

SCIENTIFIC DIASPORAS
AS DEVELOPMENT PARTNERS

Gabriela Tejada &
Jean-Claude Bolay (eds)

SCIENTIFIC DIASPORAS AS DEVELOPMENT PARTNERS

Skilled migrants from Colombia, India
and South Africa in Switzerland:
empirical evidence and policy responses

Preface by Jean-Baptiste Meyer



PETER LANG

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Foreword

Present-day globalization is characterised by free-market thinking, the growing emphasis on the global knowledge economy, the development and expansion of advanced communication and information technology services, tourism, and trade between countries. These related phenomena have led to intense international migration, and in particular the mobility of science and labour. Against this backdrop, one frequently mentioned concern in international cooperation circles is about how developing countries' scientific and professional elites are trained, particularly in relation to migration by highly qualified scientists and professionals who go to academic and research institutions in industrialized countries that offer them better personal and professional opportunities. This is a major threat because a significant and growing number are deciding not to return to their country of origin. This can be viewed as a net loss to the countries of origin, both in terms of their investment in education and training, and regarding the added value of the scientific and technological knowledge of their scarce human capital, from which only the richer destination countries actually benefit.

If we consider knowledge in general (including its manifestations as education, professional training and scientific research) as a key catalyst for socio-economic, scientific and technological progress, irrespective of the type of society, country or level of development, the exodus of Southern elites to countries of the North can be seen as a threat. In fact, the social and economic needs of societies in the South potentially clash with the legitimate aspirations of individuals, both when they emigrate to industrialised countries for training purposes and when they are unable to secure jobs with a high level of decision-making power in their countries of origin upon their return, be it in education and research, in the public sector or private industry.

Seen from a traditional perspective, brain drain is an irreversible loss that hampers development and aggravates the dependence of the South on the North. There is no doubting that the slow economic and social growth experienced by several developing countries is directly linked to their relatively weak levels of education, and science and technology.

This invites us to reflect on the various available options to increase the knowledge level in less developed countries and to raise the number of beneficiaries by changing paradigm to a new alternative, by which skilled migrants from developing countries living in industrialised countries of destination have

a potential to benefit their communities of origin without actually having to physically return. According to this brain gain perspective, scientific diasporas which bring together highly skilled migrants are regarded as important transnational actors who promote alternative forms of individual or collective involvement in the processes that promote science and technology, and socio-economic development in their communities of origin, complementing traditional institutional structures. This is achieved using methods designed to retrieve the knowledge, skills and other resources of nationals who have emigrated.

In this respect, temporary or circular flows of human resources, the formation of diaspora associations and networks, and direct or virtual exchanges between skilled expatriate professionals and scientists on the one hand and the academic, scientific and professional communities in the countries of origin on the other are seen as some of the ways of encouraging knowledge and strengthening the endogenous skills promoted by the emigrated elites.

The relevance of diasporas as promoters of development appears constantly in the current international agenda on migration and development. Following this trend and regarding specifically scientific diasporas, there has been an increase in the number of research projects and case studies in recent years that suggest the enormous potential of turning brain drain into brain gain. Although the negative effects of brain drain are well documented, there is no complete empirical evidence on the benefits of brain gain to show the value of scientific diasporas.

At a time when science, technology and knowledge play an increasingly essential role in social development processes, this volume is a contribution to the ongoing international debate about migration and development. It shows, from a brain gain perspective, the potential of skilled migrants and scientific diasporas from developing countries to promote socio-economic progress in their countries of origin through innovative ways of transferring knowledge, skills and other valuable resources.

The volume is based on a research project carried out by the Cooperation Unit at the Swiss Federal Institute of Technology in Lausanne (EPFL). The project studies the scientific diasporas of three developing countries (Colombia, India and South Africa) with Switzerland as their industrialised country of destination and was carried out between November 2006 and December 2007 in collaboration with the International Migration Programme (MIGRANT) of the International Labour Office (ILO), the University of Geneva (UNIGE), the Swiss Forum for Migration and Population Studies (SFM), and the University of Lausanne (UNIL). This project, entitled "A Swiss Network of Scientific Diasporas to Enforce the Role of Highly Skilled Migrants as Partners in Development" received generous support from the Geneva International Academic Network (GIAN).

The three countries – Colombia, India and South Africa – were selected because of the dynamism of their skilled migrants and scientific diasporas around the world and also because of their remarkable brain-gain experiences. The three countries have established various mechanisms with a view to capitalizing the resources of their diasporas; attracting their expatriate professionals and scientists (or their resources, financial or otherwise); and retaining skilled nationals in their countries of origin.

For example, the Indian government created the Ministry of Overseas Indian Affairs through which it systematically implements a whole host of policies, initiatives and services to promote close collaboration links with its diaspora that might benefit India. Whereas South Africa created SANSA (South African Network of Skills Abroad) to capitalise on the value of its diaspora, Colombia created the Caldas Network to take advantage of the skills of its expatriate scientists and professionals and to mobilise their capacities and resources in order to link them to the local scientific community back home. Both South Africa and Colombia were among the first countries to introduce the notion of the *scientific diaspora option*. Through the implementation of this and other similar initiatives, the role played by the migrants themselves, their dynamism, creativity, affective capital and motivation as well as their strategic value as transnational individuals have proven key factors in promoting brain gain.

When conducting research of this type from the perspective of Switzerland as a country of destination, it is worth mentioning the importance of the scientific collaboration between Switzerland and the three countries concerned. In specific terms, cooperation with India and South Africa has been based for many years on bilateral dialogue established through collaboration agreements. Both India and South Africa are in the group of priority countries under the current bilateral scientific cooperation strategy of the Swiss State Secretariat for Education and Research (SER). There has also been cooperation with Colombia over a long period of time, although in this case it is based on collaboration between individuals, built on the enthusiasm and strong and sustained personal commitment of scientists and professionals, and it has usually taken place without any long-term institutional or financial support.

On the other hand, it should be pointed out that Switzerland has become an important destination country for migrants. According to data from the International Organization on Migration (IOM, 2005), Switzerland was ranked 20th in the world for countries with the highest number of international migrants in 2000. That year the country had 1.8 million immigrants or 1% of total world migrants. Moreover, the country came third among OECD countries with the highest proportion of foreign-born residents in 2005 (OECD, 2007). Switzerland is becoming an increasingly popular destination for skilled migration

(IOM, 2005) as well as an important destination for international students (OECD, 2007), most of whom have enrolled on advanced research programmes¹.

As far as the Swiss labour market is concerned, there has been a small increase in the demand for skilled workers in recent times at the expense of less qualified ones². There has also been a relative increase in the supply of skilled professionals of late, changing from a low-skilled workforce to a skilled one, and to a large extent this has been influenced by recent migration policies.

One of the main objectives of migration and development studies today is to obtain data and empirical information on diasporas, and the growing numbers of skilled migrants from developing countries present in Switzerland offer researchers significant opportunities to study the professional activities of these migrants and to examine brain-gain mechanisms and other transnational practices they undertake to benefit their countries of origin. Furthermore, the role skilled migrants from developing countries play in producing and disseminating knowledge in industrialized countries for the benefit of their communities of origin has gone relatively unnoticed and has until now never been looked at in any detail. This project tackles these two problems by showing the living situation of skilled migrants from developing countries in Switzerland, and the conditions and circumstances in which their cooperation initiatives emerge. It also examines the elements that strengthen these initiatives as well as those that hinder them.

Likewise, the project contributed to the political debate about migration, development, and scientific cooperation strategies through two political discussion workshops which were attended by a wide range of different actors.

The purpose of this volume is to announce the results of this project and to put them in context. The book brings together articles by the members of the research team, and the various chapters present some conceptual contributions, some in-depth analysis, and also specific policy recommendations regarding the value of scientific diasporas as partners in development. The chapters of this volume were written between 2007 and 2009.

The book shows the crucial role that scientific diasporas can play in promoting a development model that encompasses the economic, social and cultural aspects of the lives and activities of people in their communities of origin. It also presents best practice to inspire appropriate scientific cooperation poli-

1 According to OECD data, international students in OECD countries enrol even more frequently on advanced research programmes than on regular university programmes. In Switzerland, more than 40% of those on such programmes are international students, which is high, comparable only to that found in the United Kingdom (38.6%). Indeed, international students represented 12.7% of all tertiary education enrolments in Switzerland in 2004, while 42.5% of all persons in advanced research programmes were international students (OECD, 2007).

2 See the chapter by Pecoraro and Fibbi on this volume.

cies that can serve as a platform to strengthen cooperation between skilled migrants' countries of origin and countries of destination, as well as introducing the reader to some of the mechanisms which facilitate the flow of knowledge and other resources in a more direct and balanced way between countries in the North and those in the South.

The results published in this volume suggest that retrieving the value and resources of emigrated scientists and professionals, either through physical or virtual exchanges, along with a strengthening of a country's capacity and infrastructure to support and maintain its elite are complementary aspects of a comprehensive brain gain strategy for developing countries. We believe that we need to undertake broader research and obtain more empirical evidence from the perspective of the countries of origin in order to proceed further with these hypotheses and confirm them.

Gabriela Tejada and Jean-Claude Bolay
Lausanne, September 2009

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Preface

Two decades have passed since the Colombian “Caldas” Network of Scientists and Engineers Abroad showed the way towards a new brain gain approach to highly skilled mobility. This first experience of the diaspora option put an end to the brain drain paradigm and the exclusive reliance on returning expatriates to solve the skills gap and thus underdevelopment. It replaced the traditional emphasis on permanent loss or unlikely repatriation by a workable hypothesis of long distance association and multiple connections. From a feeling of fate and despair, the mood has changed to one of hope and projects, and this is as true of migration policy as it is of science and technology policies.

Various success stories around the turn of the millennium started to lend credit to this concept. Asian cases in particular provided extensive evidence to support the idea that diasporas could make a substantial contribution to development at home. Even though their role has been hotly debated and subject to a variety of interpretations, none of these deny their important role in recent processes. In the migration-development nexus that has emerged over the last 5 years in international *fora*, potential and actual skills inputs from expats have received much attention alongside remittances. However, thus far, the emphasis has essentially been on economic growth generated in specific sectors (the IT industry, high-tech clusters) and on the role played by the country of origin in mobilizing its own diaspora.

The bias towards economic issues in the countries of origin has highlighted particular market dynamics or one-sided public policy initiatives that have proved successful in certain conditions. But it shed no light on the question of overall development and the involvement of other actors in building such transnational links. Thus the complexity and richness of the ongoing processes have only been looked at in terms of limited dimensions and interventions, and this has had a negative impact on policy design in two different ways. On the one hand, it subordinated the effectiveness of the diaspora to the macroeconomic context in a few emerging economic giants or anecdotal cases, and was therefore beyond the reach of most developing countries. On the other hand, it pointed at structural weaknesses in countries of origin in the latter group and at management solutions that might be expected to cure the institutional deficiencies that supposedly hampered diasporas’ contributions to their homelands.

Both interpretations – the impossibility of replicating good experiences or conformism to one single operational model – repeated the errors of the past.

One could once again sense that the burden of overwhelming external conditions might condemn any attempt to escape from the trend and again hear the advocates of normative, exogenous solutions. Was the diaspora option about to reproduce the pitfalls of traditional cooperation: the powerlessness of the South in the face of the patronising attitude of the North? Ironically, this is exactly the opposite of what this option is all about: empowering the former through dissolving the frontier with the latter...

This book adopts a different approach. Instead of supervising the management of skills mobility in countries of origin, it looks at what can be done with the diasporas in Switzerland, host to many expatriate groups. Instead of concentrating on economic growth, it conceptualises the value that knowledge diasporas add in sustainable development terms. In place of a utilitarian perspective obsessed with immediate bilateral transfers, it proposes an overarching one that includes ethical dimensions and cultivating relationships for mutual development. It replaces a narrow focus on migratory policy with an integrated approach encompassing international cooperation objectives and worldwide influence for well-connected – but little – Helvetia.

In short, this book is ambitious. It addresses the question from a new perspective. It faces up to the obstacles confronting any scholar of highly skilled migration, for instance the lack of accurate, reliable and precise statistical data. But it overcomes the problem through qualitative field studies that adopt a comparative perspective. This means that the authors can establish legitimate inferences without making any claims that these are absolutely representative, and conclusions may be drawn and recommendations for policy orientations made. Case studies have been selected so as to take account of historical factors. They consider diaspora experiences – from Colombia, India and South Africa – and comparisons between them allow for analysis of local evidence. The specific Swiss situation comes across not as a run-of-the-mill account of exceptional conditions, but rather as an interesting example that other states would do well to study.

The main – and original – idea is, in fact, to deal with the brain gain diaspora option from a host country perspective. It is not that this has not been attempted before, and the book does refer to previous or existing studies and programmes in this area by Western European governments (France, UK) or intergovernmental organisations (IOM, World Bank). But the scope of their response has so far been limited in terms of sectors of activity, geographical scale or institutional commitment. Even up until recently, destination countries have tended to ignore or minimize the extent and potential of the diasporas they host. For instance, some months ago, at an advisory board meeting to appraise the role of scientific diasporas within the general framework of technical and inter-university cooperation, the panel concluded that such a contri-

bution could in any case only be minor compared to traditional ways and organisations. Sceptical renowned professors and international cooperation experts may not realise how much is actually at stake here until they see what exactly these diaspora knowledge networks comprise.

This book does precisely this: it describes the reality of these networks and examines what they might do from a sustainable development perspective if they are supported by international cooperation. The approach is both all-inclusive and pragmatic. This is reflected by the choice of countries, which ensures that none of the major developing areas is forgotten (Africa, Asia and Latin America). The areas of development in which diasporas are involved include social, educational, health and environmental concerns as well as economic issues. The book provides a review of policy-oriented literature about diasporas and statistical estimates that allow the reader to put the Swiss initiative in context. It also conducts a thorough exercise in political philosophy in order to look at the diaspora option from a historical and a geopolitical perspective as part of the processes of globalization. Last but not least, all of this is examined against the background of recent Swiss scientific and technical cooperation, and attempts to analyse what diasporas would add to the current scheme.

At a time when managing mobility has become a general concern and European countries are adopting individual and collective approaches to the issue, the Swiss exploration of diasporas “co-development” perspectives should not be overlooked. A few months ago, the European Commission hired some consulting firms specialising in human resources to check how it might act with regard to skilled diasporas present on European territory, not only in order to support its partners’ efforts in the South but also to strengthen its external links worldwide. The Swiss story told by this book is about precisely this kind of bridge building.

Jean-Baptiste Meyer¹
October 2009

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Executive Summary

The chapter by JEAN-CLAUDE BOLAY considers the importance of science and technology for development and it suggests that North-South scientific cooperation could be a starting point for progress towards sustainable worldwide development. The chapter highlights the essential role human resources, scientists and professional elites can play, insofar as they are key factors in development cooperation and in transforming society in emerging and developing countries. The chapter describes how globalization stimulates an internationalization of the economy and how it links every corner of the planet through technological progress in a context of technological expansion and innovation, as users appropriate and redefine it. However, the chapter emphasises the fact that neither the technological revolution nor the globalization of the economy have managed to have any impact in terms of reducing social inequalities, instead accentuating these disparities and leading to an increase in poverty in many countries and regions around the world. Moving away from this reality, the author invites us to reflect on the relationship between information technology and social development, and he encourages developing countries to invest in human resources so that these technologies can be applied for the benefit of endogenous development. Even though investment in experimental research and development (R&D) is the main driving force behind innovation, the author provides data showing how this investment is concentrated in a small group of the world's industrialized countries. Many developing countries, which obviously invest less in this area, find themselves at a disadvantage because of their dependence on innovation that is led and managed in the North. This inequality is also evident from the number of researchers involved in the science sector worldwide, since researchers from a limited number of industrialized countries account for two-thirds of all the researchers on the planet.

Looking briefly at the specific case of Latin America, Bolay emphasizes the need for qualified professionals with a high level of specialized training since they are key factors in technology transfer, innovation and national industrial productivity. Additionally, he shows how the North-South knowledge gap highlights the difference between the realities of industrialized countries and those of emerging and developing countries. For this reason, he believes there is a need to establish a clear scientific cooperation policy and collaborate with the most appropriate institutions to forge a successful scientific partnership.

Considering that there can be no sustainable development without technology, the author highlights appropriate technologies as an extremely important part of this process. In this context, their appropriateness is understood both in terms of their being adapted to a specific socio-economic environment and in a more general sense, i.e. their ability to be appropriated by the people who are going to operate and use the technology locally. The development of technologies of this kind is a creative exchange process, which foments a spirit of solidarity whilst simultaneously offering a major opportunity for economic growth as it tries to satisfy key social needs (for example, in the health, environmental, basic services and education sectors, etc.).

This is why scientific cooperation should be promoted by establishing North-South partnerships in which scientific relations are structured in a balanced and equal manner between the two parties, allowing both sides to develop institutional capacities, individual training and research skills, and enabling institutions in the South to set their own priority areas.

As a result, the challenge today is to make sure that globalization – in its economic aspects as well as its technological ones – can be a process that leads to a more balanced world in favour of the most disadvantaged countries and the less privileged sections of the population. International cooperation plays an important role in this respect by strengthening the scientific production capacities of developing countries in order to overcome the asymmetrical balance of power that has characterized North-South relations for so long; technology and knowledge transfer need to be replaced by shared forms of technology acquisition and production that are well suited to the specific contexts in developing countries. The author points to the lessons learnt in recent years as an illustration of how to ensure that scientific cooperation for development can achieve two parallel objectives: scientific excellence and technological production on the one hand, and their adaptation to the needs of the emerging and developing countries, together with their resulting appropriation, on the other.

If North-South cooperation initiatives are to work, there must be institutional support as well as favourable national and international environments that can transform the objectives and instruments of cooperation in such a way that a win-win situation is created for both developing and industrialized countries. Universities and research centres should also play a major role, since scientific cooperation is the best way to advance the development objectives of emerging and developing countries. The author recognizes that scientific diasporas have the potential to play a positive and pioneering role in this process by identifying innovative and creative ways of linking the countries of residence to the countries of origin.

The chapter by MARIE-CLAIRE CALOZ-TSCHOPP recognizes the importance of the “diaspora option” and explains how it involves sustainable scientific diasporas as a civilized response to the challenges the world currently faces. On this basis, the chapter analyzes the links between scientific diasporas, migration and development from a philosophical and political theory perspective.

In her discussion of scientific diasporas, the author emphasises the role of *trans-migrants* as highly qualified workers and as development actors whilst also stressing the link between scientific development and international cooperation. She also highlights the role played by public authorities. At the same time, the actions of scientific diasporas take place in a context in which there is a noticeable increase in the power of non-state actors and tensions between public authorities and private interests within development. Even though diaspora members are recognized as a creative force in development and international cooperation, when they try to apply their alternative participatory mechanisms, they face certain difficulties arising from the inequalities between countries, and these limit their mobility and their possibility to make an impact in their communities of origin.

The question of diasporas – and scientific diasporas in particular – is an interesting one in terms of power, since it can be approached from different angles. For example, the various brain drain theories deal with the matters of desertion, injustice, appropriation and privatization of the common good in favour of private interests. In ‘diaspora option’ theories, this is formulated positively in terms of creative action and development under certain conditions. In both visions, we find a discussion of development in terms of ownership of human capital, raw materials, the results and products of training and research, the transformation of science and technology, as well as *diasporic citizenship*.

Caloz-Tschopp offers an in-depth analysis of the brain drain/brain gain tandem, portraying it as a question of unequal exchanges and power relations, not only in terms of the circulation of knowledge, but also with regard to the production of knowledge, its use and even the appropriation of the cognitive capital of individuals, institutions, countries and networks within the current context of globalization. The active presence of migrant knowledge workers from developing countries in Switzerland has transformed ideas of migration, development, training, science and technology as well as policy in Switzerland, Europe and the countries of origin. There is no evidence that the *diaspora option* recommended by this project is shared by states or even by the actors involved.

The author discusses the various different discourses about migration, development, and science and technology within the new world order, on the occasions these are presented in terms of the common good, human rights, and sustainable development. She also examines the positions of the Swiss and

international authorities, which favour or hinder the circulation of researchers' debates and scientific experiences and thus affect the democratization of the production of knowledge. She also looks at how they take account of the nomadism of migrant workers, scientific diasporas and the scale of their impact on their home communities.

Since this research project studies the relations of migrant scientists in Switzerland to three countries of origin (Colombia, India and South Africa) and the resulting scientific knowledge transfer (including towards Switzerland), the first part of the chapter offers a critical deconstruction of theoretical, economic, administrative and press discourse in order to answer several key questions related to diasporas, migration policy, and development.

The second part of the chapter examines in detail the practice, obstacles, realities and ambiguities to be found in the concept of diasporas, as well as in migration and development policies. The author attempts to resolve the problems that arise from the links between globalization, development and science, as well as to identify the main themes that could lead to the effective implementation of human rights and sustainable development.

In the third part, the author suggests how two new interconnected concepts linked to human rights might be introduced into scientific diasporas. These are *diasporic citizenship* and *sustainable human development*, as elements of the political environment of the *world village*. The author then goes on to argue that if the *cosmopolis* or *world village* is to become a viable project, it is necessary to explain certain concepts and resolve the paradox by which *the universal* makes use of international law. This should be done by showing how these fit in with traditional philosophy and political theory, even though these concepts are likely to transform these disciplines.

By way of a conclusion, the author presents a summary of specific global proposals. The purpose here is to establish a more effective link between migration, development and scientific diasporas based on human rights and sustainable human development from the viewpoint of scientific diasporic citizenship. In this respect, knowledge workers, scientific diasporas, states, and NGOs in Europe, Switzerland and the countries of origin are some of the key actors in the creative efforts and mediation that are required to reduce ignorance, inequalities, and violence and to move towards world peace. Analysis of the links between *cosmopolis*, *cosmopolitical citizenship*, science, technology, and sustainable human development gives rise to thirteen detailed proposals to ensure that knowledge networks can truly become scientific diasporas.

Recognizing the priority position that *diasporas* occupy in the current international discourse on migration and development, the chapter by PIYASIRI WICKRAMASEKARA raises some conceptual questions concerning the defini-

tion, quantification and profiles of diasporas, and provides some key elements for a discussion of their contributions and an evaluation of their impact.

There is a growing tendency for the terms *diasporas* and *transnational communities* to be used interchangeably in recent literature, and the author follows this trend by using them as synonyms throughout the chapter. However, the term *diaspora*, which has historically been associated with the notion of the dispersion of an ethnic population outside its country of origin, has been in use for far longer, while the term *transnational communities* is relatively recent term. It is based on a process – and related activities – that transcends international boundaries, i.e. transnationalism. The term *diaspora* has been subject to different interpretations and has taken on a broader meaning with globalization and the growth of transnational forces; it basically refers to groups of people who find themselves outside their country of origin. However, diasporas are heterogeneous, and any analysis therefore requires us to recognize the diversity of their profiles based on specific economic, social or ethnical characteristics.

The conceptualization of diasporas has also been influenced recently by the operational definitions adopted by some countries or regions of the world to refer to groups of their fellow nationals living abroad. For example, an extended national feeling is inherent in the Indian diaspora; the Caribbean diaspora is defined by a broad geographical focus that includes the region or place where the fellow nationals find themselves; and the African diaspora is characterized by a shared sense of wanting to contribute to the region of origin.

Although it is important to estimate the size of diaspora communities and draw up specific profiles in order to assess their role and their contributions, the author reminds us that it is difficult to come up with any accurate system of categorisation, mainly because there is no standardized definition of diasporas. Also it is not easy for the countries of origin to maintain an updated register of their communities abroad over a long period of time, and registration in the electronic databases some countries do have is voluntary and there is consequently a clear underestimation of the real figures involved.

A common method used to measure the size of diasporas is to consider the total number of migrants in the world, i.e. those living outside the country of their birth (the foreign-born population). However, these figures are inaccurate since they include both temporary workers and long-term resident workers living in a country that is not their country of origin, while they do not include the second or third generation descendants of those people born in the country of destination. In presenting a general overview of the scale of the diasporas of different countries and regions of the world (for example, from Africa, India, China, New Zealand, or the United States), the author highlights how difficult it is to obtain reliable estimates.

When profiling diasporas, it is common practice to take their level of education and their skills into consideration. Diaspora groups contain a wide spectrum of skills and educational levels; their members are therefore classified as being more qualified or less qualified. It is estimated that 30% of the world's entire population of migrant workers fall into the most qualified category.

While OECD data shows that the educational status of (foreign-born) immigrants varies considerably between member countries, available estimates do not reflect the fact that a significant number of immigrants are employed in jobs below the level of their qualifications, and this has an impact on their potential contributions. On the other hand, there is no precise data about the percentage of the immigrant workforce enjoying permanent residence or long-term status and capable of forming an established diaspora

The chapter also tackles the subject of return migration. There are frequent references in discussions about brain drain to professionals and scientists who return to their country of origin as a way of offsetting the negative effects of the loss of human capital. However, there is little empirically based literature on return migration available at the moment.

The diaspora of a country may be concentrated in one or two main destination areas or it may be divided among many destination countries. For the author, it is important to gain a better understanding of where diasporas are concentrated, since these are a tangible group of transnational communities that can contribute to the country of destination as well as to the country of origin.

Quantifying diasporas and establishing basic profiles of them allows us to identify the most suitable ways of involving them in initiatives to benefit the countries of origin. Several recent global initiatives and numerous research projects have highlighted the potential of diasporas to benefit their countries of origin through various transnational practices; they all recognise the importance of identifying appropriate factors and contexts that stimulate the positive impact of their initiatives.

The author suggests considering three elements when evaluating diasporas' contributions: 1) they benefit both the countries of origin and those of residence; 2) there is a gap between the real and the potential contributions for the country of origin, and these should not be underestimated; and 3) these can have a negative impact on the country of origin (there are examples of diasporas supporting armed conflicts, insurgency movements, or terrorism).

The diversity of a diaspora needs to be recognized if it is to be involved in defining the agenda and setting policy. A distinction is generally made between the contributions of the highly skilled and those of the low skilled. The author reminds us that it is not only the skilled diaspora that contributes and draws up a list of initiatives by the two types of diaspora that highlights three types of mechanism: 1) knowledge networks; 2) individual or collective philanthropy;

and 3) other contributions by migrants and migrant organizations (transfer of financial remittances, demand for goods and services such as telecommunications, consumer or travel goods, capital investments, etc.).

In summary, the focus of the chapter is on the three interrelated themes of ensuring consistency in the definitions, estimating the size of diaspora populations, and conceptualising their contributions. The chapter reveals the need to make progress with research that can provide knowledge and guide investigation into the role diasporas play in the tension between migration and development. The author identifies the following guidelines for future research: 1) it must generate knowledge about the profiles of the diaspora and its transnational involvement across a range of categories; 2) it must document the patterns of transnational practices that encompass both the countries of origin and those of destination; 3) we should find out more about the level of integration of diasporas in the destination society and what impact the latter has on their contributions; 4) analysis of operations by migrant organisations and the type of contribution they make to their countries of origin should be encouraged; and 5) there is a need to generate and disseminate data and information about the profiles of diasporas, their networks and how they work.

The chapter by MARCO PECORARO and ROSITA FIBBI provides an overview of skilled migration from developing countries into the Swiss labour market. In doing so, it complements the little literature on highly qualified migrants in Switzerland that exists by pointing out new trends in mobility and employment, and it focuses especially on migrants from developing countries, making use of available data from multiple sources.

The chapter explains how many industrialized countries, among them Switzerland, had to opt for the pro-cyclical exploitation of foreign (essentially low-skilled) workers after the Second World War. The chapter shows how the practice of this type of migration policy was initially used to satisfy an excess internal demand for labour during a period of economic growth and in turn bringing sustained economic growth with it. It also demonstrates how the determining factors of economic growth have gradually changed since the petrol crisis of the 1970s.

Basing their arguments on *new growth theory*, the authors recognize human capital as one of the basic requirements for economic growth, showing how spending on R&D increased significantly as a proportion of Gross Domestic Product during the 1990s, while the funding for science and technology also grew considerably in most developed countries, including Switzerland.

Using the definition of *highly skilled personnel* in the OECD's Canberra Manual, the chapter explains how relative demand for highly qualified workers on the labour market has increased at the expense of the less-skilled, an effect

commonly known as *skill bias technological change*. Similarly, the chapter shows a relative increase in the supply of skilled workers, stressing the fact that the nature of the migration flows, once mainly low-skilled workers, has changed over recent years to become a flow of skilled workers.

The authors show how the fluctuations and migratory trends of the last few decades have been influenced by the economic cycle and by the wars in the former Yugoslavia, as well as by various policies intended to regulate immigration. Accordingly, while the second half of the 1980s was characterized by high rates of growth in labour migration, especially from European countries, immigration from non-European countries has become quite significant since the 1990s. Over the same period, the Swiss government introduced a number of policies restricting the admission of immigrants from countries outside the European Union (EU) and the European Free Trade Agreement (EFTA) zone. In accordance with these policies, which envisage free movement with EU countries, employers must satisfy their needs with migrants from the EU and, if this is not possible, they may contract skilled workers from elsewhere in the world. However, both these recruitment strategies are only conceivable if there is no possibility of hiring a local (native) worker to occupy the vacancy (with the exception of some transfers of personnel which are done internally in some companies and, in certain cases, involve family reunification). As a result, a transition towards a knowledge-based economy combined with Swiss immigration laws based on the selective admission of immigrants by skills level and national origin has probably contributed to an improvement in the skills levels of current migrants.

The chapter includes descriptive statistics as well as an appendix with tables and figures on immigrants in Switzerland, specifically those from developing countries. These give the proportion of skilled migrants in the Swiss labour market for each migrant group by region of origin, type of economic activity, year of entry, and gender. The statistical trends reflect a strong reorientation of the migratory flows towards more skilled personnel. The chapter also provides information about Colombia, India and South Africa, showing skilled migrants as a percentage of total migration from these countries to Switzerland and providing data to indicate possible trends for the end of the 20th century.

The chapters on the case studies (Colombia by GABRIELA TEJADA, India by IBRAHIMA AMADOU DIA, and South Africa by FRANCELLE KWANKAM) offer empirical evidence about skilled migrants from three developing countries, analyzing their living conditions in Switzerland as an industrialized country of destination. They show the value of their transnational practices to their communities of origin, based on the results of the research project entitled “A Swiss Network of Scientific Diasporas to Enforce the Role of Highly Skilled Migrants as Partners in Development”.

The research emphasised the generation of first-hand data and includes field-work based on 76 interviews with skilled migrants from Colombia, India and South Africa living and/or working mainly in Lausanne and Geneva, and, to a lesser extent, in Basle, Berne and Zurich. These interviews covered a wide range of professions, socio-economic backgrounds, ages and gender. There was special emphasis on the specific nature of skilled women's experiences. During a series of in-depth, face-to-face interviews, skilled migrants from these three countries were asked semi-structured open questions to gain a better understanding of their conditions, practice and opinions in three main areas: 1) the reasons and the motives for their migration, their migration paths and their living conditions in Switzerland; 2) their links with their countries of origin and the brain gain mechanisms and other transnational practices they have adopted; and 3) the scientific and development policies and practices they employ to support skilled migrants as development partners.

The results of the research show the original and creative ways of life of skilled scientists and professionals from developing countries living in a country of residence "here", while they also maintain links with their communities of origin "there". It is this combination that makes them original transnational subjects beyond traditional national identities. The chapters analyses the situation, activities and needs of the skilled migrants in the three case studies, and show how their combination of motivation, knowledge and skills has enormous potential to make a positive contribution to the development of their countries of origin.

The case studies demonstrate the links between the integration of these skilled migrants in the country of destination and their efforts to help develop their countries of origin. They also show how the individual initiatives of the three diaspora groups tend to be informal and based on personal ambitions and desires, although in some cases they are complemented by institutionally organized collective action.

We see how institutional relations, social contacts, and scientific and academic links influence the social status of qualified migrants in Switzerland, thereby facilitating their integration into the labour market and the social life of the country. In a similar fashion, collective action by migrant associations also plays a significant role because it improves its members' social status and also serves as a platform to promote collaboration among the immigrants themselves and bolster scientific and technological capacity in the countries of origin. However, while integration may facilitate the activities of skilled Colombians, Indians and South Africans on behalf of their countries of origin, an analysis of their accounts and experiences shows that this is not a precondition for their carrying out creative work on behalf of their communities of origin.

The chapters provide examples of the obstacles skilled migrants faced in Switzerland, as well as examples of the positive conditions that permit them to

carry out brain gain activities, transfer social remittances and implement various types of transnational practices.

The project research team had previously identified three brain gain mechanisms (knowledge transfer through the networks and associations of the scientific diaspora; investment strategies in experimental research and development; and joint North-South scientific cooperation projects) and social remittances as the most significant transnational practices between Switzerland and the three case study countries. These had significant potential to strengthen science and technology as well as socio-economic development in the countries of origin.

The accounts of the skilled Colombians, Indians and South Africans in Switzerland illustrate their relations with their countries of origin as well as their professional and scientific contacts and exchanges in Switzerland and internationally. The chapters also show the extent to which the three identified brain gain mechanisms and other decentralized transnational practices and initiatives of the scientific diasporas are carried out and promoted.

On the basis of the above, one can see that skilled migrants take a broad view of development; this is demonstrated by the examples of different types of initiatives and practices given, in particular those related to the promotion of science and technology, education, business opportunities and other socio-economic activities aimed at reducing poverty in the communities of origin. Furthermore, the chapters point out some examples of best practice to illustrate the different ways (at an individual or community level, and with or without institutional support) in which scientific diasporas can get involved in the development process.

Although skilled migrants are portrayed as holding great ambitions for their countries of origin, analysis of their experiences and accounts points to the fact that both the countries of origin and the countries of destination must play a pro-active role in supporting and facilitating a compromise and collaboration opportunities with the diasporas in order to promote continued and expanded transnational activities on behalf of their countries of origin.

The final chapter provides the general conclusions of the volume. It offers a brief comparative analysis of the three case studies that outlines some of the main similarities and differences between the experiences of skilled Colombians, Indians and South Africans in Switzerland. There are some final, concluding remarks and some specific recommendations for public action that identify several ways of strengthening skilled migrants' and scientific diasporas' contributions to long-term development and poverty reduction. Finally, the chapter also drafts some key implications for research that are derived from these conclusions.

Part I
Background and Context

Chapter 1

North-South Scientific Cooperation: A Challenge for Sustainable Development

Jean-Claude BOLAY¹

1. Introduction

If this research on the role of scientific diasporas as catalysts for development of countries of origin is meaningful, it is because it looks into one of the main factors of development cooperation: human resources. To be more precise, it looks at the role played by scientific and professional elites in transforming society in so-called developing and emerging countries.

We therefore start from the very general but nevertheless important precept that science and technology – research, high-level training and technological innovation – make a contribution to the sustainable development of the planet. In an increasingly globalised world, this contribution takes place not just at the local but also continental and international levels, whether it be within academic institutions or public or private companies.

The pre-eminence of the scientist as a key factor of development is no longer disputed. However, we would like to remind the reader, in this brief introductory chapter, of a few characteristics of the predominant international situation so as to highlight a number of general considerations, as well as a few features specific to countries and regions in the developing world and the impact these have on their societies. Lastly, we will attempt to draw out the lessons learned over the past few years to ensure that together scientific cooperation and development provide the means to achieve two major aims: excellent scientific and technological production and its appropriateness to the needs of developing and emerging countries.

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2. Science and Technology for Development: an Overview

The world has changed greatly over the last two or three decades. This has occurred despite the fact that, due to our daily routines, we do not really notice how these changes in reality have altered our behaviour, our vision of the world and the manner in which we participate in it. Globalisation, to call it by its name, is what now drives an economy that is completely international in nature. On this subject, D. Cohen (2004) mentions that, between 1954 and 2000, the share of trade in GDP more than doubled. However, globalisation, with respect to its economic dimension, has caused an even more fundamental revolution in sectors that contribute to production.

According to the same author, in the most industrialised countries, the vast majority of the workforce is employed in the service sector (85% in the United States, 75% in France), and the primary and secondary sectors have become marginal in terms of the number of people who work in them. These activities do, of course, still exist, but they have to a large extent been “outsourced” to third countries that have recently entered the international market (the leading such country being China, now the second largest economy in the world after the United States²). This extraversion of economies mainly stems from the emergence of very large transnational corporations whose operations, production as well as distribution, take place all over the planet (Martin, Dominique et al., 2003), as well as from the dismantling of customs barriers with the application of World Trade Organization (WTO) rules. None of this would have come about had technological progress not made it possible to establish transport, telecommunications and information systems networks that connect, in real and continuous time, every point in the inhabited world. In the eyes of M. Castells (1996), this is the new technological paradigm, which, at the end of the 20th century, marked a key stage in the development of a new society-world focused on information technology and invested with a power where, to use his words, “the spread of technology constantly extends the power of technology as users appropriate it and redefine it”.

This technological revolution and the globalisation of world trade have, however, led to no decisive reduction in the poverty that continues to affect many regions of the world (Stern et al., 2002; Bolay, 2004). Both at the international and country levels, globalisation does not automatically lead to a general decrease in the level of inequality. Indeed the opposite is true. As Williamson (1998)

2 By GDP, the USA is the world’s largest economy with \$ 11,700 billion, China comes second with 7,600 billion, then Japan with 3,800 billion and India with 3,400 billion. Cf. CIA (Central Intelligence Agency) (2008) and Srinivasan (2006).

points out, there are growing disparities both between countries and within societies. For example, although the link between information technology and economic productivity appears a given, less attention has been paid to the – incidentally more complex – relation between this same technology and social development (Korea, 2005). This author refers to several studies that demonstrate a positive correlation between new technologies and economic and social development in the most industrialised countries, but the same cannot be said of developing countries. This should encourage the latter to invest not only in material capital but also in human resources, since the skills these new technologies require are generally lacking at the moment.

Investment in research and development (R&D), the driving force behind innovation, is still extremely concentrated (as can be seen from the table below). The United States lead this movement with about a third of total investment worldwide, followed by the European Union (25%), Japan (13%) and China (9%).

World spending on R&D (in 2002)

<i>Country</i>	<i>% world spending</i>	<i>% national GDP</i>
United States	34.4	2.66
EU	25.0	1.86
Japan	13.2	3.12
China	8.9	1.22
India	2.8	0.78
South Korea	2.8	2.53
Russia	1.8	1.52
Brazil	1.7	1.04
Israel	0.8	5.08
South Africa	0.5	0.77
Others	8.0	0.56

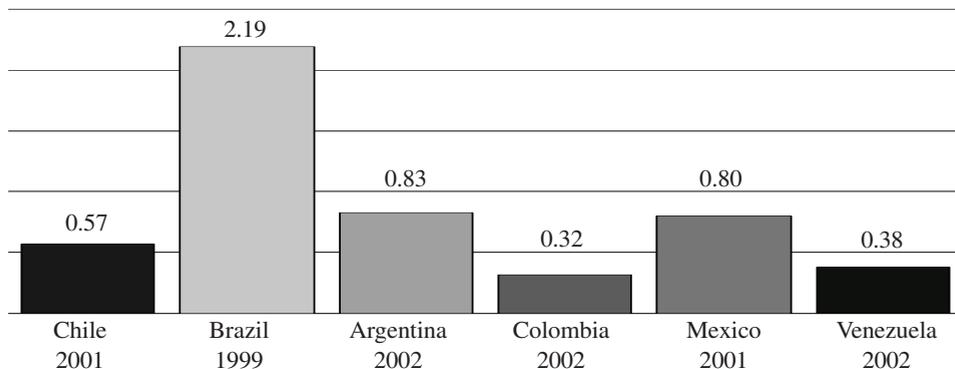
Source: Mustar & Esterle, 2006

All the other countries in the world put together represent a mere 18% of R&D, a very low figure that makes the most disadvantaged among them entirely dependent on innovation that is conducted and exploited elsewhere, and which consigns them to a situation where they consume high-value-added products imported from abroad.

Similar discrepancies can be noted for researchers involved in the scientific sector, be it public or private. The same authors announce that, in 2002, there were 5.3 million (full-time) jobs in research worldwide: 23.7% were active in the United States, 21.4% in the European Union, 15.2% in China, 12.1% in Japan and 9.2% in Russia.

In comparison to this small number of countries that are home to three-quarters of the planet's researchers, it is interesting to present the example of the prevailing situation in Latin America today. Universities were set up in Latin America in the wake of Spanish and Portuguese colonisation, with the first three founded in 1553 in the cities of Mexico, Lima and Santo Domingo. There are now hundreds. In Chile, for example, there are 16 public universities and 46 private universities, 48 professional institutes and 115 technical centres of higher education for a population of 15.8 million people (OECD³). In Brazil, a country with 179 million inhabitants, there were apparently 268 top-quality higher education academic institutions for science and technology (CNPq⁴). An electronic directory specifies 333 high-quality universities and teaching institutions in Mexico⁵. The list could be even longer if we were to include the other countries in Latin America. What is clear is that there is an impressive list of academic institutions and research centres and a need to determine a clear policy of scientific cooperation, selecting the most appropriate partner institutions, to give present and future partnerships the best possible chances of succeeding (Bolay, 2006a).

Expenditure on science & technology as a percentage of GDP (2002)



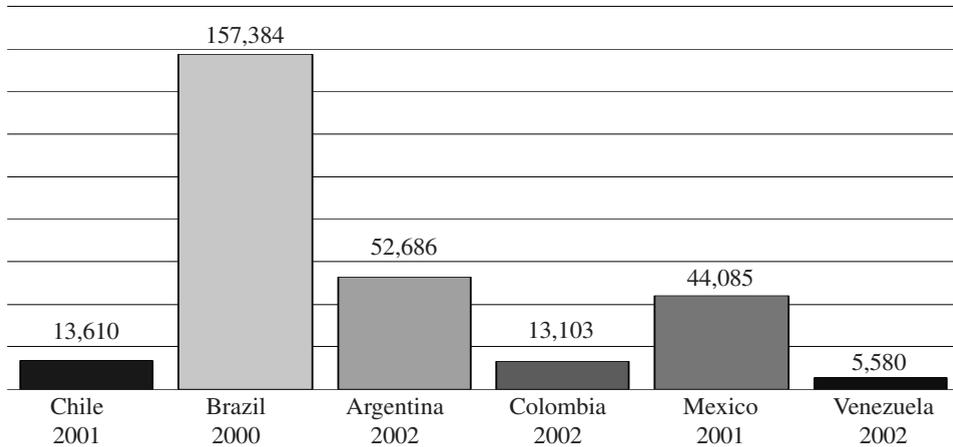
Source: Comparative analysis of RICYT data

As can be seen, the Latin American countries that are the most developed economically and industrially – Brazil, then Mexico and Argentina – are the ones that put the greatest financial efforts into technological research and development. Chile is a special case in that it only started moving in this direction a few years ago, and the results are not yet noticeable at budgetary level.

3 OECD (2004). Reviews of national policies for education: Chile, Paris, OECD.

4 National Council for Scientific and Technological Development (CNPq) (2002). Directory of Research Groups, 2002 census, Brasilia (<<http://www.mct.gov/estat/ascavpp/ingles/>>).

5 <http://www.webometrics.info/university_by_country_es.asp-country=mx.htm>.

Science & technology personnel

Source: Comparative analysis using RICYT data

This data, provided and updated by the Red de Indicadores de Ciencia y Tecnología Iberoamericana e Interamericana (RICYT)⁶, reveals the extraordinary difference between the countries that are at the cutting edge of technological research and innovation in the world and emerging and developing countries. There are more than 1.2 million researchers in the United States, representing 8.6% of the active population, as compared to about 14,000 in Chile, for example, who account for 2.7% of the economically active population.

Yet the need is still there. A recent study by the World Bank shows that demand for highly qualified staff is on the increase in Latin America. This need for a working population with a high level of training is proving to be a key factor for technology transfer, innovation and national industrial productivity (De Ferranti et al., 2003). This gap, which can be verified for the sciences by the number of articles published in international peer-reviewed journals, is undeniable, especially in Latin America. This despite the fact that countries there have a large number of high-quality universities⁷ and extremely dynamic eco-

6 <<http://www.ricyt.org/>>.

7 There are nevertheless only 7 Latin American universities among the world's 500 top universities as ranked by the Institute of Higher Education at the Shanghai Jiao Tong University (<<http://www.arwu.org/rank/2007/ranking2007.htm>>). Although this classification is much-referred to internationally, it should, nevertheless, be viewed with some caution because its selection criteria favour the richest and most internationalised universities and it neglects the fact that, in many emerging and developing countries, public (and private) universities have played and continue to play an essential role in providing young people with scientific training that allows them to join the professional and academic job market and thus, to contribute to the past and present needs of every national society (on this subject cf. Ordorika, 2006).

conomic growth. The gap is even starker if one seeks to analyse these differences between rich and developing countries in more general terms.

In its Science Report (2006), UNESCO presents us with a situation that reveals how divided the world is: 77.8% of R&D investment is concentrated in the developed countries that contain 70.8% of the world's researchers; developing countries, with 69.5% of world population and 39.1% of world GDP, account for 22.1% of investment in this area and 29.1% of researchers. For the least developed countries, with 11.1% of world population and 1.5% of world GDP, R&D spending is 0.1% of the world total, and they have 0.1% of the world's researchers. The poorest countries in the world are, therefore, completely and alarmingly marginalised in the face of the technological changes that shape the modern economy, as well as in relation to the role education, science and technology play as driving forces in societies where knowledge and skills are increasingly essential factors of production.

Africa is without doubt the continent that is most symptomatic of these socio-spatial disparities. R&D represents an average of 0.3% of GDP on the continent, but South Africa on its own concentrates 90% of the \$ 3.5 billion invested per year in sub-Saharan Africa. The remaining countries in Africa share a tiny proportion of the funding for research.

As Kagami, Mitsuhiro et al. (2004) have written, the "digital divide" is growing at various levels: between socio-economic groups, in favour of higher income groups; between regions, in favour of larger towns and urban areas at the expense of rural areas; between countries and continents, first of all distinguishing between industrialised countries and developing countries, and then between continents, favouring Asia over Latin America and Africa.

Returning to how developing countries might become more integrated into the global economy through better use of information technology, J. James (2002) suggests, in line with many other specialists in developing countries, which work be done to define pro-poor strategies that can be adapted to the particular context of each of these countries. There is obviously no "poor technology" for less developed countries that could be used in place of the high-technology used by more economically developed societies. Yet the poor should be one of our central concerns if we really intend to help reduce poverty. In this sense, technology has to be adapted to the abilities of the poor so as to make use of their potential as users (Weigel and Waldburger, 2004) with content that is adapted to social demand. Technology, despite its inherent complexity, should only be a means to an end. There are certainly some basic priorities that still need to be defined for each context, taking account of the means of poor families who, in many countries, make up the majority of the active population and whose productivity could be improved if they had better access to tried and tested technologies. One example of this is the quick and cheap use of mobile

telephones, which have an indisputable impact on their trading or craft activities, whether this be on Bolivian markets, for cotton producers in West Africa or among small traders in Bangladesh.

There can be no sustainable development (Sachs, 1997; Sacquet, 2002) without technology. However, it is essential that this technology be appropriate, both in terms of being adapted to a specific socio-economic environment and by its being “appropriated” (in the true sense of the term, as in being handled) by the people who operate it locally and by the people who use it. In a creative process of exchanging and sharing, developing such technologies also represents a fantastic opportunity for economic growth by aiming to satisfy a social demand that remains totally unfulfilled in key areas of life and society (health, housing, access to basic services and education, and promoting small and medium-sized local businesses).

3. Scientific Cooperation for Development: Practice and Principles

There are many examples of joint projects between Western universities and partners in the South in all fields and kinds of configurations. Most of the time, these stem from one person’s wish to do something. Projects by researchers and teachers are proposed and emerge from a network of social contacts; they have advantages and disadvantages. The main advantage of these collaborations between individuals is the personal – emotional, one might say – commitment and the motivation of the two partners; their weakness frequently lies in the fact that they lack institutional and financial support. The actions undertaken are discontinuous and the future prospects insufficiently thought out.

Scientific cooperation tends to integrate the best aspects of these dynamics into an academic framework which is able to support and amplify this type of initiative and to anchor it within a genuine strategy. Firstly, this strategy contributes to socio-economic development and secondly, to the rapid development of science. This is just as true of universities in the North and South as it is of bi- and multi-lateral aid agencies. This type of collaboration has been taking place for a long time now, as J. Gaillard (1999) mentions, and is on the increase, in response to the requirements of a globalised economy. It is not just trade and finance that is exchanged, but also knowledge and skills. These collaborations are also responding to the international scale of the problems we are facing at the beginning of the 21st century (climate change, use of natural resources, human migration, poverty and socio-economic inequality, etc.), all of which bring countries from the South and the North, developing and rich countries, closer.

According to J. Gaillard (1999), since the 1970s, the main donor countries have integrated research and technological innovation into their aid programmes. They have done this by providing direct grants to institutions in the South and initiating programmes that help researchers from the South work or study in research centres in Northern countries⁸, as well as by strengthening partnerships between universities. There is a clear conclusion that can be drawn after 40 years of this type of cooperation: the higher the degree and therefore the level of education the researcher strives for, the more he or she is dependent on the North!

The topics dealt with are changing. Until the beginning of the 1990s, support from Northern countries to Southern countries was dominated by issues of agricultural production as well as research on the natural environment (more than 50% of investment), plus to a lesser degree, matters pertaining to health and medicine. Very few countries showed any interest in supporting basic science and industrial and technological research. Nowadays the range of topics is far broader and tends to be more responsive to the scientific development strategies implemented by Southern countries' own governments. There is a particular emphasis laid on "biotechnology" in both the medical and agricultural fields⁹, which are moreover more in line with the major current planetary concerns (the environment and climate change, changes in demographics, pandemics).

In geostrategic terms, support for scientific research is in line with the priorities of bilateral and multilateral development aid programmes. Many Northern countries have decided to focus their aid on a few key countries, and the countries of the European Union give priority to Africa.¹⁰ In financial terms, science and technology remain an area in which there is little investment representing, on average only 5% of public development aid. Governments encourage scientific institutions in the North (and their partners in the South) to use instruments to promote research and further training and build them, wherever possible, into North-South cooperation in this field¹¹.

8 Especially through further training for young researchers from the South in universities in the North to write their Master's dissertations or do their PhDs (an approach that is certainly justified by the access these researchers can have to scientific equipment and laboratories fitted with the very latest instruments).

9 For an example, cf. the case of Chile (Bolay, 2006b).

10 The United States, for their part, concentrate its efforts on Asia and Latin America, while Japan focuses on Asian countries.

11 The European Union has thus included an international dimension into its Framework Programmes (currently the 7th of this name) to support scientific research through an INCO (International Cooperation) component. In the same spirit, the Swiss government has, through its State Secretariat for Education and Research, supported North-South scientific cooperation as part of its strategy to establish centres of competence in research by selecting some of the first 13 NCCR (National Centre of Competence in Research), a proposal by the Swiss-International network led by the University of Berne and co-funded by Swiss cooperation

In Switzerland, the Swiss Agency for Development and Cooperation (SDC)¹² supports research and academic training as has been stipulated by law since 1977 (SDC, undated). Its main objectives in terms of development cooperation are:

- To produce results that are specifically useful for development
- To strengthen individual and institutional research potential in the South and in the East for the long term
- To collaborate in a targeted fashion with Swiss centres of competence in areas that are important in development terms, and to reinforce their activities.

The government has therefore made knowledge one of the mainstays of its cooperation policy. Its strategy to support research must follow the main thematic framework of this policy so as to help the countries of the South escape from poverty and to improve the living conditions of their peoples. The main industries and areas of focus are:

- Natural resources and the environment – Employment and income – Social development – Governance – Conflict prevention and resolution.

For 2001, it is said that these efforts represented an investment of about 55 million Swiss francs, or about 4% of the SDC's total budget. This is a very low amount in relative terms and is still the product of a very traditional vision of the role of science in that the subject areas are far too general. This also comes at a time when almost no one appears to be aware of cutting-edge technological innovations and areas of science.

It is to be feared that such an overly conventional attitude will only serve to increase the gulf between countries in the South and those in the North in terms of scientific progress as well as its technical application to solve development problems. Fortunately, one can qualify this pessimistic conclusion about strategy by taking into account that the SDC supports initiatives by Swiss academics and academics from various priority fields in countries in the South, including:

- Sustainable development and the physical environment – Epidemiology and parasitology – Urbanisation and water treatment – Agricultural and food biotechnology – Global climate change.

department (to cover expenses for the Southern partners): NCCR North-South – Research partnerships for mitigating syndromes of global changes, <<http://www.nccr-north-south.unibe.ch/>>.

12 Swiss Agency for Development and Cooperation, Federal Department of Foreign Affairs, SDC/FDFA.

That said, scientific cooperation cannot be judged solely on the basis of this thematic criteria, but also – and above all – on the basis of the approaches that are promoted to support researchers and teachers from the South, the methods that are applied and the forms of joint projects that are supported in this way. The same Swiss Agency for Development and Cooperation has detected a change over the last decade in scientific cooperation that has evolved from a juxtaposition of disciplines to adopt a multi-disciplinary or even trans-disciplinary logic. This heuristic vision of the problems of development is focused on the idea of partnership, an instrument “that associates research and development cooperation... implemented so that the partner country can define the topics of research on its own instead of the partners in the North¹³ doing so”. The aim of this structure of scientific relations is to develop both institutional capacity and individual training and research skills, thus allowing countries in the South to set their own priorities.

As stated by KFPE¹⁴, research partnerships with developing countries should ideally be guided by the needs and priorities of the South. They should also – and here we come back to the “*modus operandi*” – be based on common interests, not only at the implementation stage but from the initial stage when the project is being designed, planned and the responsibilities and tasks shared between the partners. This is why the above-mentioned KFPE defined 11 principles for joint research projects (1998) that still constitute the internationally recognised guidelines:

1. Decide on the objectives together
2. Build up mutual trust
3. Share information; develop networks
4. Share responsibility
5. Create transparency
6. Monitor and evaluate the collaboration
7. Disseminate the results
8. Apply the results
9. Share profits equitably
10. Increase research capacity
11. Build on the achievements

These few rules may seem self-evident, but experience of international scientific cooperation has taught us prudence. We know, from cases that we have experienced or heard, that differences in organisation, rhythm, institutional obligations and the other constraints proper to every university and country

13 SDC (undated), p. 19.

14 Swiss Commission for Research Partnerships with Developing Countries (KFPE) (<<http://www.kfpe.ch>>).

generally result in the implementation of a decision-making system that, either overtly or unofficially, favours the project leaders from the North because they are more accustomed to scientific tenders, closer to funders (who are also in the North!), and more in tune with the results expected of such “participative” approaches¹⁵. In a book entitled “Improving impacts of research partnerships”, the same KFPE (Maselli, Daniel et al., 2004) emphasises the results of a North-South partnership approach, underlining 4 points: fresh knowledge and change in attitude of the researchers; benefits for the users; benefits at a political and a societal level; and individual and institutional capacity-building.

Above and beyond any ethical considerations, the creation of new knowledge and new know-how still does not receive the attention it should when people examine questions of scientific partnerships with emerging and developing countries. This despite the fact that it is its cornerstone – the element that will finally earn the joint project its *lettres de noblesse* in the scientific world. For if we share Sieber and Braunschweig’s view (2005), the new dimension brought by partnership and its actual contribution to scientific debate lies above all in models that focus on the interaction between science and society. In this interaction, scientific ingenuity and technological innovation are the fruit of interdisciplinarity, obliging technical and natural sciences on the one hand to negotiate with social and economic sciences on the other to achieve an interdisciplinary approach that points the way towards the creation of new disciplines to tackle the societal concerns that must be resolved in the medium to long term (Maingain et al., 2002). This was once said about the urban environment and can now be applied to any scientific discovery made as part of a joint North-South project: “This inclusion of a social dimension within the purely technological spread of innovation is the origin of institutional reorganization making true technological improvement – if not innovation – possible” (Bolay et al., 2005).

The following precepts can be found in the guidelines of many North-South research programmes such as those initiated in Europe:

- Encourage scientific partnerships between counterparts in the North and the South
- Ensure the transfer of research results for practical use in the field
- Innovate to solve the major problems facing countries in the South.

15 In Switzerland, the best current example of this shift in the meaning of scientific cooperation for development is the NCCR North-South, co-funded by the Swiss Agency for Development and Cooperation (SDC) and the Swiss National Science Foundation (SNF) and managed by the University of Berne via its Centre for Development & Environment. It has a management team of several dozen people, a board made up of professors representing the various Swiss research institutions, whose foreign partners are in turn associated with Swiss universities that present the scientific and financial reports on their behalf. The entire organisation is controlled by a review panel chaired by a Swiss professor (<<http://www.nccr-north-south.unibe.ch/>>).

This is the case of the programme of scientific partnerships with developing countries, jointly funded by the SDC and the Swiss National Science Foundation (SNF) which, beyond its scientific considerations, emphasises as selection criteria for projects “the significance for development and relevance for the local context”, and the account of the consideration of the 11 KFPE principles of the “Guidelines for research partnerships with developing countries.” France has launched a programme of cooperation for university and scientific research (CORUS) in the same spirit. This started in 2002 and was relaunched in 2008,¹⁶ and its objectives were the emergence of international-standard scientific centres in countries in the South and capacity development of these centres of research and developmental expertise. To reach this objective, the main themes are the implementation of high-quality research that generates new knowledge; the encouragement of dynamic exchanges and joint work between scientific communities in the South and the scientific community in France; training in research for domestic executive staff in universities, higher training establishments and research institutes in countries in the South; and putting scientific excellence in service to development. With support from the Belgian Department of Cooperation for Development, the francophone Belgian universities established the University Commission for Development (CUD¹⁷), whose role is to offer support to universities in the South and be actors in development matters helping less resourced universities fulfil their mission of providing training, research and services to society, contributing to the economic, social and cultural development of their country and curbing poverty. The CUD therefore encourages joint projects between francophone universities in Belgium and universities in developing countries to promote scientific partnership. It is an interdisciplinary approach that provides a holistic vision of the problem to be resolved allowing consideration of, on the one hand, the entire range of factors that are potentially responsible for a given problem and, on the other hand, elements facilitating the transfer of the results of research to the target audience.

Through their similarities, these three examples show that in three neighbouring European countries, questions pertaining to development and scientific cooperation result in the creation of instruments, including: research programmes to support more short-term activities and training projects in the North and in the South. In some a system of academic and non-academic relations with developing countries it is established that is founded on the same precepts. These examples demonstrate internationally renowned scientific endeav-

16 <<http://www.ird.fr/fr/science/dsf/corus>>. On this subject, read: Zannad, Sonia, 2007, *Le programme CORUS, au cœur d'une coopération moderne*, in *échosud* (17), CUD, Brussels.

17 <<http://www.cud.be>>.

ours that strive to solve the present and future problems of relevant populations and enhance their natural, constructed and technological environment. They are the basis of North-South solidarity.

4. Development and Scientific Cooperation:

Everywhere, by Everyone and for Everyone?

To conclude these remarks about scientific cooperation for development, its foundations and justification, we will return to several points that link this debate to the objectives that have guided the research done on high-skilled migrants in Switzerland.

Firstly, there is a consensus that emerges from the work done by numerous experts on this subject. Analysts concur in their diagnosis of the situation that skills and knowledge, both theoretical and applied, are the decisive components of contemporary societies, in whatever region of the world and whatever their history and culture. Thanks to new information technology, information circulates more easily, innovation happens more quickly and exchanges have increased. This optimistic conclusion must nevertheless be tempered and this is the second point on which specialists agree. The rise of new technologies that facilitate the exchange of information and thereby reinforce a “knowledge society” has had very little impact on the inequalities that divide the planet both socio-economically and spatially. The famous “digital gap” is just one more inequality to add to an ever-growing list that distinguishes the industrialised countries – and a few emerging economies – from the majority of developing countries. The challenge is as great as ever and includes making sure that economic and technological globalisation is also a form of globalisation leads to a rebalancing of the world in favour of its most disadvantaged countries.

From this conclusion, experts recognised that changes in benefit of education, and higher education in particular, along with scientific and technological research are conducive to better international integration of emerging and developing countries as they develop the weapons needed to mitigate the global economy. International cooperation has a major role to play in strengthening the scientific production capacities of these countries so that we can overcome the asymmetrical power that has characterised North-South relations for so long: by replacing technology and improving knowledge transfer through shared forms of technology acquisition and production appropriate to the particularities of developing countries; by supporting individual and institutional partner-

ships to help researchers in the South appropriate new and original methods, knowledge, know-how and technology that can, on the one hand, solve the grave problems their countries are facing and, on the other, transform them into “export products” that can be replicated in identical situations. The goal of this appropriation justifies itself; as J. Stiglitz, (2002) has said, “If the less-developed countries develop their own research capacity, then a new set of choices unfolds.” This is therefore the direction we have to work towards – and professional and scientific diasporas can play a very positive role in this.

However, the mechanism still needs to be set in motion given that such processes, like education and research, require considerable commitment in terms of human and financial resources as well as firm and substantial support over the long term. This is where international cooperation has a role to play, a major role, in agreement with the other actors involved in scientific and technological development: national and local governments, universities and research centres, not forgetting private companies.

This has unfortunately not been emphasised enough in the commitments made to date. Although everyone agrees that science and technology will be an increasingly decisive factor in the future of developing countries, funders do not yet seem to have placed the “knowledge and sciences” sector at the top of their agenda for their bi- and multi-lateral aid programmes. It is not that nothing is being done, but that activities remain marginal compared to the main investment programmes. This is happening at the same time as numerous emerging countries move to the forefront of technological progress and economic growth – China, India and Vietnam today, just as Japan and South Korea were thirty years ago. These examples demonstrate how strong and determined states have managed to benefit from science and education to boost their economies and bring about social improvements. For the poorest countries, cooperation should be available to support governments that are prepared to launch into such an approach and to ensure that they have the necessary financial and technical support. Therefore, cooperation agencies should review their priorities, as the more dynamic universities in the North and the South are now ready to play the game and have not waited for these opportunities to come around to implement public-private partnerships with companies. They are increasingly interested in sharing knowledge with the world’s most competitive research centres.

In this strategy of scientific cooperation that aims to strengthen research in countries in the South, numerous examples highlighted in this book show that high-skilled migrants play – or could play – a pioneering role in connecting their country of origin with their country of residence.

The traditional reaction of cooperation agencies has been to denigrate expatriates from the South who, once they completed their studies in a Western

country, did not go back to their country of origin, and were thus regarded as being lost to their native country. This perception of their role is changing. Instead of “brain drain”, people are now starting to talk about “brain gain”, aware that the acquisition of new skills abroad could be of direct use, through their reintegration into the scientific job market in their home country, or of indirect use, as unofficial ambassadors linking two worlds and two cultures. The Red Caldas¹⁸ is exemplary in this respect due to the amount of scientific exchanges, between Switzerland and Colombia that it once promoted. A change in the perception of cooperation has contributed to a qualitative improvement in the relations between the two countries and to long-term relationships between universities. The then Colombian government, having grasped the opportunities offered by a highly qualified diaspora deeply attached to its national roots, succeeded in providing institutional and financial support to encourage research exchanges and inviting expatriate Colombian scientists to join academic institutions in their country of origin.

It is through support for such initiatives that North-South cooperation will be able to make progress. To do this, there is a need for favourable national and international environments that are both open to exchanges where discrimination is purely in terms of the qualifications of the actors involved in the game, and the transformation of the objectives and instruments of cooperation. The future will depend on what changes come about in the present, and this is obvious from the technological and economic news we receive every day. International cooperation, which focuses a great deal on governance and the relations between the public and private sectors, stands to gain a lot from realising immediately that the important subjects to which it is rightly attached – the fight against poverty, gender equality, environmental protection, the fight against climate change, the promotion of fair and responsible trade – cannot be solved without their first being understood; and they cannot be understood without first being analysed, deciphered and translated into innovative techniques. Universities and research centres have a major role to play in such a strategy; scientific cooperation is certainly the best-tested and most effective way to reach these goals from which emerging and developing countries stand to benefit.

18 On this subject, cf.: ILO, Red Caldas – Colombia (<http://www.oit.org/public/spanish/employment/skills/hrdr/init/col_16.htm>).

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Chapter 2

Scientific Diasporas, Migration and Development A Perspective from Philosophy and Political Theory¹

Marie-Claire CALOZ-TSCHOPP²

When modern man fell to Earth and wanted to restructure all the relationships of immanence and transcendence from a vertical plane to a horizontal one, it was doubtlessly foreseen that a return to verticality was in the natural order of things. Nevertheless, those suppositions which suggest that the world is flat are now generally accepted by modern political imagination as being too limiting.

Walker, R. B. J., 2005

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Summary

The very fact of accepting the “diaspora option” (Brown) assumes that the movement of scientists to other countries, the so-called diaspora of the best trained people throughout the world is a viable and logical response to our present global challenges. Using the research carried out by GIAN (Geneva International Academic Network) as a starting point, this present work analyses the links between scientific diasporas, migration and development in the light of philosophy and political theory. By closely examining and comparing many types of discussion on this topic – theoretical, economic, administrative, the opinions expressed in newspapers, the views dictated by common sense – it is possible to shine a discerning, critical light on the statements and interpretations of the various facts (Part I).

By sifting through the practices, constraints, data, ambiguities that crop up in policies devoted to diasporas, migration and development, it is possible to give a clearer picture of the problems that arise from: 1) the links between globalisation, development and science; 2) the key elements that guarantee human rights and sustainable development (Part II); 3) two new concepts that are mutually dependent and crucial both for the political holding environ-

ment³ of the global city and for analyzing scientific diasporas: namely, sustainable *human* development and cosmo-political citizenship.

These two concepts connected to imperative needs, to human aspirations and human rights, allow us to clarify what is at stake in the practice of scientific diasporas. In order for the *cosmopolis*, the global city, to become a reality it will be necessary later on to examine some basic concepts (universal, pluriversal, and questions of national borders) and the ways that the difficulties of universalist conflicts can be settled by international law. We have to show where, how and at what cost we can fit these two concepts into the traditions of philosophy and political theory – in spite of the fact that we will thereby be challenging these disciplines to transform themselves. In this way we can establish the place, the role and a feasible link between *cosmopolis*, cosmo-political citizenship, science/technology and sustainable *human* development. The text ends with thirteen propositions for research and for the scientific formation of scientific diasporas.

Key-words

Philosophy and political theory, movement, Universal, Pluriversal, State, *cosmopolis*, hybridity, hybridisation, “right to a city,” *mondialisation/globalisation*, sexual gender, migration, human capital, social capital, human rights, justice, common good, development, sustainable development, sustainable human development, power, action, exploitation, key participants in development, modernity, new world order, new world migration order, governance, work force, right to work, knowledge workers, enterprise/company, diasporas, diaspora option, scientific diasporas, science, technology, networks, hospitality, right to have rights, Kant, Arendt, citizenship, cosmo-political citizenship, boundaries/borders, democracy, translation, nation-state, belonging, soil, blood, partition, order, disorder, change, paradigm.

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3 In this chapter, according to the author’s desire, the French word *cadre* will be translated *holding* or *holding environment* in the sense of Winnicott (translator’s note).

Introduction⁴

Choosing the “Diaspora Option”

Sustainable Development = Sustainable Scientific Diasporas

This current GIAN (Geneva International Academic Network) project is an interdisciplinary research project under the auspices of the Swiss Federal Institute of Technology in Lausanne (EPFL)⁵ with a strict timetable (14 months), adequate means and with precise practical objectives. The results will be incorporated into policies on migration, development, research, academic education and science and in institutional, academic and professional communities. These objectives reveal Switzerland’s involvement with three countries (Colombia, South Africa, and India),⁶ an impressive array of key players from various institutions or on site, which also includes migrant knowledge workers and associations of migrant researchers in networks linking Switzerland with other countries of the “South.” The theme: “A Swiss network of scientific diasporas to enforce the role of highly skilled migrants as partners in development” states in detail the cornerstone of the project, the key players in the setting up of the network, a clarification of the project’s objectives, questions that must be addressed, information that has to be gathered, points that need to be analysed, propositions that have to be drawn up. In the scientific diasporas’ approach, just as much emphasis is placed on transmigrant migrants (Glick Schiller et al., 1995) as on highly skilled professionals (Pecoraro, 2004), on the agents of development,⁷ on the connection between scientific development and international cooperation, on the role played by the public authorities.⁸ One can easily conjec-

4 The notes are intended to provide practical and precise help in: a) defining terms b) locating the text in a work that has been cited c) providing bibliographical tools for research.

5 The interdisciplinary research of GIAN is directed by Professor Jean-Claude Bolay (sociologist) at the Swiss Federal Institute of Technology in Lausanne in collaboration with the ILO, and the universities of Geneva and Lausanne.

6 Russian, China, India, Japan, South Africa, South Korea, Brazil and Chile are the main countries that Switzerland works with to reinforce bilateral partnerships in the federal policy to foster education, research and innovation for the years 2008 to 2011.

7 On this subject see Appave Gervaix, “Diasporas as agents of development”, notes for presentation by IOM on the initial analysis of the questionnaires for the International Dialogue on Migration’s Intersessional Workshop, IOM; <http://www.iom.int/DOCUMENTS/OFFICIALTXT/EN/iswmd_200502>.

8 Can we be satisfied with two program-questions put by a young researcher for a “clear vision of the future” in these terms: “What do politics and high schools want in terms of academic positioning in relation to other countries or at world-wide level? How can the State or a public-private partner favour funds supply in order to allow the researchers who leave the institutions with new patents, new techniques, to create a new business and go into the mar-

ture that the phenomenon of scientific diasporas owes just as much to the increased power of key protagonists who are not associated with particular countries as to the tensions between the power of the public sector and private interest as they are affected by this phenomenon. The project examines the relations developed by immigrant scientists in Switzerland⁹ with their three countries of origin (Colombia, India, and South Africa) in order to evaluate the scientific knowledge transferred by them to their country of origin (and conversely, the amount transferred by them from their country of origin to Switzerland).

What is hiding in the “brains,” the bodies – or rather we should say in the brains in the bodies (Rose, 1997) of millions of male and female workers, once we start observing the facts through the lenses of philosophy and political theory? Who are the brains, where are they, whom do they serve, what purpose do they serve in the various power relationships of production, of movement, in the use of knowledge in the new world order? In social studies why do speakers sometimes refer to knowledge workers in terms of *movement* more than *production and use* when this is clearly not supported by the English term *International knowledge production and circulation*? Is the ambiguity used deliberately to conceal the fact that they are making no distinction between scientific workers and bankers (start-up money, transferring capital, industrial parks etc.), the populations that will actually benefit or other phenomena? What part of the public and private funds that are transferred will benefit training and public research that are aimed at the basic good and protection of the planet?

Isn't appealing for the private capital (of the migrants) to help developing countries simply a way of substituting migrant money for foreign aid? What is the actual value of knowledge transferred from the South compared to the money we contribute in so-called foreign aid? What is the real place of migrant knowledge workers coming from the “South” in the globalised labour market and in the world cognitive capital (Moulier Boutang, 2007)? Are they mere *objects* of exchange, in other words *non-subjects* in international labour, exchange and social relations? We shall see that the answer to these questions lies precisely in the conceptualisation, the deployments and in the public and private tools that are shaping the construction of the new world order. The tension set up by the *brain drain-brain gain* syndrome defines the nature of unequal exchanges and power relations – not merely the movement, but also the production, the utilisation

ket?” Rydlo Alexandre, Assemblée d’Ecole, EPFL, *Etumag*, p. 11, December, 2007. See also the work of Benninghof and Leresche (2003), and of Joye-Cagnard (undated).

9 Within the context of scientific diasporas, it may be interesting to take into consideration the work of Swiss scientists who worked in these countries in a context of scientific development. See for example the report of Caloz (1975).

tion, the appropriation of knowledge. In short, it defines the cognitive capital produced by human beings (men and women) who are linked to the new systems, tools, technologies, institutions, countries, networks that shape our present-day globalisation.

We find ourselves in a holding environment of globalisation, an intentionally planned relationship between knowledge workers and networks, four nation-states (Switzerland, India, Colombia, South Africa), and international institutions (International Labour Organisation, ILO, International Organisation for Migration, IOM).

Considered from this angle, the theme poses specific questions about the project, about its home base (Switzerland) and about the established links (India, South Africa, Colombia). It asks general questions so that it can draw conclusions and it sets out thirteen concrete propositions. By putting forward two key concepts, my objective is to shed light on the complicated facets of problems related to political and philosophical life so as to broaden thought about science, migration and scientific diasporas. These constraints have had a large influence on my work (one month of research work). The research must be pursued. In this research, I am framing my question about scientific diasporas with the emphasis on its participants as agents and creators of development and international cooperation. Where are the essential cornerstones that inspire the participation, the allegiance, the powers, the opposing powers, the alternative mechanisms? And what stands in the way of setting them all into motion? How can we validate what is called mobility in scientific diasporas? What is its impact on the countries of origin and on the inequality that we see in the hierarchy between countries? (Meyer, 2001; Docquier, 2006) What weight is brought to bear by the nation-state system and by private transnational companies on the scientific diasporas within a framework of globalisation and geopolitics that is in a process of change? What are the consequences of the presence of empires that coexist side by side with the nation-state system in new forms of colonisation – we see this most markedly in the international scientific market? Does self-colonisation concern only the countries of the “South?”

How can we evaluate the role of emerging countries (China, India) that carry weight in world geopolitics and influence development in general and scientific and technical development, as soon as it is related to basic needs, human rights and sustainable development? As far as the assets of the EU and especially of Switzerland are concerned, which in the near future run the risk of seeing their relative influence diminish to the profit of the emerging countries' new powers as these are borne aloft by the financial storm (Plihon, 2004) and by new key players on the international scene, it is possible to hypothesise that Switzerland's involvement in the area of scientific diasporas could lead to a privileged role as a mediator (Balibar, 2003). Under what conditions could

such a role be developed once it is measured against the yardsticks of human rights and sustainable development?

From the perspective of philosophy and political theory, the notions of scientific diasporas, networks,¹⁰ partnership (RAWOO, 2001), migration, development have a direct bearing on the world, the holding environment, the type of political regime, on sovereignty and allegiance, on power, action, on the individual member of a country, on citizenship. What sort of political holding environment is desirable to connect individuals, peoples, minorities, nations as they move within this new climate of globalisation? Furthermore, what sort of connections and movements should there be between nation-states, Europe, other continents and the many various types of international entities (UN, transnational companies, NGO's, etc.)? In the world order, how strong is the influence of the hierarchy established between countries (poor, developing, emerging countries) in matters such as establishing lists, issuing visas, etc. that decide who should have access to education and research? Do we have to give it all the green light without another thought? What about the insoluble contradictions of statelessness in the 20th century described by Hannah Arendt when it comes to relationships between individuals, peoples, states, nations in the scientific diasporas? Would those who belong to scientific diasporas become today's stateless individuals? And if they were, in what way would they be stateless?

What is the relationship between citizen, state and the world? What is the connection between the world (*cosmos*) and politics (*polis*)? How are individuals, peoples, nations, states connected? To what elements and vital issues (political holding environment, sovereignty, territories, projects, subjects, etc.) are they connected? Such are the questions that we have to expect in a constantly evolving cosmopolitanism: the *cosmo-political citizenship* linked with *sustainable human development* at the frontiers of democracy (Balibar, 1992; Brubaker, 1989; Dowty, 1987). These are two key-concepts presented in this work. Seen from this perspective, the basic essentials demanded by scientific diasporas are the effective construction of a set of practices, the establishment of a universal and public right of access to education, research, knowledge, access to all the results and decisions of worldwide scientific policy.

So, what are the difficulties, the impediments – no, even the subversions – that are put in the way of such a collective construction for “sustainable” (Brundtland report) “human” (Amartya Sen) development and effective human rights? What place is still held by the nation-states political holding in

10 We think about Manuel Castells' work on networked societies (movement of persons and goods, information, migratory strategies and risk-taking, belonging and trust links, creation of informal institutions, etc.) (Castells, 1996).

diasporic relations of a scientific nature? To what extent are scientific diasporas participating in the creation of a “post-national” new world order? Who is a migrant when we speak about migration, about “scientific diaspora”; what are the conditions of migration for migrant knowledge workers? What is the role filled by migrant knowledge workers in their dual status as nomad migrants and members of diasporas? Do they belong to a community of migrants from their country or continent of origin or to an international/transnational community that has yet to be defined? What status (subject, citizenship) do members of networks hold in their countries of origin, their transit countries or in their countries of residence? What questions arise for them about allegiance, political participation in the broad sense, rights – and if so, allegiance to whom, participation in what political system? Are the new methods and tools (scientific policies for example) used by the networks and the diasporas leading the nation to a new place? Similarly, are we also witnessing the creation of new political organisations – and if so, which ones?¹¹ What new conceptions will develop, what justice (Della Porta, 2007) will be practised? What new concepts in property (common good, social capital), in migration policies, in development, in peace, in education, in research, in science? By using the experience of a cosmo-political citizenship, what role can scientific diasporas play in order to establish points of reference, practices connected to public rights? What are the implications of a political vision that claims to have its roots in the Universal, and in what Universal?

We shall see that the question of diasporas and in particular of scientific diasporas is interesting in that when it refers to the type of state defining the link between power and society, it envisages these states in diverse forms according to which part of the world they are located (Badie, 1997). The *brain drain* theories contain questions about defining what type of modernity; questions about desertion, injustice, appropriation, privatisation; questions about the transformation of the common good into special interests (the relationship between the private and public sectors, hierarchies between countries in policies that lead to a hierarchy of those who have access to education and science, the scientific needs of origin countries as the fruits of research production are lavished on the private sector, the status of the researchers, a different policy for patents, etc.) (Pestre, 2005). In the *diaspora option* theories (Brown, 2002) (Meyer and Brown, 1999), it is expressed in the positive term of creative action and development under certain conditions. In the two visions, we find a line of questioning about development in terms of ownership of human capital, raw materials, results, the fruit of education and research, the transformation of science and technology (universities, small- and medium-sized firms, start-up

11 For this discussion, see the work of Berthoumière and Chivallon (2006).

capital, technology parks, etc.) and cosmo-political citizenship. The active presence in Switzerland of men and women knowledge workers from the “South” changes the way we think here about migration, development, education, science, the technicalities of Swiss, European and origin country politics. Consequently, all of this has to be clarified. It is not at all evident that choosing the diaspora option is desirable to the countries of origin or the countries of residence or even to the majority of those involved in the process. How do the countries concerned with the research and its evaluation feel about it? Where can we find and record the models, the traditions, the ambiguities – even the tensions, and the contradictions?

What is said in the discourses¹² about migration, development, science and technology in the new world order when we examine them from the point of view of common good, human rights, sustainable development (knowledge, science, science policy)? What arguments do the Swiss and the international authorities put forward to ensure that the knowledge produced is made widely available, to encourage or discourage the spread of exchanges and scientific experiences of science researchers? What types of countries (northern or southern) do they propose and what practical guidelines for the use, the production, the movement of labour and the ownership of the results? To what extent do they take into consideration the nomadism of migrant workers, the effect of scientific diasporas, the nature of the communities where these migrant workers came from and the impact on these countries of origin, on the transit countries and on the countries where they now work? How can the so-called developing countries benefit from the work done by their relocated researchers and the fruits of these researchers? And of course we can ask the same questions about researchers from Switzerland or other countries who have relocated to other areas of international competition (Gaillard, 2002)? How is the principle of reciprocity applied in scientific construction (budgeting, hiring teachers,¹³

12 The making-up of a corpus (restricted time and means) takes into account all kinds of discourses about migration, diasporas, scientific diasporas and migration, development, education and science policies (administration, reviews, books, daily newspapers, media, etc.). Key theoretical concepts in political philosophy and political theory have been used as the guiding light of the observation and thought. Analyses have been integrated into the text and in the notes containing the selected quotations. One of the methods used in this work consisted in making an inventory of the key-concepts discovered in the discourses, giving a limited critical reflection on these concepts, searching for displacement so to be free of the more commonly-used conceptual yoke in order to see, think the order of the facts before our eyes from philosophy and political theory. Conceptual displacements, the search for a space of thinking and discourse tries to incorporate the practices of knowledge research workers who struggle for a place, a status, and to make their work and scientific projects heard.

13 The matter does not affect only “South” countries. 60% of the teachers at The Swiss Federal Institute of Technology (ETH Zürich) are foreign, Universities (ZH, Geneva) 46%.

researchers, enrolling students)? How can “South” and “North” researchers work together in diasporic places that are yet to be invented? For instance, the internet promises a detachment from physical territory where we can hover in virtual reality at the click of a mouse, ignoring the real world.¹⁴ There will be novel tools and new ways of thinking, innovations in the way the world and space are perceived.

What counts most is the transformation of *brain drain*, *brain waste*,¹⁵ into *brain gain*, *brain exchange* (Pellegrino, 2002), seeing a new meaning in the old terms associated with the *diaspora option*: flight,¹⁶ exodus (Gaillard and Gaillard, 1997, 2002), exile, forms of violence, pillage; replacing them with optimistic terms like choice, projects, the chance for a real freedom to create, the free movement of migrant knowledge workers in the world of production, the circulation of knowledge (Nedelcu, 2004; Fibbi and Meyer, 2002) throughout the world connected to a sustainable development that is in the spirit of our human rights’ legacy, using the results and products to satisfy the basic needs of the countries of origin. These challenges are crying out to be transformed into a development project that is sustainable both individually and collectively. *Sustainable human development implies sustainable scientific diasporas in a global and finite political time and space (Kant) that conforms to what Hannah Arendt has called liberty and plurality.* In short, this is the challenge of a new paradigm that connects the *diaspora option* to our survival, our needs, our desires (Spinoza), to *human rights*, to *sustainable human development* and *cosmo-political citizenship*. It is possible to express conceptual breakthroughs and propositions that are useful for research by translating theoretical observations into practical proposals for physical actions and future research. In this sense, philosophy and political theory can make a modest contribution to the project.

14 A geography researcher questions the idea of the world growing smaller in relation with the virtual reality development. He shows that this thesis is refuted by trade figures: the impact of the distance from the markets, penalizing or profitable, is still as important as it was 30 years ago in Europe (Boulhol, 2008).

15 A lack of any possibility of updating competences and acquired qualifications is depreciating the scientific capital acquired by researchers.

16 A South-African researcher (Bailey) showed that the main causes of highly skilled migrants’ “flight” from South Africa are crime and violence and increasing poverty.

1. Diasporas, Scientific Diasporas, Development

Capital without work doesn't exist.¹⁷

The tool and technology are cultural expressions.¹⁸

In this first part, diasporas are viewed from the perspective of philosophy and political theory. Trends in the internationalisation of education, academic research and scientific diasporas are examined. To what extent do the diasporas contribute elements that will tackle difficulties or blocks in migration, development and science when the latter is considered for the public good? To what extent does an examination of the existence of diasporas allow us to supercede the closed, mechanical model of migrants merely going back and forth from their country of origin (Safran, 1991)? To what extent do the diasporas suggest a shift in the way we envisage the movement of people and modern diasporas, a new way of looking at them which will thereby become an integral part of a political power and sovereignty that have been shaped in a complex, heterogeneous time in space and history? What does 20th century statelessness teach us about stateless persons, minorities, refugees and also about migration and diasporas? Can we legitimately apply the term diaspora to the internationalisation of migrant knowledge workers? One initial political ambiguity is worth pointing out in the history of diasporas and certainly requires careful thought. A second ambiguity in current immigration policies highlights what is at stake in the links between migration and development.

Finally, in this part we ask a two-part question: why make a distinction between *networks* and *scientific diasporas* and to what extent does the matter of one's citizenship when crossing borders allow us to enrich these two phenomena, especially that of the scientific diaspora?

1.1 *Diasporas in the Perspective of Philosophy and Political Theory*

Diasporas are ancient phenomena. When you examine them from the perspective of philosophy and political theory you can sense the persistence of a question that has always remained an open one: the ties of allegiance, participation, protection and patriotism: the bonds between individuals, peoples, minorities, nations, diasporas and states that go to define a political commu-

17 Toni Negri (2005: 88).

18 Pierre Bungener; founder of the African Institute, the IUED, Geneva. Personal notes from a public conference.

nity You can also sense a persistent tension between “dispersion” (Brubaker, 2005) (the generic meaning of the word diaspora), new forms of political organisation in the new world order (NWO) and the role of diasporas in international relations (Sheffer, 1986; Shain, 1994/1995). We can recognise the gridlocks inherited from the 19th century that were caused by the coexistence of state and nation. We can also observe the blighted experiences of colonised people who were colonised¹⁹ or forced into the diaspora²⁰ since nation-states have been created. Since the end of the imperial era (Hobsbawm, 1987) and the system of nation-states – a dominant holding environment that controlled ingress and egress – there are schools of thought that place the diasporas outside the State but inside the nation²¹ (with roles in arbitration, pressure groups, influence on war and peace policies, as well as on the creation of a national identity). These roles have neither reduced the tensions nor answered any of the questions.

Furthermore, the questions about international migration, the transformation of labour markets, wars waged because of xenophobic or nationalist tensions and the place of foreigners in their countries of residence are changing into new questions. We are witnessing a reappraisal of the model of the nation state and of sovereignty. The model for diasporas, which parallels the still dominant system of the nation state, is certainly no longer the old 20th century one with its visions of stateless people caught up in a tragic fate (Armenians, Jews, Gypsies, Kurds, Palestinians etc.), but a new one that evokes a dynamic, a future, power relations; a model that transcends frontiers, sovereignties imprisoned in the nation state system and labeled “national,” a model which goes beyond carving up the globe into territories hemmed in by physical boundaries, visas, border guards, passports. The presence of migration in diaspora turns the question of public space (Greece, Kant, Arendt, Habermas) into a diasporic, political, public space as well as a public, scientific, political and diasporic space. Measured by the yardstick of democracy – for instance, from the perspective of sex and gender²² which has to be incorporated into the research – the presence of diasporas and what is called scientific diasporas poses

19 One thinks of the debates about the Arab nations and the missteps of those debates during their struggles for independence.

20 In this context see for example the return of the power of religious conservatism, the response of the community, the persistence of armed conflicts connected to the logic of the nation state, Jewish identity, its diaspora, its Zionism and the State of Israel (Lévy-Leblond, 2008). See also the work of Dayan-Herzbrun and of Traverso (2008).

21 This is the thesis defended by Shain (2007) and criticised by Peretz (2008).

22 I am thinking here of the integration of the gender perspective into migrations in scientific diasporas which is not written into the logic of territorial sovereignty. See in particular Dietz Mary (1985, 1987).

questions to a Europe and to global citizenship (Georgiou, 2001)²³. We shall see how the diaspora could be tentatively combined with terms such as *cosmopolitical citizenship* and *human sustainable development*, by including education and scientific research²⁴ into a citizenship that is being built at the frontiers of democracy.

So, the choice of the “diaspora option” (Brown, 2002) present in the GIAN research project opens two tracks of research: in philosophy and in political theory. On the one hand, it’s a matter of locating the theoretical difficulties (imagination, concepts, representations, practices) which constrain the social-historical imagination (Castoriadis); searching out the policies, actions, principles, norms, plans, tools (Foucault) which prevent us from seeing the authentic role of the diasporas and the scientific diasporas in the world. We shall see that the process of analyzing power, the conceptual distinction between force and potency (Spinoza, 1954, *potestas* and *potential*) allows for the possibility of social-historical evolution. This kind of approach to power enables us to reflect on the power of creation, of political and scientific action (Cefai, 2007) on the ways in which the diasporas and the scientific diasporas can help to breathe new life into the way we look at politics and by extension our policies of migration, development, sciences and education²⁵.

1.1.1 Diasporas – the Statelessness of Modernity in the 19th-Century?

Today, we question the usefulness, the meaning, and the usage of the word diaspora in a context which at the same time is national and transnational (Chivallon, 2006; Cohen, 2006; Centlivres, 2000, 2006; Schnapper, 2001; Assayag, 2000) and imperial. It’s a context where individual exiles, peoples, minorities (Laithier and Vilmain, 2008) and even certain nations²⁶ and stateless persons are a reality. The long history of diasporas has both economic and political origins and wars that were waged long before the era that (Habermas, 1988) has called modernity. It is an important reality in the present-day world

23 See also the European Council, document 10.342 from the 19th October 2004 on the culture of diasporas.

24 See the important legal opinion of the European Parliament of the 16th. March 2004: a communication from the Commission to the Council and to the European Parliament concerning the presentation of a proposed directive and two proposed recommendations aimed at facilitating the admission of citizens of Third World countries for the purpose of scientific research in the European Community, doc. COM/2004/0178 final.

25 Daniel Cefai’s research (2007) provides references, analysis of theories and analysis tools for concerted action from the Chicago School to Goffmann, that can be useful for the analysis of scientific diasporas networks.

26 For example, consider the Indian nations.

(Berthomière and Chivallon, 2006). It is crucial to the borders of nation states, to the idea of nation versus territory²⁷ and to other criteria which help to define the concept of nation (Ivekovic, 2003). It provides the basic template for researchers of international migration (Cohen, 1997). Could diasporas exist without a link to a history, a territory, a State (departures, exchanges, returning, destiny, heritage, identity, belonging, etc.) and without a link to different kinds of exile (Fariba and Bayart, 2008; Saïd, 2008)? To broach the question one must first clarify the link between diaspora and migration. Our starting point is a notorious fact: “Not all migrations end up forming diasporas” (Barou, 2007). The states of origin and residence have an ambiguous attitude towards migration and diasporas. The latter do take their place in the new geopolitics of emerging powers – but in what way? Talking about certain populations, we say diasporas (Armenia, Greece, Jewish, China, Palestine, etc.) (Kodmani-Darwish, 1997) and for some others, the term is not mentioned (Muslims around the world). So, the notion refers to very different histories and realities.

The term *scientific diasporas*, used more often in the plural (Barré et al., 2003), races far ahead of political happenings and national and international scientists. During this surge forward – since the decade of 1980–1990 – the new world migration order (NWMO) has become an established organisation. The research project shows that this establishment has the parallel goals of desiring its existence to be acknowledged, of requiring an organisation for its exiled scientific workers, and not least a link to their countries of origin in order to encourage their development. Is there a consensus or are there tensions between the NWMO and that particular view of development, the individual wishes and the networks of researchers – in particular those who come from the “South” – the policies of education and research?

By means of observations and research work into the policies of immigration and asylum rights in Switzerland, I came to write a thesis in political theory (and philosophy) on the theme of statelessness in the life of a philosopher and theoretician (Arendt Hannah, 1906–1975). Hannah Arendt experienced forced displacement, exile, the forced internationalisation of intellectual work, and the diasporas of the 20th century. This train of thought combined with my findings about the facts of society induced me to work on the foreigners’ camps at European borders (Caloz-Tschopp, 2004) and on the idea of resistance in politics and philosophy (Caloz-Tschopp, 2004, 2008a). In the present day NOWM that is under construction the question of scientific diasporas makes two types of migrations cross paths (highly skilled, unskilled) and also two sorts of policies that, as we shall see, prompt two lines of philosophical and political questioning.

27 See Sonia Dayan’s article’s on this subject (with a very comprehensive bibliography) in the Algerian journal *NAQD*, no 21 (on Palestine).

At first glance, the theme of scientific diasporas seems a far cry from the short history of the 20th. Century, with its long genesis, its tragic scenes connected to the wars and genocides that racked the world (Assayag, 2007). And yet today while undertaking this research, I have come to wonder just in what sense the diasporas of migrants will become the statelessness of the 21st century? Are we heading towards a stateless (Balibar, 2005b) statism in the European construction and beyond? If so, this is a fact which concerns scientific diasporas! Hannah Arendt showed that statelessness appeared in the 20th century with the end of three Empires in Europe (Ottoman, Russian and Austro-Hungarian) and with the crisis of nation-states (Butler, 2007). The world was asked some sharp questions, which in part were similar to the ones asked today by the 192 million migrants throughout the world, the diasporas and the scientific diasporas. Their presence, which in the era of colonial and continental imperialism took on various forms according to the particular circumstances (minorities, refugees, stateless persons, denationalisations, people being stripped of their citizenship, camps) would lead to their withdrawal from the political framework, to the process of dispossessing them of all rights, to exile, to expulsion from political life. In certain circumstances this led to mass genocide, to the superfluousness of human life (Caloz-Tschopp, 2000).

It revealed a profound crisis in the nation states' system which was incapable of integrating minorities, peoples, stateless persons, refugees or foreigners. It highlighted the emergence of the new concept of power (Amiel, 2007) that left a deep mark on the 19th and 20th centuries, the nihilist signs of which are still visible nowadays. Arendt showed how statelessness brought out into the open the major crisis of the 20th century where it was impossible to harmonise the criteria and needs of individuals, of peoples, of states that were prisoners of the nation. The extent of the crisis and its fateful consequences (political deprivation, populations drifting without protection or rights, the genocide of millions of people) revealed the demand for a neutral, political holding environment (State) that would be for the common good, a political system that was pluralist and open. It pointed out the demand for a political holding environment which had been freed from the nation-state's limiting territorial sovereignty, for access to the "right to have rights" (Arendt) for every individual on the planet. In short, it implied the construction of a *Cosmopolis*, that is to say a *world city*. Such a political construction implies that we reject the logic of those time-honoured assumptions inherited from the precepts whereby the social framework, the government and the system itself were incorporated into the sovereign and territorialised States (nation, soil, and blood) and then appropriated by certain groups and certain social classes. It implies that we go beyond a definition of national citizenship (Swiss, French, Colombian, Indian, South-African, etc.). It implies that we ask ourselves before anything else in public life – which in-

cludes scientific diasporas: who is a citizen, in what way, why, where, and with what status? How can we ensure and build a neutral and open holding environment for the globalisation movement (rethink the State in a new way as a holding environment, an administration and a system by detaching it from the nation, the soil and the blood and special interests)? It also means calling into question the so-called natural order of belonging to one or more communities (as individuals, a nation, a people, as minorities, groups etc.).

The word diaspora has come into general use during the thousands of years of history of numerous peoples on all continents, from Antiquity to the colonial era, to the post-colonial era and today it's growing by leaps and bounds. The phenomenon is reshaping migration, the movement of labour forces (in colonial enrichment, the mining sector, agriculture, etc.²⁸ and a vast array of networks: human, trade, work, linguistic, cultural exchanges. The dissemination of populations throughout the planet has put the territorial sovereignty of the States into perspective without causing it to disappear. Itineraries have replaced roots. Hybridisation has taken the place of identity. But can we make exclusive use of the term diaspora to characterise moving populations and scientific exchanges in the hierarchical organisation of our planet's empires, countries and continents? But can we use the notion of diaspora for characterising moving populations and scientific exchanges in the hierarchical organisation of empires, countries and continents on the planet?

“Que vuelvan los cerebros” (“Bring back the brains!”) is the title of a Spanish journal²⁹. It explains that it is vital to retrieve those Spanish scientists who are working abroad in other countries. It also points out the quality of career as a researcher offered by Spain dissuades them from returning. In 2006 *Bilan* (a magazine for Swiss Polytechnic Institutes and universities) published an article entitled “The brains are packing their bags” (“Les cerveaux se font la malle”). It reports on the situation of Swiss researchers who after studying in Switzerland had left for the United States and Canada only to be confronted by bad working conditions: 20 hours a day, frantic competition, women not allowed working, the difficulty of returning to Switzerland. The article does not denounce the *brain drain* suffered by developing countries but the one suffered by Switzerland. Therefore, in Switzerland the question is a number one priority for foreign and for Swiss students. Over the last few years measures have been taken – or more precisely, there were requests for measures to be taken for

28 The example of the Chinese diaspora speaks for itself. It has played a major role in Asia “grâce à la puissance des réseaux familiaux commerciaux et financiers qui contrôlent 55 à 80% du capital privé (Philippines, Malaisie, Indonésie, Thaïlande, Singapour...), elle bénéficie pleinement de la réouverture de la Chine continentale...” (Carroué, 2002: 55).

29 *El País*, 8.12.07, p. 30.

foreign students of the third circle (i. e. from countries such as Turkey, the former Yugoslavia, Kosovo etc.), for internationalizing the path of Swiss researchers and for establishing links that would encourage them to return, for women's rights, for dividing one's career between teaching and research, etc. To put it more clearly, in the field of research the theme of scientific diasporas is used automatically in the plural, which implies a plurality of networks, a turning point in dividing and organizing the world labour market into a hierarchy, the relationship between the university sector and transnational enterprises, and so on. In short, it concerns knowledge workers³⁰ throughout the planet. University teaching and research are grappling with the implacable laws of international hyper-competition (Cerny, 2005) both in the public and private markets of teaching and research.

The concept transnational put forward by certain anthropologists, sociologists and political scientists in order to go beyond the limited approaches of some of their colleagues stems itself from national thinking. It still attaches a disproportionate importance to the national factor and consequently to the nation-states that are a limited historical invention as the work of several historians and political scientists shows.³¹ Nation states have replaced other internal and international political forms (empires, cities, and self-subsisting communities). They are linked to the emergence of industrial and financial capitalism which set the history of the world at a temporal rhythm (clocks) and decreed the division of space into sovereign territories defined by legal and political principles. This form of holding environment is put to a severe test by the connections and multiple economic fluxes (raw materials, capital, populations, information, etc.) which are linked to the development of a post-industrial financial capitalism and to technological innovations. Therefore, the transnational does not necessarily represent "prolonging our stay in the field of migrations with theoretical efforts" (Monsutti, 1996: 47) but allows us to go beyond closed analysis unities.

From an epistemological and methodological point of view, what allows us to perceive things differently? Reconsidering the concepts of nation-state, city and empire deserves close scrutiny given the changes in world history and geopolitics. The diasporas encourage us to change our perspective, our level of analysis and our way of looking at things. Confining ourselves to the category of the *nation* tied to the *jus solis* and even sometimes to the *jus sanguinis* questions the limits of the invention of the *nation*-state holding environment with-

30 Or sometimes "non-material workers" ("travailleurs de l'immatériel") in another theoretical tradition. The term "Worker with knowledge" ("travailleur du savoir") is also used in French. See the study "Les travailleurs du savoir," *Sciences humaines*, n. 157, February 2005.

31 For example, see the works of Eric Hobsbawm, Immanuel Wallerstein and Benedict Anderson.

out at the same time forcing us to topple into the negation of any sort of environment for public life. It questions a more profound political and philosophical practice (Ivekovic and Glasson-Deschaumes, 2000–2001): the *partition* of the political, of politics (Ibid.), of culture, of thought (and – we can hear it in the term apartheid – separate development). This concept reveals hitherto invisible blockages, ways of resolving conflicts, erroneous political solutions:³²

What is the taste of peace followed by a partition? What is the taste of life in cities that have been separated and split up, where division never occurs without the infliction of the most extreme violence on bodies, on minds, on ways of communal life?³³

The concept of *partition*, like that of *hybridisation* rather than hybridity (Bhabha),³⁴ which is superior to it, comes to us from post-colonial and feminist studies and partly also from the alter-globalist (Haase-Dubosc and Lal, 2006) (Sommier et al., 2008) movement, areas where diasporas and scientific diasporas are very active.

Consequently, approaching politics by means of diasporas and scientific diasporas brings up complex and numerous questions and matters that are at stake in theories, politics, classical practices and networks. It is a vital part of interdisciplinary debates on migration, science, technology, development, politics and citizenship. Migration, diasporas, exile are reliable keys for reading our societies. Migration and diasporas can no longer be defined in the negative, as the face of the foreigner who is denied space and legitimacy. Although they clash against the constraints of the *jus solis* and the *jus sanguinis* at the heart of migration and science policies of the nation states, to what extent do they escape the rationales and the state machinery that are currently in place? And if they do escape these rationales, is it in order to consolidate the private sectors against the political ones, using new technologies (New Information and Communication Technology)? Or is it in order to open the public sphere of politics with new dimensions to the conditions of life at the frontiers? And for what common destiny? It is certain that the diasporas undermine the powers that be by suggesting new horizons for political life: holding states in movement, *cosmopolis*, *sustainable human development* and *cosmo-political citizenship*. As we shall see.

32 “They are adequate in preventing longer conflicts, and in preventing genocide. However, at some particular, frequently inconspicuous moment, during the conflict, they are offered as the only possible response to the desire for war between the communities and the ideologies that are in place. The processes of partition are locked there, at the place where the transaction fails and has been found unworkable. They signal the failure of politics, of civility,” Balibar, Étienne (2009).

33 See the review *Transeuropéennes*, n. 18 (2009) (introduction).

34 To overcome the danger of essentialisation that “everything is hybrid,” see Brubaker (2002).

1.1.2 Political Ambiguity in the Concept of Diaspora Requires Intellectual Caution³⁵

To move forwards with this perspective it is essential to establish the precise meaning of the concept diaspora. We speak of *scientific diaspora* but is it advisable to use the concept of diaspora given the semantic ambiguity of the term, its usage and its polymorphous form which is a new social form (Ma Mung, 2006)? The perspective chosen in social sciences for tackling the subject of diasporas often emphasises the migrants' interpersonal movement at various borders. At first glance, it thereby permits one to go beyond the rationales of essentialism and logics and nation-states system limits. But it does not remove all of the ambiguity surrounding the usage of the word and by extension the term *scientific diaspora*.

We should point out a political ambiguity present in the term diaspora. A tension exists between the need for homogeneity and coherence in a thought about the origin of peoples (transcendence, state sovereignty, chosen people, etc.), with references to culture that sometimes hides the *jus sanguinis* (blood ties). Such references are also made to nation-states. Thus, diasporas can be viewed as a Being, the essence of a people on the move rather than existing within a relational framework, a relational public space to be built by political action between people at borders of the nation-states system (Marientras) (Arendt)³⁶. This sort of approach presents in no way a contradiction of nation-state thinking, which in some cases favours the philosophy of essentialism, the process of assimilation and the idea of race. Consequently, the debate is focused on the attempt to replace the word *nation* for *people* as the essence of a state in order to define belonging on this basis. From this perspective, the two concepts (nation, people) are inclusive and not relational. This complex debate pinpoints the difficulties encountered by numerous thinkers and notably by Hannah Arendt. They can be summed up in the form of open questions: what political bond is possible between individuals, nation, minorities, stateless peoples in a diaspora and a territorialised nation-State system?³⁷ What becomes of a stateless person, a stateless people, a minority, when they have lost all residence, all political membership? Does a place exist *outside* the nation-state system (as defined by nation, by people or whatever else)? How is the system of States federated? What are its links with (national) minorities, peoples,

35 My thanks to the sociologist, Colette Guillaumin, for making me aware of this ambiguity.

36 Butler Judith: "Je suis l'un des leurs, voilà tout" ("I am quite simply one of theirs") (Butler, 2007: 3–7).

37 "The Nation State would not know how to exist once its principle of equality before the law had been surrendered," writes Richard Marientras in a remarkable book. Marientras, Richard, "Être un peuple en diaspora", François Maspero, Paris, 1975, p. 279.

diasporas that are on the move outside the dominant nation-states system? How can we rethink sovereignty by not fixing it into the nation-state context defined by *jus solis* and *jus sanguinis*? The multiculturalism solution emphasises communities, but grinds to a halt when it comes to defining what makes up a community, the demands for a political holding environment, the State that could be in the form of councils, or in the form of a republican State, and which may perhaps be a form of government with principles, a method of political organisation Arendt explains, thereby reminding us of the lack of a place that recognises individuals. The solution of granting sovereignty and rights to the person (subjective rights)³⁸ does not resolve the aporia of the bond between individual and State, and between nation, people, minority and State. A legal centre for the rights of the Arab minority in Israel (Abalah)³⁹ proposes a democratic constitution that is no longer restricted to those who belong to the nation, to the people, or to the minority. From this point of view *who is a citizen?* Abalah's solution separates the idea of the State, of a political system from the idea of those who are living together, the people, and the minority. It does not resolve all the questions, but it does place citizenship, the fact that one is defined by one's *political action as a citizen*, at the centre of a constitution. At this level, it allows for a connection between sustainable human development and *cosmopolitical citizenship* in the building of a *cosmopolis*, a *city of the world*. This is the crux of what we are discussing!

It is not possible here to continue this important debate at greater depth. Let us, however, acknowledge the political ambiguity contained in the term diaspora and consequently in the term scientific diaspora. The ambiguity is not inconsequential because of the risk that essentialisation and naturalisation might insinuate themselves and be used to justify certain political deviations (chosen people, nationalism, and racism). And, above all, because this ambiguity might justify a passive conception of work and politics. Such ambiguity is not inconsequential in the way we tackle scientific diasporas and their knowledge workers. We can remove the ambiguity not only by qualifying the movement but also its connections with labour, with residence, with circulation and with politics. Therefore, one can speak on the one hand of *migrant knowledge workers*, of *networks of migrant workers*, of participation in the creation of a social wealth (Putnam), which in the broad sense derives from scientific knowledge. And, on the other hand, one can speak of a citizenship in these many locations

38 Adopted by the Austrian Austro-Marxists at the beginning of the 20th Century at the moment when large empires were being dislocated and populations were "floating" round Europe without protection.

39 For part of the debate see Butler Judith (2007) "Je suis l'un des leurs, voilà tout" ("I am quite simply one of theirs").

that have no location, *atopos* where the migrants are located⁴⁰ and where as subjects and citizens they are building the *Cosmopolis*, the world as a city. The “right to a city” is in the movement that determines the conditions of existence, without one unique location. It is rooted at the same time in labour, residence, circulation of goods and their mode of appropriation related to basic needs in the societies battling with globalisation.

1.1.3 Development Reveals an Ambiguity in Migration Policies of Scientific Diasporas

Migrants and diasporas are at the centre of turbulence and conflict at borders. Like the rest of the globe’s population, they live in a globalised insecurity (Bigo, 2005). They are battling a philosophy, a policy of disjunction (Appadurai, 1999), of apartheid (Monnier, 2004), which governs the practices and their mental image of development, of migration, and of scientific diasporas (Castoriadis, 1975). In short, the new world migration order is dominated by a utilitarian,⁴¹ security-minded – even war-minded logic of partition, opposition, hierarchical organisation and deportation, which is incapable of grasping, understanding, describing, interpreting or summarizing the movement of the world, of societies and of populations (Caloz-Tschopp, 2007).

As early as 1988, in his farewell lecture at the University of Lausanne, the political scientist Laurent Monnier, speaking of *apartheid* in terms of immigration policies in Switzerland and Europe, described our future as a form of segregation, a separation combining exploitation, xenophobic, nationalist and racist discrimination and police violence. Certainly, the analogy with the apartheid system in South Africa has limits of methodology in an historical and present-day Europe which is bordered by Southern Mediterranean countries and Eastern European countries. But the concept does keep its heuristic validity at a time when Europe has a tendency to externalise its borders (Gibney and Randall, 2003) in camps, or even on islands,⁴² and to delegate control and deportations to zones that are closer and closer to zones where there is conflict of low or high intensity.

40 “As Socrates said, the immigrant is *atopos*, without a place, displaced, unclassified. Neither citizen nor foreigner, not really being the Same or Different, the immigrant is located in this ‘bastard’ place which Plato also speaks about, the limits of the social being and the social non-being”, Bourdieu, Pierre, preface to Sayad (1999: 8).

41 For this trend in migration policies see in particular the works of Valentin (1997) (above all the period since 1974), Morice (2002), Alaux et al. (2001), Morice (2004), Kymlicka (1999) (first chapter: “l’utilitarisme”).

42 Kevin Rudd, Australian Prime Minister (Labour Party), announced after the Bali Conference (December, 2007) his wish to end the “Pacific Solution,” a controversial policy which consisted of placing those seeking asylum in Australia into a holding centre on the Pacific Islands (*Le Monde*, December 27th, 2007).

What we are witnessing in migration policies is the institutionalisation of policies called “chosen migration” (origin countries and scientific migrants prefer to call them “captive” or “selective”) and security policies based on choosing between highly skilled and non-skilled migrants, selections behind closed doors, etc. This dualism reflects interests and needs. It has numerous repercussions on societies: ignorance of the riches brought by migrants, selections made behind closed doors and an attitude by the immigration authorities towards knowledge workers that debates the installation of the blue card and visas for students and young researchers. These are debates that reverberate at the highest levels of academia. If we sign on to the diaspora option, we shall see that it allows us to distinguish between *networks* and *scientific diasporas*, between technologies, between the informal activities performed by individuals in networks in migration space and collective projects that are linked to the development of the countries of origin. It also allows us to safeguard horizontal and flexible relationships in contrast to those organisational pyramids which favour authoritarianism, control and hierarchy, which are well exemplified by the system of nation-states. In other words, we require an organisation capable of taking firm action, whose active members are all close to the scene where those actions are being implemented (in this case, scientific and social ones) and networks which genuinely represent basic needs. We require a holding environment that leads to the formation of networks, to other types of organisations, to enterprises and to a State (where the opposing forces are also in networks acting as a watchdog). We need to show clearly what human sustainable development holds for us all and what cosmo-political citizenship can offer us at the frontiers of a world we all share.

1.1.4 Globalisation of Human Capital, Internationalisation of Education, Academic Research and Scientific Diasporas.

The phenomenon of human capital globalisation and the migration of knowledge workers is growing increasing at the beginning of this 21st century (Khadria, 2001). It does not merely have an impact on places of education and research (Villavicencio, 2005), migrants, highly skilled migrants on “Southern” countries and continents (Garcia, 2007), on the transformation of the policy of universities with their current tensions between the business market and science and between new elites and the proletarianisation of researchers and academic freedom appropriated for the public good.⁴³ After all, let’s not

43 A young historian who is preparing a doctoral thesis under joint supervision (University of Geneva-EHESS) on the educational reforms and on the creation of policies to regulate the scholastic flux in Western Europe (France Switzerland, Germany), between the end of the

forget that migrants contribute simultaneously to the labour supply, to the demand for goods and services and to the production of wealth for the immigration countries. As for the globalisation of the labour force, let's use the estimates made by geographers looking at the selective globalisation of the labour market. Above all, this globalisation affects highly skilled workers and also the care, restaurant and agricultural sectors. Both phenomena resonate at the two extremes of the labour market hierarchy. The care sector mostly affects women (often highly skilled but whose qualifications are not recognised and who are excluded from the labour market) (Ouali, 2003) and also many qualified people without papers⁴⁴ amongst whom there are women who should be a part of the knowledge economy. These categories of qualified migrants don't have the status to meet the needs of the labour market. Neither they nor their networks appear in the debate about scientific diasporas⁴⁵ even though they should be included. How many knowledge workers are employed as domestic help, dish washers, taxi drivers, and illegal farm workers? The social cost of wasting such social assets, which are not taken into account in the world economy, is considerable.

The world geography of brain power is becoming increasingly polarised and unbalanced, first of all to the benefit of the United States (*brain drain*): of the 150 million salaried employees in the world who participate in scientific and technological activities, 90% reside in the seven most developed countries and 20% of the researchers are in the United States or Canada. (Caroué, 2002: 52–53)

One African doctor out of five has settled down in a developed country (more than 70% from Mozambique and Angola)⁴⁶. The geographer shows how the policy of issuing temporary visas has served as an incentive, emphasises how the developed countries have thus saved on training costs, on salaries (15 to 30%); and conversely points out the loss in human capital, the financial loss for departure countries, the manner in which all this hampers their development. He indicates the measures taken by India in demanding reimbursement for edu-

19th Century and the 1920's, reminds us that these questions have a profound significance in history and that the debates about the progressive erosion of university space as an autonomous area for the sciences and about the status of researchers do not date from the present day. See Matasci (2008); see also Krause et al. (2008).

44 "Since 1992 40% of the flux of immigrants in France has had at least the equivalent of the French baccalauréat +2 years of study. In Sangatte (on the Northern coast of France) it has been estimated that 60% of the refugees held the baccalauréat +4 years of study" (El Mouhoub, 2008).

45 One aspect which the gender-based approach might explain in connection with the "scientific diasporas"...

46 Center for Global Development; Wasington D. C.; Gunilla Pettersson; University of Sussex.

cational costs. He indicates that in the case of South Korea the brain drain movement has gone into reverse (70% are home again three years after earning their doctorate) thanks to massive investments by States and firms.

On the list ranking the most competitive countries, the relative importance of the factors⁴⁷ and the criteria are debated.⁴⁸ With the figure indicating the proportion of foreign students to host country, Switzerland tops the world list with a rate of 22.83% foreign students in 2006–2007 (ahead of the United States, 21.6%). What criteria do the recruitment policies use? What is the importance of “ethnic” (racist) and sexist criteria in obtaining a visa⁴⁹ and a place at a Swiss university? The high proportion of foreign teachers (EPFZ 59.5%, EPFL 55.5%, U. Tessin 60.7%, U. St-Gall 48.1%, Basle 48.2%, Zurich 45.8%, Berne 42.5%, Fribourg 35.7%, Geneva 35%)⁵⁰ bolsters this ranking. Studies from the American Council on Education, the OECD and the EU show that – reflecting the transformation of world geopolitics – the market for higher education is in the process of becoming multipolar, the range of students, teachers and researchers more and more international. In addition, the sites, the research laboratories are set up in partnership with the public and private sectors amongst several countries.

- 47 In case studies of scientific diasporas it would be necessary to evaluate the respective importance of the incentives of the States and the networks of migration when calculating the costs and the risks (trust) and the choice of countries in the employment offers given by international competition between countries (Indians preferring the United States, England; Latin-Americans preferring Spain and the United States; French-speaking Africans preferring France etc.).
- 48 A corollary to the globalization of the educational domain: we are witnessing a proliferation of the international classification of universities, including Swiss universities, contingent on the criteria of “performance”. Well, the results of these classifications vary a lot contingent on the methodologies that are used. To enable the students and the public to find their way through all of this, the State Secretariat of Education and Research and the Conference of the chief education officers of the Swiss universities have created an internet site <<http://www.universityranking>> (Swiss Communiqué, December 2007).
- 49 Police intervention practices in student recruitment policies have already been pointed out (visas, interventions) but to our knowledge they have not been logged or studied.
- 50 The evaluation of these figures from Office fédéral de la statistique is beyond our present work (relief, the return of Swiss researchers, engaging assistants, creation of an international network, etc.) but we may point out: a) the proportion between foreign students coming from other parts (20,644) and foreigners sent to school in Switzerland, i.e. the second generation (5,601), b) the low proportion of students coming directly from the “Third World” (5,288 taking into account those from America (not distinguishing between the two Americas). May we ask ourselves the same question that a history researcher asks about the United States in regard to the link between their primary, secondary and university public education systems: “The influx of brains into the United States, which is so often deplored, reveals above all the weaknesses of higher education in America, which is incapable of educating its own pools of scientists in a number of areas, and is forced to acquire them abroad: in China, in India... or in France” (Gervais, 2007).

The aggressive presence of the marketplace (the hierarchy of the world's best universities, competition between countries or continents trying to attract the world's best brains from the 2.5 million foreign students in the world, to solicit financing, to create common diplomas, decentralised education, to install the best laboratories throughout several universities belonging to a network, private universities, the failure of public universities, the exclusive use of English, etc.) have a substantial influence on education and research policies. Direct economic contributions,⁵¹ intellectual capital, innovative scientific products (patents) are profitable and the realities of appropriation are fierce. "The winners in this world race will have students from all cultures, campuses consisting of the elite from foreign countries, diplomas that are recognised internationally and English courses – the world language for business, research and technology" (Flynn, 2007: 6–12).

We have to examine the situation in Switzerland at greater depth within the context of North-South relations and in connection with the three countries considered in this research. What becomes of all those students when they leave their Swiss universities and the ETH of Zurich? How are they integrated into the labour market? What is the nature of the turnover of highly skilled professionals?⁵² How do their projects and the networks they belong to come together? What are the financial flows from scientific diasporas towards Switzerland and from Switzerland towards the three countries under research while they are pursuing their studies and afterwards? To what extent are they public, private and what is their background (family, industrial, banking, etc.)? What is the relationship between the taxation system (Is a transfer of funds taxed?), the wage system and social charges? Above and beyond discussing the principles of justice and solidarity, the link between migration policy, development and scientific diasporas thereby becomes more visible and the stakes more apparent.

51 In 2006, foreign students brought in 14 billion dollars in tuition and residence fees. One might well calculate the gains reaped by Swiss universities from the 22.83% of foreign students in Swiss universities (26,245 foreign students out of the 114,961 students in Switzerland in the year 2006–2007. See <www.bfs.admin.ch>, "Hautes écoles". Out of these 26,245, 20,644 were schooled abroad (Europe, 20,324/15,352, and the rest in Africa, in America, in Asia and in Oceanie).

52 On this topic, a majority (14 votes against 8) of the Commission of Political institutions of the Swiss National Council declared itself in favour of an initiative suggested by an honorary professor of the EPFL, no less than a national councilor (PDC), which proposed that non-European university graduates might stay in Switzerland and work there at the end of their studies (August 22nd 2008).

1.1.5 Scientific Diasporas and the Cosmopolis. The Preliminaries

Nowadays exchanges of knowledge, experiences and practices are essential in the globalisation of migration policies, education, formation, research and science. The issue goes far beyond *brain drain*, what today is known as “chosen migrations” or even *brain gain*. The aim of the EU’s limited blue card project (involving 70,000 people within the EU) is to grant immigration access to “specialised elites” and “top-level workers.” The measure falls far short of answering the questions. They’re working to reduce the distance and to construct a human counterpart (not merely the labour force) which will universalise communications, economic flow, cultures, and values. They have had first-hand experience of nomadism and diaspora and thus have *authentic experiences of the globalisation* of individuals, peoples, networks, collective groups, States (Bagalwa, 2007) which we can no longer ignore. In this sense, cosmo-political citizenship when it concerns any form of public service activity (such as science) is not an abstract notion but a social practice, involving principles of otherness and of frontiers, movements in power relations practiced in systems of historicised temporalities (Hartog, 2003; Baier, 2002) (in the form of countries of origin, transit and residence) and multiple and changing spatialities (the importance of cities, networks, work places and even the Internet).⁵³

In concrete terms, wherever the migrants are on the planet (the same conditions should apply to Swiss students too?), they ask to be able to move around (to travel, to study, to work, to create links, etc.) to several parts of the world without their movements being restricted to going backwards and forwards between their country of origin and their country of residence. They are able to bring knowledge, broader vistas, and their experiences of both sides (countries of origin, study or work). They also help to forge precious bonds between different parts of the world by virtue of their broader knowledge, experiences, of culture and science and technology. In that sense, they are mediators in a world that is on the move. That implies a profound transformation of the dominant social imaginary (Castoriadis), of living conditions, migration, development and science.

In a very general sense, from the points of view of philosophy and political theory, the migrants’ nomadism and networks (technology, work, life, projects, etc.) are two material forms of cosmopolitanism. They are the manifestation of building new ways of life, of envisaging the *polis* at both the local and the planetary level. In short, they are producing a blueprint for a sustainable human development and a new cosmo-political citizenship that are still

53 See for example – amongst the abundance of works on this subject – the work of Isin (2002).

under construction. The words *diasporas* and *cosmopolitanism* – politics in the cosmos, the right to a city in the world – are central concepts that may be combined in the creation of a cosmo-political citizenship integrated into a political holding environment and into a dynamic of economic-political power relations. These two concepts are not without ambiguities⁵⁴ They were forged in a historical context of peoples, minorities, stateless persons, refugees, empires, relations between Europe and the rest of the world (*Conquista*, colonialism, empires, the setting up of the dominant nation-state model, new empires). Neither *cosmos* (world) nor *polis* (city) can be reduced to what we call economic and financial globalisation. Every human being needs an open relational identity, a connection to the world, a political order that integrates the movement of life's conditions at all its frontiers.

In terms of a holding environment, of structure, political organisation, sovereignty and citizenship, how does one become cosmopolitan and a citizen? Is a cosmo-political citizenship imaginable, possible? How is it articulated with existing political holding environments? Who looks out for his rights, his need for protection? What are the duties? What then would be the political identity of a member of a diaspora? The political identity of a member of diaspora? A human being with a gender? A traveler? A migrant? A stateless person? A stateless person without a mother country? A citizen of the world? Someone from here and also elsewhere? What is the link between migration defined by movement and diasporas? What would be the place of a scientific diaspora in a holding environment transformed by movement? We shall see that the right to a city can no longer be defined in terms of political rights (citizenship in the classical sense) but has to be broadened to include the basic needs that are connected to the material conditions of existence and to sharing in the exercise of political power and the right to knowledge which is considered as social capital in the places where individuals and groups live and work. Consequently, the diasporas' and the scientific diasporas' right to a city, the links they establish with other diasporic networks, with their countries of origin, passage, and residence cannot be dissociated from various kinds of exchanges, in particular scientific exchanges, and from the conditions in the country of origin, the conditions of life of their population.

There is a philosophical, political link between *diaspora*, *scientific diaspora* and *cosmopolitanism* that philosophy and political theory have a duty to clarify. We shall see that cosmo-political citizenship inserted into a holding environment and a political dynamic which responds to its demands and its rights – in

54 One can quote the example of a “nationalism from a distance” (“nationalisme à distance”) (Benedict Anderson). See: Jaffrelot and Therwath (2007).

which science workers can take part – is one model for establishing a concrete public cosmopolitanism of knowledge, which is both local and global. It represents simultaneously a major interest for development, migration, science, international relations, peace and life in society on the Earth.

2. Globalisation, Development and Science

As the world situation has become more confused, with the disappearance of the socialist States, the emergence of significant political and economic differences between Third World societies and the diasporic movements of peoples across regional and national frontiers, a fragmentation from the global to the local has appeared at the forefront of historical and political awareness.

Dirlik, 1994: 347

In this second part I examine what is called globalisation (in English) or *mondialisation* (in French) by integrating history into development and science. I will then show in what way the theories of liberalism and justice at the root of development theories have a holding environment that is too restricted economically, nationally and from the point of view of exchanges. These restrictions prevent us from grasping the meaning of the new phenomena of labour and cognitive capital to which scientific diasporas are connected. Afterwards, the links between migration and development will be viewed in the light of the constraints of the NWO which greatly influences development, the effectiveness of human rights and scientific diasporas. Lastly, I want to show the links between science, technologies and scientific diasporas – first of all through the heritage and the new trends in science epistemology in scientific production which is where scientific diasporas take place. My goal is to have a minimal theoretical holding environment available for globalisation, development and science.

2.1 Globalisation and History: Attempting to Divide History into Period, Ruptures in History

As we wade through the flood of discourses on migration, development and science policies, we notice a certain lack of decentration, which is *historical* over medium or long periods, and *spatial* in both planetary and local dimensions. Space is represented as a space which knows only one point of reference

to which all other spaces are referred back to: a territorial hierarchical organisation of sovereign States where the ranking and the qualities of the “South” countries are solemnly inscribed (poor countries, developing countries, emerging countries) and empire, a geopolitics shaken up by multinationals and urban explosion.⁵⁵ Time is represented in a linear temporality mode which moves to the beat of Western progress. And yet globalisation is complex. It is not seen or lived in the same way by dominant and subordinate populations. Its meaning has to be pinned down in a diversified spatial holding environment and history, and in the relationships of power which cut across them, and in its constant evolution.

Researchers in economic and social history and philosophers devote a great deal of time to the question of epistemology and methodology for *periodisation* and *historical* ruptures in the history of mankind. The time of the world is long,⁵⁶ disjointed, muddled, and crisscrossed with non-linear stages and ruptures. Depending on where we are located and the power we wield, we will view and evaluate things in a different way. In short, the dominant periodisations of the West are anchored either in modernity (since Greece), or in the world-system (according to the famous French historian, Fernand Braudel, since the 16th century) with the opening up of the world, the expansion of production and the rapid rise of consumption in Europe. We run the risk of underestimating the specificity of historical circumstances.⁵⁷ The two most important ruptures from the point of view of Western economic and social history have been the Neolithic Revolution and the Industrial Revolution (Paul Bairoch’s thesis). The link between globalisation, periodisations and ruptures in the holding environments of modernity, in industrial and capitalist society have given rise to numerous debates in economic and social history, in political history, in the history of science, and in post-colonial theories. So, it deserves to be taken into account if only briefly in this particular study.

Mondialisation/globalisation, deglobalisation,⁵⁸ transnational class (Van der Pijl, 1998), historical hegemonies, “liquid” (Tosel, 2007; Bauman, 2007, 2000) capitalism, analyses, and the search for alternatives (Cox, 1997) an echo of all these things must be heard in colonialism, in European imperialism, in the experiences of destruction and extermination in the 20th century (Auschwitz, Hiroshima) – all with the aim of changing the human race. We are still aware of it today in the trail of historic inventions, putting things to use, merchandizing,

55 Around 2050, two thirds of the world population will live in towns. The towns of the “South” will account for 90% of the population, with a growth of shanty towns. See “Explosion urbaine et mondialisation,” *Alternatives Sud*, vol. XIV, n. 2, 2007.

56 The term goes back to the works of Fernand Braudel. See Braudel (1979) and Jorland (1987).

57 An argument put forward by researchers in “post-colonial studies”. See in particular “Entretien de Stuart Hall avec Mark Alizart,” *Stuart Hall*, ed. Amsterdam, Paris, 2007.

58 See also Ogilvie (2007).

the technicisation of human beings who are considered more and more mobile, malleable, disposable: the process which Michel Foucault (2004) called “bio-power” – a term which has been the object of many debates. There is a paramount need to read history and theories again. On other continents Europe is “provincialised” (Chakrabarty, 2000) in post-colonial studies. In the opinion of Indian researchers the history of financial capital and the history of Europe are no longer incontrovertible factors in contemporary thought echoing with the experience of colonial domination and the theoretical and political emancipation of those who had been colonised. Otherwise, it is not without significance that we bump into the term *mobility* borrowed from economy, *security* borrowed from the police forces, *choice* (chosen immigration) borrowed from the immigration States who in their discourses on migration are inspired to speak of the market demands in reference to highly skilled migrants. In discourses about migrants and diasporas⁵⁹ words appear like so many cracks in the evidence about mobility (economic)-security(police)-choice (the State): exile, insecurity, precarious labour, ownership of resources, local knowledge, solidarity, the needs of the country, the right to be there (Caloz-Tschopp and Dasen, 2007), etc.

Philosophies of history in unequal competition in the background behind institutional practices do influence the social-historical imaginary (Castoriadis, 1975), the systems of representation, the operations and tools of the workplace. In spite of the UN Declaration on the occasion of Migrants’ Day, “*Migrants have rights like everybody else*” – the theories of economic and scientific progress (growth), of development and its crisis – a theory that was already expounded on in the thirties –, theories about the end of history (Fukuyama),⁶⁰ the clash of civilisations and cultures (Huntington, 1997, 2004), a form of recapitulation of Carl Schmitt’s (Rigaux, 2007) friend versus enemy opposition to define international relations in a war mode, theories which go hand in hand with the conservative revolution⁶¹ continue to go in the same direction. These theories accompany the neo-liberal turning point, the structural theories of ad-

59 See for example the documents from the regional advisory council, African Union – the African diaspora in Europe, September 11th–12th 2007, Paris; see also Hardt (2001).

60 See in particular the work of Naves (2004).

61 “The representations of the social world which one must fight and resist were born in a real conservative revolution, as the pre-Nazi movements used to say in Thirties’ Germany. The think tanks from which the political programmes of Reagan or Thatcher emerged, or after them, Clinton, Blair, Schröder or Jospin were obliged, in order to be able to break with the tradition of the Welfare State, to perform a veritable symbolic counter-revolution and produce a doxa paradoxale: a restoration of the past at times at its most archaic (notably in economic relations), regressions, retrocessions were passed off as reforms or revolutions”, Bourdieu (2001).

justment of the OECD during the years between 1970–1980 (Morrisson, 1996)⁶² and the tension between regulation and deregulation in EU policies (Jobert, 1994). In the study of diasporas and scientific diasporas, what is the influence of these theories which were replaced by theories of governance (a concept replacing the notion of a political system in political theory), reinforced by a political engineering, which adapts the sciences to the marketplace (Kahler and Lake, 2000; Pierre, 2000; OECD, 2000; European Commission, 2001a, 2002b) in the study of diasporas and scientific diasporas? Many works have questioned the classical theories postulating that democracy and even science arise from the market.⁶³

The research project takes place in the early 21st century, at a historic moment of profound transformations during this present stage of globalisation.⁶⁴ History went through an important change of direction, a change of scale⁶⁵ in the 18th century, then in the 19th century. These changes have shaken up Europe and her relations that are North-North, North-East, North-South and South-South,⁶⁶ etc. The transformations call for corresponding shifts in the analysis (Assayag, 2005). The philosopher and mathematician, Michel Serres, who takes an active interest in sciences, says that, relatively speaking, after the rupture of the industrial revolution⁶⁷ we are experiencing a transformation as important as the transition from the Palaeolithic to the Neolithic Age. Nowadays studies in political science point out at least three basic trends in the international order or disorder: the return of power politics which slows down the emergence of a global governance that is nevertheless required; the consolidation of regional

62 Other texts speak of “adjustment with a human face” in order to prevent troubles in the application of adjustment policies in the years 1980 in “South” countries (better strategies, more or less dangerous measures); see bibliography of the paper.

63 For India, see the works of the economists Amiya Kumar, Bagchi; Amartya, Sen; for China, see Bergère (2007).

64 Like England and France at the dawn of industrial capitalism, China’s capitalist transformation “works initially to the detriment of the labour force but also to the small shopkeeper, the State and increasingly to the environment. At this pace things are heading towards an ecological catastrophe,” a renowned sinologist emphasises: she is thinking about the possibility of an ecological accident or a serious ecological crisis but not about local revolts, “which may push things to the institutional level” (*Le Temps*, January 7th 2008, p. 12) (Bergère, 2007).

65 See in particular the works of: Verley (1997); Baechler (1995); Hobsbawm (1997); Perroux (1948).

66 The difficulty of using a spatial metaphor shows its limits in describing, representing the political relationships in the holding environment of globalization. One might well think, like A. Sayad, that the spatial metaphor is a vestige of territorial, imperial and sovereign state thinking.

67 The economic historian, Paul Bairoch, has shown that, according to him, the industrial revolution was the second historical rupture of the Neolithic revolution (Bairoch, 1997).

entities based on the principle of mutual interests; the continuous presence of weak States that are incapable of fulfilling their public function (Gnesotto and Grevi, 2007). These trends are having a pervasive effect on development, migration, education and research policies.

Switzerland is a small country in the centre of Europe with six million inhabitants. It has no direct colonial past but nevertheless it has appeared on the list of great imperial powers since the 19th and especially⁶⁸ in the 20th century. Here are some facts which will serve to illustrate the situation. In 1913, Switzerland is clearly the leading country from the point of view of direct foreign investments per capita (\$700 versus \$440 for the United Kingdom, \$320 for the Netherlands, \$250 for Belgium, \$230 for France, \$70 for Germany, \$40 for the United States); Swiss multinational companies belong to that extremely small number of firms who dominate the world in a series of fields (energy technologies, automation, pharmaceuticals, cement and building materials, food-stuffs, clocks and watches, agrifood, the marketing of metals, banking, insurance and reinsurance).

In 2002, Swiss direct investments reached 300 billion dollars (8th in the world ranking); abroad Swiss multinationals employ 2.2 million salaried employees (twice the force they employ in Switzerland). The Swiss financial market is the fourth or fifth most important in the world specifically in wealth management, where it occupies a dominant position on the world scale (30% of the world market according to convergent estimates). In Switzerland and abroad banks and insurance companies are managing an amount equivalent to 70% of the United States GDP (10,000 billion francs). Customers from developing countries are bringing around 70% of the funds they manage offshore (*Le Temps*, Oct. 28th 2005), i.e. a global amount of 3,000 billion Swiss Francs. 80% of this money evades taxation in the countries of origin (40 billion francs tax revenue, i.e. 25 times the amount that Swiss government devoted to development aid in 2006). In addition, there is a structural legal and illegal immigrant labour force in Switzerland (varying between 16% in 1913 to 20% resident in Switzerland in 2006, i.e. more than one million persons and 200,000 of them unregistered) who suffer from much discrimination and insecurity; theirs is a form of on site relocation (Terray, 1999).

Like the rest of the world, one can argue that Switzerland – in spite of its relative power – must defend itself to survive. However, one might conjecture that the best way of doing that would be to participate in safeguarding the peace in the world and by redefining exchanges in Switzerland, Europe and the world on a more egalitarian basis – by extension therefore also in the “South-

68 On this subject, from the numerous works of historians and economists, let us quote Bairoch; Guex (1999); Jost (2005).

ern” partner countries and their workers. We should do this because of new international geo-political tensions, the growth of inequality, the pressing ecological factors, and as an example for the the rest of the European Union. To design polices for development, migration, science and technology, education and research, Switzerland cannot be content merely to follow the unique interests of the neo-liberal market leaders.

Indeed, all the key players indicated in the project find themselves involved in an exacerbation of planetary problems (ecology, economy, technology, wars, armaments, limited goods, hunger, healthy, education, etc.) and uncertainty about the future. At the same time, the inequality gap in the access and control of resources, the weight of the debt, the geopolitical transformations and the wars are taking on alarming proportions. As emphasised in the objectives of this project, to guarantee the links North-North, North-East, North-South, South-North, East-North, it is urgent to pay attention to the *human factor* and to support help organisations. In other words, what matters for research are the women and the men of the scientific diasporas and the public institutions which guarantee the safeguarding of the holding environment of these exchange relations.

From this perspective, tackling the question of migration, development, science and scientific diasporas demands first of all that we take stock of the historical context of globalisation placed in a time of medium and long duration. We can do this thanks to a *periodisation* provided by the research of historians (Braudel, Wallerstein)⁶⁹ into the world economy as seen in global space and which takes into account its limits and its critics. The presence of history and researchers of history to define the field of scientific diasporas are necessary. The discourses of migrants, diaspora researchers emphasise this necessity (historical memory, slavery, colonisation, marginalisation, failures, the place of the West, the status of local knowledge, the responsibilities of the diaspora intellectuals, etc.).⁷⁰

Whether globalisation is interpreted in terms of failures (Stiglitz, 2002), success, cost (Bauman, 1999) it is not one of today’s inventions. One merely has to think of Alexander the Great, of the Crusades, of the Conquista, the slave trade, expansionist imperialisms, etc. In the *Communist Manifesto* and *Grundrisse*, Karl Marx produced the evidence that the globalisation of capitalism dragged humanity, whether it liked it or not, into history’s first genuinely global system. It cannot simply be reduced to an accident of the market economy. It is therefore evident that what this globalisation calls for is a revision of the

69 Braudel and Wallerstein (1979); Braudel (1979, 1985).

70 Numerous discourses on the African, Indian and also the Latin-American diasporas contain these themes.

analysis methods of theories of governance (Graz, 2004) of its large domains (money, finance and development, production, labour and migration, trade and harmonisation of exchange conditions, health, the environment and living conditions). It also implies a renewed analysis of the dynamic of power versus opposing power (Beck, 2003) which from some angles comes close to the questions of research on the key players and scientific partnership.

Economic theorists tell us that we are witnessing a world rule of accumulation which is dominated by finance. So it is a matter of leaving the financial sphere (but not the technological revolution) to understand the movement of world capitalism, the new mode, the new mechanisms for accumulation which would lead to the gridlock predicted by Keynes, reminding us that history is long and eventful.⁷¹ The comparison of our stage of globalisation with that of 1870 to 1914 (Berger, 2003) is certainly a useful one. It invites us to divide history into periods of longer duration in order to locate the difficulties, the dilemmas, the present challenges, including those factors which concern policies relating to scientific diasporas. Today new frontiers of world economy are being drawn over those of previous globalisations (Berger, 2006; Balanya et al., 2005).

Historical periodisation allows us to provide a better definition of particular issues at stake in the debate between Enlightenment and anti-Enlightenment (Sternhell, 2006; Traverso, 2008) which lurk in the background of debates about progress, science, the relationship to slavery, and to colonisation. It enables us to evaluate more effectively the type of modernity,⁷² the “capitalist world-economy”⁷³ which has covered the whole planet since the 19th century and in which we find ourselves today. European modernity, from the point

71 By posing this hypothesis, by placing oneself in a world – and no longer merely a European – holding environment, the author writes that one should not concentrate on the division of labour, but rather “research the causes for the insufficient creation of wealth” by a system which is in “relative contraction”. See chapter 2–12 in Chesnais (1997); see also “Fin d’un cycle. Sur la portée et le cheminement de la crise financière”.

72 Wallerstein (1999) distinguishes two types of modernity, the modernity of freedom and the modernity of technological freedom which became globalised, remained in harmony from the 17th to the 20th century, then – according to him – split apart after the 1968 upheavals.

73 I’m borrowing the term from Wallerstein (1999): “in fact, that’s a term which is permissible for us to use to designate this period (from 15th century to the end of the 17th century), mainly because its system was already provided with the three essential elements for such an economic world: a single and axial division of labour existed within its borders, endowed with a polarization between economic activities of the central type and those of the peripheral type; the main political structures, the States, were connected amongst themselves inside a constraining interstate system whose frontiers coincided with the axial division of the labour; those who pursued the incessant accumulation of capital prevailed there on average over those who did not apply themselves to that end” (p. 188).

of view of forced migrations, began with slavery from Africa to the Americas (Portuguese, Spanish, Anglo-Saxon). It started from Europe, from the Caucasian and Mediterranean area. It first displaced Euro-Mediterranean geopolitics and geoculture towards the Atlantic, which separates Africa from the Americas, and afterwards spread out to displace other areas (Pacific Ocean, etc.).

Let us then begin provisionally with the periodisation established by the historian, Immanuel Wallerstein. On a chronological basis, Wallerstein established three periods of modernity: 1) from the 15th century to the end of the 18th century, three hundred and fifty years which mark the beginnings of the modern world system; 2) from the 19th century to the major part of the 20th, from 1789 to 1968,⁷⁴ when imperialism, nationalism⁷⁵ and the failure of socialism coincide; 3) the period after 1968. He concurs with other works by historians by acknowledging his limits and the criticisms he has received (Eurocentrism, not integrating the recent contributions made by works on coloniality)⁷⁶ and by suggesting the need for a methodology of pluri-periodisation which integrates debates on post-colonial studies (about stages, pluri-temporality, pluri-centres and spaces, etc.).⁷⁷ It is based on the concept of *world economy* of the historian Fernand Braudel (1902–1985, 1949). Braudel's is not the equivalent of the concept of modernity and he suggested it to situate the evolution of large regions of the world by qualifying evolution since the 15th century and not placing it in relationship to Greece – unlike the modernity periodisation of the Western humanities.

What I'm proposing here is to have at our disposal a historical holding environment to pin down a philosophical problem – the Universal and the *Cosmopolis* – which we often find pregnant with meaning but distantly implicit or absent in the labour market, in migration, development and science policies etc. since the advent of the facts described by Wallerstein. It is conse-

74 One of the debates about the second stage of Wallerstein's periodisation concerns the choice of the year 1968 rather than 1989 (Fall of the Berlin Wall). He and other researchers consider that 1989 is a sequel to 1968 (Arrighi, Hopkins and Wallerstein, 1992).

75 See in particular, amongst the abundance of literature, Mosse (1975).

76 On this topic see Mignolo (2001).

77 "World economy, (a phrase [...] I have coined to translate the particular usage of a German word *Weltwirtschaft*), only involves a fragment of the universe, a morsel of the economically autonomous planet, capable of being self-sufficient and whose connections and internal exchanges confer on it a particular organic unity" (Braudel, 1979). He gives, Wallerstein (1999) specifies, (note 75, p. 216), as example of world economies: "Carthage during the time of its glory, Islam after its devastating successes from the 18th to the 19th centuries, the Mediterranean during the 16th century."

quently more essential that the historian shows us that tendencies⁷⁸ must be taken into account in the labour force and the demographic balance: 1) a “serious reduction in the world pool of available cheap labour” (p. 205); 2) “an acceleration in the deruralisation of the world labour force” and its corollary: a strong increase in the world costs of labour as it is calculated as a percentage of the total cost of world production” (p. 206), and 3) a “yawning demographic gap which superimposes itself inversely on the economic gap between North and South... which is broadening even more.” According to the historian,

this factor is in the process of creating unbelievable pressure in favour of the South-North migratory movement, provoking an anti-liberal reaction of equal intensity in the countries of the North [...]. The internal demographic balance of the States of the North will change radically, and one can expect to see the birth of intense social conflicts (p. 207)⁷⁹

The availability of such a periodisation that one can shape and refine is useful to integrate one of the major philosophical and political ruptures that tore into the 20th century (thesis of Hannah Arendt and the Frankfurt School). It allows us to place the scientific diasporas not only into global space but also into historical time. Although Switzerland was not directly involved, it does require taking into account the link between colonisation, imperialism (Arendt, 1972) and what the West has known, undergone and imposed on the world since modernity culminated into the 20th century (world wars, Auschwitz, Hiroshima).⁸⁰

78 The analysis of the world of labour must integrate at this stage two other tendencies of rarefaction which are those of the “input locations” and fiscality. According to Wallerstein, “The day will soon arrive where there are no more streams to pollute or trees to cut down with serious and imminent risks for the balance of the biosphere.” Besides, fiscality finances the public services and business enterprises. Security needs are growing. That entails “an increase in the imposition of tolls to the point where it impedes the accumulation of capital.” In short, we are facing three major constraints: the labour force, nature, fiscality are not infinite. The needs of the system and the security of the populations to which it is impossible to respond, are in the process of leading “the capitalist world economy” to a “serious crisis.” “The new period of expansion which is opening to the world economy will exacerbate the conditions which have pushed capitalism towards its crisis. In technical terms, the fluctuations will become more and more chaotic. Parallel to this a dizzying regression threatens the individual and collective security, in league with the loss of the legitimacy of the structures of the States. And with as a probable corollary, a rise in daily violence across the world” (Wallerstein, 2006).

79 “It is not difficult to foresee the aftermath. In spite of the reinforced frontiers, illegal, undercover immigration will increase throughout the North. At the same time, there will be a surge in voluntarily obscurantist movements” (p. 207).

80 On this subject see the works of the Frankfurt School (Adorno, Horkheimer, Marcuse), of Hannah Arendt, and in more recent research, the works of the historian Enzo Traverso and the sociologist. See also the thesis by Paul Bairoch who shows in his works that colonialism was beneficial neither to the colonised countries nor to the city states that colonised them (under various titles).

As for science, we must take into account the debate about the transformation of thought into a tool of reason, the question about the direction of progress,⁸¹ the control of scientific progress (Stengers, 2005). This debate cannot be assimilated into the Enlightenment/anti-Enlightenment debate but must be considered at greater depth over a longer historical period⁸² (a question that cannot be tackled here but which must be taken up in a later work of research).

Without going into more depth here in our evaluation of modernity, let us quote Toni Morrison (Nobel Prize for Literature, 1993), a specialist on slavery. She provides a particular insight into the critical shift of the descriptive categorisation and what is at stake in modernity which should be incorporated into all research and in particular into research about migration, development, and scientific policies:

Modern life begins with slavery [...]. From a woman's point of view, in terms of confronting the problems where the world is now, black women had to deal with 'post-moderns' in the nineteenth century and earlier. These things had to be addressed by black people a long time ago. Certain kinds of dissolution, the loss and the need to reconstruct certain kinds of stability. Certain kinds of madness, deliberately going mad in order, as one of the characters says in the book, "[...] not to lose your mind". They're a response to predatory Western phenomena. You can call it an ideology and an economy, what it is pathology. Slavery broke the world in half. It broke it in every way. It broke Europe. It made them into something else, it made them slave masters, and it made them crazy. You can't do that for hundreds of years and it not take a toll. They had to dehumanise, not just the slaves but themselves. They have had to reconstruct everything in order to make that system appear true. It made everything in World War II possible. It made World War I necessary. Racism is the word that we use to encompass all this.⁸³

For the future of space, geography follows the transformations of spaces and territories (Bruneau). Geography itself also emphasises forced mobility and interdependence, skimming off the cream of human potential and the traffic in a labour force that is unskilled or highly qualified (Carroué, 2002). In political terms, space has been evaluated in terms of *political and public space* since the creation of democracy in Greece and elsewhere in the world.

It is in the process of profound transformation (Kant, Arendt, Habermas, Derrida) in the wake of the totalitarian experience, with a burgeoning, unlimited total-liberalism, the increasingly growing presence of cities and "Southern" cities that are polluted.⁸⁴ In addition, there is the weakening of Nation

81 On this subject, see the excellent issue of the review *Polyrama*, n. 119, December 2003.

82 "To understand what we've made of progress, it is necessary to go back to a period which is located towards the end of the 15th century, at the paroxysm of the Renaissance," specifies an historian Jost (2003: 35).

83 Toni Morrison, *Beloved*, cited by Gilroy (2003: 289).

84 90% of the most polluted towns are located in emerging countries.

States demanding sovereignty over territories that are escaping their clutches in a geopolitical framework of multinational companies, empires, regional spaces that are being reshaped, the appropriation of political space by private multinational companies. All of the above is radically transforming the relation of human beings to the space they occupy.

The successive stages of globalisation with their periodisations, ruptures, their movements of contraction and expansion, the (mis)appropriations of public and political space are creating an uncertain world. When we ponder the questions of scientific diasporas, the evolution of financial capitalism, technological innovations, the profound changes in world geo-politics, the persistence of slavery in connection with migration, we may well believe that advocating such a change in looking at things and acting to change them is not necessarily a naïve attitude, even if the logistics of economic and financial war which accompany the security discourses (also present in the transformations of university education and academic research) appear as incontrovertible evidence.

These forms of political logic with temporalities and diverse spatialities induce a dehumanisation which Toni Morrison tells us about and a loss of confidence on the part of the scientists, as L. Zuppiroli,⁸⁵ a professor of mechanical engineering at the Swiss Federal Institute of technology in Lausanne, explains. Today, the question of scientific and technological progress can no longer be assimilated into the question of social progress.⁸⁶ That suggests far more a radical renewal of scientific practices and citizenship. These are the concern of researchers in the North and South. The conditions of the freedom of movement of the diasporas are symbolised from now on by the figure of Prometheus – both chained and yet still in movement. That is the place that is the movement where conflicts and debates are in play.

85 “The top officials in charge of education and research, fascinated by the technological successes of the United States, even end up visiting M. I. T. or the California Institute of Technology or Princeton University or some other renowned establishment. They come back with stars in their eyes and their mouths full of American acronyms. [...] Since these establishments have everything to gain by pleasing politicians: ruled in general by money and private initiative – even if they are in fact flooded with public money and military funds –, they fit neatly into this neo-liberal logic that these European policy-makers – whether they’re liberal, conservative or social democrat – all finally espoused and whose bywords are privatisation and deregulation” (Zuppiroli, (undated): 19).

86 “The end of progress in no way signifies a reduction in the role of the sciences, quite the opposite. [...]. In the new configurations which will be adumbrated their role is absolutely vital: it’s a matter of designing completely new teaching methods for public validation, a policy where evidence can be discussed and arrive at a certainty, a provisional closure, by an explicit process that is no longer secret or hidden” (Latour, 2003: 37).

2.2 *The Theories of Liberalism, Justice and Development Confronted by the New World Order and Cognitive Capitalism*

As a result of the intervention of migrant workers, important transfers of labour, funds, goods, and indeed of women and children take place. They have become the subject of in-depth studies in the sociology of migration. In a context of insecurity and war, exchanges of labour, women, goods, funds, information, documents, etc. produce and reproduce social bonds. This fact calls for a critical evaluation of the theories about the State and about exchange which is limited to the marketplace. This fact calls for comparative approaches to the types of State in the West and elsewhere. The presupposition that universal modernity takes its model at all points of the world from the Western experience deserves to be examined in a comparative, critical manner.⁸⁷ This fact calls for a new general theory of exchange, as the IUED researchers (Dominique Perrot; Gérald Berthoud) emphasised in the wake of other international research (Amselle). Marcel Mauss (1969), a sociologist, has shown that gift and counter-gift (giving, receiving, giving back) are the three pillars of social relationships.⁸⁸ He has shown that exchanges exist (the famous example of the potlatch) in which the non-accumulation of goods by destroying them is exchanged for prestige and honour. We may well answer with a rejoinder to Marcel Mauss that all exchanges are not merely exchanges of objects.

In the exchange that Marcel Mauss is talking about, labour is part of the transformations in the wage system (Moulier-Boutang, 1998), part of what we call the economy, cognitive capitalism (Gaudin, 2007), where a sexist division of labour still persists (on one side men working in the ITC, on the other the women working in social assistance, health, and social services, a sector that is insufficiently taken into account in the holding environment of cognitive capitalism and as a consequence badly evaluated from this point of view) (Kofman, 2003). Other authors are also calling for a reconsideration of the conditions for the production of knowledge, for a social and political demoralisation (Tosel, 1995; Castoriadis, 1974, 1979) in companies, universities, and exchanges between countries.

Anthropology emphasised the paradigm of the distinction between an exchange and an economic exchange. At this point, let's briefly recall the works of Karl Polanyi and continue to ask the questions he raised. Not all human

87 On this subject see especially the work of Badie (1997).

88 Another anthropologist show that certain objects are excluded from the practice of donations and exchange because they are "aids to identity" which circulate throughout the group and that the logic of donation against counter-donation is much more complex (outside intervention, the status of human sexuality, the status and form of political and religious relationships). See Godelier (2007).

exchanges can be listed in the economic order. In addition, world economic exchanges do not exclusively obey the classic or neo-classic economic models which fail to take into account all the complexity and richness of social relations and the relationships of societies to the environment. The market model coming from these theories is not broad enough to build a general theory of exchange, which would take all of the complexities of societies into account and not only the market economy, explains Karl Polanyi (1972), an economist of Hungarian origin and a committed socialist who teaches at Columbia University (New York). It is interesting today to retrace the author's steps both to understand the anti-modern "great turnaround" (*Umwandlung*),⁸⁹ what happened to the modern world with the great economic and political crisis between 1930 and 1945, "the great disease" of Nazism in Europe. What he calls "German fascism" takes root, in his view, at the very heart of economic-social modernity. From a comparative perspective, as Louis Dumont explains in his preface summing up the processes, he puts The Ricardo Innovation Centre into perspective by comparing it with the exchanges in Melanesian tribes in order to research what constitutes the basis for production and the basis for exchange and in order to explain the way "Adolf Hitler buried liberalism."

As Karl Marx had already shown, market theories are based on labour value appropriation, the search for maximisation of profit transformed into capital. They refer to the mechanism of supply and demand and to the price system. They neither take into account the creation of the essence of Man and his emancipation through labour, nor reciprocity, nor the redistribution of produced goods, nor any interference with technological discoveries, nor with all the wealth from what is exchanged. The mere satisfaction of material needs and making profits do not explain the richness of human relationships, the diversity of societies, their connection to devices and tools, to the technologies, and – what is part of all this – to the creation, the production of social capital, spreading of knowledge and experiences through the means of scientific diasporas. Put more simply and once again following in the tracks of Marcel Mauss, in order to understand the richness and the complexity of the social relationships which emanate from diasporas, and in particular from scientific diasporas, we need to consider these relationships in the holding environments with an interpretation of the facts in terms of total social facts (according to the famous term).

89 Dumont (1972) translates the "great transformation" as "the great turnaround," which shows more clearly the conflict between the modernity of economic liberalism and the anti-modernism which was reawakened by Nazism in Europe. "The course of Polanyi's originality was to have viewed modern society, or the liberal economy, in the light of societies that were not modern and that stood in contrast to them... so as to extract some general concepts that might replace them." The opposition between modernity and anti-modernism will be exploited by the historians and anthropologists of the non-Western societies.

To clarify the principles, criteria and mechanisms which are prevalent today in all the decisions influencing exchanges by means of migration and scientific exchanges, perhaps it would be convenient to perform a theoretical shift and take a comparative epistemological process as Louis Dumont, reading Polanyi, invites us to do. Writing the preface to Polanyi's book in 1982, he brings out the originality of his approach and his contribution, whilst still pointing out the major factors that are at stake in building a new theoretical foundation which is necessary for the study of scientific diasporas:

modern civilisation and its history become understandable in a completely new sense when it is seen in relation to the other civilisations and cultures [...]. Nothing is more topical than this placing of cultures in relationship to one another. It's a commonplace to say that the world we live in is a world where the different cultures interact, but our view is most frequently a narrow one and we are a long way from measuring to what degree our world has absorbed any of this cultural interaction [...]. For example, recent world events have yet again shown the potency of the self-esteem held by nations or States, the importance for people to feel and be preoccupied with their dignity. Now, this need for recognizing collective identity is located precisely at the point of articulation of the Universalist values and of the specific cultures: when all is said and done, it's a matter of the weight of cultures and of their interrelationship. Our world is an intercultural world, and this point of view grants rights to the representations of the participants that one tended to underestimate. In fact, what we take to be the entirety of modern ideas and values is already at the present moment to a great extent the result of the interaction of the cultures, from the result of feedback from the dominated cultures on the dominant culture. The world that we reputedly present as modern is thus penetrated in reality by the interaction between modernity and non-modernity, or the spontaneous adaption of modernity in the dominant world. (Dumont, 1972: XVII–XVII)

These remarks are valid not only in the context of what is called “East-West” or “North-South” relations, but for all societies and all social relations (consequently also relations inside societies stamped as being in a state of modernity, where the scientists of the diasporas of the “South” congregate and work).

In the ongoing globalisation, the production, the transfer of knowledge, the experience of scientific practices is due to the scientific diasporas. Nevertheless, we must still heed the fact emphasised by Louis Dumont (1972) that “modernity in the case of economic liberalism forms an alliance at first approximation to its opposite in today's existence” (p. XIX). A comparative approach between both trends *Enlightenment/anti-Enlightenment* and their confrontations in changing tones and forms at various moments of European history, linked with debates about the place of economy in societies would reveal recurrences and other factors which form the stakes nowadays. If a universality does exist, it is that of the foreignness of the other person, which for us here means the migrants, the diasporas and the scientific diasporas. We shall see on what conditions the Universal can relay Kant's abstract universalism and the

universalism postulated by the market opening at the same time new horizons for interesting research.

After development thanks to economic growth, are we witnessing the development by knowledge to the detriment of the diversity of human know-how? The question tackled by analysts of knowledge management and by researchers in intercultural education refers back to the concept of cognitive capital concerning the economy. In order to prolong and update these works on liberalism in regard to scientific diasporas, it is necessary first of all to record “the great disillusion” of a Nobel Prize for Economy (Stiglitz, 2002), then to envisage the “new great transformation” which followed the one described by Polanyi and was described by another economist.

At this stage of globalisation, he writes, it is indicated by the emergence of cognitive capitalism.⁹⁰ This type of capitalism has an important role in a new type of capitalism which succeeds mercantile capitalism and the capitalism of slavery, amid the industrial capitalism and imperialism at the turn of the 19th and 20th centuries. Adam Smith’s political economics do not allow us to apprehend the reality of the value, the wealth, and the complexity of the world system. In order to grasp the “totality” (Jameson, 2007) of the way cognitive capitalism has taken hold, we have to change our theoretical points of reference. We have to start out again with the concept of labour. What is at stake is the capacity to locate and describe the “gangué” (current globalisation) of emerging cognitive capitalism, master the complex regions of the biosphere, the place of intangible labour and collective intelligence. The author outlines the stages of his program:

We have to be able to describe the great transformation of labour, the division of labour and the digital network (which is neither the market, nor the hierarchy), and labour-invention attractors produced by art and by the university. We have to grasp the meaning and describe new contradictions in the creeping revolution in intellectual property rights, production of knowledge assets, the crisis of wage earners (in flight and weakening), new forms of poverty, in particular intermittent workers who are the other face of intellectual capital, in the emergence of *cognitariat versus proletariat*. We have to understand and describe the process of passing from production transformations through financialisation (and not in the other direction), the links between financialisation and cognitive capitalism, taking into account intangibles⁹¹ in the enterprise, the transformations of labour market (para-subordinated), the intrinsic instability of cognitive capitalism and a “New Deal for cognitive capitalism” which includes the feasibility of a guaranteed social income. The research resonates with many of the characteristics of diasporas and scientific diasporas. It offers useful propositions (chapter VII).

90 This is a hypothesis of labour put forward by a French researcher who is in the process of testing it in a research programme. Moulrier-Boutang (1998) (see definition p. 86 onwards).

91 The category of the “intangible” is presented in an analysis of labour made by Hardt and Negri (2004) in the second section of their book.

It is even possible to enrich the debate further from another theoretical angle (that of political philosophy) inspired by the work of an Indian economist, Amiya Kumar Bagchi (2007), on the development of Calcutta. He studies the links between migration and morality (justice and equality), the sovereignty of finance and the dehumanisation of migrants. His work is partly inspired by concepts like *human development* (Amartya Sen) and *social capital* (Robert Putnam),⁹² while progressing towards a profound evaluation of the theories of justice prevalent in India and elsewhere in the world

His long and very profound article – extended by the article published in 2008 and quoted in the footnotes – is developed in five successive stages, substantially informed and well-argued (migration and globalisation, theories about justice and ethics and how they are implemented in the treatment of migrants, global project on current neo-liberal capitalism and financial capitalism (*Finance-led Globalisation II*), theories of justice (among others John Rawls' (1971, 1999) monumental work) confronted with the facts of globalisation, propositions for political ethics in migration policies). In the continuation of another work about migrants and justice theory, I'm limiting myself here principally to the terms of the imperial point of view and the dehumanisation that he discovers and describes with the starting point of the political ethic in the John Rawls' theory of justice. As far as I'm concerned, I had shown how in his time John Rawls' theory of justice and his principle of difference were prisoners of the nation-state categories and the American example of the Seventies (Caloz-Tschopp, 1996).

After his treaty on justice, John Rawls has developed certain aspects connected to international relations, but without breaking away from national and imperial categories. The remark grows in importance insofar as numerous theories in philosophy, political philosophy, law and social studies are limited by approaching them in the narrow holding environment of the nation-state and its legacies.⁹³ So the theories prevent us from grasping the phenomenon of migration, development and diasporas in all its complexity and granting it a place in the holding environment of politics and law.

Furthermore, a debate is open between so-called governance theories and democracy (Cavaliere, 2007) and citizenship theories. It is present also in migration, development, science and technology policies. The debate can't be

92 My thanks to Barnita Bagchi (Calcutta) for pointing out these two references.

93 Several publications make a point of mentioning the passage of a "national" to an "international" vision, which is certainly useful, but insufficient inasmuch as the system and the categories of the system of the nation States still dominate the construction of knowledge. See for example the publication of the AIM (2005).

settled with the invention of the concept of “democratic governance,”⁹⁴ insofar as an ambiguous concept of democracy is unable take into account the resistance and the political construction of networks (labour, technology) which exist in scientific diasporas, or – to put it more theoretically, where the sovereignty of individuals and a “people” run the risk of being forgotten, to the benefit of the closed sovereignty of the State. Ambiguity would make us lose sight of “the diaspora option” which we have chosen for the present research. The choice places the emphasis on the *knowledge workers* of the scientific diasporas and their power to act as key players in international cooperation. The resurgence of very diverse works on democracy since the 70’s and since the years 1980–1990 reveal at the same time its ruin, its disappearance, its reconstruction⁹⁵ and the radical nature of its historical creation that we have to rediscover today (Caloz-Tschopp, 2008a). In this sense, in the context of globalised neo-liberalism, when the Berkeley political analyst Wendy Brown (2007) describes the *de-democratisation*, in particular because of the depreciation of the conflict and the opposition forces from a vista where liberal democracy is in the process of dying (in her words), we may continue her research by asking ourselves to what extent this particular trend causes a *de-development* (Summers), against which, as we shall see, the choice of the diaspora option constitutes an alternative where scientific diasporas may be incorporated. To summarise, from a more radical perspective, let’s mention (without stopping there) that in policies of development, migration, education and science, there is a separation between classical works of criticism and more recent work. After the failures of development and also the blame placed on the model of limitless economic progress, philosophical questioning has no longer concerned itself merely with the economy in connection with the type of progress, but more broadly with the type of “imaginary social meaning” of “rationality” (Castoriadis, 1975, 1986), the frontiers, the place granted by human beings to other human beings, to animals and to nature in the universe.

Today, what Castoriadis was saying in 1974 about development as an imaginary, socio-historic meaning in terms of “rationalist ideology,” an illusion of omnipotence, the supremacy of economic “calculation,” the absurdity and

94 “Today governance prefigures the system that I can foresee: a mixture of hearty, back-slapping populism for the elections and the governance by the happy few for important questions. The anti-populism of the elites dutifully echoes popular antipopulism. The people entrust those who govern them with little confidence, but the opposite is also true: those elected by the people have a scant liking for them. Perhaps they will call this new system ‘democratic governance’. It would be a contradiction in terms, since the governance is anti-democratic, but will that be so shocking in a system where the principle of sovereign People, qualified by certain intellectuals from now on as ‘romantic,’ will have been forgotten?” (Hermet, 2007, 2008).

95 See especially *Le Monde diplomatique*, n. 646, Jan. 2008, pp. 22–23.

the incoherence of organising “society on a rational basis,” the religion of “science,” the idea of “development for the sake of development,” in terms of an indefinite development without end (in both senses of the world *end*) to reach “a state which is not defined by anything except the ability to reach new states” (ibid: 141, 142, 143) remains a critical question for societies and for science. Above all, let’s mention the present theoretical debates surrounding the demand for a new anthropology and a new political ontology. It’s a matter of taking into account not only the over-exploitation of nature, human beings, labour-force reserve (Marx), but also a policy of the disposable (human beings, objects), forms of destabilisation of human boundaries in social relations through a governance Michel Foucault called “biopolitics,” heavy traces of which can still be discerned in development, migration and science. Although we are not able to develop this point here, it is important to point it out, since we can well imagine that these debates already shape and will strongly reshape the analyses of the policies which interest us in the years to come.

2.3 Migration and Development and the Rights of Man in the New World Migration Order (NWMO)

From sixteen themes, 120 UN member states placed at the top the theme of migration as a tool for socio-economical development (March 1st 2007) (GFMD, 2007). The relationship placed by numerous international organisms,⁹⁶ States, NGO’s, researchers, etc. between migration and development and more specifically between migration, development and science⁹⁷ is far from being clear evidence, from now on if you plan to use it as a template in constructing a new world migration order and if you analyse the particular arguments, practices and the measures taken. From the point of view of philosophy and political theory, it implies a double construction undertaken at the same time with that of scientific diasporas: rethinking human rights and sustainable development in their radical meaning. It also implies that we take particular legacies in the sciences into account and broaden the concept of science by acknowledging the fact that science is built inside socio-political relationships.

96 See in particular: IOM (2005), Commission of the European Communities (2005), The Berne Initiative (2004).

97 See in particular: Tejada (2007).

2.3.1 *Building Human Rights in Scientific Diasporas*

The 60th anniversary of the Universal Declaration of Human Rights is an opportunity to remember the history of the struggles that are still going on for the right to live, to dignity, to basic needs, to peace, to development, and to the rights of women...⁹⁸ We may conjecture that building human rights on the very terrain where the labour market is being transformed at the frontiers of the wage earners, of civil society, of lives of international associationalism, of NGOs, of the diasporas and the scientific diasporas is one of the new forms of creation of a social conscience, of social movements in the internationalisation of class relations.⁹⁹ As for the State system, it meets with resistances and ambiguities which appear in the tendency to multiply the number of escape clauses (special dispensations, exceptions, restrictions). These facts show that it's important to "reason the reason of State" (Delmas-Marty, 1989). The human rights field demands that we decode resistances, the conflicts that surround the "impossible capture of humanity" (Lejbowicz, 1999) in relations between politics, State, and (civil) society, not merely in Europe, but in the holding environment of current globalisation. The area where work and migration take place are privileged domains for interpreting conflicts. In order to connect migration and development and the construction of human rights, research has placed the emphasis on demanding the integration of human rights into the domain of the international right to migration. Thus the objective of interdisciplinary work is to tackle the constantly debated question of the universality of human rights, not only through the lens of a theoretical debate which has already been well fed, but also through the lens of a comparative study of the reciprocal apprenticeships of history and common practice,¹⁰⁰ and by analyzing conditions for building the Universal in the domain of international labour and migration (research and citizenship).¹⁰¹ It is impossible here to recapitulate the processes and arguments which justify the demand for a new epistemological paradigm in this field. A publication which resulted from another research project carried out at the University of Geneva (FPSE), at CUDIH, at the University of Lausanne (IEPI), financed by the GIAN in collaboration with ILO and UNHCR, the NGOs, and the City Council of Geneva,¹⁰² provides us at the same time with interdis-

98 Let us take this opportunity to point out the public appeal launched by Ubuntu, the World Forum of Networks of Civil Society.

99 See on this subject Lojkine (1999).

100 See on this subject Sen (2005) (in the field of the sciences, medicine, democracy, by not reducing diversity in religious questions).

101 Amongst two recent texts, let's quote (in connection with the right to work) Supiot (2005).

102 Recherche Mondialisation, Migration, Droits de l'Homme. See the site of Professor Pierre Dasen, University of Geneva, FPSE (www.unige.ch/fapse) and the site of RUIG.

ciplinary tools and a both on international law and the internal law of the States (Caloz-Tschopp and Dasen, 2007).

Some propositions have been presented as a synthesis of the research (see vol. I). Amongst the propositions set out publically on this occasion, one by Monique Chemillier-Gendreau (Paris), a scholar of international law, deserves particular attention: la création d'un cour mondiale des droits de l'homme¹⁰³ (the creation of a World Court of human rights). It is not without significance that the proposition was set out within the framework of a research work on migrations. It has direct and indirect implications for scientific diasporas, a point which would deserve to be expanded on in future research. Along with other measures concerning migrant workers (ILO),¹⁰⁴ encouraging the use and application of the Convention on migrant workers is one of the propositions which is useful for scientific diasporas. One should also underline the necessity that the list of guidelines on human development drawn up by the UNPD and the UN be evaluated and enriched in view of the work that has been done on migration and development to shed light on scientific diasporas.

We must remind ourselves here¹⁰⁵ of the axes of action in international law that are directly relevant for migrants, diasporas and scientific diasporas. The first one relevant to the objectives of this research is the requirement of an obligatory jurisdiction on human rights. Let us imagine for a moment that in the field of migration and scientific diasporas, individuals and civil society NGOs would present articles before a court about "the right for any person to leave any country," arguing that this right includes necessarily the right to enter another country. One can thus see the ramifications of research into international law as well as into the rights connected with the freedom of movement of individuals throughout the world. It is also possible to propose that the General Assembly of the United Nations solemnly proclaim that all human rights belong collectively to "general imperative law," which by its nature is irrevocable. We may also advocate the necessity and urgency that international jurisdictions already in existence, The Hague International Court of Justice and the International Criminal Court (ICC) see that their legal powers cannot be revoked. States would no longer be able to avoid yielding to them, as is the case today. As we have seen, these themes are just as appropriate for interdisciplinary research which might be connected to work on migration, diasporas and consequently scientific diasporas. The construction of human rights is integrated with the construction

103 See Caloz-Tschopp and Dasen (2007), particularly proposition n. 7. See also the footnote 18 (p. 41).

104 See: ILO (BIT on its French acronym), 2004, 2006.

105 My thanks to Monique Chemillier-Gendreau, professor of international law, for clarifying this point for our research.

of sustainable development in the spirit of 1987 and as far as its own development is concerned with the development of sustainable *human* development.

2.3.2 *Building Sustainable Human Development in Scientific Diasporas*

In the discourses on development a critical debate has been going on since the years 1960–1970 on three axes in critical or a critical relation to neo-liberalism at the present stage of economic-political globalisation: the progress assimilated by free-market economy growth (criticism of liberalism, debate between Enlightenment and anti-Enlightenment), (in) equality (ILO, unions, migrants' countries of origin, social movement, migrants), and the environment (ecomovement).¹⁰⁶ From the first axis, the works of Pierre Bungener and Roy Preiswerk – followed up by IUED researchers (Marie-Dominique Perrot, Gérald Berthoud, Gilbert Rist, etc.), in the years that followed – one can keep in mind that in the face of all other economics, they enthusiastically recommended an anthropological reconsideration of exchange and the system of methodology of the mirror-effect on our societies in order to construct a global vision of globalisation. These research efforts tracked the shift of anthropology at the moment of decolonisation, from colonial terrain toward the terrain of our societies (notably, of our Information Society) (Berthoud, 1991, 2000). In the 80's, policies and research on development experienced a “radical rupture”¹⁰⁷ (economic reforms, eclipse of the models inspired by Marxism and nationalism).

Since the 90s we are witnessing a metamorphosis in the discourses on development, on fields of study and experiences (unequal exchange, accumulation, dependence, opposition centre-periphery, change, imperialism... (Petras and Velmeyer, 2001) structural readjustment, social capital, sustainable development, governance, gender, rights, humanitarian considerations, *empowerment*, *capability*, autonomy, etc.) (Samaddar, 2005). Let's make special mention of the themes that converge in the numerous debates: after North-South bipolarity, attention is redirected towards the demand for a project and for a world public governance which breaks with the global capitalist system (the transformation of civilisation, a reduction in the world consumption of raw materials, energy, structural changes in the various urbanised ways of life, links between the city and the countryside, the organisation of labour, the demand for a basic universal income that is not connected to the labour market, transportation, consumption, intensive production of cereals with reference to a re-

106 On the other hand, the gender perspective is much less developed in these debates.

107 This is the thesis of a scientific symposium organised by 4 research institutions and associations in Paris on the 13th and 14th November 2008. See <colloqueesmots@gmail.com>. Acts published in *Revue Tiers Monde* and review *La régulation, Les mots, Economie et Institutions*.

organisation of property, of agricultural production, changing rules in the relationships between North and South, Third World debt cancellation, etc.).

The concept of development has gone through successive reformulations since the inequality approach and has now come to be known as sustainable development (sustainable).¹⁰⁸ The link between the objectives of development and the environmental crisis led to the concept of *eco-development* that was expounded on in the early 70's by Ignacy Sachs and at the Stockholm international conference on the human environment in 1972. Then the term *sustainable development*, translated into French as “développement durable” appears in 1980. It is made official and widespread by the report “Notre avenir à tous.”¹⁰⁹ The concept integrates a temporal approach (generational in the wake of the philosopher Hans Jonas, 1990) and spatial (the Earth). It connects the social, the ecological, the economic and other notions (liveable, viable, sustainable, just) but does not yet integrate the gender (in French *sexe/genre*) perspective. It aims to improve the standard of living of disadvantaged populations without jeopardizing or possibly destroying the natural systems which maintain life (ecosystems, natural resources). We must emphasise the argument of the financial analysts according to which sustainability had a positive impact on company profits.

This fact explains why more than 50% of the 2,500 major companies quoted on the Stock Exchange are registered in a so-called sustainable fund. Thus is the concept of sustainable development reduced to the financial market and to stock market profits.¹¹⁰ Yet we have seen that it is reformulated today in connection with a radical change, with a global political project, with civil life,¹¹¹

108 The term sustainable (from the French *soutenable*) seems to me preferable to “durable,” because it includes explicitly at one and the same time the demand for temporality over the long duration suggested by the word “durable” with – in addition – the political and scientific demand for knowledge (reason, a sustainable thesis) and action, engagement, will power, political responsibility (development is sustainable in the sense of livable, viable, durable, it is sustained actively by a “who,” by the entirety of the key players and institutions).

109 States the “Brundtland Report” from the World Commission on Environment and Development, submitted to the General Assembly of the United Nations in 1987.

110 See on this topic the works of the Ethos Foundation. This argument must be placed in relation to the authority of the *Lex Mercatoria* in NWMO (see the article by H  l  ne Pellerin).

111 The 1986 declaration in which the word “development” appears 48 times, whereas the word “growth” appears nowhere, was included in the efforts to restore a more just international economic order. “For those who initiate it, the human being, the people must be placed at the heart of development, its active subjects and not its objects; the sovereignty of all nations and of all peoples is equal and their right to self-determination cannot be satisfied by a mere formal recognition. It is crucial to guarantee them in fact and in practice,” writes Florian Rochat, the director of the Europe Centre-Third World (CETIM, www.cetim.ch), the organiser of a recent symposium in Geneva (Symposium, development and international cooperation, Uni-Mail, Geneva, December 7th–8th 2007). He emphasises the importance of the broadening of democracy, of a collaboration of the great powers to ensure human, economic, social, cultural and civil rights.

and that it underlines the changes in the current globalisation of the labour market when it is connected to migration. From 1986,¹¹² development has been questioned in various discursive constructions (unequal exchange, underdevelopment or bad development (Batou, 1989), diminution) and at the same time asserted as a *right* where the process of emancipation takes place (the word *empowerment* expresses this imperfectly). Its implications are described today more precisely¹¹³ but are still relentlessly questioned at the portals of public financing of North and South States,¹¹⁴ its meaning and orientation¹¹⁵ and its links with the present stage of capitalism.

The problem is that capitalism [...] revolves around the accumulation of money and not around the satisfaction of human needs [...], its goal is still vigorously aimed at deepening and extending a world where there is no respect for human beings and where nature can be disfigured to fit this economic system [...]. As the damage may prove irreversible, the very continuation of life on the planet is threatened (Whitaker).

These recent debates are shifting the critical approach to development and migration¹¹⁶ by integrating other factors of radicality (gender, the role of the elite in Southern countries, wars, colonial starvation, genocide, the exploitation of migrants in agriculture, the place of migrant women in the he sector, the logistics of disintegration and confrontation in urban zones where some neighbourhoods are closed sanctuaries, the militarisation of public land, etc.).

Tensions in relations, the concept of power, etc. between international private commerce, police and bureaucratic control of migration¹¹⁷ and sustainable

112 See Declaration on the right of development, DDC, December 4th 1986. Carried by the Non-aligned Movement, Declaration on the right to development DDC, December 4th 1986 the declaration of the United Nations Organisation on the right of development, December 4th 1986, approved by 146 States (more than 90% of the world population), rejected by the United States and with 10 abstentions (20th anniversary) gives the following definition of development: "a global, economic, social, cultural and political process, which aims to improve ceaselessly the well-being of the entire population and of all individuals, on the basis of their active, free and important participation in the development and a fair share in the resulting benefits" This founding text was accompanied by other texts: the Charter of the rights and economic duties of the States (1974) with its famous article 20 (chapter III) demanding the application of norms on the protection, preservation and enhancement of the environment.

113 See *Annuaire Suisse de politique* (2007), see also Schumperli (2007).

114 See "Le financement du développement", *Revue Tiers Monde*, n. 192, October-December.

115 See in particular criticisms on durable development, "Quel développement?", *PubliCETIM*, n. 30, 2007.

116 See for example in French and German, translated from the English, Davis (2003) (2007), and Ackers and Davis (2007).

117 In the arsenal of control measures of the camps, were propositions about education combined with forced detention. A German deputy of the Democratic Union thus proposed the opening of reeducation camps for "foreign criminals".

development are opening new fields for challenging trade policies (Damian and Graz, 2000; Graz, 2001, 2007). All of this is not without effect on the way we look at the connection between migration, development and science and on the education and research which concerns scientific diasporas. It is clear that with the present globalisation, trends are changing in the new world migration order. "There is no doubt that people's mobility has grown considerably" in the words of Jean-Philippe Chauzy, spokesperson of the IOM. The type of migrants needed by Northern countries is changing.

Developed countries are competing to recruit computer scientists, doctors, nurses, engineers, etc. from Southern countries just as the recruiting system is coming up against a policy of restriction at the points of entry in the Northern countries. Since the 80s, we are witnessing a new stage in the attempt to control and regulate migration. Side by side with the needs for highly skilled migrant workers battling fierce competition, other needs exist in the care sector, where migrant women are in the majority, agriculture, catering, trade, basic services, etc. "It's all very well wanting specialists in high technology, but all these people need garage mechanics, laundry workers and dish washers in the restaurants – in other words, in as many areas where fewer and fewer local people are ready to work" (Crépeau, 2005). In Germany in 2000, Gerhard Schröder launched an appeal for 20,000 Indian computer scientists, but in the end only issued 18,000 "green cards." In France, 2,000 "competence and talent cards" renewable every three years tried to attract highly skilled workers from foreign countries and at the same time appeals were launched for the return of French researchers. New migration policies focus on Indian white-collar workers in the USA, Sri-Lankan workers in Saudi Arabia, Philippino cleaning ladies restricted to working illegally, and the 100,000 Moroccan and African agricultural workers who work in the greenhouses of Almeria in Spain and are treated no better than slaves.¹¹⁸ These few examples of migrant workers' statistics in the present globalisation show us that policies are established between restructuring, competition in the world labour market, protection and exploitation by diversifying the treatment of the various classes of migrants: ranging from attracting them, offering security, temporary residence,¹¹⁹ to structured illegality.

Since the 80's in the wake of debates about development, some of the discourses about immigration policies have advocated the concept of thinking

118 See *El Ejido: la loi du profit*, 2007, a documentary film by Jawad, Rhalib (80 minutes).

119 "We are not speaking here about seasonal workers like those who arrive every year from Mexico to pick fruit and vegetables, but of profession people who would come to establish themselves here for two or three years," explains H el ene Pellerin, a professor at the Political Science School of Ottawa University (2005).

about development and migration in the same context (OECD, IOM, World Conference on International Migration, Global Commission on International Migration, States, etc.). In the holding environment of the Schengen laboratory such an approach is not without ambiguity in so much as it took place at the same time as policies of enforced deportation of dismissed workers and illegals were being put into place along with other policies of selective immigration of targeted workers (a list of professions was provided to the labour exchanges of the countries of origin) and also of highly skilled workers (a hunt between Europe and the United States for the brains of the emerging countries).

Bilateral and multilateral police agreements aimed at the readmission of deported foreigners are imposed at the same time as temporary target immigration and scientific cooperation agreements – not necessarily with the same countries. Amongst the intended measures between States and at the EU level, police agreements about detention and deportation to country of origin, mention was also made of aid linked to development (Caloz-Tschopp, 2004). On a different note, other discourses connect development to migration. They intend simultaneously to broaden the idea of development so they can present new arguments aimed at encouraging public sponsorship of development (Swiss Confederation, cantons, town councils) presenting migration in positive terms¹²⁰ and allowing the “South” to have their say. The increasingly urgent necessity to include, in addition to the human element, a sensitivity to nature and a concern for climate¹²¹ in development strategies resulted at the time of the Bali Conference in 2007¹²² in highlighting the new category of climate refugees and broadened questions that had already been asked about the link between migration and development (Ndiaye, 2004). The campaigns presently run by the Swiss Federal Department of Police and Justice (DFJP) supported by certain IOM and EU services have been subject to criticism. Critics emphasise that these campaigns are tarnished by an outlook dominated by security and by the idea of a “closed circuit return ticket” type of migration.¹²³ And yet these criticisms are abundantly refuted both by the facts and by the work carried out by immi-

120 See in particular the two forums of the Geneva Federation for Cooperation (FGC) in 2005 and January 2008.

121 See the important United Nations report on climate (2007); Schwartz and Doug (2006).

122 See in particular the report of the Intergovernmental Group on the Evolution of Climate, GIED, 2007.

123 The basic model for this scheme was devised for seasonal agricultural workers during the years 1950–1960 (“circulation migration,” France). It forms part of the policy of the Promotion Agency for Moroccan Employment for the formal recruitment of migrant women to pick strawberries in Spain at 30 Euros per day at the current rate. Recruitment guidelines for the women: to be in good health, to be neither obese nor thin, to have perfect teeth, to be married, to have children younger than 14 years of age (guaranteed return).

gration sociologists.¹²⁴ They underestimate work on the conditions of production, exchange, all manner of transfers, in particular by the establishment of bilateral and multilateral agreements about legal migration between countries (rights, vocational training, lists of professions, social security, transfer of funds, etc.). We know that on the global level, the money sent by migrants to their families is estimated at 250 billion dollars annually. In 2006, the World Bank estimated that the amounts transferred by migrants in official or informal ways to their countries of origins reached 220 billion dollars (in fact, 10 to 20% more than that amount according to Jean-Philippe Chauzy of the IOM). A little less than half of this money comes from OECD countries, 30% from oil-producing countries and the Middle East, and the rest (17%) from the developing countries themselves.¹²⁵ Some studies equate what is called the drainage of money by the migrants with the development of the countries of origin by analysing the impact of the money when the national and local banks manage to channel this money towards development. Migrants are becoming entrepreneurs and vocal participants (Bagalwa-Mapatano and Monnier, 2002) in defining development policies and actual investors when partnerships are successfully established between immigrant associations, NGOs, the local authorities in the countries of origin and residence (education, work).¹²⁶

In this context, a follow-up to the research evaluating the effects on the development of the countries of origin might be to integrate the action of scientific diasporas in relationship to the support given to the countries of origin in case studies and to formulate criteria and propositions for public outline agreements for target transfers.¹²⁷ Modes of governance in the new world migration

124 Research has shown (China, India, Algeria, the Philippines, etc.) that policies of “forced return” act as a brake rather than an incentive to development.

125 In developing countries, the transfers are more profitable to the intermediary-income countries than very low-income countries. Compared to the GDP, these transfers represent 24.2% for Haiti, 22.8% for Jordan, 16.2% for Nicaragua, or 10.9% for Morocco. They have positive effects on macroeconomics (currency, national income increase, payment of imports necessary to growth), and on microeconomics (health, education, savings). These funds are also used for community facilities, telecommunication, tourism, transport and trade. The World Bank and the DFID have studied the effects of these transfers on poverty. They estimate that 10% of the transfer reduces 1.2% poverty. Source: <<http://www.diplomatie.gouv.fr/fr/IMG/pdf/Transfertsimmigrants.pdf>>.

126 The criteria at the base of these policies connected with the public needs of the countries of origin have yet to be evaluated.

127 “Switzerland encourages the development of a scientific partnership with development countries. A guide to the partnership has been set out. It is intended to facilitate the exchange of knowledge and skills and to share objectives between the partners” (Kleiber, 1999). A research project could evaluate and update such a tool by integrating the specific needs of the scientific diasporas.

order which are strongly restricted by the *Lex Migratoria* (Pellerin, 2008) form the subject of numerous works in Europe and other continents.

What will be the new hierarchies in power politics, what will be the historic dominant bloc in the new world to replace the hegemonic blocs of the Second World War that ended with the fall of the Berlin Wall? What will be the place for migration, the status of migrants? In her works, H el ene Pellerin¹²⁸ corroborates other research by showing that she herself also sees that a turning point came in the 1980s with the change from a Fordist economy to a post-Fordist economy, that the New World Migration Order is governed by the wealthier States and regions of the world, that their economic and geopolitical priorities are based on two concepts: *controlled migration* and *controlled gaps*, with new check systems, and an underground of unqualified migrants who slip through the system illegally. She notes that there is no one single principle to contemplate migration as a whole. In fact, two official principles are aimed at handling two categories of migrants. The first principle, *organised migration*, is inspired by the demands of the world labour market. It aims to eliminate obstacles for migrants from departure to arrival (there are examples of specific programmes in Australia, Canada or the United States for skilled migrants whose goal is to expedite the economic social structure based on the needs of the world economy). The second principle put forward by the Trilateral Commission asserts *the right of people to stay in their country of origin*. It modulates discussion on the free movement of the most unskilled migrants, which we may recall, only concerns the right of these people to leave their country and not their right to settle in another one.

It is first and foremost at this point in the process that the link between development and migration is imposed, by modifying both the order of migration of the countries of departure and the incentives offered by the host countries who are trying to regulate the *laissez-faire* attitudes of neoliberalism. Considered globally, the competition (mobility, flexibility) between host countries and countries of origin (supply and demand) revolves around the most highly skilled migrants and in a climate of structured illegality. H el ene Pellerin notes the tendencies of the transnational labour entrepreneurs to bypass regulation controls with the expedient use of temporary and direct subcontracting between companies (in the form of service orders, which simultaneously avoid public control and social charges). In this system, which targets the most highly skilled migrants, the private order aims to replace the contract, the passport and to weaken the control systems of the States.

From the point of view of philosophy and political theory, two questions need to be answered: 1) the anthropological question: how to analyse and evaluate

128 My thanks to H el ene Pellerin for having sent me certain of her works. See on the subject of NWMO, *Vers un ordre migratoire mondial* (author's text).

the transformation of human *labour* activity into a *service* – in other words, human workers assimilated as services, things? What had been the labour of a human being protected by agreements, labour laws, social rights, etc. is becoming a *service* for a limited period, in an area of the market space that is out of the public control. Knowledge workers are becoming ordinary service suppliers. The question cries out for studies about cognitive capital and its new requirements in terms of social justice; 2) what is the public political status of free trade and safety zones where competition and inequalities privatise public space, economic activities, a police force without public control (States, social partners, unions)? What becomes of public space then? Who is in control of these new privatised zones? What is the place, the role of the system of states, the international organisms and other social partners? How is the responsibility of the companies defined? What becomes of law? Who is governing, who is imposing the rules and with what references and what prerogatives? Can we accept that private economic agents simply impose their rules on other agents, that intergovernmental police, uncontrolled by national parliaments and the European Parliament, manage the movement of populations? There is no consensus today on these questions, as H el ene Pellerin concludes, but there are points of tension around three questions: 1) the anthropological transformation of labour; 2) the separation of two types of migrants; 3) the status of orders, spaces, forces that are in place. At the Swiss level, we can trace the thread of these international tensions in current debates about development, Europe, the Schengen Agreement, the CIDPM [International Centre for the Development of Migration Policies], the tensions between technological cooperation and SECO [State Secretariat for Economy]. We have to locate and evaluate these tensions in the policies of education, research and scientific diasporas.

In the links between migration, development and science/technology, let us once more mention the debate in philosophy and political theory about the so-called theories of governance and the theories about citizenship in connection with labour, with migration and with development (Cavaliere, 2007). It can't be defined simply by using the concept of "democratic governance"¹²⁹ because an incomplete concept of democracy can't take into account the op-

129 "Today governance prefigures the system that I can foresee: a mixture of hearty, back-slapping populism for the elections and the governance by the happy few for important questions. The anti-populism of the elites dutifully echoes popular antipopulism. The people entrust those who govern them with little confidence, but the opposite is also true: those elected by the people have a scant liking for them. Perhaps they will call this new system 'democratic governance'. It would be a contradiction in terms, since the governance is anti-democratic, but will that be so shocking in a system where the principle of sovereign People, qualified by certain intellectuals from now on as 'romantic', will have been forgotten?" (Hermet 2007: 17). See also Hermet (2008).

posing forces of networks made up of the technologies which are present in the scientific diasporas. To put it more theoretically, we run the risk of diminishing the questions of labour transformation, the sovereignty of the little people who don't "count," (Rancière, 1995) the (in) equality in international economy (Sen, 1992), "the equality of brain-power."¹³⁰ The ambiguity would cause us to lose sight of the concern that research has confirmed for putting the emphasis on knowledge workers, scientific diasporas, and their networks. This means that we must focus on those factors that inspire or deter their power of action as key players in international cooperation. Because of the ambiguity we might lose sight of the research's concern for emphasizing knowledge workers, scientific diasporas and their networks, consequently we must focus on what encourages or puts a brake on their agency as international cooperation actors. The polysemy of the word democracy together with the proliferation of very diverse works published about democracy since the 70's, the 80's and the 90's show at the same time its ruin, its disappearance, its reconstruction¹³¹ and the radical nature of its creation in history that we can rediscover today (Caloz-Tschopp, 2008a) in connection with scientific diasporas (here).

Looking at the transformations of the world labour market and at labour itself convinces me of the necessity to re-examine the social aspect of the concept of sustainable development. To this end, I need to focus on the *labour factor and on the international and diasporic democratisation of the labour market*¹³² in the same spirit that prevailed at the Brundtland Declaration of 1987¹³³. It is imperative to link nature and human workers at a time when the survival not only of nature but also of humanity is in peril. At that period, the debates centred emphatically on the dangers of destroying nature by limitless economic growth. Today, the world transformation of the labour market, the globalisation of cognitive and financial capitalism insist on being linked to the fact pointed out by researchers in philosophy, sociology (liquid capitalism, Zygmunt Bauman, André Tösel) economics (Amiya Kumar Bagchi, Amartya Sen), and in migration (Binod Khadria) concerning knowledge workers and indeed all workers. A conflict exists between *sustainable human development and overexploitation, or even worse the disposable human worker*. Apart from this, a tension exists between a highly specialised labour force which is also

130 I'm borrowing this term from Jacques Rancière, who developed it in his research on the emancipation of the working world. See Faure and Rancière (2007).

131 See especially *Le Monde diplomatique*, n. 646, January 2008, pp. 22–23.

132 I am indebted to the comments of Professor André Tösel for this realignment concerning the profound transformations of labour and the democratization of labour.

133 Brundtland Report of the World Commission on Environment and Development, submitted to the UN General Assembly in 1987.

concerned by intense competition, by a modern reserve labour force and by an insecurity that has led to the exclusion of workers from any form of protection. The globalisation of human capital by means of international migration, as Binod Khadria illustrates using India (Khadria, 2001) as an example, no longer concerns merely the physical presence of the labour force on the surface of the Earth (namely, in the countries of origin and residence, regulated by passports, visas, contracts and their equivalents). It concerns the global applicability of levels of competence in specialised fields wherever they are located. Capitalism today enacts its own rules about mobility that the labour force and the State system are supposed to follow. In the world arena, the labour force is not merely a simple factor in production value but it is also one of the tangible forms of the movement of knowledge.

Human brains are transformed into services. The status of knowledge workers has become precarious (temporary orders taking the place of employment contracts); they are overexploited and even disposable. The application of a particular area of knowledge or technology connected to finance determines the movement of knowledge workers. The worker himself doesn't determine his freedom of movement. Capital regulates the mobility of diverse factors, including the brains and bodies of the knowledge workers. From human workers they are transformed into a service (a thing) and the migratory policies are designed to manage these services and their control. In the new relationships of capital and work (Tosel),¹³⁴ the worker, the migrant workers are the negative anthropological face of a cynical and nihilistic civilisation. The new governance of migration, its new principles and management characteristics, are transforming human workers into *precarious* service suppliers (Pellerin, 2004). To put it more clearly, the globalisation of the current labour market is introducing a new way of *naturalizing the labour force*. Hence, human capital, brains and bodies are not naked. They have a history, they have an existence, they have connections, they are a social capital (Putnam). This process of destructive cannibalism demands that we refocus and place all human work and the conditions of life at the centre of things so that we can remove the specific tendencies that together would destroy nature and human life. Our path of exploration leads us to revisit the heritage of sustainable development, to clarify the concept of *sustainable human development*. Within the limited context of the present work, the way to a new political anthropology which integrates nature and human beings is open but cannot be analysed in all the implications of the connections between nature and humanity (see propositions).

134 On this subject, see Caloz-Tschopp (2008a) (especially the third table).

2.4 *Science, Migration and Development*

While in the so-called developed societies movements lay claim to the English workers in the textile industry who at the beginning of the 19th century destroyed thousands of machines in order to preserve their way of life,¹³⁵ so too do the national and European bigwigs hold forth one after the other on “science and technique in the service of development.”¹³⁶ On one side there is rage, on the other there is optimism to illustrate the link between development, science and society. The debate opened by the Frankfurt School and Habermas on technology and science as an ideology (Habermas, 1968) is alive and well. For instance, in its Resolution 2005/52, entitled *Science and Technology in the Service of Development*, the Economic and Social Council of France invited the Commission for Science and Technology in Development (within the limits of existing resources and by means of extra-budgetary resources) to undertake the following activities: to facilitate the establishment of a network of centres for excellence in the developing countries; to create a management committee, to collect and compile case studies, to evaluate the possibilities of the Internet; to continue to offer its analytical expertise and abilities for the purpose of examine political science, technology and innovation. The resolution extols the benefits of technology, notes the necessity of reducing technological fracture and the need to reinforce the capacities of the technological field. “Special attention has been paid to the experience of those countries that have succeeded in equipping themselves with the local human resources that are necessary to maintain the modernisation of their technological base.” In the link established between migration, development and science, we may include a few questions about the place of science in the described processes.

2.4.1 *Science, Technology, Diasporas and Scientific Diasporas*

History reveals the complex place of science in society and what the universalisation of scientific production really means. We recall the scientific results in the construction of atom bombs obtained by the diaspora of researchers to various places in the world (India, China, and Pakistan). One thinks of a Nobel Prize awarded to an Indian researcher – Dr. Rahman – who worked for a long time in the diaspora. One thinks of Einstein in exile. There are many other examples in appropriate technologies and even in philosophy (Aristotle, the

135 There is an abundance of literature on the “Luddite Revolt,” see <<http://www.piecesetmain.doeuvre.com>>; *Libération*, June 21st 2007.

136 See for example the United Nations, Economic and social Council, the report from March 17th. 2006 (doc. GE.06-50467 [F] 030406 050406).

“foreign” philosopher of Athens, was introduced to the West in the Middle Ages by Averroes, who experienced exile and diasporas in the Islamic world; Gandhi studied in England and went on to South Africa before developing his philosophy of non-violence which took root in his experiences. We also think of scientific contributions that arose from health needs in “Southern countries.” Let us quote as an example Dr Manuel Elkin Patarroyo (Colombia) who invented a synthetic vaccine against *paludism* (malaria) which, thanks to the networks of the Colombian diaspora, achieved worldwide recognition. In Switzerland, the foundation of the Federal Polytechnic Institute and some universities was made possible thanks to a proportion of foreign teachers and researchers who are nearly as large in number as their counterparts in the Universities of Zurich and Geneva today (around 45%).

What is science at the present stage of globalisation? A quick look at the genesis of the word *science* arouses our curiosity. “In German, *Wissenschaft* comes from the verb *wissen* to know in the sense of confident knowledge, but also in the sense of a power. Until the beginning of the 17th. Century, the idea of objective knowledge was translated by *Wissenheit*, in which the suffix *heit* expresses a more abstract idea (*heissen* = to say, to govern) whereas *schaft* (*schaffen* = to make, to accomplish). It was only in the 19th. century that *Wissenschaft* took on its modern meaning of scientific knowledge” (Lévy-Leblond) Therefore it is important to distinguish between the state of science and research (UNESCO, 2006), between science and technoscience (which is a way of covering up science and technology at the risk of obscuring the desire to understand the world in order to transform it). There are also the distinctions between hard science and social science, and between science and the marketplace.¹³⁷ Another question, is science universal?

...science today has become, at least on our planet, universalised. Physicists work on the same subjects and with the same accelerators in Geneva and in Chicago, biologists perform the same experiments in Tokyo and Paris, astronomers use the same telescopes in Chile and in Hawaii. But this globalisation is nothing more than the victory of a certain type of Western science – initially European, then American. [...] The system of technoscience [...] which we have now entered will doubtless remain a reality for quite a long time, a newer

137 “In this global market, science – or more precisely technoscience – is becoming a factor of production. The blind process of knowledge is allied with the blind production of value and the two blind men, the marketplace and science, henceforth walk together and mutually reinforce each other. The spontaneous offer of new knowledge, born from scientific passion, has found a demand born in the marketplace and in the irresistible desire to possess things. Our economic growth, our prosperity, our health depend henceforth on our capacity to produce new knowledge and to transform it into consumable products” (which would require debate), in: Kleiber, Charles (2005), *Science et art, même combat*, Conférence CHUV, April 14th 2005.

mutation in this decidedly pluriversal activity than science is. But if other places and other times have been able to give to that knowledge we consider as science intellectual and material functions that are so different from those of the present day, why not leave the question of their status open in the civilisation(s) of the future? writes the physicist Jean-Marc Lévy-Leblond.

The link between science, migration, scientific diaspora and citizenship is not necessarily by way of being a continuity, a proof of automatic progress – just as there is not necessarily a “natural” link between science and democracy (Lévy-Leblond) (Wahnich 2005). These notions are shot through with power relations, cultural diversity, the historical experiences lived by migrants and the exiled peoples of diasporas, their society (colonialism, imperialism, history of nationalisms, racisms, wars, etc.), geopolitical realities, diversity of experience and habitus (Bourdieu), conflicts, the political choices of society.

2.4.2 *Legacies in Science/Technology and the Research Field (Bourdieu)*

In the deregulation of the world labour market (Sindzingre, 2008), it isn't enough merely to work more or even to make more science in order to increase development. It is not enough to heartily recommend scientific innovation to ensure development. On the subject of migration¹³⁸ speakers make a point of mentioning the exchange of goods, the labour force and of financial funds. Added to these objects of exchange we must add the complex movement of workers (their brains and bodies), the movement of knowledge tools, machines, products and results. Within the context of current globalisation, the governments of rich countries and the great international institutions confront the migratory and environmental challenges by stressing the primordial importance of knowledge, science and technological innovation in building economic and social development. The governments of emergent countries put forward the same arguments. They underline the pressure of international competition, poverty, and the inadequacies of educational policies, the budgets and the fundamental needs that have to be met in their countries.¹³⁹ But focusing on the economy and the links between neo-liberalism, the marketplace and science¹⁴⁰ presents

138 From the very extensive literature, let us quote Adams and Page (2005); Nyberg-Sorensen (2004); Nyberg-Sorensen et al. (2002); Weiss Fagen and Bump (2006).

139 On this subject see the conference of J.-F. Miranda, director of *Colciencia*, Colombia at the EPFL, November 27th 2007.

140 The case is a complex one: suffice it here to give one precise example which concerns the facilities of the universities, the professor and the students. Bill Gates engaged 8 students at 20% to have them talk about his company, his software and to recruit talent (Seydtaghia, 2007).

problems. The relationships between nature and culture, the place of humanity, the business of connecting the economy, science and culture, civilisation (so many concepts with so many different meanings!) are too rarely mentioned in the course of the debates. Like the case of the workers at the time of the industrial revolution, migrant knowledge workers are considered to exist in a kind of social and cultural nudity. After being mere bodies, would workers from less rich areas be nothing more than brains to be appropriated and exploited? What is confirmed by the classification of occupational diseases updated by the World Health Organisation is that mental illnesses are overtaking physical wear and tear. Their history, their language, their culture, their environment, their relationships with other members of the country of origin of the diasporas, are only taken into account in current policies insofar as they ensure a profit. Furthermore, development policies inherit the ranking of countries which tends to separate “poor” countries receiving “development aid” from “emerging” countries who are building up an international (including scientific) cooperation. (Are solidarity and justice necessarily conferred by aid to the poorest and by humanitarian aid when public policies don’t succeed in modifying the structure of the labour market – as studies by the International Labour Organisation, the World Bank and others show?) In migration policies they inherit sovereign and national categories (Sayad, 1991, 2006), and in addition, categories that are utilitarian, precarious and obsessed with security. They inherit from the world of economy a vision of society where market and profit offer the most fruitful choices to the detriment of basic needs, the reduction of inequalities, the fostering of culture. For example, one needs only to read a fundamental text (Nuruddin, 1994) by the Somalian writer Nuruddin Farah to measure the lacerations of the inhabitants of the African continent caught between frontiers of peoples, colonial territories and cultural identities which afflict all of the African societies and consequently, in addition the scientific diasporas.

At the 100th anniversary of the birth of Simone de Beauvoir (De Beauvoir, 1976) we are aware of the impact of the legacy of a sexist/gendered structure (Le Doeuff, 1989; Kofman, 2003; Freedman and Valluy, 2007), which is a form of “theoretical reductionism” (Kofman) in social life, in the study of societies and in science. Moreover, research and education inherit epistemological categorisations for the sciences that fetter the practices of institutions, science, those who decide policy for the sciences, and those who speak for the academic world. These categorisations reinforce the prejudices and conformity of research by establishing questionable hierarchies. The famous separations between on the one hand, pure and applied science, between science and technology, and on the other hand, between exact sciences and the humanities and the social sciences (all of which shape the organisation of the scientific world) are reflected

for example in budgetary distributions¹⁴¹ and the catalogue of its publications. Yet the most recent works in epistemology reject these distinctions that still abound in scientific policies.

These legacies are also present in science and technology and in scientific diasporas. They are encumbered by another legacy which forces us to tackle questions about building knowledge and scientific development (Baquiast, 2004) hampered by cutting off theory from practices that are divided into disciplines, biased and blinkered. Although we know that scientific practice does not necessarily endorse this separation, some very important objects which would help to understand scientific diasporas are thereby eliminated. The ideas of science and of knowledge considered from the broader perspective have failed to resist these legacies, these arbitrary distinctions. What is the place of scientific diasporas in these distinctions and requirements? Escaping these arbitrary limits means approaching these things from the idea of a “field”¹⁴² (Bourdieu, 1997), an articulation between practice and theory (Bourdieu, 1980), between science, technology and society, that allows us to keep a critical distance from categorisations that happen to be in fashion in the various policies that are involved.

Finally, the economic and political influence of science is difficult to measure in the light of this stage of our current globalisation. In the recent history of the 20th century, it has changed with Auschwitz and Hiroshima and what followed,¹⁴³ before and after the Cold War in the West. Today it finds itself at a new turning-point with the most recent scientific discoveries which have once more launched the debate on the relationship between nature and humanity.¹⁴⁴

141 For example, at the end of the year 2000 in Switzerland, the country was not retaining one programme in the area of human sciences in the ten centres of national research. Professor Claude Raffestin of the University of Geneva was talking about the “Economic Sparta that Switzerland had become”. He made the following comment on the decision: “The human sciences provide knowledge which allows the identification of processes, the understanding if not the prediction of society’s problems, the discovery of the origins of our cultures, the correction of our judgements on the past, the anticipation of the future movements as a result of long-term studies, the evidence to legitimise the positions we take and our actions. In short, they have no purpose except to furnish instruments of regulation in a world which simply doesn’t care about them since regulation costs more money than it brings in over the short term.” *Campus*, n. 51, March-April 2001, p. 12.

142 Pierre Bourdieu explains his disagreement with the idea of “RANA” – (acronym for the French phrase “applied research that is not applicable”) – put forward by Bruno Latour, which aims at a touch of “scientism,” makes a hierarchy of the researchers, but which provides a distorted view of real scientific practices (see p. 42 onwards).

143 The testimony of Sakharov is a document concerning the consequences of nuclear technology in the USSR (Chernobyl). See Sakharov (2002).

144 See especially Braunstein (2007); Le Blanc (2002); Janicaud (2002); Chomsky and Foucault (2006); Meillassoux (2006).

From the epistemological point of view, the emergence of a science to confront the complexity of the world and no longer limited to simplified situations cries out for a conceptual transformation to take all levels of nature into consideration.¹⁴⁵ Recent developments in the history of science and technology are putting the emphasis on scientific practices and their social conditions, along with the sociology of the sciences and technology.¹⁴⁶ It's an innovation that studies the facts of science as established facts that were decided upon in a particular context and not in a disinterested piece of pure research. The debate on sociological reductionism has begun, but the interest of this approach for scientific diasporas is that it places the accent on external social causalities and on the networks of the key players. Elsewhere, some sociological works on globalisation¹⁴⁷ are studying the elites – notably the academic ones – of globalisation, their role in the development, and reorganisation of capital, the organisation of a knowledge hegemony, the role of new philanthropists who are organizing new international universities,¹⁴⁸ the new questions about ethics that scientists must consider etc. Naturally, all these themes, which are dealt with in a wealth of literature, also concern scientific diasporas. So, the first consideration is not to confine oneself to areas of research and education in Switzerland or Europe (even the newly enlarged Europe).¹⁴⁹ Rather, we should open it up by developing relationships in multiple forms: for example, why shouldn't scientific cooperation

145 See on this subject Prigogine (1996).

146 In the French-speaking world, the importer of science studies of knowledge is Bruno Latour. See Latour (2005).

147 See in particular the journal founded by Pierre Bourdieu (2004).

148 International universities exist today which are financed by philanthropists in the same tradition of the 19th Century philanthropists. They recruit in various circles connected with financial services, the new technologies, the telecommunications – George Soros, the financier, Bill Gates, the founder of Microsoft, Ted Turner, the head of CNN and AOL-Time-Warner are amongst the most prominent names. They integrate critical works on globalization (ecology, human rights, gender studies) for the purpose of creating a world government composed of the elite. The plan is to initiate a dialogue with universities and with the non-governmental organizations (NGO). In the George Soros University in Prague one finds administrators from the World Bank and from the International Monetary Fund, who are the most ardent proponents of reform from these institutions. In addition, there are members of governments and militant champions of human rights, neo-liberals and defenders of international social justice. Their knowledge and skills are “sufficiently versatile to be reinvested and utilised in these diverse fields” of practice. In other words, what is being mapped out is “a strategy to redefine government knowledge that can be mobilised in the holding environment of a globalised economy,” see Guilhot (2004: 134).

149 Perusing the discourses on the politics of science, it is impossible not to be struck by the number of texts centred on themselves with a national, European or Western bias. See for example Papon (2004); Potocnik (2005) (European commissioner in charge of science and research).

use the projected networks to establish another “lower-level of globalisation”¹⁵⁰ which would improve “South-South” relations (Latin America, Asia, Africa) and “South-East” relations (South American, Asia, Africa, Eastern Europe)?

2.4.3 *Oral, Written, Languages in Scientific Diasporas Communication*

On the subject of communication in scientific production, one thinks of the connections between places of knowledge and the society outside their doors. One thinks of campuses at the cutting edge of knowledge such as Palo Alto (United States) and Bangalore (India), which are surrounded by slums. These visible spatial realities reveal that a sort of apartheid exists between science and society. And what is happening in actual practice? It’s worth asking one question: namely the matter of communication in scientific work. What is the place, the role of oral and written languages in the communications of scientific diasporas? We think of the 26 official languages and 800 dialects of India, of the literature and knowledge produced in the context of such diversity, of the learning and culture that could be exported.¹⁵¹ In the spirit of strengthening networks, of transforming networks into scientific diasporas, of pondering the diversity of the relationships between local and global knowledge, of thinking about the oral and written languages used in communication, we are forced to the conclusion that a field of research linking the supposedly exact sciences with human and social sciences becomes a necessity. Two questions open paths of research for the scientific diasporas which can accompany case studies, the evaluation of measures, practices and the policies of education and research.

The first question is about the place, diversity and richness of languages in the world in relation to the quality of the exchanges of civilisation¹⁵² and in particular the relation of science to the language, to the way scientists communicate with each other orally and in written form. This is a very important question at the same time for development, building up sciences in the broad sense, for scientific work and for scientific diasporas.¹⁵³ Communication in science is most often represented by publications and books, whereas the sociology of sciences (Latour and Woolgar, 1988), semiology and linguistics have demonstrated that the spoken word creates a social relationship in scientific activity as in every human activity. It is important to preserve both forms of

150 The term was developed by Roland Marchal, master seminar (“African Studies,” Paris I, Sorbonne) in 2005.

151 See in particular Kamdar (2008).

152 Amongst the extensive bibliography, see Crystal (2003); Lacome (2002); Wurm Calvet (2002); Wurm (2001); Hagège (2004) (2002).

153 To read the complete presentation of the argument, see Lévy-Leblond (2008).

communication (oral, written) simultaneously through the link between teaching and research, the requirements of scientific exchanges (conferences, symposia, informal chats, seminars, visits, telephone calls) and discussions about the conditions of validity. In addition, we know from experience that oral scientific exchange uses a plurality of languages. So what language should be used in exchanges? In order to distinguish the conceptual nature of scientific research from its end product (publication) the physicist Jean-Marc Lévy-Leblond suggests that we encourage the learning and use of the many languages spoken in scientific production (i.e. the promotion of oral multilingualism) and that we unify the written language for the end product (publication). This delicate approach to safeguarding cultural diversity is worthy of emphasis in direct connection with the policies of migration, development, education and research policies, and scientific diasporas (see propositions).

A second question in scientific practice is the place given to translation between languages and cultures. The philosopher, Rada Ivekovic, a Croatian refugee in Paris who works with Indian and Chinese researchers, is searching for a trans-border universalism, critical of Western, colonial, imperial and sexist universalism. She considers translation as something that allows us to work with categories in order to define this trans-border universalism which is based on the comparison of cultures and a communal, joint effort to determine higher values. "Being-in-common" is thought to emanate from historic struggles that have been reinterpreted in the collective memory from the point of view of transitions in individual systems, border transit, transferring identities, the transduction and the translation of languages and cultures after historical struggles re-interpreted in collective memory from the point of view of transitions in individuality schemes, transit at borders, identity transfers, transduction and translation of languages and cultures from one into the other.

Being-in-common is not only *esse ad*, *esse in*, *esse cum*; it is *esse trans*. How can we take into account such a philosophical and political question in our research on scientific diasporas and concrete practices?

3. Universality, Cosmopolis, Cosmo-Political Citizenship

It should be made clear that domination refers to a relationship which is not political but domestic. In his *Politics* Aristotle defines the power of domination as one that the master (*despotès* in Greek, *dominus* in Latin) exercises in a vertical manner over his slaves. Political domination today does not take the form of slavery or servitude but insists on its legitimacy by claiming to be a *de facto* power approved by completely free and equal individuals.

Tosel, 2007: 113

In this third part, whose aim is to consider scientific diasporas, politics and philosophy as a whole, our point of departure is to reflect on the Universal and how to transcend it as a containment of Oneness which refuses to allow the inclusion of diasporas in the political holding environment. We shall also examine the establishment of a political basis for cosmo-political citizenship and the future of the sciences seen as public property. The Universal expresses itself as a form of government, a dominant political system on the planet, as the dominant system of the United Nations. An alternate route via international law allows us to clarify questions that occur in international law about the nation-state. They concern the shape of the political holding environment, namely the State and its relationship to the system of *living together* in the tensions between domination and sovereignty, unicity and plurality, purity and hybridisation, that one finds both in the sciences and in citizenship. This leads us to integrate the innovative work of a political philosopher (Étienne Balibar) on the concept of the border. An actual example from the past may help us to realise to what extent abstract ideas can prove to be very concrete ones in actual practice – in fact, in the practice of science. We shall follow a difficulty in Einstein's reasoning which shows a place where it is already possible to spot something is at stake in the articulation between the Universal and the particular. This account is useful when we have to weave together the Universal and the particular between domination and sovereignty both in scientific practice and political philosophy.

Afterwards, I shall present the notions of *cosmo-politis*, and *cosmo-political* citizenship in connection with scientific diasporas and development. Finally, the second exploratory key-concept of *cosmo-political citizenship* is translated into concrete political practice. From this perspective, it becomes possible that exchange networks in education and research can be incorporated into the diaspora option and effectively become *scientific diasporas incorporated into citizenship*. In conclusion, propositions are presented for the continuation of the debate and the research.

A cheerful observation! Colonial and feminist struggles and post-colonial studies lead to a radical, critical reconsideration of the Universal, reminding us of the place of history, of power, and of the various struggles for theoretical construction and rights. In other words, transformations and theoretical shifts go hand in hand with the historical creation of rights and of cosmo-political citizenship. It becomes clear that the perspective chosen, while still relying on the tradition of philosophy and political theory, intends to be included in an approach to political concepts in *relational* terms, the terminology of power relationships. This approach allows us to unravel the tensions and contradictions and to dislodge the theoretical and practical obstacles which have been inherited from the material and ideological side of economic-political modernity. Hence, it aims to break in a methodological manner the limits of an essentialist, evolutionary, autocentred and even mechanistic vision, which are present in the theories of international relations, development (progress) and migration (the “return ticket” vision) without toppling into relativism.

Its aim is to take into account in the experiences of power, the plurality of the rhythms of temporalities, the relationship to space, to political technologies, to tools etc. Its aim is to maintain a critical distance from categorisations of theories and from practices that have sprung from the friend/enemy syndrome (Carl Schmitt), which refuses to acknowledge the significance of conflict in policy, the apartheid that is in league with the forces of security, the war for civilisation (Samuel Huntington) along with theories of dependence and adjustment. It strives instead for a *relational approach to power, to conflicts in the diversified transfers of exchange, of diffusion rooted in history and planetary space*. In the histories of places and peoples and States and the political theories of modernity and present times, what makes or mars the exchanges of real experiences that would allow the creation of a cosmo-political citizenship for the way society functions, for the way science functions? In the debate about the Universal, how does one get to the roots of these conflicts, how do you locate the source of the antagonisms (Rancière)?

3.1 *Universal, Pluriversal, Hybridisation: Logic, History and Politics*

At the present stage of financial, scientific and technological globalisation, de Tocqueville’s question, *How does one become European?* (Assayag, 2000) is certainly still relevant (in the debate about Europe), albeit concealed under layers of ambiguities. But de Tocqueville’s question calls forth another question which might unravel these ambiguities: how and why does one become a full-fledged member of the *city of the world* whatever one’s place on the planet? Science, our own Prometheus who has to be liberated from his chains, is no

longer merely European. He comes from other continents and countries. He can be found in the scientific diasporas which are being constructed all over the world. His gender is just as feminine as it is masculine. Furthermore, his chains are new forms of submission. The debate began in the history of science and in economic and social history during the prosperous years of growth when it was still believed that economic and scientific progress resulted automatically in progress full stop. Since then it has become a more complex question fraught with such issues as gender, wars, the limits of progress, the environment, scientific and technical innovations, massive transformations in the labour market, the importance of culture etc.). One of the historian's undeniable preoccupations is dealing with the consequences of the *big bang* of the markets on migration (Batou, 2007). In part, the Three Generations of Human Rights have formalised the nature of the debate into one of the public laws of the United Nations (human rights, economic and social rights, and the right to sustainable development) yet without satisfying the people's desire to participate in politics and without achieving any convincing results. Far from exhausting these subjects, we can try to point out some problems whose effect on the question of scientific diasporas is not without significance.

The Eurocentric genesis of sciences and technology, their expansion and their innovative devices flourished within Europe at a time when it dominated the rest of the world. It involved the economic, social, and technical history of the European societies (Landes, 2000), the connections between wealth and poverty,¹⁵⁴ as well as between exploration and exploitation (Tran Hai and Mounoud, 2006).¹⁵⁵

A quick bibliography search in the library and on the internet (without claiming to be exhaustive) shows at first glance that this Eurocentrism in research, in the history of science and technology,¹⁵⁶ still survives and that there is a need to broaden historical research. By questioning the direction and by acknowledging the aspect of sex and gender from an off-centred angle (the links between the populations of the countries of origin, migration, diasporas, and scientific diasporas), the movement of populations and the cultural diversity (Robertson, 1992; Appadurai, 2001) are arduously emerging. Cultural diver-

154 For example, how does one comprehend the fact that Switzerland's revenue per inhabitant is 80 times higher than that of Mozambique? How is it for the three research countries (Colombia, South Africa, India) at the national level as well as those regions we examined?

155 See also Foray (2002). The authors' thesis is overcoming the conflict by an open-ended problem-solving model which involves itself in training and in the systems of belief (the socio-cognitive approach).

156 Let us quote one of the rare references: Selin (1997).

sity is underestimated in European and Swiss¹⁵⁷ companies. What is the situation in the universities and laboratories of Switzerland, India, South Africa and Colombia?

The development of science and technology cannot be reduced to the theories of economic and political progress that make use of terms such as progress and economic development,¹⁵⁸ the market, democracy whether it be parliamentary or oligarchic or populist. Nowadays, how do you phrase the famous question that was asked by C.P. Snow (1950) in the 1950's? What is the connection between scientific culture and humanist culture (science and literature)? It is of interest to researchers of scientific diasporas, whether in Switzerland, in Colombia, in South Africa or in India. And how do you include the need to take into account the (in) equality and the cultural diversity or more precisely the *plurality* in accordance with Arendt's concept?

Evaluating these questions within the context of philosophy and political theory involves examining the concepts of the Universal, plurality, and the *Cosmopolis* to forge an exploratory notion of cosmo-political citizenship as a *praxis* (which the word *empowerment* translates incorrectly), so as to describe the living conditions, the needs and desires at the frontiers of democracy. We have seen that the dominant world order is a mixture made up of the order of the private multinationals, the geopolitics of empires and a system of sovereign nation-states in the process of transformation in chaotic temporalities as well as a hierarchy of disjointed territories which are struggling to integrate moving populations in their search to reclaim their sovereignty. The aporias of the nation-state as a political holding environment and system, conflicts around displacements of populations become obvious as soon as one takes an interest in the matrix of the Universal. The tension between the movement of populations, security policies, the imaginaries of the movement and the essentialising metaphysics of soil and blood leading to nationalisms, populisms and racism reveal the contradictions and hiatuses between the theories, systems and the future of societies.

157 Five challenges await the human resources of companies from now until 2015 as they confront the ageing of the population and the shortage of highly skilled labour talent management, the demographic question, organizational learning, the balance between private and professional life, the management of change and of cultural diversity (with the obviously unequal treatment of gender and cultural diversity). This is the last factor to be mentioned and it directly concerns the scientific diasporas. As the works of Professor Pierre Dasen and his team at the University of Geneva have shown especially (site), it concerns both relations *in* and *between* the "North," the "South," and the "East". See Strack and Böhm (2007).

158 For a defence of this thesis, see Cosanday (2007).

3.1.1 *Universal, Plurality, State. A Conflict Made Visible by International Law*

In the field of anthropology, the Universal evokes *universals, invariants*, a kind of “solid platform shared by humanity” (Héritier, 2001: 8), a kind of bedrock of humanity.¹⁵⁹ Yet to think politically from a universal matrix, doesn't it mean confining oneself to an enclosure of Sameness, Identity, Oneness and on its reverse side, into a thought pattern of closed partition?¹⁶⁰ For the researcher in philosophy and political theory the question takes us back to a system of metaphysics of monotheistic transcendence. On the political level it regresses to the idea of a closed community which runs the risk of erasing history, the future, memory, space colonisation, the diversity of the world's key players, the movement in particular of the citizenry of migrants, of diasporas, of minorities, of peoples, of languages etc. which represent so many of the signs of a creative social-historical diversity. The universal matrix is far from being conclusive proof when one considers the example of the nation-States' system, which under the impetus of the imperial bourgeoisie raised itself to universal status by appropriating the State.

In political and legal spheres the Universal is in a state of crisis; so too is the tradition of the *communitas* (Esposito, 2000), as well as political systems and the model for the national State. Can the matrix of the Universal account at the same time for an *extensive* universality that has reached its limits on the planet Earth (colonisation of the planet accomplished, outer space conquered) and an *intensive* universality (globalisation has invaded all social and private spheres)? Under what conditions could the Universal¹⁶¹ become the general matrix of international relations that Kant dreamed of? These two questions lie at the heart of the concerns of researchers in international law. The difficulties they describe enable us to clarify a theoretical, logical and political predicament, that partly duplicates the problem of the nation-states system and which

159 The invariants of human thought are “modules, templates in some ways, forming conceptual frameworks made up of unavoidable associations of concepts that cannot be created but are all furnished differently according to the diverse cultures and which are located in domains whose limits can be plotted thanks to the ethnological experience which describes and collects those things which exist, or thanks to logical reasoning which can envisage all that is conceivable even if something has not yet seen the light of day. [...] They would enable us to understand not merely the behaviour but in addition and more profoundly the systems of representation or the social systems” (Héritier, 1999: 321–322).

160 On this subject see the works of Ivekovic on partition in philosophy and in politics (2002–2002).

161 One could pursue the debate from another angle, by tracing the exact derivations of the words *mondial, global, universal*. I hold strictly to a weighting category in philosophy and in law to frame two limited questions in philosophy and political theory, which however have vast implications.

conceals the power in the future movement of planetary, political and scientific relations. As far as politics, citizenship and law are concerned, the Universal contains three types of interwoven conditions: 1) the need for an *empty space* where relationships might be built between individuals, groups, peoples, nations, etc.; 2) the need for a political *holding environment* which is necessary for politics (various forms of States); 3) the need to provide forms of political organisation which are open to a plural future.

How does one think of an empty space, a neutral holding environment, an open and plural political dynamic so that political life doesn't turn into pure chaos on the planetary level? Every political dynamic harbours the tendency for the place and the holding environment to be filled, appropriated, essentialised by certain political forces (nationalism, communitarianism, tyranny, oligarchic privatisations, sovereignty movements, mercantile, bureaucratic and police government control, etc.). So, how do we envisage a *political holding environment of a state city* that is conducive to life and the public interest and which is not going to be appropriated in the name of narrow criteria tied to one of the (mis)appropriations of sovereignty (nation-State, patriarchal State, racist, ethnic, sexist State, etc.)? How do we conceive of measures that are designed *purely* to safeguard an empty space, the building of a holding environment and a negotiated community and that are not, as in our experience of politics, some form of essentialisation that paralyses every movement of creation or exchange? These three conditions serve as observation markers to help us to focus on what has constituted political diversity and its genesis since the 14th century in Europe: nation-states under the stress of the fluctuating forms of empire (Walker, 2005) and the increasingly powerful influence of towns in the 20th and 21st centuries. Problems selected from international law allow us to position the elements of the conflict between the tendency towards political homogenisation and the pluralistic process, in order to find an opening into a future of a "ruptured transnational" (Besserer, 1997) citizenship, a "cosmo-political citizenship."¹⁶² Indeed, without prejudging what its multiple forms of organisation might eventually be, the question is already asked at the level of the empty space of the political holding environment of the city-state whether or not a political relationship is allowed. "What international society is lacking is a matrix for the Universal which would serve as a reference point for all the diversities without reducing them," writes Monique Chemillier-Gendreau, a lawyer in international law (Chemillier-Gendreau, 2005, 2008).

The Universal was Kant's dream as a means of ensuring peace in a finite world after the conquest of the planet by the West. Hegel has shown that it was

162 On this topic see especially Negri (2005).

not a simple question of logic (respect for the principle of identity, for non-contradiction, for the law of the excluded middle). So how can we think of the matrix of the Universal at the same time in terms of a holding location (a holding environment), a logical coherence and a dynamic? Far from being simply logical, the question is philosophical, historical and political. With the emergence of the nation as the dominant force in comparison to that of the minority, the people, the nation-State appropriated the Universal that was Kant's dream. It became the holding environment that contained the forces of maintenance, the homogenisation of diversity and contradictions under the aegis of the nation's criterion that gave the State its definition. The necessity to contain chaos, the need for order or coherence have been translated into the homogenisation of nation-States which have oscillated between patriotism and nationalism in various historical contexts.¹⁶³ Since then, as Monique Chemillier-Gendreau explains, the nation-States have acted as the matrix in the holding environment of societies, but with the great power to reduce other differences so that they conform to the nation. All the Jacobin movements have had the effect of negating the diversities in Europe (Turkey included). They have confiscated the question of a matrix of the Universal that is open to that which is to come and to plurality.

At the international level the matrix model has been transferred into the globalisation of the model of the nation-states system which is tied to today's market place. The model is under tension with the fragmentation – even the bursting – of the nation-states system, the regional dispersions, the transformations of the model for empire(s) and the emergence of cities. Diversity resists the sovereigntist homogeneity of the nation-State with the rise of regionalisms and all kinds of other oddities. Committed to the logic of Oneness, the sovereignty of the national state keeps the groups in a binary choice set in the enclosure: whether it stays within the framework of statism and *national* State sovereignty by losing any plural character, or whether it emerges in the direction of another form of statism and public sovereignty on a world scale. If a new form of Universal were imposed from above, it would contain the same limits as the model of the nation-State. Moreover, as Monique Chemillier-Gendreau specifies, the sovereigntist statism and national tradition of territory are also linked with another reduction, that of "Man" in the history of human rights from the Universal Human Rights Declaration translated over successive generations. They have broadened the concept of "Man" by integrating various problems but have also created other problems which at this moment are clearly visible in the current debates of the United Nations Human Rights Council. From these

163 See for example Quijada (2000).

two restraints, how can we avoid the destructive fusion of multiple identities or the bursting of all places and political holding environments? How do we build a political holding environment, a relational dynamic in a postnational citizenship? At the current stage of globalisation, how can we rethink the political holding environment that forms the State from the bottom up? How can we rethink the type of city-State and public law that would go beyond the exclusive criteria of the nation and “Man,” the insoluble contradictions of territorial and national sovereignty, without necessarily endorsing the empire shape imprisoned in a model of Oneness and force or that extreme fragmentation which threatens to topple towards a city-State and a law that are no longer public but privatised?¹⁶⁴

In fact, it’s exactly at the point of articulation between the Universal and Plurality where difficulties form. Monique Chemillier-Gendreau locates the failure of international law as a universal law, the right to construct a holding environment which contains politics, a pluriversal law,¹⁶⁵ at that point where diversity could not oppose equality. The various, hybrid identities of dominated minorities, particularly those from former colonies, have been swallowed up and forced into the model imposed by the Western powers (i.e. the sovereign nation-states and the marketplace). One could also draw attention to another criterion: namely, the absence of women, which the philosopher, Rada Ivekovic from the former Yugoslavia, calls the “sexual gender of the nation” (Ivekovic, 2003). So we can see that a double particularity, the sexually gendered nation, has occupied the place of the Universal and the human race and monopolised it and the political holding environment. The other peculiarities, all the other peoples and minorities – whether or not they are formed into States – have not had access to the empty place of a political holding environment, to a neutral reference point permitting them to exist in their own right, in touch with other diversities.

Integrated by losing their existence and their soul or by being marginalised, such was their dilemma. Politically, the crucial step that is called for is the construction of a city state holding environment that is public and able to contain a system of politics for the planet that is sacrosanct. This system would be able to contain diverse forms of political existence (individuals, genders,

164 The legal scholar, Gérard Soulier, who revives Greek terms for the debate about European *isopolitie* (common citizenship) and *sympolitie* (the multinational democracy of the European Union), proposes that we think again about the decay of the State, that we reconsider the idea of “civic right” on the basis of “independent cities which could take over from the enfeebled State as a holding for citizenship and initiate a civic right which is independent of all economic activity”.

165 I am borrowing this term from Jean-Marc Lévy-Leblond, who uses it when talking about a democratic universalisation of science.

peoples, minorities, nations, etc.) and any other hybrid positions that have been adopted.¹⁶⁶ These positions are the common characteristic of subordinate cultures that now by necessity reassemble in pluri-positions so as to form themselves *legitimately into a pluriversal and open city that is constantly evolving*.

The empty space of a holding belongs to nobody – it is essentially public property – and for everybody it can only be a political holding environment that is inviolate and open and able to welcome an open network of existences and dynamic positions where there is a corresponding openness of debate and a public law which can integrate the multiple conditions of existence. The empty place of the Universal holding can be only a type of public stateness to contain the existence of politics and to allow for political and democratic construction (Claude Lefort; Cornelius Castoriadis) by integrating diversity and hybridisation. To the extent that all the diverse conditions of existence and the *positions of hybridisation* find a place there, the Universal collected together into a political practice becomes the place to establish a holding for a *pluriversal and open* political dynamic. Individuals, peoples, minorities, diasporas, non-governmental organisations and transnational companies contain in many different ways the seeds for creating such a *pluriversal* construction and they question the appropriation of the place of the *Universal* holding by the sovereign nation-state. For a long time the nation-state has claimed to confiscate the Universal of a society both in the double form of a *sovereign and national state holding on a closed territory* and under the control of private interests (*Lex mercatoria*). Only the empty place of a public holding built and safeguarded by everyone,¹⁶⁷ by the transformation of positions into localised attitudes of citizenship allow for the construction of stateness and public law in the area of a political holding environment that is always open and which belongs to no one person, to no one group and to no one class in particular. The positive reference to the construction of the cosmo-political Pluriversal combines, in Monique Chemillier-Gendreau's view, a neutral place (we should write neutralised by political practice), a public stateness and a primary status of political dynamics supported by plural positions of existence and action rooted in a hybridisation granted to everyone (individual, gender, group, people, minority, nation, etc.). At the level of international law, one can observe an example of the first, slow, disappointing steps towards construction, whether they are directed towards democratic

166 I have borrowed this term from the researcher in *post-colonial studies* from Homi K. Bhabha (2007).

167 This holding cannot be reduced to the “veil of ignorance” from John Rawls' theory of justice since the diversity remains present inside a neutral holding which is not taken over by any of those particular characteristics which the nation has used to represent a decisive moment in history.

construction (demos-cratos, power to the people, the reappropriation by the people of sovereignty, of their political power to act, an organisation for punishing crimes against humanity (see the list of propositions). Certainly, this is a limited frame of reference, even if it is negative, one that refers to acts that everybody recognises as their moral duty to condemn since they jeopardise the very possibility of existence for all of us.

For example, you can see one of its contradictions¹⁶⁸ at work in the dynamics between the marketplace and the State, or if you prefer, between the *public* and *private interests* in the international law concerning migrations (here). As a result of the weakening of nation-states combined with intergovernmental security forces and the *Lex Mercatoria*, the pathway towards showing the need for the pluriversal at the international level has experienced “considerable flaws in conception.” “Values are confused and, if cosmopolitanism does exist, it has been confiscated by the merchants just as patriotism was by the nationalists” (Chemillier-Gendreau, 2001). The creation of international law should be “a common law regulating world society,” but “the process has been spinning its wheels for half a century.” For example, the law for migrants shows that we have “one rule for one and another rule for the other,” that the rule of the security forces will always prevail over the rights and the safety of the migrants. Progress towards a privatised Universal is being made by transforming the law into the status of a “blueprint law” which is becoming part of the public political sphere (State, public law, public space, publicity) in the shape of interest contracts under the *Lex Mercatoria*. In this sphere the action is submitted to a consensus of arbitration and to a relativism that are beyond the reach of the law.

Thus the concept of the contract is no longer that which is decided by the philosophers of the constitutional State and which is a public political contract, i.e. rooted in the State as a guardian of the law (Kant) and balanced by three public powers (legislative, executive, judicial), where the major premise is the law itself to which everyone is subject. So stateness is defined by a private and commercial conception of a consensus where the letter of public law becomes blurred and where resources and rights become privileges dependent on profit and merit.

From this trend, we can see that public law is shifting from the politico-juridical sphere of the State towards the sphere of economics and war. The process is removing the entire force of law from the law by erasing public law

168 On the subject of this contradiction and others which run through migration (inclusion-exclusion, wealth-poverty, global-local, modernity, postmodernity, globalisation from the top and from the bottom), see for example Castells, Stephen, *Globalizacion y migracion: algunas contradicciones urgentes*, inaugural text, intergovernment council of the MOST, June 16th 1997.

and substituting private law in its place. This means that private interests are taking over public stateness, causing the State to disappear and even going so far as to attack the soft laws in the international public sphere of the United Nations. Indeed, the United Nations itself is suspect as a framework for relationships between the States. This is confirmed by the work of the political analyst, H el ene Pellerin,¹⁶⁹ who specialises in the New World Migration Order. She shows that in the multilateral governance policies of international institutions (OECD, Trilateral Commission, EU Commission,¹⁷⁰ IOM, etc.), the transformation of the labour market into a service market is marked by the absence of an international public law concerning migration¹⁷¹ and by the creation of new rules based on international business law (temporary assignments instead of real work contracts and no attention paid to economic, political, social and environmental rights). The new rules tend to constrain at the same time the presence of the United Nations Organisation and the regulating power of the States and their laws which are already at a minimum. She gives us a concrete example by analysing the GATS (General Agreement on Trade and Services) model of the four modes of movement in terms of the management of goods and services and the displacement of those people who are linked to specific services. Her analysis does not include living conditions and the need for protection but concerns itself for example with the simple fact of a GATS visa that offers service with a total disregard for any other right that should properly be considered one of the basic human rights. One also thinks of the very fragile status of the UN Convention on Migrants' Rights.¹⁷²

Using a different approach, two researchers are asking further questions about the limits of the Universal that we can discover in international law by placing them in the historical context of economic-political relations. The historian Immanuel Wallerstein (2008) examines European universalism along a course going from colonisation to the right to interfere. Europeans are not the only ones to hold universal values. He explains that the dominant universalism of the Western colonial powers was based on the limitless accumulation of capital and that colonialism and imperialism merely served to legitimise that aim. After the Netherlands in the 17th century, Great Britain in the 19th century and the United States in the 20th century, China and India have now taken their

169 Pellerin, H el ene, *La Gestion multilat erale et l'influence du droit international* (author's text).

170 See the 2001 directive adopted by the European Parliament to encourage the "facilitation of services".

171 In this context one has to stress the importance of the International Convention for Migrants (see propositions).

172 See especially Caloz-Tschopp (2008b).

place as major powers. So are we witnessing the emergence of a new universalism? For Immanuel Wallerstein (2006), one of the conditions is that of moving to the periphery to begin work on a methodical deconstruction of the rhetoric of European universalism as an ideology of what he calls (in the footsteps of Fernand Braudel) the world-system. He describes three variants of the Western universalist rhetoric: *the right to interfere* (“*le droit d’ingérence*”) dating from as early as 1550 in the Valladolid Debate and the Spanish theologian Sepúlveda’s justification for the conversion and massacre of Indians (civilizing mission), *orientalism* and the univocal notion of *scientific truth*. In his analysis, which refutes both relativism and indifference, pointing out the silences in liberal revolutions (colonialism, place of women, minority rights) and the acts of humiliation which result in war (the United States’ war against terrorism), he brings out possible alternatives based on dialogue that conform with the pluriversal perspective by imagining a “multiplicity of universalisms which would form a network of universal universalisms.”

The historian Pierre Rosanvallon (2008), in an approach that is limited to the evaluation of democracy in France, stresses the fact that the Universal has been marked by the weight of European and colonial history. For him, the history of the French Revolution symbolises a closed model of democratic universalism. “It is there that we see for the first time the impossibility of real universalism.” He emphasises that the American and French Revolutions contain “strong, indeterminate answers to the essential questions of citizenship, representation and sovereignty” in relation to the liberty and equality which formed the first uncertainties of these revolutionary foundations. By erasing the difficulties and contradictions, they led to a sterile conception of the history and “the construction of closed, democratic universalisms,” to a misunderstanding of experiences in the West and equally so elsewhere. He advances the thesis that “democracy conceived as an experience opens the door to genuine universalism; an experimental universalism,” which allows for a more open and more egalitarian dialogue between nations and a rejection of the “clash of civilisations” theory. In his article, he unfortunately gives no examples of concrete actions to be taken, either in theoretical experiences or in actions of citizenship.

In conclusion, to break the deadlock in the search for a possible political holding, should one take the Universal as “a hypothesis, a kind of disciplinary horizon eternally waiting whose outlines could never be clearly drawn” but which is there to bring out the principles of comparison between societies? This is the suggestion of the anthropologist Philippe Descola (1993). We have seen that the matrix of the Universal must respond to other challenges, not merely those of comparative approaches. To avoid impossible pitfalls, any thoughts about a matrix are in fact put to the challenge of combining the neces-

sity for constantly developing political action to create a holding that contains both spatial and historical evolution (Sibertin-Glanc, 2003).

Any approach which implies a new political ontology, a new logic and a new epistemology has to face the challenge of acknowledging the fact that, under the effect of wars and struggles (Hardt and Negri, 2004), foundations move and invariants vary, sometimes to the point where any framework holding political life has disappeared.¹⁷³ In other words, the dynamics of the evolution of social-historical being transforms theory, logic and philosophy (Castoriadis). History, the transformation of power relationships, territorial re-configurations in global geopolitics impel the philosophy and the political theory of the matrix to shift towards a political ontology of the future, of the power of multiple connections, of networks (Deleuze and Guattari)¹⁷⁴ towards an open and creative logic and a theory of relationships between the State and that which is outside the State, where migration is just one of the notorious facts. The word matrix itself becomes inappropriate and we have to find a new word. Philosophical and political debate is as vast, complex and abundant as it is rich. It is far from being over. It is emphatically present in the field of migration.

3.1.2 *How Can we Become Universal, Mr Einstein?*

A concrete example may bring these matters closer to the field of scientific practice by illustrating the difficulty of a practice of the Universal called upon to transform itself into a practice of the Pluriversal and to integrate the future. The Universal, the cosmo-political citizenship having been active in the *city of the world*, in the *cosmopolis*, are not a principle, a dream, a Utopia or an abstract norm as Kant thought in his idealistic approach. These two notions are (de)constructed in a dialectic of power relations which also exists in scientific thought.

So, the Universal in the *Cosmopolis* is not an absolute concept. It is a practice, a personal experience that is relational, individual and collective which is striving to become pluriversal. It concerns the construction of a place, a holding environment, a positive relationship to the multiple places where action and life abound and it is translated by the creation of cosmo-political citizenship that is tied to a place, a pluriversal political holding built at this stage of current globalisation. To live across several countries, to feel completely Swiss, European, Colombian, Senegalese, Indian or South African ... is the reality not only for migrants but for all the multiple forms of human beings on

173 One only has to think of the situation in the former Yugoslavia, Colombia and certain African states.

174 See in particular Deleuze and Guattari (1980); Deleuze and Negri (1985); Deleuze (1990) (2002).

the planet at various levels and degrees.¹⁷⁵ Various practical and theoretical constructions of the *pluriversal cosmopolis* and the cosmo-political citizenship do exist. Let us consider an example provided by a physicist to illustrate the brick wall that political and scientific thinking alike are butting their heads against. To put it more clearly, the enclosed universalism which is present in politics is not absent from science. We saw this connection with the history of universalism (Wallerstein). Examining the operations of theoretical constructions highlights the tangled web of conflicts we should take notice of, rather than merely affirming an abstract principle that has been emptied of all its contents. He reveals to us the dialectic at work in the practices of cosmo-political citizenship in order to create and build a *pluriversal city of the world*. One of the tangled knots is consequently the tension between the Universal and the singular which is called on to transform itself into a pluriversal dynamic. According to Kant, universalist conviction means that all human beings, without exception – beyond individual differences (gender, people, race, sexual orientation, class, etc.). have the same worth.

Reason (the logic of the universal) does not necessarily follow morality (any form of sinning against the universalist ideal). In Kant's complex universalist doctrine (David-Ménard, 1997) based on reason and morality, the exercise of reason and morality walk *pari passu*: any form of sinning against logical universalism is a moral error, any breach of moral universalism is a logical error. If there is no adequation, we must postulate a dysfunction of reason. The operator of equivalence (therefore the removal of differences) is the Universal. Thus, we have to consider two forms of equivalence: action and subjects, the physicist Françoise Balibar (2005) writes after reminding us of the elements of the debate. "Act as if the maxim of your action could always become equally valid as the law of a possible human world," writes Kant to describe the famous moral law as the construction of an equivalent class of acts. Running parallel to this, another class of equivalence is defined (and not constructed on an ad hoc basis), the class of subjects. At this point, reason intervenes. The outside subject enacts the moral law, which is reason (the subject is stripped of all that which is sensitive in its nature). The law of logic can only become universal if it is stripped of all contingency and of any particular subjectivity. Consequently, there are two universals in Kant, the universal of acts (or morality), constructed and *extensive*, and the universal of subjects, which is *intensive*. This method for making the Universal excludes the notions of the

175 "In order to make possible the multiplicity of adherences we need a gangway, a common reference point which we must build together and which would form human rights." Driss, El Yazami, General Delegate of Generics (Paris), declared recently. <<http://www.generiques.org>>.

individual and of individuation. Kant articulates universal acts, subjects and collective by erasing the individual. Henceforth, is it possible to think about the individual and the universal in physics and equally in politics without erasing the individual? The question was on Einstein's mind for his whole life, as Françoise Balibar (2005) shows from the example of a "moral mistake" Einstein committed, in a demonstration in which she compares Kant's theory to Einstein's theory of relativity and where she notes their common failure to combine the articulation between the individual and the Universal at the level of particles in fundamental physics and at the political level. Perhaps we should draw the conclusion that the only possible position in the face of aporia is to keep the conflict between these two terms open, and to live with the conflict by including what Kant annulled (passions, singularity) precisely so that we do not annul them. This short digression allows us to free ourselves from an idealistic, abstract and therefore ineffective vision and to go beyond the closed, inessentialising identity, to give a primordial importance to relationships, to passions, to conflicts, to hybridisations and to opt for a constructive conception of the Universal, of politics, of rights – and even of the sciences (which joins us up with social capital and scientific diasporas). A new reading of the notions of border and *cosmopolis* allows us to go from the Universal to the Pluriversal.

3.2 Rethinking the Notion of Border (Balibar)

By force of circumstance, many researchers buckled down to establish a criticism of logic, to categorise the idea of the frontier in ways that were too narrow to describe the movement, the large diversity of the way the movement took place in time (history), world space (territories) and to define the richness of social relations that were part of the movement that could not be reduced to mere economic mobility. Neither human history, nor world space, nor global landscapes that are occupied by more and more towns are conceivable without the relational movement of migration, diasporas and scientific diasporas. Think of the Greek scientists/scholars and philosophers in Sicily, in North Africa, Alexandria, India, China, Mexico, etc. Whenever geopolitical tensions and partitions flare up, the questions about borders surge up again with regularity. It is hardly astonishing that migration has become the barometer for measuring tension and changes.

The emergence of transnational theories in social studies particularly those concerned with the so-called transnational (Barry and Goodin, 1992; Fibbi, 2004) migration and diasporas is still rooted in the idea of a nation so as to qualify for the link between diasporas and nations (Bordes-Benayoun and Schnapper, 2006), between nation-states and the "transnational world," (Glick

Schiller et al, 1995) taking into account the various forms of nation-states (including those that emerged from ethnic theories of nationalities¹⁷⁶ that were opposed to the patriotism of the Enlightenment). The relative weakening of the nation-states system pervades suspicions about diasporas, debates about politics and European citizenship in Europe, debates about the regularisation of illegals in certain States for instance, and indirectly, the policies that govern education, science and labour. Theoretical trends which speak of the “clash of cultures,” where the stranger/foreigner becomes the enemy (Huntington, 2004) recall the old essentialising distinction – friend/enemy – expounded by the Nazi legal expert Carl Schmitt which was very much in fashion during the Nazi period (Morgenthau, 1946).¹⁷⁷ The Schmitt distinction places the distinction between national and foreign on a radical war footing to the point of expelling migrants from the States and from politics. It tolerates no thinking that goes beyond the category of “national,” nor does it allow for a global and political temporality or spatiality to take shape in institutions, policies, measures, or in any form of solid administrative machinery. It strictly controls attitudes towards movement, limits, frontiers, citizens, foreigners, laws, administrative procedures, police and military practices of intervention and surveillance, and the worth (or lack of worth) that is placed on culture.¹⁷⁸ Theoretical space is always occupied by the category of the “national” which accompanies the system of nation-states. It is always under the same roof with regional multinational and multilateral attitudes, with attitudes towards cities and empire (Hardt and Negri, 2001; Schmitt, 1985; Agamben, 2003) and towards “biopower” (Foucault, 2004) In the area of migration, the UN and the International Organisation for Migration have launched a new project, NIROMP – *New International Regime for Orderly Movements of People* – in which movement is present but

176 Such a theory is born from Herder’s affirmation of the equal rights of all cultures facing the cosmopolitanism of Western Enlightenment – an aspect of cultural integration from Germany beginning in the second half of the 18th century of the ideas and values of the French Enlightenment and the French Revolution. This became a heritage in the Germany of the 20th century. See Dumont (1979). One can find more “intimate” traces of this in the cultural-linguistic relationship (*Bildung*) and more precocious roots of Herder’s developments in the translation of the Bible by Luther (1483–1546), which delatinises the German language in order to found a national culture. The work of language translation “answers the need to bring out the essence by modifying it through a confrontation with a sacred or classical canon: the national is thereby founded by a broadening of its translatability, which blends with the idea of *Bildung*, understood as a process of formation, as a beginning, of a national language which can translate that which is foreign in the context of this process.” Kristeva (1988).

177 See also the introduction by Georges Schwab to the new edition of *The Concept of Political* (1932), by Carl Schmitt (1996).

178 On this subject see the works of the networks European Liberty and Security by Didier Bigo and Migreurop (<www.migreurop.org>).

where economics and security are dominant (Pellerin). Neither the term international (nor others derived from “national”), nor the term imperial are satisfactory to grasp the future of the State as a holding capable of containing political dynamics, as the place for peoples, as the aporiae of the nation state, as adequate to express the economic-geopolitical transformations in globalisation. As for Michel Foucault’s term “bloopers,” which we come across in the field of migration, it requires a renewal in political anthropology worthy of reevaluating the neoconservative and racist theories (from the 18th century to the 1930s and today) and capable of defining the new forms of essentialisation and naturalisation, whose importance we know to be so crucial in the discourses about migrants and women. A shift in theory and category is taking place.

Taking up again the notion of *border*, a work in progress on political philosophy about migration and the building of Europe¹⁷⁹ sets out an innovative approach to overcome the difficulties related to the Universal and to conceive of the holding, the system and the sovereignty. In the connection between the economy and security in migration policies, the area of *Liberty-Security-Justice* in Europe¹⁸⁰ (Tampere) and the expression *security perimeter* borrowed from the computer world show that the concept of justice is enclosed within a security vision of security. The frontier leaves room for unified, secure places with priority given to strategic management (efficiency, fluidity, reduction of national judicial orders in favour of globalised market criteria).

“Crossing borders or having many homes?” the sociologist Zygmunt Bauman (2004) wonders as he describes the human experience in conditions of globalisation. Étienne Balibar takes a political and philosophical stand. He looks again at the question of sovereignty and considers the proliferation of sovereignties (state and quasi-state bureaucracies of the police and the army) by confronting them at the border, in the State and amidst the people (Balibar, 2000). We shall confine ourselves here to his work about the *border*, which is very important¹⁸¹

179 I’ll limit myself here to the work of conceptualisation of the philosopher Étienne Balibar; one should quote other works by geographers, diplomats, in Europe, Asia, Latin America (references in French). For Europe, see for example, Foucher (1998, 2007); Dumont (undated); Zourabichvili (2008) (Georgia); for the former Yugoslavia and Asia (India, Pakistan), see the works of the philosopher Rada Ivekovic.

180 Council of the European Union, “The programme of The Hague to reinforce liberty, security and justice in the European Union as approved by the European Council at the time of its meeting on November 5th. 2004,” Brussels, December 13th 2004 (n. 16054/04).

181 “The border is of crucial importance for contemporary debates that care to know if the rich context in which we try to give meaning to political life must be understood as international – the accepted opinion – or even as imperial and belonging to globalised capitalism and to the unilateral militarism of the United States [...] by the prevalence of security measures on liberty that have been activated by the contemporary readjustments made by the sovereign authority.” Walker R. B. J. (2005).

in order to understand the relationships which have become intertwined at the borders where we still find women, migrants and diasporas.

The question of the links between the power of the State and the movement that is visible in migration and diasporas may be approached in the many ways that lead from exile to the crossing of the border. But far from being an *essence*, in the numerous faces, places, functions, etc., the vital, central issue in the border question is always a *relation*. The border crystallises the transnational relations of power, domination, class, and confrontations between the system of States and the migrants, the diasporas in the globalisation process. Étienne Balibar invites us not to confine ourselves to the visible border of the sovereign State on a confined territory with passports¹⁸² and walls, but to move to another position so that we might decipher the power games, the contradictions and struggles that are going on there. The State is transformed at its borders. So are individuals and peoples.¹⁸³ We have to understand that individuals and peoples may be inside (citizens) or outside (stateless persons), or inside and outside (diasporas), but whatever the relations of power may be, these people are something quite different from being a “border.”

They are building themselves a philosophical, political, psychic and civil identity by confronting the border. They develop a *power of Being* in the face of state and multinational forces which are trying to confine them to immobility and impotence. For a proper understanding of the content of Étienne Balibar’s (2007) important text in philosophy and political theory of which I can only mention here the essentials, we will refer to a complementary text by the same author (2002). Relying on Fichte and Devereux, Balibar shows by a different scholarly progression that the question of borders is not only an external, geographical and administrative relationship, but also a relationship that is actually lived, a relationship that *constitutes identity*. It must enable us to elucidate two great philosophical questions:

the relationship to “I” and to “we”, the idea that identities are neither purely individual nor purely collective, but are multiple ways for the individual to internalise belonging and for the community to institute or to prescribe the subjectivities, and on the other hand, the question of “I” (or “we”) and the “otherness”. The border that we are all defending together, and which makes us feel protected or restricted, which is the crossing point and point of contact with the other as well as an area that is closed off, is the slightly more historical and concrete face of these big questions.

In the broader sense, Europe has experienced yearnings for nationalism and the contrary desires to open up in the political debates about its relationships with

182 On this subject see Torpey (2005) (socio-history).

183 One thinks of the notion of “multitude” put forward by Toni Negri on rereading Spinoza.

its former colonies (Algeria), about broadening Europe (Turkey, Eastern European countries applying for EU membership), “the traces of the great frontiers of civilisation are not as immutable as one might imagine,” Balibar notes again in a commentary of a text by Keynes. Therefore it is necessary to know the dialectic of the history of borders and to ensure that fundamental rights are being honoured in the reports of border institutions, in police work and in the bureaucracy of Schengen and of the states. The measures to ensure this require reappropriating and establishing opposing forces to act as guardians and as a safeguard for fundamental rights. The border become the space of *inter-esse*, a no-man’s land between activities, continents, poles, borders, a place for crossing points, a meeting place for populations, ideas and knowledge which are in movement, in relationships, in conflict. Thus, one has to install a dynamic method which is in movement itself, which is “polychronic,”¹⁸⁴ “plurifocal,”¹⁸⁵ *multi-sited*. This is the place where we find the scientific diasporas.

3.3 Movement, Cosmopolis, Cosmo-polical Citizenship

The *movement* of persons, ideas and knowledge cannot be reduced to free movement, to what economic language calls *mobility*. From a philosophical point of view, movement is a constituent element of the evolving social-historical Being (a concept borrowed from Cornelius Castoriadis, 1975). It exists in the cosmos, in history, society, in the human body and in thought, labour, knowledge, all manner of links and in the tools of information and communication. Therefore movement is a component of the social-historical Being. The movement of societies, of populations (not only of migrants) and brains in the bodies is not a simple economic mobility. It can’t be confined to a utilitarian vision of the free movement of economic factors in terms of ends and means. Moreover, although a fracture often exists in discourses between the *Realpolitik* of interests and the police management of anonymous numbers (Brinkbauer, 2006), is it possible to think without critical detachment that the scientific, political, cultural, and ethical construction of Europe should be focused as a result of the polices of migration and development,¹⁸⁶ science and technology, on a cohabitation be-

184 Mireille Delmas-Marty insists on this aspect of the plurality of the *chronia*, of the time in the construction of international rights.

185 The word comes from an ethnologist. See Marcus (2005).

186 A few figures to strengthen the debate: 780 billion (dollars), world military spending (if one adds indirect costs such as: the wounded, education etc. double this figure); 50 billion, public aid to development; 50 billion, for the cost of September 11th. 2001; 150 billion, the cost of Hurricane Katrina; 50 billion, the cost of the battle against money laundering; 30 billion, the cost of cancelling the debt for poor countries; 24 billion, the cost of the battle against soil

tween a “chosen” migration policy and the delegation of politics to an administration and police force whose aim is the strict control of populations and who are accompanied by a mercenary and cynical utilitarianism? At this very moment that is what is being debated with the directive on the return and the pact of migration surrounding the launching of The Mediterranean Union (UPM)¹⁸⁷ on July 14th 2008 (France) just as 58 bodies washed up on the coasts of Spain and without anyone knowing the number of fatalities from the four boats packed with illegal immigrants that sailed for five days without food or water before sighting the Spanish coast. Just one case amongst so many others.¹⁸⁸

To begin to reconsider the Universal and the border, philosophy and political theory would do well to envisage the question of scientific diasporas by clarifying the link between movement (populations, thought, knowledge, learning), scientific diasporas, politics and citizenship. Before examining the views from innovative work of which we now have a general idea after reflecting on the aporia of the Universal and the notion of border, we should first remind ourselves briefly of some historic discourses in philosophy and political theory. This will allow us to see the marks of the old debates in the tradition of political philosophy.

Political theories and the discourses they inspire at a moment in history when the need arises for a new holding environment and for a new dynamic for politics (the State), oscillate at different levels in various combinations between “the state of nature” and “political demands. Hobbes and Rousseau, who developed diverse philosophies of the State and the social contract, both recognised nevertheless the revolution of the passage from the state of nature to the social state. For Hobbes in his *Leviathan*, the “natural human condition” (chap. 13) is governed by the famous sentence “a war of all against all” through trickery and violence, for one’s own necessary self-preservation. From their perspective, the state of nature may be defined in terms of a lack of holding and political contract. Government, civilisation, the political holding, contract, laws and common power are missing. The reference “thou shalt not kill” doesn’t exist. Nothing can stop “sad passions” (Spinoza) and the progression which leads to open violence. In the state of nature nothing can contain brute force. Human beings have to yield to the “war of all against all,” to an incessant struggle for power in order to defend their lives.

erosion; 19 billion, the cost of the fight against epidemics (AIDS, malaria); 18 billion, the cost of the struggle against malnutrition; 15 billion, the cost of the struggle for access to water; 8 billion, the cost of the struggle against illiteracy; 2 billion, the cost of anti-personnel mines; (source: France Culture, 31st October 2005).

187 In particular see: Bensaad (2008); Chérif (2008); Belkaïd and Orsenna (2008).

188 See the reporting of the newspaper *El País* of the 12th July 2008.

The universalism of the Enlightenment has been caught in two contradictory currents: liberal French and English Revolutions and nationalisms sometimes reinforced by *jus sanguinis* theories, the racial theories at the root of modern racism. It has also been seized by Hegel's dialectic, overthrown by Marx, but not totally overtaken in its determinism where hybridisation and otherness remain prisoners of a monistic and partitionist Universal.¹⁸⁹ The dialectic between state of nature and political creation within a holding to be reinvented – the State – has been developed by social contract philosophers (Locke, Rousseau, etc.) and also, as we saw, by Hannah Arendt, a philosopher and political theorist who experienced the condition of exile and diaspora, and who was inspired by Kant in particular. We examined earlier how she was sensitive to certain aspects of philosophical and political theories related to migration, forced displacements of populations, exile, the stateless, diasporas, and overcoming various aporiae regarding the system of nation-states and the movement of populations. These tendencies, these trends are present in the tensions which are never pure and simple between essentialisation and naturalisation, domination and democracy, individual, people, minorities and nation-state. They exert weight on the holding and limits of the State in its dominant form as a system of nation states. They also exert weight on diasporas and scientific diasporas. Reconsidering what constitutes a State, a border, hospitality and the right to have rights (Arendt) allows us to open their dialectical process so that we may reformulate the concept of sovereignty and citizenship, the pluriversal form of which might serve as a cosmo-political citizenship.

In the history of sciences, the cosmopolitan universe has been explored beginning with the thesis of the “war of the sciences” (Stengers, 2003), by an order of knowledge which excludes social sciences and studies, by the ambitious dream that science alone (physics, chemistry, biology) can penetrate the enigma of the world. Critical debates in social studies related to modernity take place today around the concept of *cosmopolis*; Stephan Toulmin (2001) is one of its spokespersons in the history of ideas. In short, Toulmin thinks of the notion of *cosmopolis* as a place of critical historical information on the transition from tolerant 16th-century humanism in search of an authoritarian rationalism and unified in the 17th century into the nation-state. He reads there in a

189 “The moral universalism of the Enlightenment finds, beyond the ordeal of the French Revolution, its magisterial discourse with the reasoned aspiration of Kant for a universal peace. As a counterpoint, the romantic inversion, the emergence of German nationalism and quite especially the notion of Herder's *Volksgeist*, but above all the negativity of Hegel – which at the same time rehabilitates and systematises, unchains the power of the Other, against and within the conscience of the Same – will be able to be thought of as stages in preparing for the ‘Copernican revolution’ which was the invention of the Freudian unconscious.” Kristeva (1988).

mirror the reconstruction of the transformation that was put to the test by European society after the Thirty Years War and the Revocation of the Edict of Nantes when the relative tolerance it had represented comes to an end.

Other researchers who take on modernity from other points of view utilise, more or less critically, the contributions of the republican internationalist Kant who placed himself in a finite world, rejected colonies and was concerned with the law of the people (Belissa and Gauthier, 1999)¹⁹⁰ (and not only the State) and even questioned the idea of private property. So Kant allowed us to think of the extensive and intensive universalism in history and reality (since it exists) (Balibar, 1993) in order to formulate the need for hospitality (Schérer, 2005) at the root of the “right to have rights” (Arendt) and for a more effective law (Tosel, 1988). He enables us to give a shape to the aspirations for a modernity that could not be hemmed in by the fractious jurisdictions of an inter-state system (Habermas, 1987) nor by the “new cosmopolitan community of humanity” (Walker, 2003). In a critical dialogue with other authors (Marx, Spinoza, etc.), researchers proposed theoretical openings to link justice with global governance (Marti, 2007),¹⁹¹ putting the emphasis on “ega-liberty,” cosmopacifism (multilingualism, mediation, translation) (Cassin, 2004; Balibar, 1997, 2001, 2003; Ivekovic, 2007), and opening perspectives for transforming the power of knowledge, citizenship,¹⁹² hospitality and peace. Those last approaches to cosmopolitanism enable us to identify “identity tensions” surrounding the appropriation of the holding location by certain groups, classes, the transformation of nation-states,¹⁹³ and to overcome the aporiae of the dominant political system of nation-states. Above all, it allows us to identify the places and knots of conflict – not so much in Kant’s too abstract universalism, but in a concrete pluriversal world, in movement at the borders. Placing the accent on plurality, relational movement and conflict as a positive creative element, refers us to the dialectic operating at borders and the invention of democracy (in Greece and elsewhere). It implies that we take into account the dynamic of the conflict in exchanges. The conflict inherent in the creation of a cosmo-political citizenship incorporated in the “germ” of a radical democracy (Castoriadis) may articulate various types, qualities, levels and political diversification of exchange relations in societies rather than the consensus where there is the risk of favouring homogenisation in which diasporas and scientific diasporas would be at pains to find visibility and a place.

190 See also Belissa (1998).

191 My thanks to the author for having sent me this article.

192 From this perspective the place of women is primordial. On this topic, in connection with one of the countries under research, see Hames (2006).

193 In particular, see Beitz (1979); Brown and Shue (1983); and Dowty (1987).

3.3.1 Cosmopolis, *Cosmopacifism*, *Hospitality*

We saw with Monique Chemillier-Gendreau the implications for international law of a location for a neutral and open public political holding (State) which takes into account the dialectic of Oneness and plurality and of hybridisation. We saw with Immanuel Wallerstein what the critical analysis of Western universalism implies for a historian. Taking into account the etymology and common usage of the term *cosmo-polis*¹⁹⁴ allows us continue that line of thought. The word *cosmos* is often translated by *world*, found in the French world for globalisation *mondialisation* (*monde* being the French for *world*). In everyday usage there is the danger of reducing the notion of world to that of economic globalisation in modernity, i.e. the neo-liberal market. In philosophy, *world* refers in part to *cosmos* (ordered world out of the chaos). In political philosophy, *cosmo-polis* refers to the link between *cosmos* and *polis* (city in Greek), one of the political forms of democracy invented in human history. It is the root of a cosmo-political citizenship. In political terms, we must understand the word *cosmopolis* in the Aristotelian sense and in its use by other writers on political philosophy who have clarified its links with governance, project and the democratic imaginary (Castoriadis). It expresses the political form of the *polis* (city-state in ancient Greece), a political way of life in the city includes a possible (but not necessarily practical) open relationship at its borders, a relationship to the world (*cosmos*) and to the others, seen as a sort of common area, a public space in and at the borders of the *polis* extended to the *cosmos*. The relationship, the passage, articulation from *polis* to *metropolis*,¹⁹⁵ *cosmopolis* and even more radically to *demopolis* (city of the people) bring up a number of political questions which I am unable to examine here (levels, articulations between city, the system of nation-states, world, the mode of construction from above, from below, disagreement and sharelessness (Rancière) at the root of every political relationship, the link to recent technological discoveries which support cyber networks, etc.). But these questions do not remove the ever open desire for a project that is always possible – namely, to construct a *cosmopolis*, a city of the world. In other terms, those words that are heavy with legacies, foundations, debates, desires, passions refer to experiences and actions in the

194 This term is taken from the Greek *kosmos* which designates the world: “This world, which is the same for all, no one of gods or men has made.” Heraclitus, Fragment 30 *Encyclopédie philosophique universelle*, “Les notions philosophiques,” vol. 1, Paris, PUF, 1990, p. 500.

195 Ever since Walter Benjamin was walking in Paris with a nostalgia for a bygone era, described also by Musil “The Man without Qualities,” urbanization has assumed global proportions (52% of the world’s population lives in towns that have more than a million inhabitants). In 2008 there was an exhibition in Beijing of the 12 largest cities in the world; most of them are not in Europe. One of the interests of the scientific diasporas is their connection with towns.

long history of humanity whose contradictions, difficulties and deadlocks must also be defined.

The creation of a *cosmopolis* (Hassner, 2004), a right to a city in the most general sense, i.e. a world citizenship (Kriegel, 1998; Schnapper, 1998) at the present stage of globalisation considered as *a power, an agency* is consequently caught in a pincer movement between state of nature and political state, between State and nation-state, between chaos and political creation. When there is neither a political holding nor a *polis* (political community) where every individual on the planet is able to forge multiple bonds of belonging and participation, individuals and groups are deprived of any place in the world, and in politics, there is a lack of *cosmos* (self-organised world). Chaos takes over. Kant, who met with nationalist passions in his time (Beitz, 1983), had integrated the historical stage of a finite world after the *Conquista*. He was preoccupied with setting up a universal system of States, an international law based on hospitality and peace. For Kant, the *raison d'être* of a *cosmopolis* and of *cosmopacifism* is evident when the planet is entirely conquered and the world is in a finite space. "A violation of human rights at any point on the planet is felt everywhere" (Kant, 1986: 350–353). For Kant, hospitality is the place where war is banished and where peace is worked for, since hospitality allows for relationships between individuals, countries and continents. Hospitality is a place for working on the ambiguous definition of what is foreign (god and monster, Aristotle). Thinking about peace, Kant creates a prescription for cosmopolitan law that must be restricted to the conditions of universal hospitality (*allgemeine Hospitalität*) connected with respect for the human being. For Kant, it is not a question of philanthropy but of peace, law and politics. Kant argues from the discovery of the earth, which is round and therefore finite, and thus belongs to everybody and to nobody in particular (the right to a common ownership of the surface of the earth). The end of discovering and populating virgin lands, a planet entirely conquered by the West leads him to infer that hospitality, coexisting in tolerance, is a necessity to prevent war. As René Schérer (2005) shows, he imposes another condition which leads us to the heart of politics, far beyond migration policies, towards the political requirement for a political community without appropriating resources and with the necessity for justice in the area of what has been called, since the Sixties, North-South relations. Kant the republican comes to question the right of property in order to permit hospitality and to prevent war. He prefigures debates that will develop later in the debates on international public law, the appropriation of resources, the shape of political holding, the dialectic between Universal and Pluriversal (Chemillier-Gendreau) fueled by the famous process of hybridisation, and the debates about human rights and sustainable development.

3.3.2 *Choosing to Create Cosmo-political Citizenship*

After Kant, in a completely different historical context, in her famous chapter about the decline of the nation-states and the end of human rights (Arendt, 1972),¹⁹⁶ then in her philosophical and political analysis written during the tragic 20th century, Hannah Arendt has described the emergence of a totalitarian political power without precedent, defined by its nihilist destructiveness and the *superfluity of human life*. She has shown how in the wake of specific political circumstances, the loss of State (the holding), the appropriation of the State by the nation and the radical deprivation of political belonging (statelessness) led to millions of individuals becoming superfluous, to mass murder and to world deprivation (*worldlessness, acosmia*). She showed that the right to a city was challenged by overtaking the constraints of the nation-states system to rethink an open political holding, to rely on the “right to have rights” which is at the root of belonging politically and belonging to the world, that which is guaranteed to every human being. The concept of *cosmopolis* is rooted in a holding environment for the common good, the foundation stone for Arendt’s “right to have rights.” It is not juridical but political. It implies that every human being is entitled to a political holding and a location recognised by others where he or she can exercise liberty and plurality wherever they reside on the planet. And where history (memory, generations) and their space on earth may be integrated. It has at the same time the recognition of the importance bestowed on a holding and involves a relational approach to power in terms of evolutionary movement, of the *power* of creative action rather the force of war.

Arendt’s approach leads to *cosmo-political citizenship*, even if she did not define it in her work. The choice of the term *cosmo-politic citizenship* relies on a choice which is both semantic and strategic. To anchor the creation of the world city in the cosmos, which is envisaged as an open, dynamic, evolving and pluriversal order, and in the historical experience of the *polis* that is to be created, is better than anchoring citizenship in the diaspora itself, a word which means “dispersion.” The chosen anchorage is concerned with the general rather than attaching itself to particular situations. It articulates the general and the particular. It is at the same time historical (memory), material, imaginary, and utopian. Furthermore, such an anchorage in the cosmos and the *polis*, i. e. that which is of the most general nature in social-historical Being, and of existence (world, politics) underlines the fact that cosmo-political citizenship concerns every individual on the planet, in the world (in the philosophical meaning of being contemporary with a world where every individual is living): the entirety of all human beings and therefore the entirety of migrants too (and not some category

196 For the analysis of the “right to have rights” see Caloz-Tschopp (2000).

of privileged people who would be “chosen”). In short, *cosmo-political citizenship* is a kind of political citizenship of the world, or if you prefer the entirety of all the populations moving about on the planet. It concerns all human beings and therefore migrants, diasporas and particularly scientific diasporas here. To exist as an effective project, it must be articulated as a neutral political holding (which can no longer be a sovereign nation-state), but a holding able to contain a pluriversal dynamic of political creation integrating the movement of the living conditions of human beings on the planet. However, its creation does not bring about economies in the material anchorage of the system of existing nation states and in the invention of the means to surpass it (European citizenship, multilateral agreements, the awareness of conflicts at borders, etc.). Cosmopolitical citizenship must enable us to define rights and duties that are under tension here and now and in the future (who defends the rights of an Indian, Colombian, or South African researcher? Who ensures that the laws are respected? Who verifies that the criteria of planet survival and basic needs are upheld?) It must enable us to identify the consequences of citizenship actions that are linked to living conditions in the broadest sense, to public action that will favour the survival of the planet and cater to the basic needs in several places on the planet.

The concept of cosmo-political citizenship proposed contains the legacy of complex debates which are equally present in the diaspora option (Brown). It is a matter of separating the question of citizenship from nationality and dispersion alike, and by putting the emphasis both on the necessity of a holding environment and on the future in movement at all kinds of borders. This implies, unequivocally, that we take into account at the same time bonds with the country of origin, passage, residence in other countries and above all strength in the form of *power of action connected with the individual and collective future* (Spinoza). Thus, the perspective of a cosmo-political citizenship is directly in accordance with the “right to have rights” (Arendt) (Balibar, 2005a). Thus, cosmo-political citizenship integrates at the same time the reality of concrete and multiple movements of populations and knowledge, theoretical notions of “social capital” (Robert Putnam) and sustainable *human* development, by refusing to incorporate political anthropology and politics into utilitarian exploitation and the dominating force of war. This cosmo-political perspective leads to openings that are at the same time theoretical and equally present in partnerships (not only State, the UN, the international institutions), but also in networks made up key players who are not connected with the State, with professionals and with others. It induces transformations, shifts (philosophical, theoretical, epistemological and logical alike) in the formulation of questions, problems, needs in the sense of the construction of *cosmopolitanism at borders* (cosmos, belonging to the world) linked with knowledge workers and their living conditions taken together, in particular their status and working condi-

tions. Knowledge and its transformations into cognitive capital are part of the cosmo-political citizenship (where the open creation of a neutral public holding might be located along with exchange networks and partnerships).

In other words, the notion of diasporas, scientific diasporas and the concepts of cosmopolitanism, cosmo-political citizenship and sustainable *human* development signify the transformations of the theoretical and conceptual holding, of the content of and of the relations between *migration/development/science/technology, society and politics* such as they appear, as the result of the intervention of transformations of the human condition and consequently, of migrants in diaspora. Knowledge workers may be the chief protagonists in the construction of a concrete cosmo-politanism around learning, the exploration of concrete conditions for a cosmo-political citizenship, the forging of political bonds at the level of the common world where knowledge is connected with their country's basic needs. Following on from the construction of knowledge, science and learning can be viewed as a social capital (Putnam) to be connected with a new *right to a city* incorporated in sustainable *human* development.

Consumed by the multiple necessity of transformation of the State framework into a pluriversal holding, an open political location and of power in the form of action, concepts of *cosmopolis, cosmo-political citizenship* and sustainable *human* development are much more radical in their numerous implications of ontology and political anthropology, holding, political location, law, practices, and including scientific activities, than what is called the right to live in one's place of residence (the right to leave) (Liskofsky and Vasak (eds), 1976), or to return to the country of origin or even to have access to a vote. Such a conceptual holding contains a heavy theoretical, historical, spatial, political, and cultural burden. These precise definitions are essential at a time when we see not only the limits of nation-states system but also the elimination of the holding of the State and rights, the appropriation of politics by restrictive criteria (gendered nation, ethnicity, race) rather than its necessary transformation. We live in a time where politics amounts to market competition mechanisms and to security policies evading any political regulation. To what extent do human beings and migrant human beings reduced now to objects for utilitarian use or temporary service, to temporary work assignments in the place of contracts, or to being regarded as illegal criminals, disposable persons, to what extent do these people have a guarantee of being considered in their condition as human beings defined by freedom (spontaneity) and plurality (relationship)? H  l  ne Pellerin evokes the question of political anthropology in her analysis of the new world migration order. We may object to her requirement of a pluriversal public holding (State) reinvented on radically democratic bases, the creation of the *cosmopolis* environment, a city of the world on the same scale as the planet, a cosmo-

political citizenship that would also be granted to diasporas and scientific diasporas in order to ensure a sustainable *human* development.

Conclusion, Propositions

Thirteen Propositions for an Effective “Diaspora Option”

Q: What is the human experience in conditions of globalisation?

A: Don't the elite *globetrotters* and travelers in cyberspace have more in common amongst themselves (nevertheless without forming a *Gemeinschaft* in the sense of the word as used by Ferdinand Tönnies) than with the local community which suggests their postal address (and not their e-mail address)? And to what extent (if that is the case) do the ideas generated by interpersonal exchanges, the flesh and blood of this 'local community' have a chance of competing with their virtual counterpart which freely flows, floats and drifts, and which ignores the distance and the transport costs? After all, globalisation means that speed and acceleration and the ability to travel light will carry it onto the body of the land, the volume and the mass.

Bauman, 2005

From the perspective of philosophy and political theory, listed in the conclusion is a synthesis of some of the ideas, some global and specific propositions¹⁹⁷ which have in mind a more effective link between migration, development and scientific diasporas. They are anchored in human rights and sustainable *human* development¹⁹⁸ and in the choice of a *diasporic scientific citizenship*. In this sense, knowledge workers, scientific diasporas, the States and the NGO's in Europe and Switzerland and in the countries of origin are key players in the creation and mediation efforts to banish ignorance, inequalities and violence and to promote peace in the world.

To illustrate the creative process of the *cosmopolis*, the city of the world, we may quote the example of dynamic exchange networks such as *Red Caldas*

197 The propositions have been formulated in the same coherent line of thought taken by the research work. At the conclusion there are calls for specific action. It has not been prejudiced by a systematic inventory of all the existing propositions that have been already set out in the contexts of various debates (national and international arenas, ONG, etc.). In particular we should cite Barré (2003) (synthesis, p. 65 onwards).

198 Alain Supiot, a professor of labour law, underlines a logic which is present in a new test case of the European Court of Justice (the cases of Viking and Laval). It has just limited the unions' right to act against companies which use the economic liberties guaranteed by the Treaty of Rome to lower salaries or work conditions. See Supiot (2008).

(Colombia) established by the State of Colombia (Colciencias)¹⁹⁹ 1992 with the goal of encouraging knowledge transfers to Colombia by appealing to Colombian scientists outside the country. Switzerland gave support to this network in the form of collaboration projects.²⁰⁰ This shows us an example which articulates national experiences (Colombia, Switzerland) and world experiences with the support of the State of origin calling for the support of other States and other key figures in migration, development and in the world of science in connection with the activities of the scientific diasporas (de Haas, 2006; Turner, 2004). There are numerous other examples of networks in other countries in Latin America, Asia, Africa which illustrate the exchanges and the transfer of knowledge and capital through various actions (education and research support, creation of technology parks, etc.). In these examples, one can see at work various modes of production, of the movement of exchanges and cognitive capital between different parts of the world, its producers, its products, and frameworks not only for regulation but also for inspiring scientific and citizen action. To carry on university education projects (including post-graduate) and research themes in connection with EU research projects into the subject of scientific diasporas, considering that migrant workers and migrant knowledge workers can contribute to their origin countries basic needs in connection with human rights and sustainable *human* development:

- it is a basic necessity to integrate diasporas and scientific diasporas into scientific action and citizenship, and by using incentive policies to encourage links and remote mobilisation and movement (trajectories) with the countries of origin and their innovative projects;
- it is imperative that migration, development and science (education, research, circulation) policies integrate gender issues at all levels of action by scientific diasporas;
- in the case of scientific diasporas what is at stake is the production of knowledge, practice and universal and public right to an access to basic needs, in particular access to education, research, knowledge, results, de-

199 The debates organised in the Red Caldas show that they are presented as a “strategic benefit” for the country, that cooperation from a distance is searching for innovation, that science is defined in the broad sense and approached in connection with social debates: environment and development; territories, regions, towns; science, technology and society; communication and culture. See website Red Caldas. See also Chaparro (2004).

200 Federal Department of the Interior, State Secretariat for Education and Research, service order, (contract model between the Swiss Federation and the HEIG-Vaud, no date given). See also Kapil, Sibal and Charles Kleiber *Visit of State Secretary for Education and Research, Ch. Kleiber, to India, 27.4.2007* (cooperation agreement, instruments, application of cooperation, mechanisms, financing, structures). See too the document for agreed cooperation enacted with South Africa in March 2007.

- cisions in the field of planetary scientific policy. It is a matter of public property, rules, rights, public contracts of collaboration between scientific workers, NGO's, States and companies in a context of globalisation. Therefore it is neither a matter of the simple incorporation of politics, migration rights, development, education, research in "South" and "North" States in international private competition that runs the risk of weakening any political and public framework in globalisation, nor of simple economic mobility, nor of the transformation of scientific work into the circulation of services, of the simple granting of private rights;
- at the level of references, the pleasure in producing scientific knowledge and exchanges combines at the same time with an anchorage in the different strata of historically built human rights and in sustainable human development (in the sense of 1987);
 - at the level of the political holding, the existence and the reinforcement of scientific diasporas and the exercise of a scientific right to a city require a pluriversal public statist holding environment which is at the same time local, national, regional and world-wide and linked with active opposition forces – in particular scientific diasporas organised as collective protagonists – of regulation and control, public rights and working conditions, movement of produced goods as public property;
 - a policy linking migration, development and science is put to the challenge of identifying cognitive capitalism (Moulier Boutang) specific constraints in "South" and "North" countries (there are several Souths and Norths), so as to convert the mechanical concept of "return" in migration policies into *durable links sustaining the movement of human beings and knowledge* in the reorganisation of the world market of knowledge (education, research);
 - such policy is not limited to the so-called exact sciences or ICT (Information and Communication Technology) transfer, but takes the concept of science in the broad sense by integrating the so-called hard sciences, technical sciences (engineers, specialised high schools – HES-Hautes Ecoles Spécialisées), social science and social studies in the programs and questions which the latter ask of science practices (cultural diversity, history, languages, translation, etc.). We also understand that it is important to integrate education and research into international and scientific work and exchanges (support given to the educational needs of "South" countries' by all knowledge workers taking part in scientific diasporas).²⁰¹

201 One thinks of the broadening of the notion of the mobility of the North towards the South, of all the categories of students, of researchers and of knowledge workers and even the integration of the resource that is represented by retired teachers and researchers.

Ten general propositions

Within the limits of what could be developed at this stage of the research, knowledge *networks* may really become *scientific diasporas* under several conditions:

1. starting from the “diaspora option” (Brown) to situate scientific diasporas resources, a place should be given in education, interdisciplinary research, particularly research in philosophy and political theory, international law and history²⁰² and into the concepts of human development sustainable *human* development in its relations with cosmo-political citizenship, to the examination of their legal and practical status in the EU, in Switzerland,²⁰³ in the countries of origin and immigration on the planet, their genesis and their theoretical referents in the perspective of building a new political anthropology. It would be a matter of analyzing their conditions, means and theoretical and practical implications, linked with the tradition of human rights and sustainable *human* development (1987)²⁰⁴ enriched with new questions arising from the presence of knowledge workers and cognitive capitalism observable in scientific networks and diasporas;

202 At this stage first contacts in philosophy and political theory and history for network building have started on the occasion of this work with the director of IEPRI (Instituto de Estudios Políticos y Relaciones Internacionales), Universidad Nacional, Bogota (Colombia), professor of philosophy André Tosel, CNRS, Nice, professor of international law Monique Chemillier-Gendreau, Paris 8, Barnita Bagchi, Associate Professor in Human Sciences, Institute of Development Studies Kolkata (India), professor Urs Marti, from the University of Zurich, and CNRS researchers, professor Jean Batou (economic history), University of Lausanne. The list is open.

203 A legal evaluation in international law would be useful to analyze the eventual inscription in the Constitution and in European and Swiss application rules of a legal status for the notions of diaspora, scientific diaspora and diasporic citizenship (with a special attention to the texts of law and application rules regarding education and professional and academic research).

204 Sustainable development criteria imply that we return to the spirit of the 1987 Declaration and distinguish markets interests and development needs. One point in connection with the choice of projects that worth noting is taking into account fields of activity excluded from the sustainable concept and scientific discussion of criteria fixed for climatic changes (extraction of fossil energy, exploitation of fossil energy plants, car manufacturing, plane manufacturing), destruction of the ozone layer (production of substances destroying ozone), the diversity of species (production of persistent organic polluting agents (POP [pollutants organiques persistants] according to the Convention of Stockholm), non-sustainable silviculture (without FSC label), non-sustainable fishing (without MSC label), nuclear energy (exploitation of nuclear plants or final stocks of nuclear material, nuclear reactors manufacturers), genetic engineering (creation of GMOs), other environmental risks (production of PCV or vinyl chloride) and social problems (arms production, tobacco and goods for smokers production). Source: Suisscanto quoted in *Le Temps*, 21.1.2007.

2. the consideration of sex/gender should be systematically integrated and evaluated by research into the establishment of human rights and sustainable *human* development, in apparatuses, tools, budgets, the measures taken in migration, development, science and in scientific diasporas policies;²⁰⁵
3. in order to go beyond a restrictive Eurocentrism the referents of the varied and rich canon of human rights and sustainable *human* development should be taken into account, built, and expanded with research into scientific diasporas in the context of international academic freedom involving all interested parties. Research in science, technology, history, philosophy, political science, international law, economics, education and science should undergo a reorientation of research in general to include ecology and urgent economic questions and basic needs. How future generations will consider human rights and how to broaden them, implies involvement in the requirements for the survival of the planet, reinforcement of public property, public law and autonomy in relation to private commercial law. Scientific innovation does not necessarily spring from the marketplace, as is shown by an analysis of scientific discoveries and the twenty-three Nobel Prizes for Science awarded in Switzerland between 1901 and 2003.²⁰⁶ The objective is to clarify the criteria of public needs for policies to be put in place which link migration, development and science (financing, evaluation);
4. the links between States, international intergovernmental organisms, diasporas²⁰⁷ and knowledge workers should become horizontal and regional links of *scientific partnership*²⁰⁸ in the philosophical and political

205 In a perspective of equality integrating transnationality and gender in the field of scientific diasporas, would it be possible for instance to apply the attestation procedure of salary equality between women and men called Equal-salary to the sites where diasporas researchers are used (at different levels of career) by introducing the national-foreigners and intercontinental foreigners variable, in connection with the Observatoire universitaire de l'emploi (OUE) in Geneva headed by professor of political economy Yves Fluckiger. In his work he attempts to attach the salary to the office and not to the person.

206 Federal Department of the Interior (DFI), Higher education and research. Comparative table Switzerland-India, state November 2006.

207 At this level one of the measures could be to encourage diaspora's remittances toward scientific projects of public development in countries of origin.

208 In scientific innovation, the thesis advancing the idea that the concentration of science and the system of research accompanies globalization, a vertical hierarching of the political system may perhaps be discussed in countries which have a federal structure (German, Holland, Switzerland). In these countries globalization has been articulated by regionalization (Länder, cantons, provinces), into a reconfiguration of the power of the State. And the territorial division of power has a large role to play in regional innovations. See Braun (2000). One can add to this estimate that for research and actions concerning scientific diasporas, the problem of integration of the regions and also of the "domestic" key players is important and that this point must be integrated in the European Research Area (ERA).

sense of the term. This implies a pluriversal holding, the principles of liberty, plurality, reciprocity and equality, of opposing forces and not the unequal relations of allegiance and the power of a confiscated sovereignty. In this holding, the diaspora option translated into education and research policies with migration and development takes on its full meaning in close connection with academic freedom. The heart of the matter is not to cater to individual interests, or to particular groups, nor to the private, financial interests of trade. What is at stake is the making of a *pluriversal right to a city of sciences* (Lévy-Leblond) for the international scientific community linked with planet survival, international scientific community basic needs²⁰⁹ and peace in the countries of origin of knowledge workers in scientific diasporas and in Switzerland and in Europe as well;

5. examining appropriateness of setting up in Switzerland with the help of the Confederation a *diasporic scientific council*,²¹⁰ along with an *evaluation and research observatory* linked with “South” countries grouping together scientific diasporas, rooted in the right to a city, composed of States, NGOs working for migration, development and science, countries of origin, local and migrant knowledge workers’ networks, entrepreneurs, etc. and with EU, ILO and UN. At this stage, continuing with the research would imply that we draw up a systematic and complete inventory of students, researchers and “South” scientific networks connected with Switzerland (and vice versa);
6. wanting the per cent for development (0.8%)²¹¹ to be applied in Swiss international cooperation budget and its targeted display toward reinforcement of public link between migration, development and scientific diasporas; encouraging migrants’ private funds transfer toward public interest projects in the countries of origin, being sure that they don’t substitute development public funds; encouraging labour public conventions respecting fundamental rights in the networked countries. We can understand that development and cooperation policy cannot depend on the closed duality market/politics under the influence of transnational companies’ networks, but that it must be global, is subjected to human rights and sus-

209 See also “Scientific Diasporas,” *Science*, vol. 312, 16.6.2006.

210 I don’t begin to discuss here the matter of the creation of a Diasporic Council grouping together migrants in several diasporas, a movement which is increasing in extent after other historical experiences. I limit myself to the organization of scientific diasporas.

211 The 0.8% for development has been decided within the framework of UN in 1970. Some comparative numbers: Denmark, 0.6%, Netherlands, 0.82%, Sweden, 0.81%, Norway, 0.8%, Luxembourg, 0.7%. A current Swiss Churches’ campaign is calling for the 0.7% to be reached in 2008.

tainable human development and cannot place certain categories of migrants' right to a city in conflict with others' without causing prejudicial fractures and inequalities;

7. developing a product and patent policy explicitly related to planet survival, basic needs, justice, common good, public interest, sustainable *human* development (retrospective analysis and integrated evaluation of the actions) (Tansay et al., 2004). We understand that links State/industry in Switzerland and between Switzerland and the involved countries are formed on the basis of collaboration in connection with survival urgency and all the population's needs, human rights, sustainable *human* development and not industrial and financial markets' particular interests or private multinationals competition or even individual interests. The list of the countries chosen by Switzerland²¹² for a scientific collaboration must be opened to the three countries part in the research (it is not yet the case for Colombia) and also to other countries where we see a pluridisciplinary scientific diaspora activity at the level of HES (Hautes Ecoles spécialisées in technical, social, artistic education) and academic activity connected with Switzerland and Europe;
8. increasing the number of South knowledge workers (level master, doctorate, post-doctorate, and research teams), with a particular attention to the gender perspective and the integration of migrants present in the country (we should make visible the education social capital the costs of which have been the origin countries' responsibility). A consistent scholarship and visas policy,²¹³ compensating origin countries for the education cost before leaving,²¹⁴ an exchange policy (Erasmus and other programs) favouring exchanges with knowledge workers from "North" to "South" (particularly support to teaching and research tasks) so that scientific diasporas are set up on a collaboration basis rooted in laboratories, faculties, units,

212 Russia, China, India, Japan, South Africa, South Korea, Brazil and Chile are the countries Switzerland first accepted to reinforce bilateral partnerships in the context of the federal policy encouraging education, research and innovation for the years 2008 to 2011.

213 Several persons and organisms, in particular Professor Neyrinck at EPFL, propose to grant "South" young researchers permanent resident permits as soon as they complete their doctorates. Such a proposition illustrates the similar migration needs of Switzerland and Europe for highly skilled professionals caught up in the international competition of the knowledge market. We should include criteria regarding origin countries' needs and partnership relations between Switzerland and those countries.

214 This public social capital might be directly reinvested to reinforce public universities in the links with scientific diasporas (support for teaching and research for young researchers who are starting their careers, laboratory equipment, organization of symposiums with members of scientific diasporas from various parts of the world).

- here and there networked universities, for the revaluation of jobs and relations between researchers from all involved countries;
9. demanding quick ratification of the Convention on Migrants' rights by immigration States and not only emigration States. We must emphasise that just like all immigration countries to date Switzerland did not ratify this Convention;
 10. taking part in the efforts for the creation of a World Court of human rights (a proposition publicly stated in Geneva during another GIAN research)²¹⁵ by the international law jurist Monique Chemillier-Gendreau (Paris) and carrying out a critical analysis about such Court's relations and implications with scientific practices and the theme of scientific diasporas.

Three local operational propositions

11. analysing at the level of Lausanne academic campus (Switzerland, where the project is based) the opportunity of networking the Federal Polytechnic Institute in Lausanne (EPFL) UNESCO Chair (education, research) with the Club of Rome²¹⁶ grouping together scientists from all the world. At this stage, when Al Gore is awarded an EPFL honorary doctorate, the City of Lausanne might establish a close collaboration with the EPFL and the Club of Rome set up in Winterthur (Switzerland) to develop its international opening. We have to underline that at this stage of development of its activities, the Club of Rome wants to direct its work towards connections between sustainable development and science;
12. in the field of research into scientific diasporas, by instituting a structural scientific collaboration between the EPFL and the UNIL Institut d'Etudes Politiques Internationales de Lausanne (IEPI-UNIL) and between the EPFL and the Institut d'histoire économique et sociale de Lausanne (UNIL-IHES) that received the archives of the University of Geneva's Emeritus Professor Paul Bairoch²¹⁷ (1930–1999, one of the great economic historians of post-war years with an honorary doctor of the Swiss Federal Institute of

215 See on the GIAN website information about the research *Mondialisation, migration, droits de l'homme*.

216 Reference book, *Limits to Growth*, 1972; the Club of Rome wants to move towards sustainable development to give globalization a "human face," *Le Temps*, 18.1.2007.

217 Among about twenty books and more than 120 articles, he has written *Le Tiers Monde dans l'impasse*, Gallimard, Paris, 1992. For a more complete reference, see *Victoires et déboires: historique économique et sociale du monde du XVI^e siècle à nos jours*, Gallimard, Paris, 1997; *Mythes et paradoxes de l'histoire économique*, La Découverte, Paris, 1999.

Technology (1983), research director at the EHESS (Paris), Collège de France foreign scientists Chair, 1983) to integrate both historical and social approach to sciences and techniques enabling to situate historically the emergence of the scientific diasporas issue in Switzerland as a research matter;

13. proposing in a possible second step of the EPFL research project the installation of scientific collaborations:
 - 1) In Switzerland with NGOs such as Geneva International Peace Research Institute (GIPRI)²¹⁸ reinforcement of the links with State organisms like Swiss Forum for Migration of the University of Neuchâtel.²¹⁹ A link should materialise with the Swiss research project *Mobilités vers l'Excellence (MOVE)* (Zürich, Berne, Lausanne, Neuchâtel) under the co-management of professors G. d'Amato and O. Söderström and finally the theme of scientific diasporas should be developed as a research field at the EPFL and within the framework of European research outline programs for development;
 - 2) In India setting up a scientific collaboration with Indian researchers and research centers and researchers with whom collaborations took place in an anterior GIAN program (Globalisation, migration, human rights) and the ongoing research into scientific diasporas: Institute of Development Studies Kolkata, Calcutta University, Profs. Amiya and Barnita Bagchi, Economy and Human Sciences; Dr. Ranabir Samaddar, Dir., Political Science, Mahanirban Calcutta Research Group, Kolkata/Calcutta;
 - 3) In Colombia, with the Universidad Nacional, and in particular the Instituto de Estudios Políticos de Relaciones Internacionales (IEPRI), dir. Prof. Gabriel Misas Arango (Economics).

218 It is an example among others regarding education, research, science, scientific diasporas connected with post-conflict situations requiring a systematic inventory of the initiatives in Switzerland concerning scientific diasporas. GIPRI (dir. Gabriel Galice), International Peace Research Institute and RISIPRI (<<http://www.gipri.ch/risipri>>) are developing synergies between Iraqi researchers, researchers in diaspora and the Universities of Geneva, Grenoble and Brussels. From support to the restoration of higher education in Iraq, the GIPRI finds three lessons to be learned: 1) in uncertain situations, it is essential to tip the scales in favour of peace through scientific support connecting researchers in the country, diaspora and Swiss researchers; 2) relying on diasporas researchers who received their education and doctorates in Switzerland and in Europe is fundamental (and in this sense, scholarship in foreign countries and visas are very important); 3) support to academic women in the country and in diaspora is a key-stone of the collaboration.

219 Regarding database, bibliographic references (books, reviews, websites, etc), a reinforcement of the Forum Documentation Centre in order to integrate the scientific diasporas issue would be very useful. For the moment this centre has only one post at 70% (Mr Giovanni Casagrande) for the migration issue as a whole.

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Chapter 3

Diasporas and Development: Reflections on Definitions, Measurement and Contributions

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1. Introduction²

The importance of diaspora or transnational communities as a development resource has been recognized in the recent discourse on migration and development (Devan and Tewari, 2001; GCIM, 2005; Kuznetsov, 2006; UNESCO, 2006; United Nations, 2006a; GFMD, 2007). The background report for the United Nations High Level Dialogue on International Migration and Development (United Nations, 2006a) pointed out that citizens working abroad can be development assets for countries of origin. The potential contribution of transnational communities also formed the foundation for the research project on “A Swiss Network of Scientific Diasporas to enforce the role of highly skilled migrants as partners in development,” the results of which are reported in the present volume. Diasporas have been hailed as harbingers of new knowledge, innovators and reputation ambassadors, among others (Devan and Tewari, 2001). The purpose of this paper is to raise some conceptual issues on diaspora definitions, measurement and contributions to home countries. It is based mainly on a review of recent literature focusing on the linkages of diasporas with development. It does not address the philosophical issues raised in the paper of Marie-Claire Caloz-Tschopp in this volume. In the first section, I shall review definitions of the diaspora and transnational communities. The second part deals with some estimates of the diaspora and information on their profiles. In the next section, I shall highlight the nature of contributions of the diaspora to home countries and the conclusions focus on areas for further research.

2. Conceptual Issues in Defining Transnational Communities and the Diasporas

The terms ‘transnational communities’ and ‘diasporas’ are now increasingly being used interchangeably. Obviously the more long-standing term is ‘diaspora’ which has historically been associated with the notion of dispersion of an ethnic population outside its traditional homeland. It is linked with the notion of forced displacement, victimization, or alienation. Cohen (1997) characterized diasporas in terms of several attributes: dispersal from an original homeland,

2 The author is grateful to Ms. Rola Abimourched for helpful comments on the paper and Ms. Katerina Liakopoulou for editorial assistance.

often traumatically; alternatively, the expansion from a homeland in search of work, in pursuit of trade or to further colonial ambitions; a collective memory and myth about a homeland; and an idealization of the supposed ancestral home. He categorized diasporas using a five-fold classification with specific examples: *victim* diasporas (Jews, Armenians, slave diasporas), *labour* diasporas (Indian indentured labour, Italians, Filipinos), *imperial/colonial* diasporas (Ancient Greeks, British, Portuguese), *trade* diasporas (Lebanese, Chinese) and *cultural* diasporas (Caribbean). The categories are not mutually exclusive however, with overlapping features between some types. Long-established or mature diasporas may date back centuries while newer diasporas can be the result of labour migrations or refugee flows in recent decades. The former can be described as mature diasporas with a long history of migration and settlement and integration such as Armenian, Chinese, Indian, Jewish and Irish diasporas, among others.

“Transnationalism refers to processes and activities that transcend international borders. In the last two decades or so, transnationalism has become a popular term which ‘represents an attempt to formulate a conceptual framework for understanding the ties – social, economic, cultural and political – between migrants’ host and origin countries’” (King and Christou, 2008). “‘Diaspora’ is a much older concept than transnationalism and is differentiated from contemporary international migration and transnational communities given its ‘historical continuity across at least two generations, a sense of the possible permanence of exile and the broad spread and stability of the distribution of populations within the diaspora.’” In other words, “time has to pass” before a migration becomes a diaspora (King and Christou, 2008). The TRANS-NET project has defined transnationalism “as a *perspective* on cross border migrations and on the ties migrants and others forge in the processes connected” in its review paper (Pitkanen et al., 2008: 2). It highlights that transnational linkages and migration across boundaries entails manifold political, economic, social, cultural and educational implications.

The term diaspora has itself become subject to different interpretations in recent times. This is partly due to its association first with anthropological and social studies and then with migration and broader development studies. With increasing globalization and transnationalisation forces, it has acquired a broader meaning – to refer to persons outside their country of origin and covering diverse groups such as political refugees, migrant workers, ethnic and racial minorities and overseas communities.

Sheffer’s definition of the diaspora is closer to the broader definitions currently being used: “Modern Diasporas are ethnic minority groups of migrant origins residing and acting in host countries but maintaining strong sentimental and material links with their countries of origin – their homelands” (Sheffer,

1986: 3). Some writers have adopted this definition in their discussions (e.g., Koser, 2003; Newland and Patrick, 2004).

While Sheffer (1986) discussed the issue before the emergence of the more recent development discourse where diasporas are seen as potential agents of home country development, he stressed trans-state networks (in current parlance, ‘transnational networks’) and the ‘triadic relations’ between host, origin states and the diasporas themselves.

Orozco (2006a: 3) however, maintains that diasporas are not formed as a “consequence of dispersion, common national ancestry, or simply any kind of connection.” He adds: “There is a process by which groups are motivated or influenced to become diaspora”. The elements of this process are: consciousness about the need or desire for a link with the homeland at the community level; the homeland’s perceptions of emigrants; the outreach policies of governments in the homeland; and the existence of relationships between source and destination countries. This however, seems to mix up definitional issues with the expected role of the diasporas as a development resource.

It is important to recognize that diasporas or transnational communities are by no means homogeneous or closely knit groups. They criss-cross with a diverse range of economic, social and ethnic characteristics.

Currently much more than in the past, diasporas include complex mixes of people who have arrived at different times, through different channels, through different means and with very different legal statuses. When divisions in the country of origin are also taken into account, such diasporas can thus be highly fissiparous, which can give rise to problems of coherence when mobilising for development and other purposes. (Van Hear, Pieke et al., 2004: 3)

Faist (2007) finds that both terms, diaspora and transnational community, to be too restrictive, which imagines a rather homogeneous cross-border social formation. According to him:

Transnational social formations and a systematic transnational approach is an alternative. Transnational formations – also: fields, spaces – consist of combinations of ties and their contents, positions in networks and organisations and networks of organisations that cut across the borders of at least two national states. In other words, the term refers to sustained and continuous pluri-local transactions crossing state borders. (Faist, 2007)

One can also look at some operational definitions adopted by countries/regions or regional entities in regard to diaspora. The following definition of the Caribbean diaspora is broad-based and does not assume any responsibilities or obligations on the part of the diaspora. The “people” boundaries of CARICOM are not confined to the physical boundaries of our regional homelands. “The living boundaries of CARICOM are to be found wherever CARICOM nationals or their progeny reside and work” (Patterson, 2007).

This wider sentiment is captured in the definition of persons of Indian Origin (PIO).

The Indian Diaspora spans the globe and stretches across all the oceans and continents... They live in different countries, speak different languages and are engaged in different vocations. What gives them their common identity are their Indian origin, their consciousness of their cultural heritage and their deep attachment to India. (Government of India, 2001)

However, the following definition adopted by the African Union (AU) Executive Council implies a conditional one based on the willingness of the diaspora to contribute to African development: “The African Diaspora consists of peoples of African origin living outside the continent, irrespective of their citizenship and nationality and who are willing to contribute to the development of the continent and the building of the African Union.” The diaspora are also described as Africa’s sixth region. This is closer to the Orozco’s definition of willingness to contribute to home countries.

The European Commission (2005: 23) uses a broad definition in its Communication on Migration and Development.

The diaspora from a given country therefore includes not only the nationals from that country living abroad, but also migrants who, living abroad, have acquired the citizenship of their country of residence (often losing their original citizenship in the process) and migrants’ children born abroad, whatever their citizenship, as long as they retain some form of commitment to and/or interest in their country of origin or that of their parents. In some extreme cases, such as the Chinese diaspora, people may still feel part of a country’s diaspora even though their family has been living in another country for several generations.

This also highlights the links between generations and the sense of identity.

What appears more suitable for the present discussion is the definition by Van Hear et al.

Diaspora are defined as populations of migrant origin who are scattered among two or more destinations, between which there develop multifarious links involving flows and exchanges of people and resources: between the homeland and destination countries and among destination countries. (Van Hear, Frank Pieke et al., 2004: 1)

While the subtle distinctions between recent or new diasporas and transnational communities can be appreciated, I shall use them interchangeably in the rest of this paper – a practice in line with the recent literature.

In the next section, I shall look at the numbers and profile of select diasporas.

3. Estimating the Diaspora: Numbers and Profiles

It is important to estimate the magnitude and profile of diaspora communities for assessing their roles and potential contributions to both countries of origin and destination. The profiles can be described in terms of gender, age, skills, among others. Yet there are serious data problems in relation to the estimation of numbers and profiles due to several factors (Ionescu, 2006).

First and foremost is the fact that there is no standard and consistent definition of a diaspora population as shown above. Second, it is difficult for countries of origin to keep track of migrant communities abroad over periods of time. The transition to citizenship in host countries and the emergence of the second and third generations make tracking the diaspora quite a tricky exercise. Third, while some countries or agencies have started electronic databases of the diaspora, registration is often voluntary and there is substantial underestimation. One can only provide a range of estimates from low to high.

3.1 The Foreign Born Population

The diaspora numbers at a given point in time relate to a stock concept. In measuring diaspora populations, one handy – though by no means comprehensive indicator – is the total number of migrants in the world. The United Nations Population Division (United Nations, 2006b) estimated total global migrants at 195 million in 2005, and at 214 million in 2010, defined as those residing outside their place of birth (the foreign born population). But this foreign born population or people outside their country of birth include both temporary workers and those settled abroad or long-term residents in foreign countries. Some may already be naturalized citizens of the countries of destination. Some countries use the criterion of nationality in discussion of migrant populations; a foreign born immigrant may disappear from the immigrant numbers when he/she acquires citizenship in the country. Moreover the foreign born estimate does not include the second or third generations of the diaspora (born in the host country) since only the foreign born population is counted.

Table 1: Global migrants

Region	2000		2005		2010	
	Number (Millions)	Per cent	Number (Millions)	Per cent	Number (Millions)	Per cent
Africa	17.1	9.6	17.7	9.1	19.3	9.0
Asia	51.9	29.1	55.1	28.2	61.3	28.7
Europe	57.6	32.3	64.4	33.0	69.8	32.6
Latin America and the Caribbean	6.5	3.6	6.9	3.5	7.5	3.5
Northern America	40.4	22.6	45.6	23.4	50.0	23.4
Oceania	5.0	2.8	5.5	2.8	6.0	2.8
Total	178.5	100.0	195.2	100.0	213.9	100.0

Source: United Nations (2006b).

The following table attempts to capture the size of the diaspora in selected countries based on different sources.

Table 2: Estimates of diaspora populations

Country	Estimated number for recent year (million)	Percentage of national population
USA	7.0	2.5
Australia	0.9	4.3
New Zealand	0.5–0.85	21.9
India	20.0	1.9
Armenia	9.0	
Pakistan	4.0	2.8
Philippines	7.5	9.0
China	30 to 40	2.9
Japan	0.87	0.7
Italy	29.0	49.4
Canada	2.7	9
Mexico	19.0	19
Republic of Korea	6.4	13.2
Vietnam	2.6	3.2

Sources: (Government of India, 2001; Bryant and Law, 2004; World Bank, 2007; Hugo, 2008; Newland and Patrick, 2004; other sources cited in text).

3.2 Selected Diaspora Estimates for Regions and Countries

The African Diaspora

Africa had long been affected by forces associated with slavery, colonialism and globalization creating a situation in which African persons were dispersed in different regions of the world. It is therefore, important to distinguish between the old (traditional) and the new diaspora, who are more in the nature of transnational communities as mentioned above.

The African Diasporas can be classified broadly into two categories:

- (a) Africans in America, the UK, Brazil/Latin America/Caribbean as a result of involuntary migration and
- (b) the new African immigrants, mainly in North America and Europe and to a smaller extent in Australia and Japan, among others, as a result of voluntary migration for education or employment or family unification. According to the World Bank (World Bank, 2007), the official estimate of documented ‘voluntary’ African immigrants in North America and Europe is about 3 million – one million in the United States, 282,600 in Canada and 1.7 million in Europe. (The figure for Europe does not include immigrants from North Africa).

The African Union figures (Table 3) shows the difference according to these distinctions. Of course, these are probably more in the nature of “guess-timates.”

Table 3: The African diaspora

Region	Population size	Generations
America (USA, Canada)	39,161,513	Descendants and immigrants
Latin America	112,645,204	Descendants
Caribbean	13,560,263	Descendants
Europe	3,512,183	Immigrants

Source: <http://www.info.gov.za/issues/african_diaspora/What_is_the_Diaspora.pdf>.

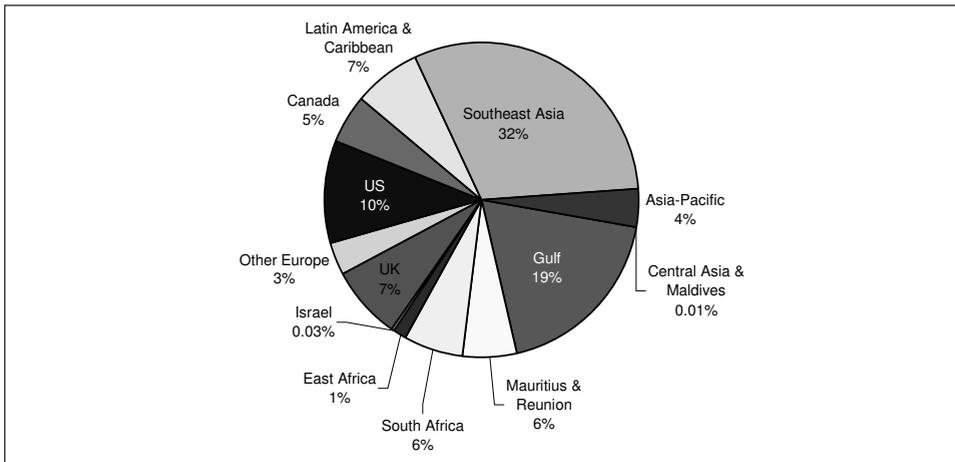
The Indian Diaspora

The High Level Committee on the Indian diaspora estimated the total Indian diaspora globally at about 20 million which included persons of Indian origin (PIOs) and overseas Indians (Government of India, 2001). Non-Resident Indian [NRI] means a ‘person resident outside India’ who is a citizen of India or

is a 'person of Indian origin.'³ 'Person of Indian Origin' (PIO) includes *foreign citizens of Indian origin or descent*, including second and subsequent generations. It is thus closer to the concept of overseas Chinese.

Figure 1 shows the distribution of the Indian diaspora by region.

Figure 1: Percentage distribution of NRIs and PIOs by region



Source: Government of India (2001). Report of the High Level Committee on the Indian Diaspora.

The bulk of the Indian diaspora populations are found in Asia (36%) and the Gulf countries (19%). Including Mauritius, Africa hosts 13 percent, while 15 percent reside in North America. In Europe, the United Kingdom is the single most important host country reflecting colonial linkages with India.

The Chinese Diaspora

Overseas Chinese estimated at about 30–40 million globally and living in about 30 countries comprise one of the largest diasporas in the world (GCIM, 2005). China tended to view overseas Chinese initially with suspicion. This attitude changed largely following the economic reforms initiated by Deng Xiaoping in 1978. Since then, China has introduced many concessions and incentives to the overseas Chinese and given them special status to visit and invest in China. They have been the major source of large FDI flows into China. The OECD estimates that in 2004, investments made by overseas Chinese in the People's Republic of China comprised some 45 percent of the country's total FDI (GCIM, 2005).

3 All definitions from the Ministry of Overseas Indian Affairs website: <<http://moia.gov.in/showfaqmain.asp?page=5&catid=7>>.

At the same time, China is promoting a two-track approach by focusing also on the intellectual and scientific diaspora by targeting “Overseas Chinese Professionals (OCPs)” who are more recent emigrants as students and researchers to the West. The numbers are of course, much smaller than for Overseas Chinese. According to Biao Xian (2005), between 1985 and 2003, an accumulated number of more than 700,000 students went overseas for study and about 180,000 of them returned to China on a long-term basis, thereby creating a pool of OCPs of 520,000 (including students who may return later). Combining the new OCPs with those who left before 1949 (estimated to be 600,000), Biao estimates that the total OCPs at the current time (by end of 2003) to be 1.1 million, including 140,000 who left after 2000 (Biao, 2005).

The US diaspora and the Foreign Born Population in the United States

There are no accurate estimates of the American diaspora overseas. According to a State Department estimate for 2005, about 6.6 million Americans (excluding military) lived in 160-plus countries.⁴ The US Census Bureau has generally included only “federally affiliated” groups – members of the military and federal employees and their dependents – but has excluded private citizens residing abroad from recent censuses. The 2010 Census will also exclude this category due to cost reasons.

At the same time, there is extensive data on the foreign born population of the United States from the Censuses. The 2000 Census provides the following information.

Table 4: Profile of selected demographic and social characteristics for the US foreign-born population: 2000

<i>U.S. CITIZENSHIP STATUS</i>		
Total foreign-born population	31,107,890	100.0
Naturalized U.S. citizen	12,542,625	40.3
Entered 1990 to 2000	1,759,385	5.7
Entered 1980 to 1989	3,777,455	12.1
Entered before 1980	7,005,785	22.5
Not a citizen	18,565,265	59.7
Entered 1990 to 2000	11,418,890	36.7
Entered 1980 to 1989	4,687,305	15.1
Entered before 1980	2,459,065	7.9

Source: based on information at: <<http://www.census.gov/population/www/socdemo/foreign/STP-159-2000tl.html>>.

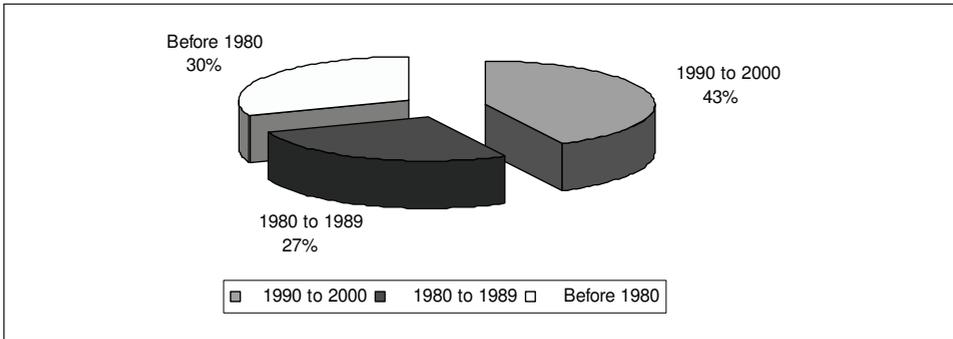
In March 2000, an estimated 10.4 percent of the U.S. population was foreign born, up from 7.9 percent in 1990. The rapid increase in the foreign-born popu-

4 <http://www.aaro.org/index.php?option=com_content&task=view&id=34&Itemid=46>.

lation from 9.6 million in 1970 to 31 million in 2000 reflects the high level of international migration during recent decades. The transition to citizenship shows that those who arrived earlier have higher rates of citizenship – overall 40% have acquired US citizenship.

Figure 2 shows that the bulk of the foreign born (43%) have arrived in the decade, 1990–2000. About 70% have arrived since 1980.

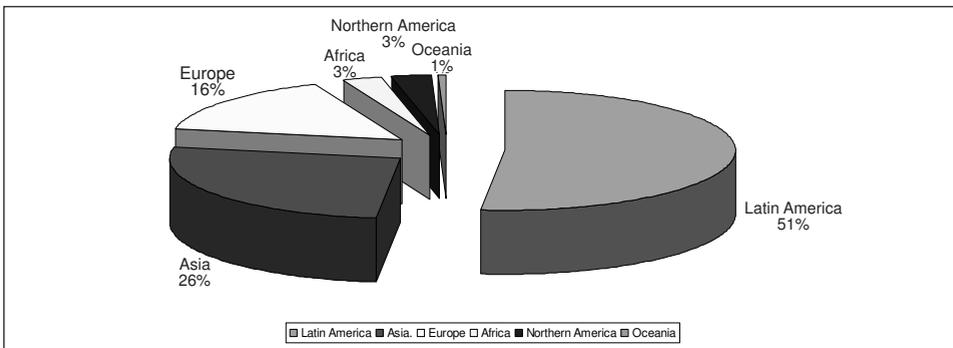
Figure 2: US foreign born population by date of entry, 2000



Source: based on data in Table 4.

In terms of source regions of the foreign born population, Latin America comes first with slightly over half of the total. Asia accounts for 26 percent while the traditional source – Europe – now accounts for only 16 percent. The share of Africa is relatively small at three percent (Figure 3).

Figure 3: United States foreign born population by region of birth – 2000



Source: based on information at: <<http://www.census.gov/population/www/socdemo/foreign/STP-159-2000t.html>>; Census 2000 Brief – The Foreign-Born Population: 2000 (C2KBR-34.pdf), US Census Bureau, December 2003.

New Zealand Diaspora Populations

Gamlen (2007) correctly observes that the number of New Zealanders abroad has never been accurately counted and remains unknown (Gamlen, 2007). Estimates range from 460,000 to 850,000 while the media quote about one million. Gamlen noted that the differences in estimates related to whether individuals were or whole family units were counted, a significant number of whom are not New Zealand born and/or are not New Zealand citizens (KEA, 2006). The phenomenon of dual citizenship among a significant number of New Zealand citizens living overseas also complicates estimations. He concludes that New Zealand's diaspora may range between about a tenth or a fifth of the total New Zealand population and perhaps up to quarter of its tertiary qualified workforce (Gamlen, 2007). A study commissioned by KEA – New Zealand's Global Talent Network – *Every One Counts* – also reveals the complex interests and diverse loyalties that affect expats' connections with New Zealand. The expats in the sample seem socially engaged with New Zealand through family and friends, yet relatively detached economically and politically (Box 1).

Box 1: New Zealand's diverse expatriate community

- One fifth of expats surveyed have been overseas for 10 years or more.
- A high proportion of respondents have formed deep attachments overseas.
- One-third of expat New Zealand citizens surveyed also have citizenship of a second country.
- Over half of their spouses or partners are not New Zealand citizens.
- Over two-thirds of their children either do not have New Zealand citizenship or have another citizenship as well.
- Among those who consider themselves New Zealand expatriates are about 6% of respondents who first migrated to New Zealand and then moved to another country.

Source: <http://www.keanewzealand.com/news/eoc-summary.html>.

Another important aspect of the profile of the diaspora is their educational levels and skills. This is discussed next.

3.3 Profiles of the Diaspora

Skill Profile of the Diaspora

Recent discussions have focused mostly on the intellectual or skilled or scientific diaspora. Yet, diaspora populations represent a wide spectrum of skills ranging from low, medium to highly skilled. Similarly development contributions are also not a monopoly of the skilled diaspora (see section 4). Of the global migrant worker population, about 30 percent may be highly skilled according to recent estimates.⁵

Data from the United States show that 37 percent of the foreign born population had less than a high school diploma. Those with a tertiary degree and above were almost one-fourth, while high school graduates or higher was 56 percent of the total (Figure 4).

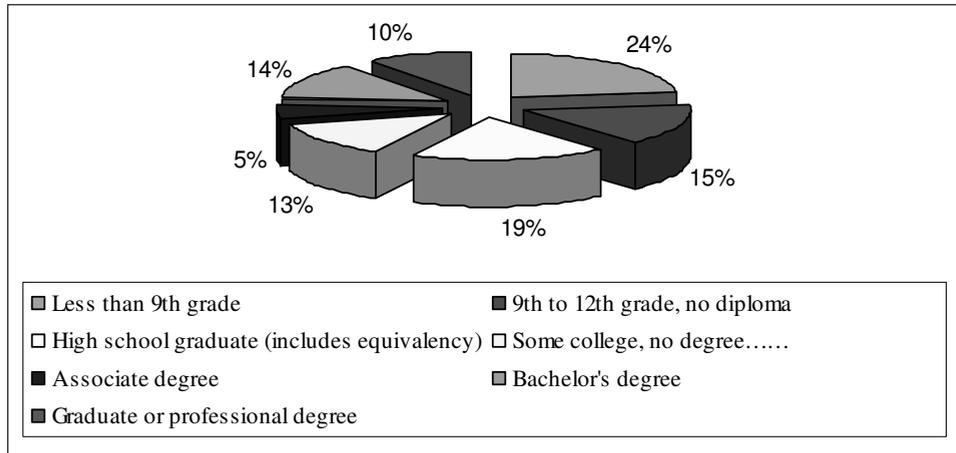
In OECD countries, the educational status of the foreign born population and the second generation also varies considerably among countries as shown in Appendix Table A1. The share of low-educated among the foreign born is relatively high in Denmark, France, Germany and Switzerland among both men and women. Australia and Canada both show high share of persons with high education, which probably reflects their selective talent admission policies. The United Kingdom also has a high share of the foreign born population with high levels of education. The comparison with the second generation in these countries shows some interesting features. Except in Australia, the share of the low-educated persons shows a remarkable decline from the first to the second generation in most countries. The gains are mostly in the middle levels of education.

Table A2 (Appendix) shows the distribution of low-educated persons in the total and the foreign born labour force. The foreign born share of the total low educated labour force (in the total working age population) is high in Austria, Germany, Luxembourg, Switzerland and the USA. Among the foreign born labour force, the low educated share is particularly high in France, Greece, Germany, Portugal, Italy, Spain, Switzerland and the USA. Overall for the 25 countries of the European Union (excluding the new accession states, Bulgaria and Romania), the low educated foreign born formed 14 percent of the total low educated labour force and 35 percent of the foreign born labour force.

The data may not reflect the fact that a considerable number may be working below their qualifications which affects their potential contributions. The OECD (2007) found that in all of the OECD countries considered, almost 50 percent on average (or at least 25 percent) of skilled immigrants were “inactive, unemployed or confined to jobs for which they are over-qualified”.

5 Based on information provided by Lindsay Lowell, Georgetown University.

Figure 4: Educational attainment of US Foreign born population 25 years and over – 2000



Source: based on information at: <<http://www.census.gov/population/www/socdemo/foreign/STP-159-2000tl.html>>; Census 2000 Brief – The Foreign-Born Population: 2000 (C2KBR-34.pdf), US Census Bureau, December 2003.

It found that immigrants were more likely than the native-born to hold jobs for which they were over-qualified. Foreign-born women were at an even greater disadvantage. According to Table 5, the differences between native and foreign workers were particularly pronounced in the case of Spain and Sweden (more than double) and Australia (over 30 percent).

Table 5: Over-qualification rate of native and foreign-born populations in selected OECD countries (%)

Country	Native-born	Foreign-born
Australia	12.9	18.9
Canada	21.3	25.2
France	10.8	13.7
Spain	7.3	19.8
Sweden	7.6	18.7
United Kingdom	14.0	18.4
United States	14.0	17.3

Source: Table II.2, p. 137, OECD 2007.

There is good data available from Switzerland about the skill composition of migrants from the GIAN project on scientific diasporas (Table 6). Since 1990,

migrants to Switzerland have been more and more highly skilled, whatever the origins of population (apart from Latin America in aggregate terms). In 2000, highly skilled migrants represented 36.4 percent of the migrant labour force compared to 22.2 percent ten years previously. This proportion reaches 38.9 percent, 30.1 percent, 38.3 percent and 35.4 percent among migrants from North Africa, Sub-Saharan Africa, Latin America and Asia respectively. Again, migrants from South Africa, China and India are mainly high-skilled (73.1%, 61.7% and 79.5% respectively) (Pecoraro and Fibbi, 2007).

It is not clear how many of the migrant labour force enjoy permanent or long term residence status to form a settled diaspora.

Table 6: Distribution of the migrant labour force by skill level: Switzerland

Geographical origin	2000		
	Highly skilled %	Low-skilled %	Total
Europe	35.3	64.7	649,414
EU-1 5/EFTA-3	41.6	58.4	413,665
<i>Other European Countries</i>	20.2	79.8	235,749
Africa	33.7	66.3	24,013
<i>North Africa</i>	38.9	61.1	9,323
<i>Sub-Saharan Africa</i>	30.1	69.9	14,690
<i>South Africa</i>	73.1	26.9	629
North America	90.5	9.5	9,607
Latin America	38.3	61.7	17,386
<i>Colombia</i>	45.8	54.2	1,508
Asia	35.4	64.6	43,304
<i>China</i>	61.7	38.3	2,527
<i>India</i>	79.5	20.5	2,923
Oceania/Other Countries	78.3	21.7	1,797
Total	36.4	63.6	745,521

Note: The migrant population represents all foreign-born persons irrespective of the date of their entry into Switzerland (Pecoraro and Fibbi, 2007).

Temporary Migrants vs. Settled Migrants or Long Term Residents

Part of the foreign born population does not belong to the diaspora if we define them as settled immigrant populations. The increasing proliferation of temporary labour migration schemes in recent years has increased the importance of those migrating on temporary basis. The contractual migration to the Gulf since the mid-1970s has been by nature temporary, although some workers, especially skilled workers, are able to acquire repeat renewals of their stay. Part of the Indian diaspora population in the Middle East (estimated at 19 percent of

the total) may fall into more settled category in the Gulf. There is however, no data on the duration or renewals of migrant stays. Weiner (Weiner, 1986) has contrasted temporary migrant workers and their treatment and integration into a diaspora in the Middle East and Western Europe in the mid-1980s. He noted that the ideology of return and temporariness is intrinsic in the Gulf model whereas there are possibilities for settlement in the Western model. The recent thrust on temporary migration in the North as well may reverse this trend.

Skilled workers admitted on temporary programmes and students in higher studies have the option to change their temporary status. In the United States, among scientists and engineers, only 11 percent were found to have temporary status. (Kannankutty and Burrelli, 2007)

The Philippines makes estimates of the total migrant stock worldwide. Almost 40 percent are permanent migrants who form the core diasporas, while some workers in irregular status also may be long term settlers in some cases.

Table 7: Philippines: Total migrant stock in the world

<i>Type</i>	<i>Number</i>	<i>Percent</i>
Permanent	3,692,527	42.3
Temporary	4,133,970	47.4
Irregular	900,023	10.3
Total	8,726,520	100.0

Source: POEA, 2008

Traditional settler countries such as Australia and Canada are also increasingly resorting to temporary admission of skilled workers, who have the option of changing their status. In 2006, Australia admitted 192,000 persons under the regular migration programme while admissions for temporary migration for work amounted to 210,000 (including working holiday makers) (OECD, 2008).

First Generation and Second/Third Generation Diasporas

Box 2: Definitions of diaspora generations

- *The foreign born: the first generation.*
- *The second generation: those native-born children with one or both parents foreign born.*
- *The third and higher generation: those native born with both parents native-born.*
- *1.5 generation – children who migrated to the host country at an early age often with their foreign born parents, and who often share the characteristics of both the first and second generations.*

The foreign born population represents the first generation. The second generation are native-born with one or both parents foreign-born. The 1.5 generation is defined as those who migrated to the host country with their foreign born parents at an early age, and therefore may share features of both the first and the second generations. Most young immigrants may have been educated abroad, at least in part (OECD, 2007). OECD (2007) argues that the term 'second generation' is not however ideal because it does tend to suggest an 'inheritance' of immigrant characteristics, which may be true to some extent, but does not reflect the fact that the person in other respects, including language, education and indeed cultural outlook, may be indistinguishable from other native-born persons.

It is difficult to derive the second generation from most databases and censuses may not contain information on the place of birth of the individual, as well as on that of the parents (Heckathorn, 2006). There is no consistency across OECD countries in recording parentage of native born children of immigrants (OECD, 2007: Box 1.5, p. 78).

The US population data provides rich information on this aspect. In March 2000, the data from the 2000 Current Population Survey (CPS) shows that 11 percent of the foreign born population were aged 65 and over. The share of older people among the foreign born declined sharply, from 32.6% in 1960 to 11.0 percent in 2000 (He, 2002).

More than one-third of the older foreign born are from Europe, compared with 15.3 percent of the total foreign born population. In contrast, people from Latin America accounted for only 31.3 percent of the older foreign born but 51 percent of the total foreign born.

The shifting world regions of birth of the US foreign born is reflected in the shares of the older foreign born. Historically, Europe was the primary source of the foreign born. A much higher proportion of the older foreign born than of the total foreign born are naturalized citizens (70.2 % compared with 37.4 % respectively in 2000), in part because typically they have lived in the United States longer.

A Migration Policy Institute (MPI) study based on 2000 Census data (Dixon, 2006) highlights the following features of the second generation in the USA (Box 3).

The study, however, tells little about the second generation in age groups below 25 years. The special issue of the Migration Information Source has provided important information in this regard and other aspects.⁶ Studies of second generation from particular regions or countries can yield rich information as shown by a survey of Mexican second generation in California (Waldinger and Reichl, 2006).

6 <http://www.migrationinformation.org/issue_oct06.cfm>.

Box 3: The second generation in the USA – 2006

- *The second generation accounted for nearly 11 percent of the US population in 2006.*
About 12 percent (35,436,774 individuals) of the US population are foreign born, 11 percent (30,994,680) are second generation and 77 percent (226,068,824) are third-or-later generation.
- *Two of every three members of the second generation have parents born in Mexico, Europe, or Canada.*
About 35 percent of the second generation have parents born in Europe or Canada, while 29 percent have parents born in Mexico. Asia: 18 percent; Latin America (other than Mexico): 16 percent.
- *More than two of every five members of the second generation have a US-born parent.*
- *Members of the second generation with Mexican and Asian roots were more likely to have two parents born in the same world region.*
- *The second generation tend to be very young.*
The median age of the second generation is 21 years, compared with 38 years among the foreign born and 37 years among the third-and-later generation. The young age of the second generation reflects the large, recent wave of immigrants to the United States.
- *The second generation of European and Canadian origin are four times older than those with roots in other areas.*
- *Members of the second generation are more likely to finish college than both the foreign born and members of the third-and-higher generation.*
About 31 percent of the second generation 25 and older have completed a four-year college degree or higher compared with 27 percent of the foreign born and 28 percent of the third-and-later generation.

Source: Dixon, 2006.

Return Diaspora or Reverse Diaspora

“[R]eturn migration is the unwritten chapter in migration’s history” as Russel King stated in his seminal article on return migration (King, 2000). There is considerable interest in return migration, particularly of the diaspora and its impact on development of home countries.

In discussions of brain drain, there have been often references to a reverse brain drain implying the return of professionals back to the home country. If they move to a third country from the host country, it no longer represents a return as such. Recent OECD research shows high rates of return among migrants from OECD countries although they do not distinguish between returnees on the basis of duration. The findings indicate that departures by foreigners from OECD countries can represent anywhere between 20 percent and 75 percent of arrivals in any given year. Further, depending on the country of destination and the period of time considered, 20 to 50 percent of immigrants leave within five years after their arrival, either to return home or to move on to a third country – secondary emigration (OECD, 2008). The value of the above OECD findings is somewhat limited by the wide range of estimates quoted.

Table 8: Australia: Settler arrivals and permanent departures (Australia- and overseas-born) to APEC member countries, 1993–94 to 2005–06

Country of Last Residence	Settler Arrivals	Permanent Departures as % of Arrivals from each country		
		All Persons	Australia-Born	Overseas-Born
Brunei	1,447	110.2	73.3	37.0
Canada	10,397	127.4	74.1	53.4
Chile	2,455	67.4	22.6	44.8
CHINA (Excluding Taiwan Province)	76,352	28.1	6.8	21.3
Hong Kong SAR	41,872	97.8	32.1	65.7
Indonesia	30,297	34.1	15.2	18.9
Japan	9,203	90.6	50.2	40.4
Korea, Republic of	10,352	36.9	7.8	29.1
Malaysia	30,759	21.4	10.8	10.6
Mexico	441	53.1	30.2	22.9
New Zealand	275,829	49.3	18.8	30.5
Papua New Guinea	3,481	129.3	93.0	36.3
Peru	1,770	13.9	6.8	7.1
Philippines	42,969	7.5	3.0	4.5
Russian Federation	4,376	7.3	3.6	3.7
Singapore	44,173	52.6	31.4	21.2
Taiwan Province of China	16,109	47.5	5.4	42.1
Thailand	16,007	42.3	21.4	20.8
U.S.A	24,658	236.9	161.4	75.4
Vietnam	30,398	20.9	5.2	15.7
Total	673,345	52.7	23.4	29.3

Source: Hugo, Badkar et al., 2008.

The pattern of permanent returns is clear in the case of migration to Australia. Table 8 reveals an interesting picture. Along with settler arrivals, there are de-

partures of both natives and migrants. The definition is based on the intentions recorded, but still they indicate a fairly consistent pattern. While the data pertains only to APEC member countries, it shows a common pattern of returns and circular migration, particularly for Hong Kong SAR which records a two-thirds return level.

Another term which has become popular is the concept of the 'Reverse diaspora'. This is a reference to the return of diasporas to the origin country. The Canadian diaspora raise some interesting issues about reverse diaspora moves. The Asia Pacific Foundation of Canada puts the number of Canadians overseas at about 2.7 million, about nine percent of the population (Metropolis, 2006). As in the case of Australia, a substantial part of the overseas Canadians are recent immigrants who have chosen to emigrate not long after coming to Canada. It is estimated that one-third of male immigrants between 25 and 45 (at the time of arrival) left Canada within 20 years of coming there, with about half of those relocating within the first year. This was especially so of Hong Kong SAR immigrants who arrived between 1990 and 1994.

The Asia Pacific Foundation estimated 200,000 Canadians living in Hong Kong SAR by 2006 or so, most of whom were natives of Hong Kong SAR and return migrants from the 1990s (Metropolis, 2006). According to a survey, some 15 percent of recent Chinese immigrants leave Canada in the first year after they have landed in Canada. Over half of these returns happened within 3 years. The most important motivation for moving to Canada is acquiring Canadian citizenship or permanent residency, followed by studying in Canada and living in a better natural environment. The major motivations for returning to China were found to be greater opportunities for promotion, higher paying jobs and more job security. On the Canadian side, the top contributing factors were Chinese qualifications and experience not being recognized and lack of Canadian work experience.

What is important is that when immigrants with the right of return (either as citizens or holders of permanent visas) go back to their home countries, they form a dual diaspora – a return of the diaspora for the country of origin and a diaspora abroad from the perspective of the destination country. In other words, for Canada, it is the Canadian diaspora who have gone to Hong Kong SAR whereas for Hong Kong SAR, it is the return of the diaspora who initially left the territory.

This is the real reverse diaspora movement rather than the incoming immigrant populations mentioned in the case of the New Zealand study by Bryant and Law (2004). Bryant and Law have defined "reverse diaspora" as people born elsewhere who migrate to live in New Zealand as New Zealand's "reverse diaspora" (Bryant and Law, 2004). It is however, more logical to define the reverse diaspora as those who first immigrated to a host country and then moved back to the home country. The KEA (2006) study showed that this group comprised about 6 percent of respondents of New Zealand's expatriate population.

In the case of China, the return of professionals is not that large (Biao, 2005). Over the period 1985–2003, out of over 700,000 who emigrated, only 180,000 returned – implying that almost three-fourths of the OCPs remained overseas (Table 9).

Table 9: The scope of outflow, return of students and OCPs, China (accumulative, 1985–2003) (10,000 persons)

Time (1)	Outflow (2)	Return (3)	OCPs (remain overseas) (4)	% remaining overseas (4)/(2)
Up to 1985	4	1.65	2.35	58.75
Up to 1991	17.0	5	11	64.71
Up to 1995	25.0	8.1	16.9	67.6
Up to 2000	34	14	20	58.82
Up to 2001	48.6	15.22	33.38	68.68
Up to 2002	58.3	16 -	42.3	72.56
Up to 2003	70+	18	52	74.29

Source: Biao, 2005.

Migration Status: Diaspora in Irregular Status

Since immigrant populations could consist of some who entered in an irregular manner or who have become irregular over time, it is indeed logical to expect some incidence of immigrant populations in irregular status. There are no global estimates but there is anecdotal evidence. The Philippines estimates that 16 percent of its total migrant stock of eight million is in irregular status. Out of the Mexican diaspora in the United States, a substantial proportion of the low skilled may also be in irregular status. Portes et al. (2007) found that immigrants in irregular status ranged between 80 to 98 percent of the total immigrant populations in the United States from Mexico, the Dominican Republic and Colombia.

Table 10: Profile of immigrants in USA from selected Latin American countries

Item	Colombia	Dominican Republic	Mexico
Total immigrant population	470,684	764,945	9,177,487
Legal immigrants 2001	16,730	21,313	206,426
Percent of total immigration	1.6	2.0	19.4
Those in irregular status %	98.4	98.0	80.6
Professional speciality occupations %	16.1	9.4	4.7
College graduate %	21.8	9.5	4.2

Source: Adapted from Portes et al., 2007.

Diaspora Concentrations

Diaspora populations may be concentrated in one or two top destinations or scattered over many countries. The concentration of diasporas is important because they represent a tangible target group of transnational communities for engagement for both destination and source countries.

This concentration is evident in New Zealand and Canadian diasporas who are centred largely in Australia (77%) and the United States (83%), respectively. Table 11 shows the situation for a few major countries of destination. While New Zealand attracted migrants from 177 countries in 2001, there were more than 10,000 migrants from 16 countries. Australia and Canada show still much greater diversity as regards the origin of migrant communities with 56 and 72 countries respectively accounting for more than 10,000 migrants (Bryant and Law, 2004).

According to the High Level Committee on the Indian Diaspora, there are about 10,000 or more overseas Indians in 48 countries and more than half a million persons of Indian descent in 11 countries, where they represent a significant proportion of the population of those countries.

Table 11: Numbers of migrant communities, New Zealand and selected countries, 2001

<i>Country</i>	<i>Number of countries from which the selected country has at least...</i>		
	<i>100 migrants</i>	<i>1,000 migrants</i>	<i>10,000 migrants</i>
<i>Australia</i>	166	110	56
<i>Canada</i>	185	140	72
<i>Denmark</i>	114	51	14
<i>Ireland</i>	—	30	2
<i>Italy</i>	143	83	33
<i>Netherlands</i>	146	76	26
<i>New Zealand</i>	120	48	16

Source: Bryant and Law 2004.

The above discussion has shown that the diaspora numbers can be quite important for some countries. Moreover it highlights their diversity which needs to be recognized in diaspora engagement policies. Diaspora links to home countries may cut across some of these profiles when both male and female or high and low skilled form common associations to support the home country.

The current interest in the diaspora is not just about mapping their numbers or profiles. Such mapping is called for in evolving the best approaches to engaging the diaspora for home country contributions. In the next section,

I shall review the forms and channels of these contributions as reflected in recent discussions.

4. Diaspora Roles and Contributions

Recent years have seen a major emphasis on linkages between migration and development (ILO, 2008). One of the major linkages identified in this context is contributions by the diaspora communities to home country development. The role of the diaspora in contributing to development has been reiterated by many researchers and recent global initiatives. Box 4 highlights some of these.

Box 4: Recognition of the role of the diaspora

➤ *The Global Commission on International Migration (GCIM)*

Diasporas should be encouraged to promote development by saving and investing in their countries of origin and participating in transnational knowledge networks.

➤ *ILO Multilateral Framework on Labour Migration (2006): Guidelines on transnational communities (Principle 15 on Migration and Development)*

15.4. promoting and providing incentives for enterprise creation and development, including transnational business initiatives and micro-enterprise development by men and women migrant workers in origin and destination countries;

15.9. facilitating the transfer of capital, skills and technology by migrant workers, including through providing incentives to them;

15.10. promoting linkages with transnational communities and business initiatives.

➤ *The UN Secretary-General's Report on International Migration and Development (United Nations, 2006a)*

Governments understand that their citizens working abroad can be development assets and are strengthening ties with them. (Paragraph 59).

➤ *Department for International Development, UK, London: "Moving out of poverty – making migration work better for poor people"*

[T]he positive economic, social and political connections that diasporas maintain with their countries of origin have the potential to be an engine for development (DFID, 2007).

➤ *European Commission (2005) Migration and Development: Some Concrete Orientations*

As part of transnational communities linking countries of origin and countries of residence, diasporas can make an important contribution to the development of their home countries (p. 23).

➤ *Global forum on Migration and Development, Brussels 2007*

Home and host countries should integrate diaspora initiatives into national development planning and poverty reduction strategies, both at national and local level (GFMD, 2007).

4.1 Diversity of Diaspora Roles

The diaspora roles have been described in different ways. For example, Newland and Patrick (2004: 2) state:

For many countries, the Diasporas are a major source of foreign direct investment (FDI), market development (including outsourcing of production), technology transfer, philanthropy, tourism, political contributions and more intangible flows of knowledge, new attitudes and cultural influence.

Ionesco (2006) has documented a number of these contributions for different regions. The diaspora agenda of the African Union highlights the extensive nature of expected contributions (Box 5). The African Union has recognized the diaspora as an integral part of the continent and led on to its official designation of the African diaspora as the “Sixth Region” of the African Union, alongside North, South, East, West and Central Africa.

While all the above roles are possibilities, one has to decide which factors work best in which contexts and the extent to which diaspora profiles affect the outcomes. There is inadequate information on the relative impact of different diaspora contributions (Lowell and Gerova, 2004). Such assessments would require much more empirical information than presently available. Kuznetsov (2008) spells out a hierarchy of diaspora impacts starting from remittances at the bottom and going up to donations, investments, knowledge and innovation with institutional reform at the top. However, he does not explain the logic of this hierarchy.

Box 5: Diaspora agenda of the African Union

The AU diaspora agenda covers six broad areas:

- (i) international affairs, peace and security (seeking a strategic response to globalization);
- (ii) regional development and integration (mechanisms for joint projects aimed at infrastructure development);
- (iii) economic cooperation (joint venture mechanisms to transform manufacturing industries and ensure Africa as a favourable investment destination);
- (iv) historical, socio-cultural and religious commonalities (identifying concrete projects or areas of cooperation);
- (v) women, youth and children (exploring new models and initiatives to protect the vulnerable and people with disability); and
- (vi) knowledge sharing (including communication technology to address the digital divide; research collaborations on energy, environment, agriculture and food processing, science and technology; health; emphasizing mathematics in education, intra-Africa and external trade etc).

(World Bank, 2007)

There are several factors to be considered in evaluating diaspora contributions.

– *Two-way nature of diaspora contributions*

Diaspora communities contribute to both host and origin countries. From the viewpoint of the host country, they represent ‘migrant communities’ or the foreign born and their descendants rather than a ‘diaspora’. While the migration-development discourse has primarily focused on the contributions of the diaspora to home countries, their first and foremost contribution has been to host countries. It has been noted by the High Level Committee on the Indian Diaspora:

The Indian Diaspora has transformed the economies and has come to occupy a pride of place in the life of those countries. Its members are found as entrepreneurs, workers, traders, teachers, researchers, inventors, doctors, lawyers, engineers, managers and administrators. (Government of India, 2001)

It added that the Indian Diaspora had the distinction of being the second largest diaspora in the world with a huge purchasing power, estimated at around US\$ 300 billion.

– *Actual and potential contributions to countries of origin*

It is also important to distinguish between the potential and actual contributions of the diaspora communities. While there is wide consensus about the potential, there is no guarantee that these will be realised without some

effort on the part of migrant communities or some intervention by destination and origin countries. In other words, the gap between ‘promise and reality’ needs special attention in diaspora discussions. As mentioned earlier, Orozco maintains that several conditions are necessary for groups to be motivated or influenced to become a diaspora which cover both diaspora willingness to have links with home countries and the outreach policies of the home governments (Orozco, 2006a).

– *Positive and negative contributions of the diaspora*

The third point to highlight is that diaspora contributions can also be negative for the home country’s development where they prolong conflicts and fuel insurgencies. This applies to both intellectual and other diaspora groups. The cases of Eritrea, Kosovo, Somalia, Sri Lanka, Sudan, etc. are well-known, where diaspora engagement has created negative situations (Newland and Patrick, 2004; Vertovec, 2004; 2005) cites the role of some overseas communities in ‘nation-wrecking’ rather than ‘nation-building’ and sustaining insurgency and terrorism in the home countries.

In the following Box (6), I have attempted a somewhat crude categorization of these different contributions for illustrative purposes. Needless to add, some of these factors are closely inter-linked.

Box 6: Diverse contributions of the diaspora

- **Positive**
 - Economic
 - Financial remittances, FDI & investments, outsourcing, exports related to demand for home country goods, tourism, business networks
 - Intellectual
 - Transfer and sharing of skills, know-how, knowledge through Diaspora Knowledge Networks (Focus of current project) and other means; advice on economic reforms. transfer of market based institutions
 - Philanthropy – charity and donations for home country infrastructure and other purposes;
 - Political
 - Lobbying, advocacy, mediation, reducing reputation barriers.
 - Social and cultural contributions
- **Negative**
 - Sustaining conflict in home countries
 - Fuelling insurgent movements and terrorism

4.2 Diaspora Contributions by Skill Profile

In identifying diaspora contributions, there is a clear distinction made between two categories of diasporas: low skilled (LS) and high skilled (HS). Some researchers focus on the educated diaspora described as intellectual or scientific diaspora (Khadria, 1999; Meyer and Brown, 1999; Barre et al., 2003; Kuznetsov, 2006; Wescott, 2006). Kuznetsov's (2006) paper contains a number of country case studies highlighting the role of the educated diaspora. A series of recent studies by the Asian Development Bank (Wescott, 2006) also focussed on such contributions. Some countries such as China focus mainly on professionals in their diaspora outreach as seen by the definition of the diaspora and policy attention on Chinese Overseas Professionals. At the same time, other researchers, especially those working in Latin America, highlight the contribution of all types of migrants (Orozco, 2006a and 2006b; Orozco, 2003; Lucas, 2004; Portes et al., 2007). As rightly noted by Lowell and Gerova (2004: 5): "[T]here is little differentiation made in the literature as to which mechanisms are primarily those of low- versus high-skilled diasporas, much less which common mechanisms may exist".

In Table 12, I have tried to sketch a list of contributions and their relative importance for these two groups of the diaspora. Needless to say this bipolar dichotomy between low skilled and high skilled ignores the wide spectrum of skills between these two extremes and also considerable interactions among them. These factors can also make a difference to the outcomes. In short, I argue that there is no real basis for ignoring the contributions of the less skilled diaspora groups since both HS and LS do contribute to their home countries. Since the low skilled are more likely to be in temporary status than the high skilled, their contributions may be greater. Most existing sources of data noted in Column 4 of Table 12 do not show the contributions by skill profiles. Only special surveys and case studies can throw light on them.

In the sections below, I shall briefly focus on three selected mechanisms of diaspora contributions: knowledge networks, other contributions by migrants/migrant organizations and philanthropy. The objective is simply to illustrate the conceptual issues relating to identification and measurement of these contributions rather than to discuss the issues in detail. I shall not deal with remittances which have received extensive discussion in recent literature.

Table 12: Positive contributions of diasporas by skill profile

<i>Specific contribution (1)</i>	<i>High-skilled (2)</i>	<i>Low-skilled (3)</i>	<i>Sources of information (4)</i>
<i>Economic</i>			
Remittances	++	+++	Central Banks/World Bank-IMF data
Customers for home country goods	++	++	Export/import data in source and host countries
Business and trade promotion	+++	++	Diaspora organisations; country records
Investments/FDI	+++	+++	National and international sources
Entrepreneurship	+++	+++	Studies
Home visits and tourism	++	+++	Country data; surveys
Outsourcing contracts	+++		Trade and company data
<i>Intellectual</i>			
Technology, innovations and skills transfer	+++		Special surveys/ case studies
Digital networks/virtual return	+++		Web search; Research studies
Advice on home economic reforms	+++		Country Case studies
<i>Political</i>			
Lobbying, advocacy	++	+	Country case studies
Mediation and reducing reputation barriers	++		Country case studies
Promoting democratic reform and human rights	++		Country case studies
<i>Philanthropy</i>			
Home town associations/matching grants	+	+++	Surveys; organization records ; interviews
Charitable donations to communities, health and education, etc.	+++	++	Country data/ organizational records; case studies
<i>Social and cultural</i>			
Social capital (networks)	++	++	Special studies; web search
Cultural exchanges	+	+	
Support to potential or new immigrants	+	++	Case studies and surveys; Diaspora organization records

Note: (More + means stronger contributions).

4.3 Diaspora Knowledge Networks (DKNs)

A major area of attention in recent literature is on the potential of the intellectual or the scientific diaspora to transform brain drain into brain gain in the context of home countries. Scientific diaspora networks is also the first brain gain mechanism identified in the GIAN project on the Swiss Network of Scientific Diasporas. It is said to facilitate the other two brain gain mechanisms: strategies of investment in research and experimental development and North-South research partnership programmes. In theory DKNs' enable regular contacts, transfer of skills, virtual linkages, participation and return. The diaspora abroad represent in this sense a brain bank to be drawn upon by the home country.

Repeated waves of emigration have led to the creation of vibrant diasporas that possess cutting-edge technology, capital and professional contacts. For example, developing countries accounted for three-quarters (approximately 2.5 million) of the 3.3 million immigrant scientists and engineers living in the United States in 2003... At a minimum, the technical, market and marketing knowledge of national diasporas is a huge potential technological resource. (Burns and Mohapatra, 2008: 3)

In the case of China it is estimated that there are approximately 1.1 million overseas Chinese professionals (OCPs), including 0.6 million who left China before 1978 and 0.52 million who emigrated after that. Among them a total of 0.8 million have completed education and therefore form a "mature" pool of professionals (Biao, 2005). A particularly significant policy development has been the introduction of a "transnational" perspective by Chinese authorities, as evidenced by the slogan *weiguo fuwu* (serve the motherland) of the late 1990s, as compared to the earlier notion of *huiguo fuwu* (return and serve the motherland), which indicates that physical return is no longer regarded as essential. A so-called "dumb bell model", meaning that a professional has affiliations in both China and overseas and moves back and forth, has been advocated as an effective means to serve the motherland (Biao, 2005).

How extensive are these networks? Meyer and Brown (1999) identified 41 DKN (internet-based) in 1999 and Meyer and Wattiaux (2005) estimated 158 DKNs in 2005. Nineteen of the top twenty Indian software businesses were founded by or are managed by professionals from the Indian diaspora (Westcott, 2006). The industry relies on individuals and professional organizations from the diaspora for ideas, technologies, markets, reputational advice and diaspora-led subsidiaries in key markets such as the United States (Westcott, 2006). Kuznetsov (2006) has presented a number of case studies such as GlobalScot and ChileGobal that have helped connect diasporas across the globe. The GlobalScot is said to represent a highly successful network of about 850

Scottish expatriate professionals all over the world. The ChileGlobal is a network of about 100 successful professionals of Chilean origin in the US, Canada and Europe, which has led to co-founding of high-tech firms in Chile.

Yet the gap between the potential and actual contributions drawn earlier or between 'promise and reality' applies to these networks. Some of these networks seem to lose momentum after the initial launch. For instance, it is embarrassing to note that the link on the Digital Diaspora Network for Africa (DDNA) initiative⁷ by the United Nations Information and Communications Technology Task Force to mobilize the intellectual, technological, entrepreneurial and financial resources of the African diaspora is no longer functional. A recent electronic survey of the South African Network of Skills Abroad (SANSA) by the South African Research Foundation revealed that 46 percent of 2,440 email contacts in the SANSA database were not working; only 428 responded to the survey and 40 percent of them mentioned that they rarely or never accessed the SANSA website (cited in Séguin et al., 2006). Lowell and Gerova (2004) found two major issues with such networks: a) 34 percent of the networks surveyed (61 DKNs) were inactive; b) 27 percent of government assisted Networks had failed (4 of 15). Meyer and Wattiaux (2005) however, disagree and point out that two-thirds of 158 DKNs identified by them were active.

Moreover even an active web presence cannot indicate much tangible impact. Diaspora initiatives are easy to start but it is difficult to maintain momentum unless concrete results materialize. There is a need for significant technical, human and financial resources to make them sustainable. Lack of strong leadership or individual champions and ineffective follow up mechanisms are other causes (Wickramasekara, 2007). This is what Kuznetsov calls the Paradox of Diaspora Initiatives (Kuznetsov, 2004). In his view, it is a paradox that for effective utilization of diaspora potential one needs capable institutions at home.

4.4 Other Mechanisms of Transnational Engagement

As argued above, it would be useful to focus on all diaspora contributions and not necessarily only on those by the scientific diasporas. There have been a number of pioneering studies in this respect in the Latin American countries, particularly focusing on links with the United States. As Portes et al. (2007)

7 The link (<<http://www.ddn-africa.org/>>) visited on 30 November 2008 led to a completely unrelated page (Mortgage Loan and Refinance Center). The webpage of the UN Information and Communications Technology Taskforce which was responsible for the establishment of the Digital Diaspora Networks (<<http://www.unicttaskforce.org/stakeholders/ddn.html>>) is no longer updated.

highlight what is important for definition of transnational engagement is the regular execution of such activities unlike an occasional remittance.

According to Orozco (2006a) the transnational relationship between a diaspora and the home country can be captured by *five Ts*: Transportation, Telecommunication, Tourism, Transfer of money and nostalgic Trade. He used a number of indicators relating to frequency of contacts with home country, investments, remittances and businesses in the home country and membership of diaspora or hometown associations as indicators of the level of “transnational engagement” in several studies (Orozco, 2005, 2006a et 2006b). Yet this categorization fails to capture knowledge sharing and transfer of skills and technology, probably as they are based on information gathered at household level.

Table 13 shows the empirical evidence gathered by Orozco (2005) for the Ghanaian diaspora through three survey studies in the United States, the United Kingdom and Germany in selected cities (New York, New Jersey and Washington, DC in the U.S., London in the U.K. and Frankfurt, Germany). It reveals that substantive linkages exist at the individual household level. It also shows that belonging to a Home Town Association is not essential for such engagement since less than 40 percent were members of such organisations.

He concludes that in practical terms, a typical immigrant’s economic linkage with the home country extends to at least four practices that involve spending or investment: family remittance transfers; demand of goods and services such as telecommunication, consumer goods or travel; capital investment; and charitable donations to philanthropic organizations raising funds for the home country’s community.

His results for some Latin American and Caribbean countries show similar patterns (Appendix Table A3). For the region overall and most LAC countries, the major transnational practices are phone communications, buying of home country goods and travel to the home country. The Ghanaian data indicate that more than fifty percent of this population is extensively connected. Orozco argues that the range of Ghanaian engagement in their home country surpasses their Latin American and Asian counterparts. Latin American and Asian diasporas exhibit a strong commitment to family but the scope of their commitment to other sectors of society, while expanding, is relatively narrow (Orozco, 2006b: 38).

Table 13: Practices of transnational engagement for Ghanaians in: % of respondents

Country	Germany	U.K	U.S.A
Sends money to Ghana other than family remittances	49	50	28
Calls at least once a week	42	71	84
Sends over US\$300	2	9	54
Buys home country goods	88	83	94
Travels at least once a year	34	59	52
Spends over US 1,000)	77	52	83
Helps family with other obligations	58	64	28
Supports or contributes to a Home Town Association	37	28	15
Has a savings account in a bank	89	89	97
Has a mortgage loan in home country	13	11	5
Mean percentage	49	52	54

Source: Table 31, Orozco 2005.

Portes et al. (2007) define transnationalism among immigrants as their frequent and durable participation in the economic, political and cultural life of their countries, which requires regular and frequent contact across national borders. Innovations in transportation and communications technology available now have made it possible.

On the basis of a detailed study of immigrant organizations of Colombians, Mexicans and Dominicans, Portes et al (2007) find that transnational, civic, philanthropic, cultural and political activities are common among immigrants in the United States and “on the aggregate, they possess sufficient weight to affect the development prospects of localities and regions and to attract the attention of sending governments” (Portes et al., 2007).

The KEA study for New Zealand diaspora is shown in Table 13. The information provided is more limited, but it indicates more social and cultural ties than business interests, which seem quite low at 7.4 percent.

Table 14: New Zealand diaspora contacts

Current Connections with New Zealand (NZ)	Total Number	%
Travel to NZ	806	26.6
Business interests in NZ	224	7.4
Family / Friends in NZ	2952	97.5
Other	147	4.9

Source: KEA 2006.

4.5 Philanthropic Contributions

Johnson (2007) defines “philanthropy” as the private, voluntary transfer of resources for the benefit of the public and notes several fundamental elements of “diaspora philanthropy.” These are: charitable giving from individuals who reside outside their homeland and who maintain a sense of identity with their home country; giving to causes or organizations for public benefit in that country. She highlights the difficulties in distinguishing philanthropy from other financial flows, including remittances and financial investments (Johnson, 2007).

Philanthropic contributions can be individual or collective. The best known examples of collective initiatives are the Home Town Associations (HTAs) of Latin America, especially Mexico. The recent experience with the response to the Tsunami disaster in Asia has also shown how the diaspora can be mobilized at short notice to respond to sudden disasters faced by home countries.

While we do not intend to discuss the mechanics of HTAs here, their growing importance can be captured by a few figures. An MPI study mentions that the number of Mexican HTAs increased from 441 in 1998 to 623 five years later in 25 US states. Estimates of the number of Mexican HTAs active in the United States range from 600 to 3,000. There are at least 200 Ghanaian HTAs in the United States and about 268 Salvadoran associations in the United States. In France, there were an estimated 300 village associations, analogous to HTAs, representing Mauritania, Senegal and Mali in the Paris area in 2000 (Somerville, Durana et al., 2008).

HTAs are used for community and infrastructure development programmes in communities of migrant origin and often attract matching grants from local authorities. There have been extensive discussions of these (Orozco, 2006c; Somerville, Durana et al., 2008); I wish to draw attention to Orozco’s conclusion:

Although the contributions of HTAs are relatively small when compared to development needs or the structural transformations required to improve society, some of their philanthropic activities have a distinct developmental effect. (Orozco, 2006c: 283)

Diaspora philanthropy to enhance community development at the local village level has been a practice of Filipinos worldwide. In the Philippines, out of about 12,000 Filipino Associations Overseas, 4,000 were recorded as engaged in diaspora philanthropy according to the Commission for Filipinos Overseas (CFO). A study of philanthropic contributions of the Filipino diasporas in New Zealand showed that the contributions are made by a variety of sources: resident Filipinos migrants, Filipino personal networks, Filipino organisations, Filipino Church groups, Philippine Embassy, Filipino media, Filipino entertainment groups and Non Filipino entities (Alayon, undated).

A case study of Kenyans in the United States highlighted the rich heritage of philanthropy and dynamic strategies employed by them to support their home countries. Case study data shows that Kenyans support community projects in their hometowns, most notably through emergency relief during disasters, support for AIDS/HIV victims, improvement of community facilities and scholarships. (Copeland-Carson, 2007). The study noted that institutional philanthropy is slowly developing in Kenya with the Kenyan Community Development Fund (KCDF), founded in 2001 by a coalition of Kenyan leaders.

Johnson (2007) ends on an optimistic note: “Optimistically, diaspora philanthropy will prove itself to be a powerful engine for social change as the 21st Century unfolds”.

Yet there is some doubt as to how sustainable and predictable philanthropic contributions are. There is not much evidence of their impact at the macro level or their poverty reducing impact.

5. Conclusions and Directions for Research

The foregoing sections have dwelt on consistency of definitions, estimates of numbers and conceptualising contributions of the new diaspora or transnational communities. The three issues are very much inter-related. The picture that emerges is the need for much more work on these issues.

Globalization trends and advances in internet and communications technology and travel and transport have led to many options in transnational engagements. At the same, the increasing attention on promoting migration and development linkages has focussed on the role of the diaspora as a major area of intervention. Betting on the intellectual diaspora alone in this respect may not be an equitable or sustainable proposition. There is substantive evidence that all categories of the diaspora can play important roles and a broad definition of the diaspora communities will be useful in this respect. The diversity of diaspora contributions is another striking feature which needs to be given due recognition in diaspora engagement policies.

I would like to end the paper by highlighting a number of areas or directions for further research. As the European Commission (2005: 23) rightly pointed out: “A key difficulty that sending and receiving country governments are often faced with in terms of dealing with the diaspora is precisely knowing the diaspora.” Thus, we need better information on diaspora profiles and their transnational engagements within different categories, particularly the determinants of different types of engagement. There is very limited information on

the profile and role of women in diaspora communities or their engagement with home countries. One also needs to document patterns of transnational practices that embrace both source and destination countries and/or the wider diaspora (Sørensen, 2007). It is also important to know the extent of integration of the diasporas, and status of respect for their rights in host societies, and the impact of such integration and protection of rights on their contributions. It is also important to continue in-depth analysis of the operation of migrant organisations, both formal and informal and how they contribute to home countries. Last but not least, all these point to the need for generation and dissemination of data and information on diaspora profiles, networks and their operations.

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Appendix

Table A1: Education levels for immigrants, second generation and other native-born, 20–29 and not in education, by gender, latest available year

Country	Education Level					
	Men			Women		
	Low	Medium	High	Low	Medium	High
Australia ¹ (2001)						
Foreign-born	40	19	41	39	13	48
Native-born, at least one parent foreign-born	46	30	24	44	19	37
Native-born, both parents native-born	49	32	19	50	18	32
Canada (2001)						
Foreign-born	22	18	60	19	16	66
Native-born, both parents foreign-born	16	19	65	9	12	78
Native-born, one parent foreign-born	19	21	61	13	16	71
Native-born, both parents native-born	27	20	53	20	16	65
Denmark (2004)						
Foreign-born	56	35	9	50	39	12
Native-born, both parents foreign-born	57	34	9	44	43	13
Native-born, at least one parent native-born	28	59	13	24	53	23
France (1999)						
Foreign-born ²	40	44	16	45	37	18
Native-born, both parents foreign-born	29	55	17	26	53	21
Native-born, one parent foreign-born	22	52	26	21	45	34
Native-born, both parents native-born	20	54	26	19	48	34
Germany (2005)						
Foreign-born	39	46	15	42	41	17
Native-born, both parents foreign-born	36	52	12	35	49	16
Native-born, one parent foreign-born	30	56	14	23	56	20
Native-born, both parents native-born	18	62	19	17	57	26
Norway (2004)						
Foreign-born	14	74	12	14	66	21
Native-born, both parents foreign-born	12	75	13	8	73	19
Native-born, one parent foreign-born	6	73	21	5	64	31
Native-born, both parents native-born	5	75	19	4	64	33
Sweden (2004)						
Foreign-born	24	47	29	20	43	37
Native-born, both parents foreign-born	21	57	23	15	53	31
Native-born, one parent foreign-born	16	58	27	12	51	37
Native-born, both parents native-born	11	59	30	8	50	42
Switzerland (2000)						
Foreign-born	44	41	15	46	39	12
Native-born with foreign nationality at birth	14	69	17	13	75	12
Native-born with Swiss nationality at birth	7	74	20	7	81	15
United Kingdom (2005)						
Foreign-born	25	35	40	27	27	45
Native-born with other "ethnic background"	11	54	27	8	55	37
Native-born with "white British ethnic background"	8	65	27	9	60	31
United States (2005)						
Foreign-born	35	46	19	29	44	28
Native-born, both parents foreign-born	14	59	27	15	57	28
Native-born, one parent foreign-born	13	68	20	9	58	34
Native-born, both parents native-born	10	65	25	7	57	36

Notes: "Low" refers to below upper secondary; "medium" to upper secondary and post-secondary non-tertiary and "high" to tertiary education.

Source: (OECD, 2007: Annex Table I.A1.3, pp. 92–93).

Table A2. The low-educated in the total and foreign-born labour force, by age, 2006 (%)

Country	Age group 25–34 years old			Total working-age population (15–64)		
	Low-educated share of the labour force	Foreign-born share of the low-educated labour force	Low-educated share of foreign-born labour force	Low-educated share of the labour force	Foreign-born share of the low-educated labour force	Low-educated share of foreign-born labour force
Austria	10.5	41.9	25.0	17.5	25.5	29.0
Belgium	15.3	22.9	28.2	23.5	14.9	31.4
Czech Republic	4.8	5.4	13.9	5.8	4.5	14.5
Denmark	10.1	17.1	23.9	20.0	7.3	25.1
Finland	9.0	8.5	18.6	17.7	3.6	23.1
France	16.2	19.4	31.7	26.6	17.9	42.7
Germany	13.3	39.6	29.6	15.7	28.3	31.8
Greece	23.2	20.2	50.0	35.5	10.7	45.6
Hungary	10.6	2.2	13.7	13.1	1.4	10.6
Ireland	15.0	12.4	11.4	25.9	8.0	17.1
Italy	31.0	14.4	42.9	39.3	9.7	44.9
Luxembourg	21.2	59.8	26.4	29.7	50.2	34.0
Netherlands	16.5	17.5	23.2	26.2	10.2	26.6
Norway	4.1	35.5	14.0	11.1	10.0	14.9
Poland	6.3	–	–	9.0	0.4	10.0
Portugal	56.1	9.0	44.1	69.4	5.5	49.0
Slovak Republic	4.5	0.6	7.0	4.6	0.7	4.8
Spain	32.4	20.0	34.5	42.7	12.4	36.3
Sweden	8.2	26.3	16.0	14.8	16.1	19.1
Switzerland	11.6	71.9	28.1	18.7	43.0	33.0
United States	11.3	54.1	30.9	11.7	38.7	28.8
<i>EU-25</i>	<i>19.0</i>	<i>19.6</i>	<i>31.8</i>	<i>25.4</i>	<i>14.1</i>	<i>35.0</i>
<i>All above countries</i>	<i>15.9</i>	<i>29.6</i>	<i>31.3</i>	<i>19.4</i>	<i>20.7</i>	<i>31.5</i>

Note: Low-educated are those with less than upper secondary education (ISCED 0-2). The EU and All countries lines are weighted averages.

Source: OECD 2008: International Migration Outlook 2008 SOPEMI, Paris, p. 128 (OECD, 2008).

Table A3: Transnational engagement: Latin America and the Caribbean

Country	Colombia	Cuba	Ecuador	El Salvador	Guatemala	Guyana	Honduras	Mexico	Nicaragua	Dominican Rep	Bolivia	Jamaica	LAC
Calls at least once a week	80	48	98	41	56	42	57	66	70	77	33	75	61
Sends over \$300	27	15	33	32	43	33	8	46	13	17	21	42	31
Buys HCG	88	29	95	66	50	84	74	86	83	65	70	64	73
Has a saving account	39	2	55	16	19	48	16	21	5	29	10	58	27
Travels at least once a year	34	13	51	24	9	45	12	23	19	69	13	69	32
(& Spends over US 1,000	61	50	90	61	48	54	43	70	26	64	91	58	60
Has a mortgage Loan	12	2	14	13	4	18	12	3	6	6	36	15	10
Owens a small bus	5	2	1	3	2	8	4	2	3	3	4	2	3
Helps Family with mortgage	21	1	24	13	1	21	8	5	7	13	31	16	12
Belongs to HTA	6		10	2	3	29	7	2	4	3	1	16	6

LAC = Latin America and the Caribbean. Source: Orozco 2006b (reproduced with permission from the author).

Highly Skilled Migrants in the Swiss Labour Market, with a Special Focus on Migrants from Developing Countries

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with the collaboration of Rosita FIBBI

1. Introduction

After the Second World War, many industrialized countries – including Switzerland – resorted to procyclical exploitation of foreign workers, who were essentially low-skilled. The practice of such an immigration policy was initially used to satisfy the excessive internal labour demand during an economic boom, thereby sustaining growth (Salt et al., 2004).

The determinants of economic growth have changed progressively since the oil crisis of the 1970s. According to the *new growth theory*, human capital² is one of the necessary bases for economic growth (Lucas, 1988). Indeed, the gross domestic expenditure on research and development (R&D) increased significantly during the 1990s and the field of science and technology (referred to as S&T hereafter)³ grew considerably in the majority of developed countries, including Switzerland (Pastor, 2000). Moreover, the relative labour demand for highly skilled workers has increased at the expense of the less skilled, which is more commonly referred to as *skill bias technological change*. At the same time, we have observed an increase in the relative total labour supply of qualified workers. Accordingly, the nature of migration flows, which was mainly characterized by a low-skilled labour force, has evolved in favour of highly skilled labour (Pecoraro, 2005).

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2 The human capital indicates any form of investment made by an individual to improve his knowledge, his culture, his health, even his social network.

3 The concept of “science and technology” is related to the activities for which a high-skill level is normally required.

The aim of this chapter is to complete the existing literature concerning highly skilled migrants in Switzerland by offering new trends with a particular focus on developing countries as source countries, using a multitude of data sets available currently. This chapter is organized as follows. The first section introduces the subject, while the second section describes the labour migrants in Switzerland and their characteristics.

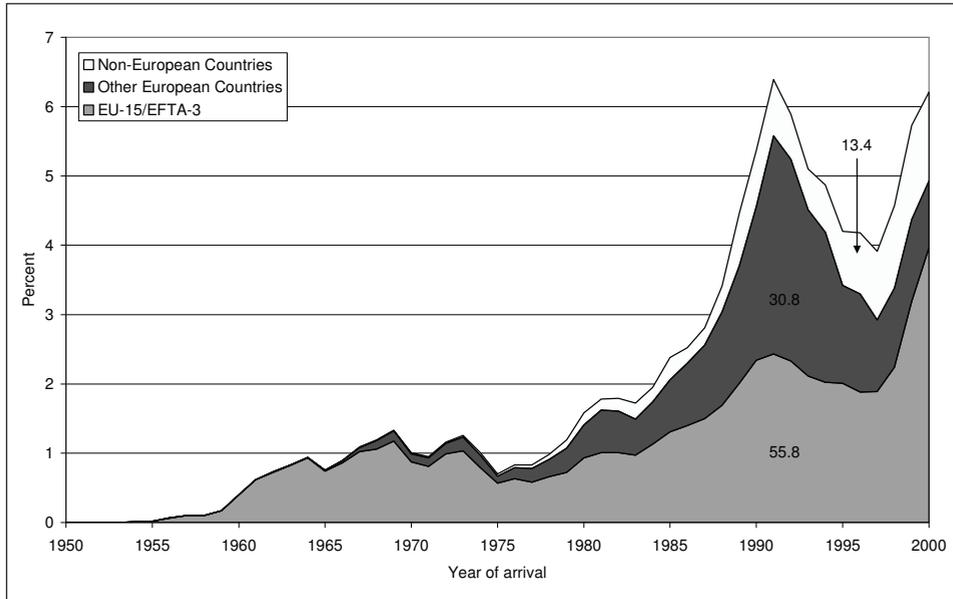
2. Immigrants in Switzerland: Some Descriptive Statistics

2.1 Overview

Figure 1 outlines the historical pattern of immigration into Switzerland for the primary migrant labour force in 2000, using matched data taken from the Swiss population census 2000, the Central Register of Foreigners (ZAR) and the Automated Personal Registration System (AUPER). Primary migrants are foreign-born persons who were at least 15 years old at the time of their entry into Switzerland. The graph shows that a large fraction of working-age primary migrants in 2000 are recent arrivals. At least 6% of all primary migrants arrived within the last year, around 12% arrived since 1999, and more than half arrived within the last ten years. The distinction between three groups of foreigners – those coming from the 15 (pre-enlargement) member countries of the European Union or the European Free Trade Association (EFTA) states, those coming from other European countries (including Eastern European countries, ex-Yugoslavia and Turkey), and those coming from the rest of the World – indicates major stylised facts of immigration to Switzerland.⁴ First, immigration fluctuates jointly with the business cycle, wars in ex-Yugoslavia and different policies intended to regulate the former. Secondly, the second half of the 1980s is characterized by a high growth rate of labour migration, especially coming from the other European countries. Thirdly, immigration from non-European countries primarily takes place from the 1990s (cf. Figure 2); during the same period, the Swiss government introduced a range of restrictive policies with respect to the admission of immigrants from outside the EU/EFTA area.

4 Notice that this graph illustrates the historical immigration pattern of immigrants who are resident in Switzerland in 2000, not the pattern of inflows, due to mortality and return migration.

Figure 1: Distribution of primary migrants living in Switzerland in 2000 by year of entry



Source: Swiss population census data 2000 (SFSO), Central register of foreigners (ZAR) and Automated Personal Registration System (AUPER).

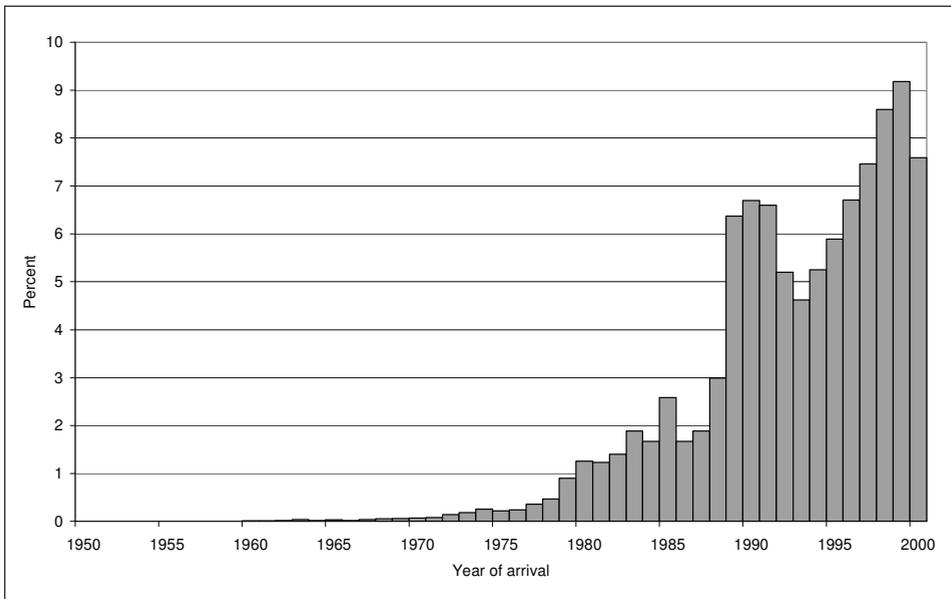
Note: Men aged 15–64; women aged 15–61.

According to these policies, which anticipate free mobility within the EU countries, employers are advised to fill their needs with migrants from within the EU, but they can prospect worldwide for skilled workers. However, these hiring strategies are conceivable only if no native worker can be recruited to fill the vacant job⁵ (with some exceptions regarding intra-firm transfer and family regrouping⁶). Thereby, the transition to a knowledge-based economy combined with the Swiss legislation in terms of immigration, which is based on the selective admission of immigrants according to skill level by means of the national origin, have probably contributed to qualifications improvement among contemporary migration flows.

5 According to the agreement on the free movement of persons between Switzerland and the EU (in force since 1st June 2002), the priority given to native workers does not prevail anymore towards citizens of the EU-15/EFTA since 1st June 2004.

6 The law project on foreigners adopted on 24 September 2006 by a majority of the Swiss population tightens from now on possibilities of family regrouping concerning non-European citizens.

Figure 2: Distribution of primary migrants from Non-European developing countries* and living in Switzerland in 2000, by year of entry



Source: Swiss population census data 2000 (SFSO), Central register of foreigners (ZAR) and Automated Personal Registration System (AUPER).

Note: Men aged 15–64; women aged 15–61.

* Africa, Latin America and Asia without Japan, Taiwan, South Korea, Singapore and Israel.

2.2 Highly Skilled Migrants on the Swiss Labour Market

There are at least two ways to measure a worker's skill level. The traditional method refers to the educational attainment; more precisely, the employed or unemployed workers with a tertiary-level education are defined as being high-skilled. The second method does not rely exclusively on the educational background, but it also takes into account the type of occupation; according to the "Canberra Manual" (1995), the highly skilled labour force either has successfully completed education at the tertiary level or else it is employed in a S&T occupation.⁷

7 The S&T occupations include a rather large group of jobs (corporate managers, specialists in their field of competences) and do not exclusively refer to scientific qualifications.

Table 1 shows the proportion of the migrant labour force⁸ with a tertiary-level education in 1990 and 2000. For nearly all migrant groups (excepted the Latin America community taken as a whole), this share improved during the 1990s. For the total migrant population, it increased by almost two thirds (21.1% in 2000 as opposed to 12.8% ten years ago). In 1990, most labour migrants from North America and Oceania had completed a tertiary-level education, whereas only a minority of those from other origins had such a qualification (the proportions ranged from 10% to 30%). In the year 2000, however, Chinese and Indian migrants showed higher shares of third-level educated workers than ten years before; these figures rose above 50% (also the case with South African migrants) while they remained below 30% in reports by regions of origin.

Table 1: Distribution of migrant labour force by the highest level of education attained

Geographical origin	1990			2000		
	Education		Total	Education		Total
	Below the tertiary level	Tertiary level		Below the tertiary level	Tertiary level	
Europe	88.5	11.5	655,358	80.3	19.7	649,414
<i>EU-15/EFTA-3</i>				75.3	24.7	413,665
<i>Other European Countries</i>				89.9	10.2	235,749
Africa	76.9	23.1	15,168	75.4	24.6	24,013
<i>North Africa</i>				70.7	29.3	9,323
<i>Sub-Saharan Africa</i>				78.5	21.5	14,690
<i>South Africa</i>				44.1	55.9	629
North America	32.3	67.7	7,088	20.4	79.6	9,607
Latin America	72.8	27.2	8,879	74.0	26.0	17,386
<i>Colombia</i>				63.9	36.1	1,508
Asia	82.8	17.2	36,932	75.8	24.2	43,304
<i>China</i>	72.8	27.2	1,687	46.8	53.2	2,527
<i>India</i>	74.6	25.4	3,520	41.0	59.0	2,923
Oceania/Other Countries	45.3	54.7	1,296	36.5	63.5	1,797
Total	87.2	12.8	724,721	78.9	21.1	745,521

Source: Swiss population censuses data 1990–2000 (SFSO).

Note: Men aged 15–64; women aged 15–61. The number of persons is obtained by extrapolation. The migrant population represents all foreign-born persons irrespective of the date of their entry into Switzerland.

Using the definitions included in the “Canberra Manual” (1995), Table 2.1 suggests similar trends. Since 1990, migrants to Switzerland have been increasingly highly skilled, whatever the origins of the population (apart from Latin America in aggregate terms). In 2000, highly skilled migrants represented 36.4%

8 In all tables of this paper, the migrant population represents all foreign-born persons whatever the date of entry in Switzerland.

of the migrant labour force compared to 22.2% ten years previously. This proportion reaches 38.9%, 30.1%, 38.3% and 35.4% among migrants from North Africa, Sub-Saharan Africa, Latin America and Asia respectively. Again, migrants from South Africa, China and India are mainly high-skilled (73.1%, 61.7% and 79.5% respectively).

A way to interpret migration in time with the census is to distinguish migrants according to the place of residence five years before 2000 – in Switzerland or abroad. In the latter case, migrants are considered recent. As can be seen in Table 2.2, the share of highly skilled labour among migrants recently arrived in Switzerland amounts to 54.9% – i.e. 18.5 points more than among the total migrant population. In other words, overall migration flows to Switzerland during the second part of the 1990s are increasingly related to a skilled labour force. However, this stylised fact is less straightforward for some regions of origin; for instance, recent migrants from North Africa, Sub-Saharan Africa and Latin America are less likely to be skilled with respect to their total counterparts. So we need another criterion – such as the year of entry into Switzerland – in order to assess with greater rigour how the skilled composition evolved in contemporary migration flows from various origins, with a particular focus on developing countries.

Table 2.1: Distribution of the migrant labour force by skill level

	1990			2000		
	Highly skilled	Low-skilled	Total	Highly skilled	Low-skilled	Total
Geographical origin						
Europe	20.8	79.2	655,358	35.3	64.7	649,414
EU-15/EFTA-3				41.6	58.4	413,665
Other European Countries				20.2	79.8	235,749
Africa	32.2	67.8	15,168	33.7	66.3	24,013
North Africa				38.9	61.1	9,323
Sub-Saharan Africa				30.1	69.9	14,690
South Africa				73.1	26.9	629
North America	82.1	17.9	7,088	90.5	9.5	9,607
Latin America	42.6	57.4	8,879	38.3	61.7	17,386
Colombia				45.8	54.2	1,508
Asia	25.6	74.4	36,932	35.4	64.6	43,304
China	36.2	63.8	1,687	61.7	38.3	2,527
India	42.6	57.4	3,520	79.5	20.5	2,923
Oceania/Other Countries	69.1	30.9	1,296	78.3	21.7	1,797
Total	22.2	77.8	724,721	36.4	63.6	745,521

Source: Swiss population censuses data 1990–2000 (SFSO).

Note: Men aged 15–64; women aged 15–61. Human resources defined according to the Canberra Manuel (1995). The number of persons is obtained by extrapolation. The migrant population represents all foreign-born persons irrespective of the date of their entry into Switzerland.

Table 2.2: Distribution of the migrant labour force in 2000, total vs. recent migrants

	Migrant population		Recent migrants*	
	Share of highly skilled	Total	Share of highly skilled	Total
Geographical origin				
EU-15/EFTA-3	41.6	413,665	66.0	76,064
Other European Countries	20.2	235,749	29.9	33,447
North Africa	38.9	9,323	35.7	4,038
Sub-Saharan Africa	30.1	14,690	28.4	6,050
<i>South Africa</i>	73.1	629	78.7	424
North America	90.5	9,607	91.4	5,316
Latin America	38.3	17,386	37.7	7,760
<i>Colombia</i>	45.8	1,508	41.3	894
Asia	35.4	43,304	41.3	13,370
<i>China</i>	61.7	2,527	65.4	1,257
<i>India</i>	79.5	2,923	83.6	1,227
Oceania/Other Countries	78.3	1,797	82.4	1,076
Total	36.4	745,521	54.9	147,121

Source: Swiss population census data 2000 (SFSO).

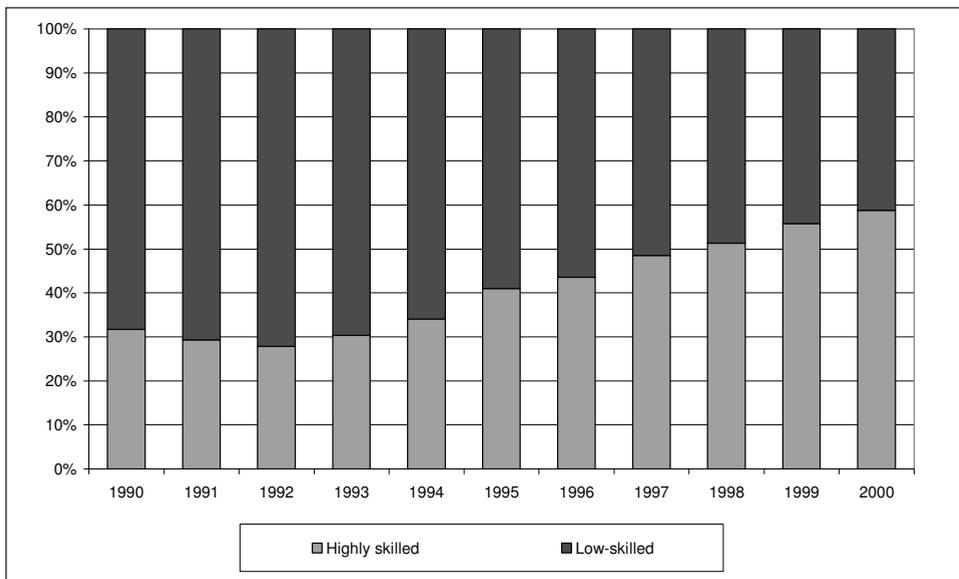
Note: Men aged 15–64; women aged 15–61. Human resources defined according to the Canberra Manuel (1995). The number of persons is obtained by extrapolation. The migrant population represents all foreign-born persons irrespective of the date of their entry into Switzerland.

* Recent migrants correspond to the migrants arrived in Switzerland after 1995.

Figure 3 presents the share of high-skilled labour by year of entry during the 1990s for the overall primary migrant population living in Switzerland in 2000. This share did not stop growing from the cohort who arrived in 1992 and rose above 50% among cohorts arrived since 1998. The maximum share is reached by primary migrants who arrived in the year 2000 (about 60% of this cohort). Hence, these trends confirm previous findings regarding the strong reorientation of migration flows towards more skilled people.

Figure 4 displays the same information according to four main regions of origin. In comparison with Figure 3, we also have an increase in the proportion of highly skilled labour from the cohorts who arrived at the beginning of the 1990s, except in the case of those coming from non-European developed countries (i.e. NEC I) whose cohorts remain by a great majority highly skilled (proportions ranging between 85% and 90%). However, the “speed” (= slope) of progression differs according to national origin. While the maximum share is reached among EU/EFTA cohorts who arrived in 1998 and 1999 (two thirds in each cohort), the share growth rate increased strongly among cohorts from non-EU/EFTA countries (North America, Japan, Taiwan, South Korea, Singapore, Israel and the countries of Oceania excluded) arriving during the same period (steeper slopes). When only non-European developing countries (i.e. NEC II) are considered, the share of highly skilled labour remains stable (around 30%)

Figure 3: Distribution of primary migrants living in Switzerland in 2000 by skill level, according to cohort of entry (since 1990)



Source: Swiss population census data 2000 (SFSO), Central register of foreigners (ZAR) and Automated Personal Registration System (AUPER).

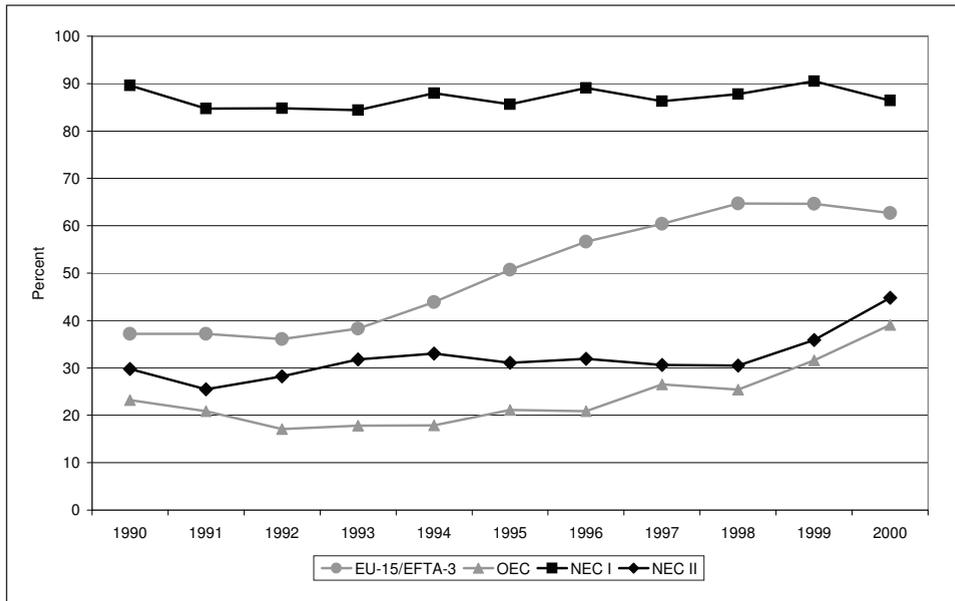
Note: Men aged 15–64; women aged 15–61. Human resources defined according to the Canberra Manuel (1995).

among the cohorts arriving between 1990 and 1998, then increases for cohorts who arrived after 1999 and reaches the maximum value (about 45%) among the cohort who arrived in 2000.

Figure 5 shows how the location of Switzerland within Europe plays an important role in attracting highly skilled labour from the EU countries (especially the border countries). In 2000, close to three quarters of all the highly skilled migrants come from the pre-enlarged European Union and the EFTA states; besides this it is worth noting that most of them are German, Italian and French (47% of all the highly skilled migrants). On the other hand, non-Europeans constitute only 15% of all the highly skilled migrants; proportions reach 5%, 4%, 2.9%, 2.7% and 0.6% among migrants from Asia, North America, Africa, Latin America and Oceania respectively. Moreover, the distinction between developed vs. developing non-European countries establishes that migrants from the latter origin account for less than 10% of all the highly skilled migrants. Lastly, we note that the share of Indians among highly skilled migrants is below 1% whereas this share is below 0.5% for Colombians or South Africans; accordingly, the likelihood that these particular populations exert any macroeco-

conomic influence (e. g. through remittances) on economic growth in their respective countries of origin should be relatively small, even insignificant.

Figure 4: Share of high-skilled primary migrants living in Switzerland in 2000, according to region of origin (four main groups) and cohort of entry (since 1990)



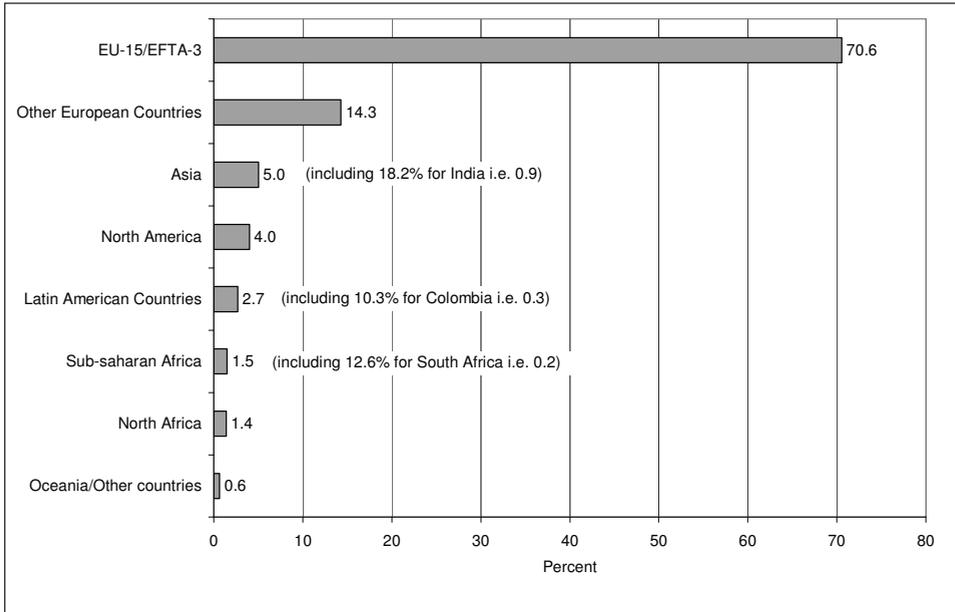
Source: Swiss population census data 2000 (SFSO), Central register of foreigners (ZAR) and Automated Personal Registration System (AUPER).

Note: Men aged 15–64; women aged 15–61. Human resources defined according to the Canberra Manuel (1995). OEC = Other European countries; NEC I = Non-European developed countries (i. e. North America, the countries of Oceania, Japan, Taiwan, South Korea, Singapore and Israel); NEC II = Non-European developing countries (i. e. Africa, Latin America and Asia without Japan, Taiwan, South Korea, Singapore and Israel).

Finally, Table 3 gives a better representation with regard to the distribution of high-skilled migrants by branch of economic activity. Highly skilled migrants, considered as a whole, hold a greater proportion of jobs related to manufacturing and energy. European nationals – 17.6% of high-skilled migrants from the EU/EFTA countries and 19.9% of those from the rest of Europe – are the most involved in this branch. They are in health and social activities too: they account for 15.6% of high-skilled migrants from the EU/EFTA countries and 21.2% of those from the rest of Europe. By focusing on the three selected countries chosen for the case study, we see that the fields of real estate and other business activities represent the most important share of highly skilled migrants from South Africa and Colombia (19.6% and 16.1% respectively).

We have, however, a rather different trend for high-skilled Indians; at least one fourth of them work in the health and social work sector.

Figure 5: Distribution of high-skilled migrant labour force in 2000 by geographical origin



Source: Swiss population censuses data 1990–2000 (SFSO).

Note: Men aged 15–64; women aged 15–61. Human resources defined according to the Canberra Manual (1995). The migrant population represents all foreign-born persons irrespective of the date of their entry into Switzerland.

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Table 3: Distribution of high-skilled migrant labour force in 2000 by branch of economic activity

Geographical origin	Branch of economic activity											Total	
	Agriculture and fishing*	Manufacturing and energy	Construction	Trade	Hotels and restaurants	Transport and comm.	Finance and insurance	Real estate and other business activities	Government services**	Education	Health and social work		Other services***
EU-15/EFTA-3	0.7	17.6	2.6	13.3	5.6	3.7	8.7	16.2	2.5	8.1	15.6	5.3	100.0
Other European Countries	1.1	19.9	5.6	12.8	8.3	4.2	4.3	10.8	2.3	4.5	21.2	4.9	100.0
North Africa	0.5	13.0	1.6	15.9	12.1	7.3	5.8	13.4	6.8	7.8	9.5	6.4	100.0
Sub-Saharan Africa	1.0	12.5	1.6	10.2	8.5	7.6	6.3	14.8	9.0	7.9	11.8	8.7	100.0
South Africa	0.4	12.2	0.4	12.5	5.1	9.8	18.0	19.6	1.6	9.8	4.3	6.3	100.0
North America	0.4	10.2	0.4	10.9	2.7	3.4	11.5	20.7	5.2	14.5	11.4	8.7	100.0
Latin America	0.8	12.8	1.5	11.2	7.5	5.0	7.1	14.5	7.2	9.0	14.7	8.9	100.0
Colombia	0.6	14.5	0.9	10.4	5.4	4.1	6.6	16.1	7.9	12.0	13.6	7.9	100.0
Asia	0.7	12.3	0.6	11.8	11.0	5.6	9.5	13.0	6.2	6.2	17.8	5.2	100.0
China	0.0	14.3	0.3	8.7	13.2	3.9	11.2	12.2	8.7	10.4	12.6	4.7	100.0
India	0.7	11.0	0.2	7.1	4.6	5.5	12.8	17.1	5.7	4.0	27.6	3.6	100.0
Oceania/Other Countries	0.5	12.3	0.5	9.5	3.9	9.3	13.3	20.2	5.6	12.3	4.8	8.0	100.0
Total	0.7	17.1	2.7	13.0	6.3	4.0	8.2	15.4	3.0	7.8	16.1	5.5	100.0

Source: Swiss population census data 2000 (SFSO).

Note: Men aged 15–64; women aged 15–61. Human resources defined according to the Canberra Manuel (1995). The migrant population represents all foreign-born persons irrespective of the date of their entry into Switzerland.

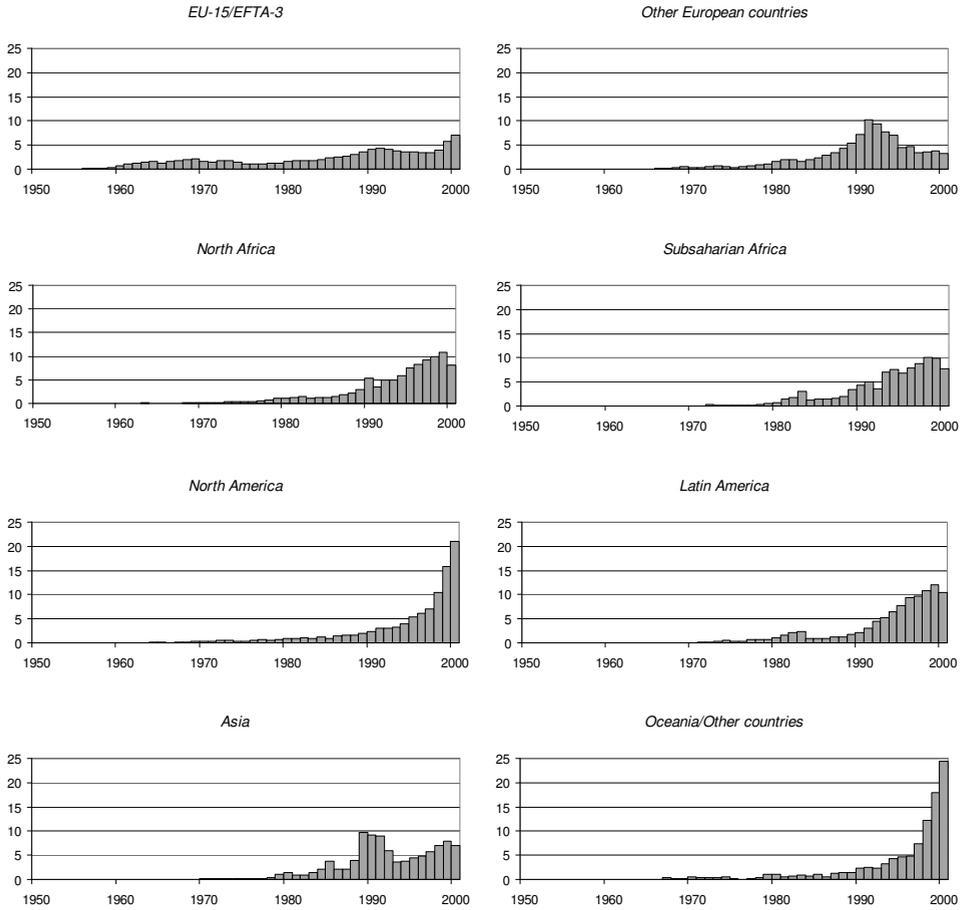
* This heading corresponds to the primary sector.

** This heading includes the extra-territorial organizations and bodies.

*** This heading includes the domestic services (i. e. private households).

Appendix

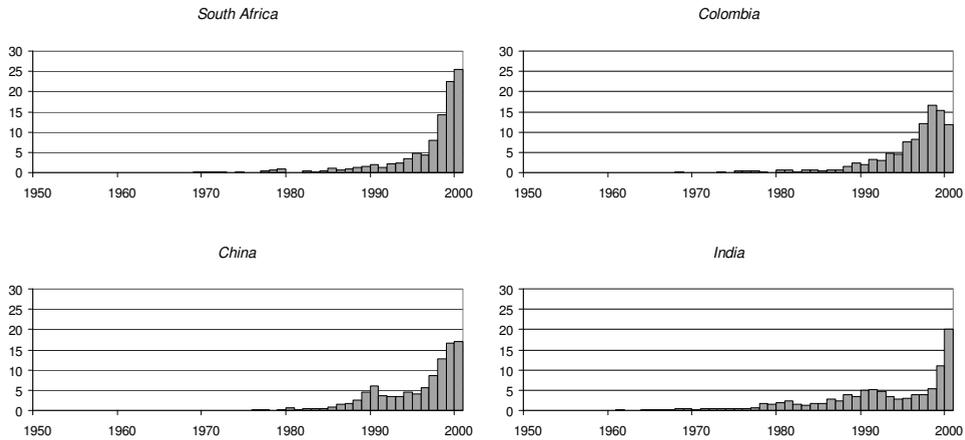
Figure A.1: Distribution of primary migrants living in Switzerland in 2000 by year of entry



Source: Swiss population census data 2000 (SFSO), Central register of foreigners (ZAR) and Automated Personal Registration System (AUPER).

Note: Men aged 15–64; women aged 15–61.

Figure A.2: Distribution of primary migrants living in Switzerland in 2000 by year of entry



Source: Swiss population census data 2000 (SFSO), Central register of foreigners (ZAR) and Automated Personal Registration System (AUPER).

Table A.1: Distribution of migrant labour force with a tertiary-level education by gender

Geographical origin	1990			2000		
	Gender		Total	Gender		Total
	M	F		M	F	
Europe	76.4	23.6	100.0	65.0	35.0	100.0
EU-15/EFTA-3				66.4	33.6	100.0
Other European Countries				58.6	41.4	100.0
Africa	86.9	13.1	100.0	74.3	25.7	100.0
North Africa				74.9	25.1	100.0
Sub-Saharan Africa				73.8	26.2	100.0
South Africa				63.8	36.2	100.0
North America	69.7	30.3	100.0	58.6	41.4	100.0
Latin America	71.3	28.7	100.0	45.2	54.8	100.0
Colombia				42.9	57.1	100.0
Asia	79.2	20.8	100.0	59.5	40.5	100.0
China	73.1	26.9	100.0	49.6	50.4	100.0
India	82.1	17.9	100.0	70.6	29.4	100.0
Oceania/Other Countries	75.0	25.0	100.0	64.8	35.2	100.0
Total	76.5	23.5	100.0	64.1	35.9	100.0

Source: Swiss population censuses data 1990–2000 (SFSO).

Note: Men aged 15–64; women aged 15–61. The migrant population represents all foreign-born persons irrespective the date of their entry into Switzerland.

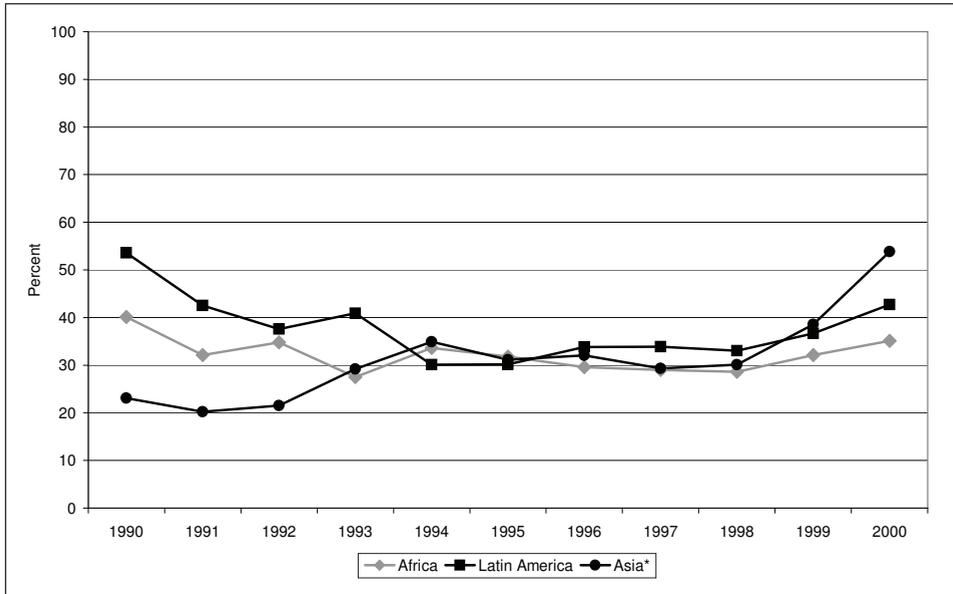
Table A.2: Distribution of high-skilled migrants by gender

Geographical origin	1990			2000		
	Gender		Total	Gender		Total
	M	F		M	F	
Europe	69.4	30.6	100.0	62.6	37.4	100.0
<i>EU-15/EFTA-3</i>				64.4	35.6	100.0
<i>Other European Countries</i>				53.8	46.2	100.0
Africa	83.9	16.1	100.0	71.3	28.7	100.0
<i>North Africa</i>				73.7	26.3	100.0
<i>Sub-Saharan Africa</i>				69.0	31.0	100.0
<i>South Africa</i>				59.2	40.8	100.0
North America	67.0	33.0	100.0	57.6	42.4	100.0
Latin America	62.2	37.8	100.0	45.3	54.7	100.0
<i>Colombia</i>				43.5	56.5	100.0
Asia	69.8	30.2	100.0	57.4	42.6	100.0
<i>China</i>	69.8	30.2	100.0	47.1	52.9	100.0
<i>India</i>	59.1	40.9	100.0	62.0	38.0	100.0
Oceania/Other Countries	72.7	27.3	100.0	65.2	34.8	100.0
Total	69.6	30.4	100.0	61.9	38.1	100.0

Source: Swiss population censuses data 1990–2000 (SFSO).

Note: Men aged 15–64; women aged 15–61. Human resources defined according to the Canberra Manuel (1995). The migrant population represents all foreign-born persons irrespective the date of their entry into Switzerland.

Figure A.3: Share of high-skilled primary migrants from non-European developing countries and living in Switzerland in 2000, according to region of origin (three groups) and cohort of entry (since 1990)



Source: Swiss population census data 2000 (SFSO), Central register of foreigners (ZAR) and Automated Personal Registration System (AUPER).

Note: Men aged 15–64; women aged 15–61. Human resources defined according to the Canberra Manuel (1995).

* Excluding Japan, Taiwan, South Korea, Singapore and Israel.

Table B.1: Distribution of tertiary-level students in 2000 by high level academic institution

	Tertiary-level education			Total
	Other tertiary level**	HES*	University	
Geographical origin				
EU-15/EFTA-3	18.8	14.6	66.7	15,053
Other European Countries	25.5	11.1	63.5	4,297
North Africa	12.3	18.4	69.3	903
Sub-Saharan Africa	17.8	14.8	67.4	1,099
<i>South Africa</i>	35.7	16.7	47.6	47
North America	16.5	12.0	71.5	819
Latin America	20.0	14.7	65.3	1,468
<i>Colombia</i>	15.1	15.7	69.2	209
Asia	26.8	29.4	43.8	3,996
<i>China</i>	30.3	34.8	35.0	1,674
<i>India</i>	22.7	32.3	45.0	325
Oceania/Other Countries	10.1	16.0	74.0	134
Total	20.7	16.2	63.1	27,154

Source: Swiss population census data 2000 (SFSO).

Note: The number of persons is obtained by extrapolation. The migrant population represents all foreign-born persons irrespective of the date of their entry into Switzerland.

* HES = Universities of Applied Sciences.

** Higher Vocational Education and Training (including Higher Technical Schools).

Table B.2: Distribution of tertiary-level students by gender, according to high level academic institution

	Tertiary-level education														
	Other tertiary level**				HES*				University				Total		
	Gender		Total		Gender		Total		Gender		Total		Gender		Total
	M	F	M		F	M	F		M	F	M		F		
Geographical origin															
EU-15/EFTA-3	54.7	45.3	100.0	58.5	41.5	100.0	51.9	48.1	100.0	48.0	52.0	100.0			
Other European Countries	59.2	40.8	100.0	51.9	48.1	100.0	42.9	57.1	100.0	48.0	52.0	100.0			
North Africa	85.4	14.6	100.0	79.0	21.0	100.0	68.1	31.9	100.0	72.2	27.8	100.0			
Sub-Saharan Africa	52.8	47.2	100.0	68.7	31.3	100.0	69.8	30.2	100.0	66.6	33.4	100.0			
South Africa	46.7	53.3	100.0	42.9	57.1	100.0	50.0	50.0	100.0	47.6	52.4	100.0			
North America	46.0	54.0	100.0	46.7	53.3	100.0	41.7	58.3	100.0	43.0	57.0	100.0			
Latin America	42.9	57.1	100.0	45.0	55.0	100.0	44.1	55.9	100.0	44.0	56.0	100.0			
Colombia	50.0	50.0	100.0	37.0	63.0	100.0	44.5	55.5	100.0	44.2	55.8	100.0			
Asia	49.8	50.2	100.0	51.4	48.6	100.0	49.4	50.6	100.0	50.1	49.9	100.0			
China	40.4	59.6	100.0	45.5	54.5	100.0	45.6	54.4	100.0	44.0	56.0	100.0			
India	79.7	20.3	100.0	80.2	19.8	100.0	77.2	22.8	100.0	78.7	21.3	100.0			
Oceania/Other Countries	66.7	33.3	100.0	42.1	57.9	100.0	48.9	51.1	100.0	49.6	50.4	100.0			
Total	54.4	45.6	100.0	56.1	43.9	100.0	50.7	49.3	100.0	52.4	47.6	100.0			

Source: Swiss population census data 2000 (SFSO).

Note: The migrant population represents all foreign-born persons irrespective of the date of their entry into Switzerland.

* HES = Universities of Applied Sciences.

** Higher Vocational Education and Training (including Higher Technical Schools).

Part II
Empirical Evidence and Policy Implications

Chapter 5

The Colombian Scientific Diaspora in Switzerland

Gabriela TEJADA¹

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Executive Summary

The research project “A Swiss Network of Scientific Diasporas to Enforce the Role of Highly Skilled Migrants as Partners in Development” was carried out during 2006 and 2007 with the financial support of the Geneva International Academic Network (GIAN) in an attempt to provide some clues on how to take advantage of the potential of skilled migrants from developing countries who live in industrialized countries in terms of their contributions to the development of their homelands. This project was based on three case studies: Colombia, India and South Africa, from the perspective of one country of destination: Switzerland.

On the basis of this research, this chapter examines the situation of the Colombian scientific diaspora in Switzerland and offers empirical evidence

obtained through in-depth interviews with 27 skilled Colombian migrants. The chapter analyzes the causes and characteristics of skilled Colombian migration to Switzerland, their living and working conditions, their everyday life experiences, as well as their relations with their country of origin and the initiatives they undertake to benefit development in Colombia. The chapter shows original transnational ways through which skilled Colombians can live in the country of destination while maintaining close links with Colombia, and it provides evidence of the obstacles they face and the positive elements that stimulate the impact of “brain gain” mechanisms, social remittances and other transnational practices that benefit the country of origin.

In order of importance, the main factors determining the migration of skilled Colombians to Switzerland are: studies and training; family regrouping/marriage; professional mobility; and socio-economic reasons. One usually finds a mixture of personal agendas and professional perspectives, objectives and training opportunities behind the decision of skilled Colombians to emigrate.

The French-speaking part of Switzerland is the main destination of most Colombian skilled migrants as a consequence of the social networks that have been built up over the past two decades there as well as the social capital derived from these networks. The contacts that Colombians maintain with their fellow nationals back home have helped to strengthen the network effect and this causes other skilled Colombians to also emigrate to Switzerland.

The Colombian case offers proof of how student mobility has put the labour market in the country of destination at the disposal of a group of qualified workers. In this respect, the great majority of Colombians who arrive in Switzerland for study and scientific training reasons enter the labour market after they have finished the training that brought them to Switzerland in the first place. Their most significant push factors are: the limitations in some scientific areas, the lack of resources for research, the shortage of materials and equipment, the small number of research positions and the lack of doctoral programmes in certain disciplines, etc.

Family regrouping/marriage is the second most important factor behind Colombian skilled migration to Switzerland. All Colombian respondents who left their country of origin for family regrouping or marriage reasons or because their partner was a Swiss citizen were women. The evidence shows how family migration due to family regrouping/marriage helps to introduce valuable human resources into the job market and the scientific world in the country of destination. Accordingly, all the skilled Colombians who have come for family reunification familiar/marriage reasons have followed a professional or scientific career in Switzerland. For some Colombians, the most significant factor after their decision to emigrate to Switzerland was the presence of family members in that country, together with their desire to find better profes-

sional and living opportunities. The Colombian case also offers us evidence of the complex mixture of motivations behind migration, the interaction of gender aspects with various migration patterns, which include circular migration, temporary return to the country of origin and permanent residence in the country of destination.

The third most important reason causing skilled Colombian migrants to move to Switzerland is labour mobility. In this case, labour mobility is facilitated above all by the social networks and the social and professional contacts established previously by Colombians, and to a lesser extent it is also facilitated by family contacts in the country of destination.

Finally, socio-economic reasons also play a decisive role in the migratory processes of skilled Colombians. As they search for better professional opportunities, the skilled Colombians are attracted to pull factors such as training opportunities and/or the chance to pursue their careers in an environment of academic and scientific excellence, the high quality of life, the stability, etc. At the same time, additional push factors which stimulate the emigration of Colombians include a lack of opportunities in Colombia and the atmosphere of violence and insecurity.

Scientific exchange as well as scholarships and bilateral cooperation programmes are decisive factors which encourage Colombians to leave their country of origin. A third of the Colombians interviewed had received scholarships to carry out research in Switzerland. Furthermore, many of the Colombians who arrive in Switzerland through scholarship or scientific exchange programmes are offered jobs once they finish their studies or their research and for this reason they have not returned to their country of origin as they had originally planned.

As far as the migratory routes of the Colombians are concerned, we should mention here that the nomadic lifestyle of the scientists causes them to move to different countries and it also explains why they had spent time in other destinations before arriving in Switzerland. Some Colombian scientists returned to Colombia temporarily but then came back to Switzerland, passing through a third country in many cases, often to accept professional development or training opportunities which were better than those offered in their country of origin. In several cases, family and personal factors also influenced the migratory dynamics. The Colombian case shows that, unlike less qualified migrants, skilled migrants can move with greater ease and they have more options to choose from.

The skilled Colombians have varying initial experiences in the country of destination, which are especially related to the factors determining migration. Accordingly, those Colombians who arrived in Switzerland with scholarships or work contracts generally have more positive first experiences than those who emigrated for family regrouping/marriage or socio-economic reasons. Further-

more, the Colombians who rate their initial experiences as positive are those who lived in other countries before arriving in Switzerland and those who started a job immediately after they arrived in the country of residence as well as the few who already knew one of the local languages.

The strong social network that the Colombian diaspora has created over the past decade especially within the environments of the Swiss Federal Institute of Technology in Lausanne (EPFL) and the University of Lausanne (UNIL) is another significant element which contributes to skilled Colombians having positive experiences when they arrive in Switzerland. The Colombians recognize that to a large extent they have been able to establish initial contacts which have facilitated their first experiences, thanks to the Association of Colombian Researchers in Switzerland (the ACIS). For others, their senior work positions in private industry and the multicultural and international environment have certainly been of great help.

In contrast, the initial experiences in Switzerland of those who did not come with the help of a scholarship or a work contract are difficult. Adapting to a new culture, lifestyle, climate, rhythm and intensity of work, the difficulty of making friends and the fact that they are far from their families, the difficulty of obtaining a work permit and in some cases sexual or racial discrimination and the non-recognition of their academic diplomas are the most significant obstacles faced by skilled Colombians. Skilled Colombians recognize that learning the local language is a key step for professional and social integration.

On the other hand, some skilled Colombian women felt discriminated against on their arrival in Switzerland, both socially and professionally. This is something that changed once they learned the language or became integrated in professional life. The Colombian case shows the important difficulties faced by women when they try to transfer their academic and professional resources across borders in order to reach a level of integration suited to the level of their capabilities.

For some skilled Colombians their migrant status has seen them question their personal identity as well as their feeling of belonging, especially if they have had difficult initial experiences after their arrival in Switzerland. The process of identification as individuals and as group members in a different country has carried an emotional burden for skilled Colombians, especially women. For those who did not receive a work permit when they arrived in Switzerland and who previously had professional careers in Colombia or other countries, migration to Switzerland meant a change of status, and specifically the loss of their professional standing. Once the skilled Colombian migrants decide to remain on a definitive basis in the country of residence, generally their desire to integrate increases and this facilitates the feeling of affinity with their new identity.

Skilled Colombian women with small children come up against many major obstacles as they search for a balance between family life and their professional or scientific lives. They disagree with the role that society expects from mothers in Switzerland in the sense that it is assumed that they will stay at home to look after their children. In addition, they believe the Swiss system is not designed for working mothers, but rather and on the contrary, it discourages them from doing both jobs. This is unlike Colombia where the system is designed to allow women to enjoy a family life and a professional life at the same time.

In their free time, skilled Colombians practice sports or outdoor activities, cultural activities, participate in philanthropic activities, and they also meet up with Colombian friends and/or family members or people of other nationalities during the weekends. The skilled Colombians recognize the respect that the work culture grants to free time and family and private life, the flexibility offered by academic life and the possibility to work part-time as major advantages of the Swiss quality of life.

The Colombians create contacts with other national communities, with the local community and with the Colombian community, which strengthens their social capital. While the majority feel a special affinity with Colombians, there are others who would rather not meet their fellow countrymen simply because of their shared nationality or common culture but rather only if they have an affinity of interests.

Professional and institutional contacts as well as social relations are decisive factors for the integration of the skilled Colombians in the country of residence. While many Colombians make use of the social capital that they bring with them when they arrive in Switzerland, others need more time to gain access to new social and cultural resources which are essential for their integration. They do this through their professional activities, study programmes, their knowledge of the language or their active participation in associations.

Most Colombians feel comfortable living in Switzerland and they consider themselves to be well integrated into the social and/or professional life of this country. The existence of a continuous bifocalism or sense of a double framework of reference is a significant element that has been observed among the majority of skilled Colombians in Switzerland, since in their everyday lives they persistently compare their condition in their country of origin (“there”) with their situation in the country of residence (“here”). The transnational feeling is especially strong among those Colombians who have spent a long time outside Colombia as well as among those who have settled down permanently in Switzerland. Likewise, skilled Colombians emphasize their “feelings for Colombia” and show their roots, culture and Colombian identity, regardless of their level of integration in the country of residence.

The Colombian case offers evidence that the identity of the migrants is influenced by their migratory status, the type of residence permit and the type of citizenship they hold. For many skilled Colombians the fact of having a stable residence permit has become a major factor when it comes to deciding whether or not to settle, insofar as it offers them the possibility to think in the medium and long term future. This, in turn, helps to increase their identification with the country of residence and with this, their integration and transnational feeling and identity. The migratory status of the Colombians changes during their residence in the country of origin; a third of the skilled Colombians who participated in this study have become naturalized Swiss while retaining their Colombian nationality.

Skilled Colombians who have dual citizenship feel that this condition stimulates the feeling of integration in Switzerland and it facilitates their entry into the labour market. Accordingly, being a citizen of the country of residence has contributed to skilled Colombian migrants considering themselves full members of the host society.

With regard to the specific practices and initiatives of the skilled Colombians in benefit of their country of origin, the project identified, a priori, three “brain gain” mechanisms which have been shown to have an impact on the development of the countries of origin: the creation of networks and associations of the scientific diaspora; investment strategies for experimental research and development (R&D); and North-South scientific collaborations. The declarations of the Colombians provide proof of their active participation in the creation of the Caldas Network, which has been a paradigmatic example on a global level of an innovative way of taking advantage of the resources of the emigrated abilities. The Swiss node was hosted by the ACIS association. The ACIS is a clear example of an association of the scientific diaspora which has had an impact in the field of science and technology in the country of origin as some of its members have contributed to the creation or reinforcement of a critical mass in key areas such as the environment, medicine or ICT, through scientific collaborations based on individual efforts.

The Colombian case shows the key role played by the networks and associations of the scientific diaspora insofar as they facilitate the implementation of the other two brain gain mechanisms: R&D and North-South scientific collaborations. The implementation of joint research projects between a partner in Switzerland and a partner in Colombia is a well elaborated way that North-South scientific collaboration impacts science and technology in Colombia.

Furthermore, skilled Colombians usually transfer social remittances, which are a type of personally motivated initiative understood as practices, ideas and social capital which the migrants channel from the country of destination to the

country of origin, especially for the benefit of the less resourced social sectors in Colombia mainly through philanthropic activities.

Family or kin support is an additional advantage that skilled Colombians abroad offer their country of origin. The majority promote ties with their family and friends back in the homeland and keep in constant touch with their families in Colombia. Likewise, more than half of the skilled Colombians in Switzerland who were interviewed send financial remittances to their families on a systematic basis. The skilled Colombians encourage a productive use of the remittances that they send, most of which go towards financing the education of some of their family members or investing in the infrastructure of their family dwellings.

Other actions/practices of skilled Colombians which generate a positive impact include their contribution to building up the good reputation of Colombians abroad and the creation of an awareness of Colombia in an attempt to improve the general perception that people have of the country.

On the other hand, other actions and the practices of the skilled Colombians involve a transfer of knowledge to the country of origin. A third of the skilled Colombians who were interviewed maintain scientific and/or professional exchanges with Colombia on a permanent and systematic basis. Furthermore, most of the skilled Colombians possess abilities, knowledge and resources of great value which they can offer to the country of residence as well as to the country of origin, thanks both to their scientific and professional contacts as well as their international experiences.

Skilled Colombians do not follow specific “brain gain” strategies but rather, they base their initiatives on whatever opportunities present themselves as well as personal motivations and interests. Furthermore, constant communication, networking, forming institutional contacts and becoming part of associations, and the possibility to find suitable partners are all elements which have boosted the chance of seeing their initiatives carried out. For some Colombian scientists the good reputation that they have in the scientific field, their personal motivation and their scientific interests are additional positive elements, which allow them to carry out their projects for the benefit of Colombia.

The recommendations of the skilled Colombians on how to carry out initiatives for the benefit of Colombia are directed at the institutions in the country of destination as well as those in the country of origin, especially with regard to the necessary institutional and financial support.

The project identified three determining factors that facilitate initiatives of the Colombian scientific diaspora for the benefit of their country of origin: motivation; the ability to mobilise; and the appropriate environment and policies. The vast majority of skilled Colombians possess a deep desire to give something back, which can benefit their country of origin. Their strong feeling

of motivation towards Colombia is palpable. For many their reaction is to give their country back some of what it has given to them and this is based on personal inspirations and ambitions to make their knowledge, resources and experiences available to society in their country of origin.

The evidence shows how the mobilization of resources of the Colombians for their country of origin has taken place both on an individual and informal manner based on personal motivation and aspirations, as well as through collective efforts maintained especially through their participation in the ACIS where they share a sense of community. The skilled Colombians interviewed have participated in the creation of other associations of Colombians in Switzerland, dedicated to strengthening exchanges between the Swiss and Colombian or Latin American communities, promoting the integration of Colombians in Switzerland, fostering social and cultural activities or supporting social projects.

Some skilled Colombians do not tend to work in a group or promote mobilization for the benefit of Colombia through collective action. Some feel that the dispersion of the initiatives of the diaspora is little more than a reflection of the political polarization in Colombia. In this way, the Colombian case shows how weak social cohesion experienced by the Colombian society is reproduced in its diaspora, and one of its implications is the difficulty to meet their compatriots and form solid associations.

Nostalgia is a common element among skilled Colombian migrants. Despite being an element that grows stronger among emigrants with the passing of time, it is not a decisive element in terms of the promotion of common activities with compatriots in the country of destination.

The skilled Colombians expressed their opinion on the environment and policies to promote their initiatives for the benefit of Colombia. As far as the situation in Colombia is concerned, some of the Colombians believe that the situation has improved considerably in recent years. However, the social inequality in Colombia, evidenced by the gap between rich and poor, is a fundamental concern for skilled Colombians. Poverty, social polarization, the bad distribution of wealth and violence are elements that worry the Colombians in Switzerland.

As far as the political situation is concerned, the skilled Colombians believe that the weakness of the institutions, corruption, and the lack of transparency show that the Colombian institutions still have a long way to go in terms of governability and the state of law. On the other hand, Colombian scientists are sceptical of Colombia's scientific policy, emphasizing its lack of continuity and especially the lack of systematic support for this sector, which is fundamental for the development of the country.

The perception Colombians have of the socioeconomic and political climate of their country of origin influences the way they view the opportunities

that it offers them when they have to decide whether to return or remain in Switzerland. Skilled Colombians are convinced of the need for their country of origin to create opportunities in order to retain its human capital and also to encourage the return of those who have immigrated to other countries. The lack of opportunities which can encourage most skilled migrants to remain in Colombia is viewed as a major problem by skilled Colombians in Switzerland.

Skilled Colombians have an extremely positive perception of Swiss scientific policy in relation to the environment and the policies in the country of residence and they recognize that investment in science is a priority and that the public resources for research are enormous. However, they are more critical of Swiss migratory policy which they consider to be a failure insofar as it does not make the most of skilled migrants from developing countries that have lived in Switzerland for a number of years, and they disagree with the two-circle model which does not facilitate the integration of skilled persons from developing countries in the job market.

The skilled Colombians emphasized the fact that both the country of origin and the country of destination should recognize the potential and worth of the scientific diaspora through suitable policies that can take advantage of their resources and capacities.

With regard to their plans for the future, skilled Colombians are interested and motivated in terms of establishing or increasing their ties with their homeland and therefore they expect to have specific projects in the future with their Colombian counterparts. The possibility of making plans for the future is based on a stable professional situation. The evidence shows that, unlike lesser qualified people, skilled Colombians have a broader spectrum of options that allows them to plan their future.

Some skilled Colombians are interested in finding a system of living that will allow them to move between the two countries, Switzerland and Colombia, on a regular basis. On the other hand, half of the Colombians interviewed have no intention of returning to Colombia although they are interested in building or strengthening the ties between the country of origin and the country of destination. Many of those who wish to return are sceptical about the professional opportunities that Colombia can offer them, and they feel that they would be making an important professional sacrifice were they to return home, and therefore they are not really that willing to return. A favourable environment back in the homeland is the only thing that could encourage the return of the skilled Colombians and help them contribute to the progress being made in the socioeconomic development of Colombia. On the other hand, some skilled Colombians intend to return to Colombia once they have retired.

The Colombian case study shows how personal and family relations have become increasingly important factors in the decisions of migrants to leave

their country of origin and to return. It shows also how the skilled Colombian migrants who arrive in Switzerland on a temporary basis to study or pursue scientific training, and those who start a relationship with a Swiss citizen while they are in Switzerland, rarely end up returning to their country of origin. Likewise, in the case of Colombians with children of school age, the educational opportunities and the suitable environment for their children influence their decision to remain in Switzerland, return to Colombia or go to another country. Accordingly, the evidence shows that it is normal for children to determine the migratory routes of skilled migrants.

Some skilled Colombians consider their presence abroad to be of great importance for Colombia in terms of encouraging its national science and technology system. Likewise, the skilled Colombians in Switzerland believe it is primordial to have a systematic interchange between the skilled Colombians who have returned to Colombia and those who remain abroad.

Introduction

International migration occupies a position of priority on the current international agenda. While the magnitude of migratory flows and their complexity have increased in recent years, there has also been a rise in the interest in research which advances our knowledge of the reality of the phenomenon and the search for specific actions that can contribute to minimizing the negative effects and maximizing the positive impact of migration.

The research and action-oriented project “A Swiss Network of Scientific Diasporas to Enforce the Role of Highly Skilled Migrants as Partners in Development”² looked at the migration of highly qualified individuals as a social phenomenon and as a subject for study which is no longer perceived as something totally prejudicial for the countries of origin and approached the matter by examining the value of the resources and practices of the scientific diasporas in the promotion of the development of their homelands. Brain drain and the growing knowledge gap justify the innovative forms of knowledge transfer carried out both collectively through diaspora associations and networks as well as through individual strategies based on the personal motivation of skilled

2 The project was directed by the Cooperation@epfl unit at the EPFL and was carried out in collaboration with the International Labour Office (ILO), the University of Geneva (UNIGE), the University of Lausanne (UNIL) and the Swiss Forum of Migration and Population Studies (SFM), with financial support from the Geneva International Academic Network (GIAN).

migrants. The research included field work carried out during 2006 and 2007 through in-depth interviews of a qualitative nature with skilled migrants from three countries: Colombia, India and South Africa from the perspective of one country of destination (Switzerland) and included two workshops during which the political implications were discussed.

This chapter offers knowledge-based evidence on the Colombian scientific diaspora in Switzerland based on the results of this project. A total of 27 in-depth interviews were held with skilled Colombian migrants and these offered evidence on: 1) their migratory paths and living conditions in Switzerland; 2) their links to the country of origin and brain gain mechanisms and strategies; and 3) the best environment and support policies that encourage them to be partners in development. Through an analysis of the results of the research, this chapter provides a diagnosis of the situation, lists the activities and experiences of skilled Colombians in Switzerland and illustrates how the plethora of motivation, knowledge and resources that they have to offer have enormous potential in terms of having a positive influence in their country of origin. From a gender perspective, the research brings to light some specific elements of the experiences of skilled Colombian women in Switzerland.

Right from the moment of conception of the initial ideas on which this project was based, it was always clear that the Colombian case had to be included in this research study. The Colombian scientific diaspora is a global case of reference insofar as it was the first to put into practice the idea of the “scientific diaspora option” through the creation of the Caldas Network, the aim of which was to link Colombian scientists abroad with the local scientific community. A large part of the technical and human structure which made the creation of the Caldas Network possible, and which enjoyed its rapid rise and then suffered its downfall, had its origins in Switzerland. In spite of the lack of sustained support due to the irregularity in Colombian science and technology policy, the shortage of resources and lack of a consistent institutional strategy as well as poor recognition of the value of scientific diasporas in Switzerland, this structure continues to operate on an active basis being fed by the dynamism of Colombian researchers in Switzerland. However, very little is known about it.

The chapter provides empirical evidence on the transnational practices of skilled Colombians in Switzerland, showing the value of their resources in promoting development in the country of origin and specifically the Colombian agenda on science and technology. Particular transformations are revealed, for example: the strengthening of specific research areas thanks to their contribution to the creation of a critical mass in fields such as the environment, ICT and medicine or their influence in the design of science and technology poli-

cies. Although affective capital and the ability to mobilise are elements that the Colombian scientific diaspora can offer, there has been a lack of support from a consistent scientific policy that can capitalize on their resources. The conclusion reached is that the trend for the dynamic action of the Colombian scientific diaspora to advance faster than the local public policies which recognize it and take advantage of it needs to be reverted through its inclusion on the development agenda, while it is hoped that decentralized transnational activities that benefit the development of Colombia can continue and expand over the course of time.

The chapter provides some guidelines for future research into scientific diasporas, which suggests the areas that need to be studied in greater detail, and offers some political recommendations to take advantage of the resources of the scientific diasporas both in the country of origin and in the country of residence.

The chapter is structured in two main sections. The first section, which introduces the subject, offers a broad outlook of the Colombian context, including information on the socioeconomic and political situation, and it provides a general overview of the science and technology environment in this country. We also examine the origin of the Colombian scientific diaspora network, offering evidence of the importance that Colombian scientists in Switzerland played in its creation. The most significant Colombian institutional initiatives in favour of diasporas and skilled migration are also mentioned.

The second section presents the results of the research project on skilled Colombian migrants in Switzerland, providing an analysis of the empirical evidence gathered through field work, showing the most representative testimonies of the skilled Colombians who were interviewed. This second section is divided into five main parts. The first part offers a brief description of the research project and the methodology used. The second part shows the causes and the characteristics of skilled Colombian migration to Switzerland, describing their main determining factors and migratory routes and offering a portrait of the daily life of skilled Colombians in this country as well as their living and work conditions. A special emphasis is placed on integration in the country of destination, analysing the influence of the residence status and transnational identity with regard to their feeling of integration in Switzerland. The third part identifies some “brain gain” mechanisms implemented by the skilled Colombians which generate an impact in the country of origin, which brings to light the importance of the role played by the Association of Colombian Researchers in Switzerland (the ACIS) in promoting bilateral, bottom-up scientific collaboration. We also highlight other actions and practices of skilled Colombians which involve a transfer of knowledge, including social remittances and other transnational practices and positive impacts for the benefit of Colombia. In the

fourth part three determining factors which facilitate the initiatives of the Colombian scientific diaspora for the benefit of their country of origin are identified: motivation; the ability to mobilise; and a suitable environment and appropriate policies. We can see how the mobilization of the resources of Colombians towards their country of origin has taken place in both an individual and informal way based on personal aspirations, and through collective efforts maintained especially through their participation in the ACIS. Evidence is provided of the need for both the country of origin and the country of destination to recognize the potential and the value of the scientific diasporas through suitable policies which can take advantage of their resources and abilities. The fifth part provides evidence of the future plans and expectations of skilled Colombian migrants in Switzerland. A final section outlines the conclusions and makes specific recommendations to capitalize on the resources of the Colombian scientific diaspora to benefit the development of Colombia.

1. Colombian Context

1.1 General Political and Socioeconomic Situation in Colombia

Colombia, with its 45 million inhabitants, is a country that has many valuable natural, cultural and social resources. Today it has one of the fastest-growing economies in Latin America. Despite these resources, as in other Latin-American countries, the country's wealth is unequally distributed among its inhabitants. In socio-political terms, what makes Colombia stand out from other countries in the region is its armed conflict, whose roots lie in the rise of the Revolutionary Armed Forces of Colombia (FARC) and the National Liberation Army (ELN)³ at the beginning of the 1960s. This conflict has affected every class, social organisation and area of the country, and, as a result, social violence has spread through the entire social framework. The consequence has been an erosion of legality and the rule of law. The current President, Alvaro Uribe, who was re-elected in 2006 for a second 4-year term, rose to the presidency promising to implement a democratic security policy that would re-

3 These organisations encourage armed conflict to address social, political and economic inequalities in Colombia, and promote solutions to the populations' social needs against what they consider 'a failed democracy'. In addition to using violence, they are also involved in drug trafficking.

establish public order and help to undermine the guerrilla forces and thus resolve the social conflict. With this in mind, Uribe initiated peace negotiations with the aim of dismantling the various paramilitary groups. He offered them an amnesty under the controversial Peace and Justice Act. His actions have fuelled great expectations in Colombian society. A further direct consequence of the social conflict has been the humanitarian crisis that Colombia has faced as a result of the large number of people who were forced to flee their homes. According to IOM data (2005), there were about 2.5 million internally displaced persons (IDPs) in Colombia at the end of 2002. This is one of the largest populations of IDPs in the world. According to data from the same source, more than 1.2 million Colombians have emigrated since 1997. Remarkably, however, the turbulent social and political situation in Colombia has not prevented strong economic growth in recent years.

The Colombian economy has seen much positive development in recent years and shown significant growth prospects, mainly as a result of increased investment over the past six years. The Colombian economy registered growth of 6.84% and 7.52% in 2006 and 2007 respectively, in part based on the remarkable growth of over 10% in the manufacturing industry, transport, construction and trade sectors and through privatisation and further private sector investment in the coal, petrol and gas industries.⁴ Other positive factors are an increase in exports⁵ and remittances from abroad, as well as in foreign direct investment (FDI), which exceeded US\$ 6,000 million in 2006 and increased by 40% in 2007 with US\$ 9,000 million according to the same source. This increase, alongside the country's position as the third most popular destination for FDI (after Brazil and Mexico) in Latin America, is a clear sign of foreign investors' confidence in Colombia's economic opportunities. Moreover, it is worth mentioning industrialised countries' support for Colombia through eco-

4 Source: Colombian Economic Gazette (Boletín Económico de Colombia, April 2008), prepared by the Colombian Embassy in Switzerland (<<http://www.emcol.ch>>).

5 It is worth mentioning that Switzerland is the fourth destination country for Colombian exports and these were up by 58% in 2007 compared to 2006 reaching US\$ 885 million. Similarly, imports from Switzerland increased by 37% over the same period to a total of US\$ 339 million according to data from the Colombian Economic Gazette (Boletín Económico de Colombia, April 2008). Moreover, in the context of the celebration of the centenary of diplomatic relations between Colombia and Switzerland, a Free Trade Agreement was signed between Colombia and the countries of the European Free Trade Association (EFTA) in November 2008. With this agreement, Colombia has consolidated its trade relations in goods, services, and investment with these European countries whilst also strengthening its strategy to become an active member of the international community. The agreement was approved by the Swiss Federal Council on March 6th 2009.

conomic and trade policy measures to foster development.⁶ As RICYT's "State of Science 2008" report shows, these macroeconomic data indicate an encouraging panorama. Colombia's case is one example of the six-year cycle of sustainable growth (2002–2008) from which Latin America has benefited.⁷ However, a large section of the Colombian population still lives in poverty and has no access to the prosperity that can be expected of this economic growth.

1.2 Science and Technology in Colombia

Economic conditions affect a country's potential to encourage the development of national systems of science, technology and innovation, as stressed in the UNESCO Science Report (2006). The brief overview of the recent economic situation in Colombia provided above may give us some clues to its potential in terms of the advancement of science and technology (S&T). Some statistical data about S&T in Latin-America and the Caribbean region might well be useful at this stage to offer an overview of Colombia's position and regional potential in the S&T sector. According to data from the UNESCO Science Report (2006), the Latin American and Caribbean region (LAC) accounts for 8.3% of the world's population and 8.9% of the world's GDP. However, this region represents only 3.2% of the world's investment in research and development (R&D), while Asia, with a population six times greater, represents 35% of investment worldwide in R&D. On average, the LAC countries invest 0.6% of their GDP in R&D, while the world's richest countries each invest 2–3% of their GDP in this area. LAC countries contributed only 2.6% to the total scientific publications worldwide in 2001, and this contribution was much lower than that of Asia (18.2%) and paled into insignificance when compared with figures for the richest countries (31.8% for North America and 42.1% for Europe). The contributions by LAC countries are unequally distributed; for instance while Brazil represents over 40% of the total scientific publications from LAC countries and Mexico and Argentina account for 20% of the total, Chile, Venezuela, Cuba and Colombia each contribute less than 8%.

6 For example, according to the official communication (<<http://www.seco.admin.ch/aktuell/00277/01164/01980/index.html?lang=en&msg-id=17694>>) dated 070308 aiming to improve the effectiveness and efficiency of Swiss development cooperation, the Swiss Federal Council approved a total of 800 million of Swiss francs (some US \$ 700 million) over a period of four years (2008–2012) to finance economic and trade policy measures in favour of development to seven countries (one of them being Colombia), which will allow the State Secretariat for Economic Affairs (SECO) to continue its bilateral cooperation activities in favour of developing countries.

7 <<http://www.ricyt.org/interior/interior.asp?Nivel1=6&Nivel2=5&IdDifusion=25>>.

The UNESCO figures and data clearly show that in most countries in the LAC region, the percentage of investment in S&T fluctuates wildly from one year to the next according to economic and political circumstances, which Cetto and Vessuri (2006) stress as factors that have “a direct influence on the stability and potential of developing national science, technology and innovation systems.” Moreover, these indicators highlight the overriding problem of a lack of both human and financial resources for S&T activities in the LAC region. These statistical data indicate that, apart from the case in point of Brazil, the LAC region still has a long way to go until it can be regarded as a major player in the international scientific arena. Nevertheless, like most developing countries, LAC countries are generally aware of the need to strengthen their S&T capacities, which are still weak, if they are to build a knowledge society that recognises knowledge, education, science, technology and innovation “as the most important engines for progress today” (Tindemans, 2006).

There have therefore been some important and noticeable efforts made to raise the profile of national science, technology and innovation systems. LAC countries are also aware of the importance of making use of cooperation in this regard “which is for them a possibility to enlarge their horizon further their national frontiers” (Cetto and Vessuri, 2006); Colombia is also following this general trend.

According to the Network of Science and Technology Indicators writing in its “State of Science 2008” report,⁸ Colombia has 45 million inhabitants and a GDP of US\$ 135 billion (2006). Its total annual expenditure on S&T in 2006 was US\$ 636 million, which represented 0.47% of GDP⁹ (Table 1). Colombian

8 The data from RICYT (<<http://www.ricyt.edu.ar>>) are based on information provided by its member countries following the rules of the Frascati Manual of the OCDE (<http://www.madrimasd.org/MadridIRC/documentos/doc/Manual_Frascati_2002.pdf>), which is one standard for R&D surveys worldwide. However, it is worth mentioning that RICYT’s data does not necessarily match the figures published by Colciencias and the Colombian Science and Technology Observatory. Concerning expenditure on S&T in Colombia, the Colombian Science and Technology Observatory does in fact mention in its document “Indicadores de Ciencia y Tecnología, Colombia, 2005,” that the data it provides is based on estimations since “no serious and complete study has been made that would allow precise numbers to be provided” (p. 15), and states that “in reality we do not know how much Colombia spends on S&T” (p. 15) (<<http://www.ocy.org.co/COLOMBIA2005.pdf>>).

9 The document “Indicadores de Ciencia y Tecnología, Colombia, 2005” by the Colombian Science and Technology Observatory reports that current expenditure on S&T lags far behind the 1% recommended by the Colombian Science, Education and Development Mission in 2004 and which is considered by the United Nations as the absolute minimum for a nation to be on the threshold of development (<<http://www.ocy.org.co/COLOMBIA2005.pdf>>). Moreover, this document underlines that the Colombian government has set a goal for 2019 (in the Colombian Vision for the Second Centenary of its Independence) of 1.5% of GDP, half of which is to come from the private sector (p. 15).

expenditure on S&T as a percentage of GDP reached its highest level in 1995 and 1996 (0.55% and 0.56% respectively), but a couple of years later, in 1998 and 1999, investment in S&T activities had fallen to 0.32% of GDP; these figures were the lowest investment in terms of the percentage of GDP since 1995. Today, the investment in S&T by type of activity breaks down as follows: 24% goes to basic research; 29% to experimental development; and 47% to applied research. According to data for 2006 from RICYT, 43.26% of Colombian S&T activities are financed by the government, 39.58% by the private sector, 11.29% by higher education institutions, 3.12% by foreign funders and 2.75% by NGOs. Data from recent years provided by RICYT show how the private sector has assumed a significant position in the S&T sector and everything suggests that this will only grow in the future.

As far as the human capital devoted to science and technology goes, data from RICYT shows that only 60 PhDs were completed in 2005 in all disciplines and fields followed by 39 in 2006.¹⁰ With an average of 43.5 PhDs in all fields completed over each of the last 7 years (2000–2006), the Colombian national science, technology and innovation system has a long way to go in terms of knowledge generation, while there is also a need to foster the emergence of top-level human capital. This situation also shows that the established links to the Colombian scientific community abroad are of strategic importance and should also be encouraged. As mentioned above, international cooperation plays a key role. Although they are mainly motivated by specific research needs, there are significant additional reasons for joint scientific projects which include: the acquisition of new skills and knowledge; mutually beneficial exchanges; access to laboratories and local data; increase in the impact or the influence and scope of research results; or simply having the opportunity to work in a different environment or with colleagues from various parts of the world. The UNESCO Science Report 2006 shows that between 1999 and 2002, the total number of joint publications accomplished in Colombia in collaboration with international partners came to 1,337 (529 were conducted with partners from within the LAC region, 679 with partners in the United States, and 740 with partners in the European Union).

10 In 2005 the PhDs were completed in the following areas: 24 in natural sciences; 8 in engineering and technology; 4 in medical sciences; 3 in agro-sciences; 18 in social sciences; and 3 in humanities. In 2006: 17 in natural sciences; 4 in engineering and technology; 1 in medical sciences; 4 in agro-sciences; 10 in social sciences; and 3 in humanities (<<http://www.riicyt.edu.ar>>).

Table 1: Indicators for science and technology in Colombia

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Population (million)	38.54	39.23	40.02	40.77	41.54	42.30	43.04	43.78	44.53	45.29	42.09	43.00
GDP (in millions of US\$)	80,525	97,147	106,671	98,444	86,186	83,786	81,990	81,122	79,458	96,673.8	122,939	135,000
Expenditure on S & T (in millions of US\$)	441.9	546.9	561.4	316.3	275.4	367.2	391.4	378.1	382.7	514.0	632.4	636.0
Expenditure on S & T (as a % of GDP)	0.55%	0.56%	0.53%	0.32%	0.32%	0.44%	0.48%	0.47%	0.48%	0.53%	0.51%	0.47%
Expenditure on R & D (as a % of GDP)	0.29%	0.30%	0.27%	0.21%	0.20%	0.18%	0.17%					
Number of PhDs completed				6	16	28	42	38	55	43	60	39

Sources: RICYT indicators and UNESCO Science Report 2006.

The approval of the new Colombian Law on Science, Technology and Innovation¹¹ at the end of 2008, replacing the previous legal S&T framework that has been in force since 1990, was extremely significant. The new framework aims to encourage an interdisciplinary model linking academia and research with the national productive sectors by means of a fund that will facilitate the management of public and private funds as well as those from international scientific cooperation; it will also encourage private sector participation in scientific and technological research and innovation. To do this Colciencias, the Colombian Institute for the Development of Science and Technology,¹² has become an Administrative Department with its own separate budget and is responsible for managing the National Fund for Science, Technology and Innovation.¹³ These changes have given Colciencias considerable autonomy and power to act, and consolidated its position at the head of the S&T sector in Colombia. Furthermore, the visible efforts by the Colombian government to raise the status of S&T among public investment priorities is reflected by the substantial increase in Colciencias' budget in the last few years. Hence, a total of more than 585 billion pesos¹⁴ have been allocated to the S&T and innovation sector

11 Officially in force through the promulgation of Law 1286 of 2009.

12 The Colombian Institute for the Development of Science and Technology "Francisco José de Caldas," Colciencias, was created in 1968 as the entity responsible for science and technology in the country.

13 This is the culmination of a long process encouraging the development of the *knowledge society* in Colombia, considering science, technology and innovation to be key issues for the country's development. There was a change in the legal framework that had been in force since 1990 when Colciencias was transformed from an institute to an administrative department, the "Administrative Department of Science, Technology and Innovation," with its own separate budget and the right to participate in the Council of Ministers and in the National Council of Economic and Social Policy (<<http://www.colciencias.gov.co/>>).

14 Around US\$ 248 million.

for the 4-year period from 2007 to 2011.¹⁵ In annual terms, the budget of 81 million pesos for 2007 was doubled to 161 million pesos for 2008.¹⁶ As the Colombian Science and Technology Observatory points out, these efforts to encourage S&T through greater financial support are part of progress towards the goal of spending 1% of Colombia's GDP on activities in this sector in 2010 and 1.5% in 2019, with 50% of this coming from the private sector.¹⁷

1.3 The Origins of the Colombian Scientific Diaspora Network

Colombia was one of the first countries to put the idea of the scientific diaspora option (Barré et al., 2003) into practice when, at the beginning of the 1990s, it created the Caldas Network of scientists abroad. Indeed, for many years the Caldas Network was regarded as the most advanced example of this brain gain strategy and was followed by initiatives by other countries such as Argentina, Chile or Venezuela in Latin America, India and Korea in Asia, and even South Africa in sub-Saharan Africa.

The context of science and technology policies in Colombia at the time the Caldas Network was created was a special one. While Colciencias, the Colombian Institute for the Development of Science and Technology was created already in 1968, it was only at the end of the 1980s that the Colombian government began to formulate and implement major policies in this area, recognising the important role science and technology (S&T) play in socio-economic development. At the end of the 1980s, the first PhD programmes were established, but scientific research was developed almost exclusively at universities and as a purely academic activity with few links to industry and other fields of social activity. In spite of various initiatives, there was no real will to establish a long-term national scientific policy and this, together with the still limited encouragement given to science through governmental policies, showed that S&T was not one of Colombia's major priorities.

However, there were several dramatic social, political and economic changes at the beginning of the 1990s, mainly caused by the shift from a protectionist economic regime to a more liberal one. All these changes managed to offset the lack of any tradition of cooperation between S&T and other productive sectors, and contributed to more efficient forms of science practice, with the 'triple entente' of university, state and industry (Waast, 2003) as the central model. The

15 <<http://www.colciencias.gov.co/>>.

16 An increase of US\$ 34,4 million in 2007 to US\$ 69 million in 2008.

17 "Indicadores de Ciencia y Tecnología, Colombia, 2005" (<<http://www.ocytt.org.co/COLOMBIA2005.pdf>>).

National System of Science and Technology was created and Colciencias acquired a central role as the entity responsible for organising all policy-implementation and fund-management activities. At the same time, various sectors of the economy were exposed to international competition and one of their central concerns was how they might enhance their own competitiveness by linking up with science. Colombia, a country with a small, dispersed and mainly inward-looking scientific community, perceived a need to mobilise its external resources in order to develop its national scientific capacities. When it was pointed out that there was a risk of scientists being isolated – the norm among Colombian researchers – a link to the Colombian scientific community abroad became a priority.

Meyer et al. (2001) mention three conditions that were essential in making the Colombian scientific diaspora a viable approach to enhancing S&T in Colombia: 1) the emergency of electronic communications at the beginning of the 1990s; 2) the existence of skilled Colombian migrants around the world willing to contribute to the development of their homeland;¹⁸ 3) a clear political strategy offering skilled migrants the possibility to turn their desire to contribute into reality.

In the Colombian case, electronic communications helping skilled migrants to become active were emerging and these people were already motivated; these factors inspired Colombian institutions' plan to create a network of Colombian researchers abroad. Although the idea was first voiced in Colciencias circles, it was actually the Colombian scientific diaspora that played the most important role. In fact, the creation of Colext (Colombians abroad in its Spanish acronym) at the CERN (European Organization for Nuclear Research) in 1990 was the first time Colombian researchers had used the internet as a tool to communicate among themselves and for strategic cooperation. This was a server list of Colombians abroad created by a Colombian scientist¹⁹ that aimed to enhance social exchanges and support collective action. This project was indeed the critical factor that enabled Colombians abroad to express their shared identity (Fibbi and Meyer, 2002) and sense of community with members of the same national group. This shows the extent to which the scientific diaspora option is based on collective action and, as Cohen (1997) argues, brings together members of the same ethnic group who live where the specific diaspora is located. Although Colext was not a list dedicated to scientific and technological communication (its aim

18 This willingness to contribute to the development of their mother country is known as migrants' *affective capital*, which is an entrenched characteristic of diasporas' identity (Tejada, 2007; Tejada and Bolay, 2005).

19 Fernando Rivera told us during a conversation that he started Colext to link up Colombian students abroad when he was a physics researcher at CERN, before it was taken over by the government and became the Caldas Network. He pointed out that "the network had momentum, but it did not receive any long-term governmental support."

was to foster social exchange), it mainly put people in the academic sector in touch with each other, since universities and academic centres were the only places connected to electronic networks at that time. The number of Colombians abroad on this list grew rapidly and there were a few hundred such members by the following year.

In 1992, Colciencias took over the Colext structure and created the Caldas Network, with nodes in different countries, its main objective being to link Colombian scientists and researchers studying or working abroad with the scientific community and national research programmes in Colombia. Colciencias also increased the number of Colombian graduate students abroad by expanding its graduate training programme. In fact, during the period from 1992 to 1997, Colciencias supported between 51 and 176 graduate students abroad per year, gradually forming a community of almost 850 graduate students at the world's best universities, the majority of them at PhD level (Chaparro et al., 2006). According to Chaparro et al. (2006), the Colombian graduate students with grants joined with others who were not supported by Colciencias but who wanted to give something back to their homeland and became the backbone of the Caldas Network.

The Swiss node of the Caldas Network was one of the most active, and it established links with major Colombian universities. It is well known that at one stage it included some of the most important Colombian researchers abroad, which shows how significant it was. The Swiss node functioned through the Association of Colombian Researchers in Switzerland (the ACIS in its Spanish acronym).²⁰ The creation of the ACIS in 1992 was an original and recognised *brain gain* initiative by the Colombian scientific diaspora in Switzerland: it was a scientific association set up to promote collaborative links between Colombian researchers in their homeland and the Colombian scientific community in Switzerland.²¹

As Charum and Meyer (1998) explain, the creation of the Caldas Network did respect official discourse, but it was the local strategies implemented by the members that enabled the various actors to complement each other's work. In other words, Colombian institutions provided the enabling environment, while the motivation and the ability to mobilise, which Brinkerhoff (2006) describes as entrenched characteristics of scientific diasporas, along with the infrastructure they created, were the factors that actually made the Colombian scientific diaspora option possible.

The main practical objective of the Caldas Network was to develop collaborative research projects between Colombian research groups and their coun-

20 <<http://www.acis.ch/>>.

21 The creation of the ACIS, its main characteristics, its role and its members' profile will be further discussed in the next sections of this chapter.

terparts at universities around the world where Colombians were studying and doing research.²² Various specific types of contribution by the Colombian scientific diaspora were identified. Some that are worth mentioning are: the design and implementation of public policies (some diaspora members were appointed by Colciencias to carry out evaluation and advisory tasks); training and education in S&T (courses, students exchanges, etc.); communication and mobilization (information on scientific meetings, professional offers, scholarships and project funding possibilities); and programmes and projects (Charum et al., 1997; Charum and Meyer, 1998). This shows how it is possible to mobilise skilled migrants and make use of their resources to contribute to the development of their country of origin by taking advantage of advances in information and communication technologies. It also represents an innovative and decentralised approach to implementing a brain gain strategy and, according to Castells (1997), is an example of the networking logic in the information society. However, there is no register of the projects that were successfully formulated and implemented; it is therefore not possible to determine the real impact of the Caldas Network in terms of specific projects benefiting the home country.

After a dynamic launch that met with great enthusiasm, the Caldas Network lost momentum at the end of the 1990s, mainly due to a lack of funding for projects and to the general S&T crisis in the country.²³ Colombia's insufficient institutional capacity to host the projects, resources and initiatives of its scientific diaspora hindered the potential impact of their trans-national practices on endogenous socio-economic development. Last but not least, this also created great frustration within the Colombian scientific diaspora. Today, the Caldas Network is remembered as an innovative strategy to harness the capacities and resources of the scientific diaspora, but it is well known too that it created many hopes to which it was then unable to provide the appropriate response. Revitalising the Caldas Network is now one of the strategic objectives of Colciencias, which was established in 2006 to obtain significant results in international cooperation and in the development of joint projects. Colciencias' policy of international expansion prioritizes the articulation of initiatives coming from the Colombian scientific diaspora, and promotes the entry of the Colombian community into international research networks and projects.

22 Some examples of the joint projects carried out as well as an evaluation of the Caldas Network have been published in two books (Charum and Meyer, 1998; Charum et al., 1997). Other publications about the Caldas Network followed, giving details of how the network was set up as well as its characteristics and achievements (Meyer et al., 1997; Granés et al., 1998; Barre et al., 2003; Chaparro et al., 2006).

23 As shown in Table 1, the investment in S&T activities in 1998 and 1999 was 0.32% of GDP, the lowest investment percentage since 1995, after having reached a peak of 0.55% and 0.56% in 1995 and 1996 respectively.

The “*Colombia nos une*” (Colombia unifies us) programme set up five years ago by the Colombian Ministry of Foreign Affairs is another significant institutional initiative aimed at the diaspora. This initiative seeks to establish and/or reinforce links with the Colombian community abroad by recognising them as key elements for Colombia and by attempting to establish this as a public policy objective. The programme is organized around nine thematic areas, which represent the main needs of Colombians abroad, while a number of themed networks have also been established in accordance with the common interests of their members.²⁴ One of them, the Network of Students and Professionals Abroad, operates as a virtual community of persons and seeks to enhance cooperation links between Colombian students abroad, students who plan to emigrate and those who have returned to Colombia. Another network, the RedesColombia, which was set up in December 2007 with the support of the Colombian Ministry of Foreign Affairs and the International Organisation of Migration (IOM), is an innovative portal which offers contacts, cooperation and helps to create and develop Colombian social networks on the Internet. Its purpose is to provide Colombians abroad with the possibility of contributing to the development of their homeland. Moreover, RedesColombia has recently launched the project Redes C aiming at creating a network of networks to link Colombian scientists and researchers abroad with those based in Colombia as well as with other diverse actors in the Colombian national S&T system to create a positive impact in Colombia.²⁵

In addition, guidelines for an Integral Migration Policy were put forward in June 2008 with the aim of promoting an overall policy on international migration. This highlighted the large number of Colombians living abroad, showing that some 4 million Colombians live outside the country (almost 10% of the total population),²⁶ and their financial remittances reached a total of some

24 <<http://www.colombianosune.com>>.

25 The creation of Redes C (Red Colombiana de Conocimientos en el Mundo) is part of the project CIDESAL (Creación de Incubadoras de Diásporas del Conocimiento para América Latina) of the Agence Française de Développement which has the objective of reverting the exodus of human capital from three Latin American countries –Colombia, Uruguay and Argentina–, through a systematic and organised association of their scientific diasporas, in which RedesColombia participates (<<http://www.redescolombia.org/redc/>>).

26 According to the IOM (2005) more than 1.2 million Colombians emigrated between 1997 and 2005. Similarly, according to the Colombian Ministry of Foreign Affairs, 10% of all Colombians live abroad, and almost 50% of this total lives in North America (<<http://portalminrelext.gov.co>>). Following Riaño-Alcalá and Goldring (2006), this migration has been determined by three main factors: the worsening of the armed conflict in Colombia; the deterioration of spaces for democratic participation and social inclusion; and the economic crisis that Colombia suffered between the late 1980s and the 1990s due to the shift towards a neo-liberal economy.

US\$ 4 billion in 2007, accounting for almost 3% of the country's annual GDP.²⁷

All these initiatives show the Colombian government's readiness to consider diasporas a source of knowledge, ideas, skills and further resources and eagerness to find benefits from the potential impact of migrants' resources and trans-national practices on development. However, the real objective behind involving the scientific diaspora in the Colombian development agenda through sustained support based on a coherent policy on S&T still remains unclear. It seems that there is still a long way to go if we are to see a move from plans and promises to real consistent actions. The scientific diaspora also has to overcome its scepticism towards public actions with regard to their involvement in the Colombian development agenda, since Colombian institutions have created great expectations for their scientists abroad on different occasions in the past without actually going on to give them the capacity to fulfil them. Promoting ownership of the new public initiatives by diaspora associations and organizations can certainly contribute in this regard.

2. Colombian Skilled Migrants in Switzerland

2.1 Project Background, Case Study and Methodology

The project 'A Swiss Network of Scientific Diasporas' involved three case studies tracing skilled migrants²⁸ from Colombia, India and South Africa living in Switzerland. For the Colombian case-study, field work included twenty-seven (27) in-depth interviews with skilled Colombians (15 women and 12 men) living and/or working mainly in Lausanne and Geneva, and to a lesser extent in Bern and Basel. During face-to-face interviews, participants were asked open-ended semi-structured questions that allowed researchers to gain a better understanding of the conditions, practices and opinions of skilled migrants in three main areas: 1) their migration trajectories and living conditions; 2) their links with their home countries and the *brain gain* mechanisms and strategies they adopted; and 3) good scientific and development policies and practices to support skilled migrants as development partners.

27 <<http://www.minrelext.gov.co/WebContentManager/Repositorys/site0/lineamientosPIM-final-junio132008.doc>>.

28 Since this article is based on research done in the country of destination, the terms "migrants" and "immigrants" are used interchangeably here.

Using the term highly skilled as defined by the Canberra Manual of the OECD (1995), the sample included human resources in science and technology.²⁹ Appropriate subjects for the survey were identified through networking schemes (mainly through personal contacts) as well as a web search, and the selection of respondents was made gradually over the course of the field work. We found the respondents through personal contacts, the *snowball* principle, information from embassies, universities, research institutes, private companies, diaspora networks and associations, alumni offices and international organisations. For the sampling strategy, we decided to limit the number of respondents to 25–30 and to ensure the representation of women and the professionally active in different sectors as well as PhD students from different disciplines within this group.

The sample contains four different categories³⁰: of respondents 1) scientists, post-doc researchers and students at academic and research institutes (at EPFL, HEIG-VD, Bern University Hospital, UNIBE, UNIL, IDIAP, Ludwig Institute for Cancer Research³¹); 2) staff working for international organisations (at the UNO-NGO liaison office, ITU, Secretariat of the Basel Convention of the UNEP, CASIN³²); 3) managers and consultants working in the private sector (at Nestle, Novartis, Hoffmann-La Roche, Teamwork Management, BOBST Group); and 4) people working in government institutions (Canton of Vaud). Additionally, one respondent was unemployed at the time of the interview.

29 Following the Canberra Manual definition, our sample included individuals who comply with one of the following characteristics: individuals who have successfully completed tertiary education, implying at least 13 years of schooling (Carrington and Detragiache, 1998) in science (knowledge) or technology (application of knowledge) and/or people who may not necessarily have had such an education but are employed within an area of science or technology and hold positions that would normally require tertiary education. Accordingly, highly skilled resources are made up of three types of individuals: individuals who have completed tertiary education and are employed in a professional area within the fields of science or technology; individuals with this educational background who are not employed in a professional area within science or technology; and individuals who do not have such an education but who are employed in an area in science or technology.

30 See Annex 1: Socio-demographic characteristics of respondents.

31 Haute Ecole d'Ingénierie et de Gestion du Canton de Vaud (HEIG-VD), University of Bern (UNIBE), University of Lausanne (UNIL), Dalle Molle Institute for Perceptual Artificial Intelligence (IDIAP).

32 United Nations Office-Non-Governmental Organizations liaison office (UNO-NGO), International Telecommunications Union (ITU), United Nations Environmental Programme (UNEP), Centre for Applied Studies in International Negotiations (CASIN).

2.2 Causes and Characteristics of Colombian High Skilled Migration to Switzerland and Migrants' Life

The first part of the interview involved asking skilled Colombians about the causes and motivations for their migration and their migration paths. This also allowed us to build up a social portrait of their professional and private life in Switzerland.

2.2.1 Migration Determinants

Although there are a range of factors and motives behind qualified Colombians' immigration to Switzerland, their main reason is for study and training, and to a lesser extent for professional reasons, family regrouping, and marriage or for socio-economic reasons.³³ In this way, the determining factors and causes of Colombian immigration in Switzerland can be summarised by the following types of factors: 1) studies/training; 2) family regrouping/marriage; 3) professional; and 4) socio-economic. These factors are often combined with a desire to travel and see other cultures.

Studies (postgraduate and PhD) and scientific training (post doctorate) are the most important reasons for qualified Colombians to reside in Switzerland. While this presence is very significant in the French-speaking part of Switzerland, it is not so high in the German-speaking part. Most of the Colombians we interviewed who came to Switzerland to study or train were at the EPFL or the UNIL. This is mainly due to the *social networks* (Vertovec, 2003; Bruggeman, 2008) that have grown up over the past one or two decades and to the *social capital* (Bourdieu, 1986) drawn from those networks.³⁴ It is well-known that in migration today information about people's experiences, living conditions and job and scholarship opportunities in the host country flows back through people's immediate and extended social networks. Vertovec (2004a) stresses that "rapid and real-time communication fuels anticipation among would-be migrants" (p. 18). In Colombia's case, skilled migrants find study and training opportunities (and then a job – see below) in Switzerland, and their experiences encourage and help others to migrate. The networking effect is reinforced

33 It would be interesting to compare our results with those of the empirical study *Colombia Networks Survey* (Encuesta Redes Colombia) applied at the end of the 1990s to Colombians in research and academic centres worldwide. Its results showed that 75% of Colombians abroad left mainly to study and/or to train, while 10% left Colombia to work and an additional 15% had other reasons for departing (Charum and Meyer, 1998).

34 The importance of social networks and social capital for the integration of skilled Colombians in the host society is looked at in another section of this chapter.

by a snowball effect since respondents' colleagues, friends, relatives or friends of friends were often PhD students or postdoc researchers in academic and research institutions in the French-speaking part of Switzerland too. Thus Colombian skilled migration has led to more migration.

The Colombian scientists who emigrated to study and/or train acknowledged that the limitations in some scientific areas in Colombia were a significant *push factor*. According to those interviewed the lack of funding for knowledge activities, the shortage of materials and equipment, as well as the small number of research positions mean that the levels of scientific excellence as well as the available resources and infrastructure are better in Switzerland than they are in Colombia. The lack of doctoral programmes in specific areas was also a significant *push factor*. Skilled Colombians said:

I left Colombia 20 years ago and the main reason was that I wanted to have the opportunity to advance my scientific knowledge. In Colombia, there were no PhD programmes in my area and no resources for research or the encouraging environment, the technology or infrastructure. There were only a limited number of positions available.

(Researcher in Neurosciences, working for a pharmaceutical company in Basel)

I came because of my intense passion for science and professional and scientific achievement and because there was no PhD at a high research level in Colombia in my field.

(Postdoc in Chemistry and Microtechnology at EPFL)

Colombia has a high level of education and PhD programmes, but it has fewer resources, so excellence in education is hard. In chemistry, there is not enough equipment or instruments. I wanted the opportunity to observe how Europe works and how it does science. I was willing to be trained and to learn state-of-the-art techniques, and then go back to my country and make a contribution.

(Researcher and PhD student in Chemical sciences at EPFL and professor in Colombia)

The respondents came from disciplines and fields including physics, engineering, biology, computer and communication sciences, medicine, immunology, neurosciences, chemistry, environmental sciences, geography, economics, management and administration, architecture, geology, and hydrology. As stated by the OECD (2007), student mobility offers a potential pool of qualified workers, whether during their study years or for subsequent recruitment. In the Colombian case, this hypothesis of a transformation from migration for studies to migration for work is repeatedly proven true. The majority of respondents entered the labour market once they had completed their doctoral studies or training; some of them even start carrying out a paid activity during their studies.³⁵

35 This trend was already perceived in the late 90s when *Colombia Networks Survey* (Encuesta Redes Colombia) showed that 50% of Colombians studying abroad were at the same time carrying out a paid activity (Charum and Meyer, 1998).

Many of them initially came for a short period and stayed longer than originally planned. One respondent said:

30 years ago, I left Colombia because I won a Swiss government scholarship for one-year's studies at EPFL; the second year I started working as a research assistant. That original year has now been prolonged up to 30 years.

(Professor in Computing at EPFL and Dean of ICT at the HEIG-VD)

Often, there is a mixture of personal agendas and potential professional and training opportunities behind the decision to migrate. Personal and family relations play an increasingly important role in migration. According to OECD data (2007), family migration is still the dominant reason for the inflows of permanent immigrants; this is due to family reunification and "*family formation*" (marriage), but also to immigrant workers' accompanying them.³⁶ Family regrouping/marriage is the second most important factor for the qualified Colombians who have immigrated to Switzerland. The respondents who asserted that the reason they left Colombia was for family reunification, to live in a partnership or to get married were all women. Their main reasons were to follow their Colombian husbands in their scientific careers or to marry or live with a Swiss citizen – so-called *love migration* (Riaño, 2003). Skilled Colombian women said:

I don't think it had ever crossed my mind to move to Switzerland, but I fell in love with a Swiss national whom I met in Washington.

(Senior Economic Counsellor and MBA student in Geneva)

I came to Switzerland because my husband is Swiss. We got married and decided to live here whilst he finishes his PhD. I was living in Germany and started to look for working opportunities here. When I got this job at EPFL, I moved to Switzerland for good.

(Scientist in Microbiology at EPFL)

I left my country of origin due to love; my husband is Swiss. I met him in Colombia. He wanted to show me his country and introduce me to his family so I came with him when he had to defend his PhD thesis in Paris. We originally came for one year, but the economic conditions and political situation in Colombia made us stay here.

(Educational psychologist working in a government institution in Lausanne)

However, while women have always migrated as spouses and family members, recent data shows an increasing trend for women to migrate independently in pursuit of training opportunities or professional prospects in places that offer

36 According to data on immigration in OECD countries in 2005, family migration accounts for between 45 and 60% of all permanent type migration to most OECD countries (OECD, 2007).

better conditions than in their home country (OSCE, IOM, ILO, 2006).³⁷ This, combined with a clear feminization of migration,³⁸ underlines the need to include gender dimensions in migration research. Furthermore, the Colombian case validates what studies by Riaño (2003) and Riaño and Baghdadi (2007) on female skilled migration prove, since many Latin American women who arrive in Switzerland for marriage are graduates. Regarding family regrouping as a reason for migration, some respondents mentioned that the decisive factors for their departure were the presence of family members in Switzerland, along with the search for better professional and living opportunities. One 30-year-old respondent with dual nationality (Swiss and Colombian) and two small children said:

My brother and sister were already living in Switzerland; we are Swiss, so they were studying here. I had recently gotten married so I thought I'd come for a long honeymoon. At the late 90s Colombia was having a construction crisis and we are both architects so we thought it would be nice to leave while this was going on, learn more things and then go back. And almost 8 years have passed since then; my brother and sister have already gone back and we have stayed.

37 Despite the constraints and difficulties women migrant workers face, it has been proved that migration can empower migrant women and can help them to emancipate. There are many cases that show how migration offers women new opportunities including financial independence abroad as well as a better status within their families and communities in the home country. As Nyberg-Sorensen and Guarnizo (2007) show in their study of Colombian and Dominican migrants in Europe, the work of migrant women enables a transformation from their subordinate role as unpaid family worker to a paid one that allows them to provide for their families while living somewhere else. Moreover, migrant women are increasingly being recognised as key actors in the economic transformation of their home countries (through their financial remittances but also since they actively create opportunities by investing their resources (social, skills, knowledge, experiences) in activities and practices for the benefit of their home countries. As experts on migration and development for international organisations stress, "women migrants are becoming agents of economic change" (OSCE, IOM, ILO, 2006).

38 Around half of the 191 million migrants in the world today are women (OSCE, IOM, ILO, 2006). Furthermore, as Nyberg-Sorensen and Guarnizo (2007) state, most labour demand in Europe in recent years has focussed on what are traditionally regarded as feminine activities in the service sector (from domestic activities to caring for children and the elderly). This partially explains why there are a lot more Latin American women migrants in Europe than men. Similarly, using data from the Swiss Federal Statistical Office (FSO), Bolzman et al. (2007) show that in 2004 women represented 64.5% of all Latin American immigrants entering Switzerland. The authors stress that emigration from Latin America is exceptional in this sense because, whereas women on average make up half of all migrants entering Switzerland from other world regions, in Latin America's case this rises to almost two thirds. Following Bolzman et al (2007), the over-representation of Latin American women is linked to the large number of marriages with Swiss citizens or with persons residing in Switzerland, as well as large demand for a female labour force in the service sector.

She went on comparing her motivations for moving to Switzerland between when she first came to study on a more temporary basis, and coming this second time with different expectations. This shows how migration determinants can change over different periods of a migrant's life, and shows that migration is a dynamic process that is based on a migrant's opportunities at a given moment. It is clear from both cases that, beyond its complexities, migration remains a natural and inevitable phenomenon (OSCE, IOM, ILO, 2006). The skilled Colombian stressed:

I came to Switzerland from 1996 to 1997 on an exchange study programme with the university in Colombia and then went back; then I got married. When I came back with my husband, it was different from when I came as a single student; my expectations of living prospects were different.

(Architect and MBA student)

The data on skilled Colombians in Switzerland provides evidence of the complex mixture of motivations for migration, interplay of gender aspects with various migration patterns that include circular migration, temporary return to the country of origin, and permanent stay. This confirms, as international organisations have stated (OSCE, IOM, ILO, 2006), that patterns of migration are becoming increasingly complex "with temporary, circular migration and permanent migration showing an emerging paradigm of international labour mobility" (p. iv). The experiences of skilled Colombians show particular arrangements within new dimensions of trans-national family life in which "long-distance parenthood" connecting "fractured families" and "geographically dispersed homes" (Vertovec, 2004a) are only some of the new migrants' family experiences, involving significant emotional sacrifices. One respondent said:

After a first short stay in Switzerland due to my husband's scientific career, I went back to Colombia with my children to finish my studies there and then came back to Switzerland. During this time my husband stayed here.

(Senior postdoc researcher in Immunology at the UNIL)

The third most important reason for skilled Colombians migrating to Switzerland is labour mobility, but there are relatively few cases of this. Labour mobility includes skilled professionals being posted abroad by multinationals or professional relocation within multinational companies. Labour mobility is facilitated by the social networks and professional and social contacts that Colombians have previously established and to a lesser extent by family contacts in the destination country. The survey shows here as well – as mentioned – that social networks and the social capital drawn from such networks can be decisive in the migration process, both for those moving for job reasons and for those searching for scientific and research challenges. Respondents gave the following answers:

I came to Switzerland by pure chance: some of my sister's friends in the field of biology helped me with contacts, and a Spanish professor gave me the opportunity to come to his lab; he told me about the Swiss ESKAS³⁹ scholarships. I went back to Colombia and prepared all the papers. As I had already been accepted by a lab in Geneva, everything was easier.
(Microbiologist and researcher in Immunology at the Bern University Hospital)

I came directly from Colombia to Switzerland; I was mainly seeking better training and educational opportunities. The level of molecular biology is better here than it is in Colombia; and I also wanted to offer my sons better opportunities in another country. I studied at the Univalle and worked with an important researcher on malaria that had contacts in Switzerland.
(Molecular Biologist and Project Manager in the food industry in Vevey)

Finally, socio-economic reasons are also decisive factors in the migration process. In their search for better opportunities both professionally and personally, most respondents recognised some important *pull factors* like the opportunities for training and/or pursuing a scientific career within an excellent academic and research environment, as well as the quality of life, stability and security that Switzerland has to offer. Similarly, key push factors at play include the lack of opportunities in Colombia, and violence and insecurity. One skilled Colombian said:

I basically left Colombia to look for new opportunities and work possibilities; it was actually a mix of need and opportunity, and as a result, a search for some new alternatives. The internal structural problems in Colombia were the main reason.
(Scientist in Chemical Sciences and Engineering at EPFL)

Furthermore, some respondents mentioned bilateral cooperation, scholarship and scientific exchange programmes as decisive factors in their decision to leave. Indeed, scholarship programmes from both Swiss and Colombian institutions have played a key role in opening up possibilities for Colombians to pursue their studies abroad. One third of the respondents had scholarships to pursue their studies and research; other respondents received a scholarship after arriving in Switzerland. The most common scholarships and funding institutions and mechanisms that have supported Colombians are: the International PhD Programme from the Swiss National Science Foundation (SNF), the EPFL-SDC Fund,⁴⁰ the

39 Swiss Federal Commission for Scholarships for Foreign Students (ESKAS on its German acronym).

40 Cofinanced by the EPFL and the Swiss Agency for Development and Cooperation (SDC), the EPFL-SDC Fund is one of the main programmes managed by the unit Cooperation@epfl at the EPFL. It covers interdisciplinary, medium-sized, top level scientific research projects who have acknowledged public utility for emerging and developing countries, implemented through North-South partnerships (<<http://cooperation.epfl.ch>>).

ICETEX,⁴¹ ESKAS, Colfuturo, and Colciencias. There are also scholarships from the French and the German governments, from the Max Planck Society, or the Marie Heim-Vögtlin Programme from the Swiss SNF. Colombians who had been granted scholarships mentioned:

I learned about the existing scholarships and about EPFL through an EPFL professor who went to Colombia, so I sent an application and was accepted. I always wanted to learn more and see new cultures, but for my socio-economic situation made it difficult, so my only choice was to receive a scholarship.

(Supply Chain Project Manager in the packaging industry in Prilly)

I came (back) to Switzerland in 1995. I did the equivalent of my diploma at the UNIL and started a PhD thanks to the Marie Heim-Vögtlin Programme – a special scholarship from the Swiss Confederation for women, who like me, were taking a professional break to be with their children. It financed my PhD.

(Senior postdoc researcher in Immunology at the UNIL)

Many Colombians who came through one of these scholarship programmes or through scientific exchanges were offered a job after finishing their studies/research in Switzerland and they have not been back to Colombia as most had originally intended. Further research should find out to what extent these bilateral programmes encourage knowledge circulation and the opening of opportunities for skilled persons in developing countries without undermining the efforts in countries of origin to encourage capacity building and development and strengthen human capital. Given that this tendency seems to be continuing, initiatives that encourage the virtual or physical return of skilled migrants and the capitalization of their resources for the benefit of the country of origin are becoming more and more essential. Skilled Colombians who had been granted scholarships explained:

I studied at the National University in Bogotá where there were many strikes. I looked for opportunities to finish my studies abroad and got funding from a mix of sources – mainly my parents and ICETEX – to go to England for 3 years. After returning to Colombia and then to England again to do a PhD, my PhD director put me in contact with the ETHZ,⁴² where one of the most important professors in the field of organic chemistry accepted me for postdoc research.

(Postdoc in Organic Chemistry, working in biomedical research and pharmaceutical industry in Basel)

41 The Colombian Institute for Educational Loans and Technical Studies Abroad (ICETEX on its Spanish acronym) is the Colombian government body in charge of managing scholarships in international co-operation provided by the governments of other countries and international bodies.

42 Swiss Federal Institute of Technology in Zurich (<<http://www.ethz.ch>>).

In 2000 I got a fellowship with the graduate school at the EPFL. I did one year of technical courses and then had the opportunity to start my PhD in 2002, which I completed in 2005. Right after that, in 2006, I joined IDIAP.

(Research scientist on brain-computer interfaces at IDIAP Research Institute)

Although the Colombian case study shows that scientific exchanges programmes have played an important role in encouraging scientific and professional mobility, it is also true that these exchanges are essentially down to the individual motivations and efforts of the scientists and professionals themselves. In fact, the constant professional contacts and scientific exchanges between some members of the Colombian scientific diaspora in Switzerland and their counterparts in the country of origin have played a significant role in stimulating the ongoing exchanges. One third of the Colombian respondents mentioned senior researchers who are key members of the Colombian scientific diaspora in Switzerland as their principal source of information about the scholarship programmes or the possibilities of obtaining an assistantship and a PhD place. These scientists were also founding members of the Association of Colombian Researchers in Switzerland (the ACIS) in 1992, and they continue to play an important role in its promotion to this day. The interviews revealed that at least 20 PhD students had come to Switzerland during the last decade as a result of the individual efforts of these senior researchers to encourage collaboration and exchanges with Colombia without any systematic institutional support. Of those 20, some have gone back, some have moved to other countries, and some have stayed in Switzerland, most of them on a permanent basis. Skilled Colombians said:

A Colombian professor at EPFL had links with the Univalle and other universities in Bogotá. He needed assistants for his courses, so he told us about the existing scholarships stressing the fact that the scholarships were not granted most of the time due to a lack of information about them. He encouraged us to take advantage of them, so two friends and I applied, and the three of us were accepted.

(Engineer in Electronics, SAP consultant in Logistics working in Geneva)

I came thanks to an EPFL scientist; I met him through his cousin, established contact with him and found out that we had scientific affinities – that was my entry point. After his collaboration with the Univalle where I studied, I had more links with him. When I applied for a scholarship, he was my source of information about EPFL and Switzerland.

(Scientist in Chemistry and Microtechnics in the healthcare and life sciences industry in Lausanne)

2.2.2 Migration Paths

If one regards international mobility as inherent to the scientific world while recognising that the scientists' nomadic lifestyle benefits science (Meyer et al., 2001), it becomes normal to see skilled Colombian's migration paths include

time spent in other countries before they finally settle in Switzerland or abroad. One Colombian scientist mentioned categorically:

Exposure to the international arena is the basis for scientific and personal advancement, as well as for the development of scientific capacities in Colombia.
(Professor in Computing at EPFL and Dean of ICT at the HEIG-VD)

At different times, scientific, student and labour mobility are important elements in the experiences of skilled Colombian migrants as well. In this context, most Colombians interviewed had spent time in other countries for educational and/or professional reasons before they came to Switzerland. The different migratory routes the respondents had followed included such traditional destinations as the United States or the United Kingdom as well as other European countries like France, Germany, Spain and even Russia, Israel or Latin American countries such as Brazil, Chile or Mexico. A few respondents stated that they had returned to Colombia temporarily but had later come back to Switzerland (in some cases passing through a third country), especially to accept new professional or training opportunities that were better than those offered in their country of origin and, in some cases, for family reasons too. The testimonies of respondents give vivid proof of this:

I studied in Bogotá at the Lycée Francaise, where I got a scholarship to continue my studies in France; I stayed there for 4 years. Then I moved to London for 1 year, and from there I got this position at EPFL through a job search system of an Engineers Association I was member of.
(PhD student in Mathematics at EPFL)

I left Colombia for the University of California in LA on a short internship. I met a Brazilian scientist there and he invited me to go to Brazil as part of a project; I went and completed a Masters. From Brazil I went back to the USA to start a PhD. At a congress in Mexico I met a German scientist with whom I submitted a research proposal that was accepted – and that's why I'm here. I have to say that Brazil was where I experienced my scientific awakening.
(PhD student in Geosciences and Geochemistry at the University of Bern)

Skilled migrants' paths and routes including temporary return to the homeland show that migration is a dynamic process in which international circulation provides experiences, language skills and multicultural work practice of significant benefit to the skilled human resources. Respondents also mentioned that the level and reputation of science in Switzerland opened unique professional opportunities. The better quality of life in general was an additional motivation to return to or stay in Switzerland. The Colombian case study shows that in many cases, there is a complex combination of personal reasons and professional goals behind professional and scientific mobility. It also shows that unlike unskilled workers, skilled migrants can move more easily and have more choices.

I got a grant to study in Israel for two years. I met people from the University of Geneva there and through these contacts I was accepted to do my PhD in Geneva, where I stayed for 5 years. Then I left to go to the University of California where I stayed for another 5 years. I then had the opportunity to go back to Colombia since my position at the university there had been held for me all those years, but I was more concerned about knowing more and improving my scientific level. It was an overall decision based not on one single element but various ones such as work utility, private life, professional life, good salary, Swiss quality of life... (Scientist in Neurosciences, working for a pharmaceutical company in Basel)

In the scientific world, mobility and scientific exchanges are very important. I left Colombia to do postdoc research in parasitology at the University of New York. From there I came to Lausanne to test some new technology. My three-month research visit here ended with publications at the highest scientific level. I then had a choice of going back to Colombia or accepting an offer with career prospects here, with an independent programme on Tumour Immunology (cancer) and I stayed. It was an easy decision because it was a very good offer. (Medical doctor, professor and researcher in Immunology at the UNIL)

2.2.3 Daily Life Experiences, Living and Working Conditions

The daily professional activities of Colombian scientists, postdoc researchers and PhD students in Switzerland are mostly related to research, teaching and training, and capitalising on research. Accordingly, their main activities involve supervising research, interacting with other scientists and PhD students, searching for literature and funding opportunities, drafting publications and writing scientific articles, participating in conferences and seminars, teaching, designing and implementing projects. For Colombian staff working for international organisations their daily professional activities are mostly related to training and capacity-building; awareness-raising issues; participating in conferences and seminars; policy advice; liaison and networking; research and publication; coordination of regional centres; and designing and developing educational training programmes.

For Colombian managers and consultants working in the private sector, the daily professional activities include evaluation, establishment and negotiation of strategic alliances; making recommendations on markets and opportunities; research; design and delivery of products; customer support; management and supervision of research and projects; evaluation and/or implementation of projects; development of projects; training courses; writing reports; audits and quality management; linking up with business enterprises; and advising business on diverse issues. The daily professional activities for Colombians working in government institutions include organising, planning and implementing training for personal; and networking and building relations with different partners.

One third of respondents have work that includes regular exchanges with researchers and scientists in the country of origin. All of these are scientists,

postdoc researchers and PhD students in research and academic institutions. Some respondents asserted the following:

My daily scientific activities involve Colombia. I have research projects there and encourage student exchanges, and joint publications with Colombian partners and colleagues. I have constant scientific cooperation with Colombia.

(Scientist in Chemical Sciences and Engineering at EPFL)

I have been here for 30 years and in the second year I already had joint projects with Colombia. I have continuously encouraged student and researcher exchanges, visits, and courses. I have 29 years of projects with Colombia behind me.

(Professor in Computing at EPFL and Dean of ICT at the HEIG-VD)

PhD students are mainly taken up with their research, but they do develop other projects at the same time, some of which involve research groups in different countries. This gives some impression of the breadth of their collaboration experiences as well as their network of contacts, thereby increasing the overall value of their work, skills and experiences. One respondent stated:

I dedicate most of my time to my PhD research but in parallel I have other projects, in Germany, Italy, Colombia and Canada; Brazil is also involved in all of them.

(PhD student in Geosciences and Geochemistry at the University of Bern)

The interviews uncovered interesting information about skilled Colombians' first experiences in Switzerland, as well as the impact of their legal and occupational status on their social and economic situation. This analysis reveals contrasting first experiences that were mainly related to their migration determinants. Those who came on scholarships and work contracts generally had more positive first experiences in Switzerland than those who moved due to family regrouping or marriage or for socio-economic reasons. The qualified Colombian migrants therefore had different first experiences after arriving in their country of destination. The spectrum covers every possibility ranging from very positive and fascinating to very negative situations with continuous obstacles. Around one third of respondents emphasized the positive elements, one third the negative elements, and one third described their arrival in Switzerland as a mixture of good and bad experiences.

Positive First Experiences

The positive elements the Colombians emphasised were working in an excellent scientific environment, the abundance of resources in the laboratories, the opportunity to see and live in a new culture, the beauty of the landscape, a liking for the Swiss lifestyle, and being well received and accepted by work colleagues. For some Colombians, their first experiences in Switzerland were

fascinating: success, curiosity and opportunity were some of the key words mentioned by respondents in this regard. Respondents explained their first experiences:

A very positive personal attitude combined with my professional success made my first experiences very positive. My professional results after a first three-month stay were spectacular including publications in *Nature*. Since then I have always been in demand.
(Medical doctor, professor and researcher in Immunology at the UNIL)

Some of my first experiences were awesome. The change to having an abundance of resources to work with was enormous; to pass from scarcity to having more than someone could have imagined made a great impression and it motivated me to work even more.
(Scientist in Chemistry and Microtechnics in the healthcare and life sciences industry in Lausanne)

The respondents that emphasized their positive first experiences were especially students who had received scholarships under privileged conditions, those who arrived with contracts for postdoctoral studies, or been accepted on PhD programmes, those who had lived in other countries before coming to Switzerland, those who started work directly on arrival, and the few who knew the language. One Colombian who was raised in Switzerland said:

I came when I was a kid and coming to Switzerland was a huge change in my life; a very abrupt and extraordinary change. For someone like me who had never left his country, always lived in a modest surrounding with strong social links and always spoken the same language, it was quite a shock. There were lots of opportunities and materials at school here, with a huge variety of possible activities and ease of travel. It opened up the world for me.
(International official at the United Nations in Geneva)

Other skilled Colombians mentioned:

For me it has not been difficult to settle in Switzerland mainly due to the fact that I had been already many years living abroad and used to be within different cultures. Additionally, the French part of Switzerland is a lot more “Latin” than the North of Germany, where I used to live, thus the adaptation was easier. Moreover, I had many friends through my husband who is Swiss and because I used to come here regularly.
(Scientist in Microbiology at EPFL)

There are cultural differences that aren’t always easy to surmount but professionally speaking my first experiences were good, I found a good job a few months after I came, so everything was pretty much positive.
(Architect and MBA student)

As mentioned above, the Colombian diaspora community has created a very strong social network that has facilitated the first experiences of many in Switzerland, especially at the EPFL and the UNIL. Respondents mentioned that it was largely thanks to the ACIS that they had been able to establish first con-

tacts and it had facilitated their first experiences here. Once more, as observed previously, skilled Colombians took advantage of the benefits of established networks (Bruggeman, 2008).

When I came to Switzerland I became part of a group that was very welcomed internally at the EPFL, so the first experiences upon arrival were positive; we all knew each other. There were many Colombians who created a social and friendship network with very strong kinship links; this helped us all a lot to feel well and to support each other. Additionally we were always organising lots of events.

(Engineer in Electronics, Consultant SAP in Logistics working in Geneva)

It was an easy transition from Colombia to Switzerland given the fact that several people I knew from Colombia were living here. This gave me an introduction to the Swiss lifestyle and helped me get an apartment. Also, I was enrolled in a programme for international students so most of the people around me were in the same situation, trying to build a life for themselves; and everybody helped each other out.

(Research scientist on brain-computer interfaces at IDIAP Research Institute)

The international nature of the academic environment and in some particular areas of industry such as pharmaceuticals has helped some Colombians to adapt. For some respondents working in industry, their high-level professional position and the multicultural and international professional environments have certainly helped. They never experienced any difficulties, and even the language was not a barrier for them since they knew English and did not need to learn the local languages as their workplaces worked in English. One respondent stressed:

I feel very comfortable here because there is nothing that makes me feel excluded despite the fact that I don't speak the language. The city of Basel is absolutely cosmopolitan and people here accept that the city lives of the pharmaceutical companies and these are international. I have never felt the necessity to speak German; I speak French and English at work.

(Scientist in Neurosciences, working for a pharmaceutical company in Basel)

Finally, some Colombians spoke of the importance of links with the local community through their partners' families and the support and help they offered to overcome some of the difficulties on arrival. One respondent said:

My partner's family was ready to lend a hand, and that was very helpful. Their support made things easier.

(PhD student in Geology at the University of Bern)

Negative First Experiences

In contrast, the initial experiences in Switzerland of most respondents who came to study or train and did not have scholarships, or those who came without a job contract, were not easy. The main difficulties these qualified Colom-

bians faced included adapting to a new culture (and on occasions to a new life as well), adapting to the weather, adapting to a new rhythm and intensity of work, the difficulty of making friends and being far away from their families, the difficulty of obtaining a work permit, and in some cases sexual or racial discrimination. An additional obstacle for skilled Colombians is the fact that their qualifications are not always recognised. Some Colombians said:

I arrived 12 years ago with a scholarship of Colciencias. (However) some first experiences were very traumatic. My diploma was not recognized and I had to do admission exams; that was very hard for me. In addition I had to follow my courses, do research and learn French, all at the same time. Those first experiences were frankly very hard.

(Scientist in Chemistry and Microtechnics in the healthcare and life sciences industry in Lausanne)

I experienced the stereotype of Latin American women without education when I was once treated as somebody who lacked even the most basic education.

(Senior postdoc researcher in Immunology at the UNIL)

For many the language was the main barrier. Skilled Colombians had realised that learning the local language is the key to academic, professional and social integration, and most had learned French quickly. Some of them benefited from intensive six-month courses that were part of their scholarship programmes. But for respondents who had to learn German and study the Swiss-German dialect, the difficulty was even greater. One PhD student said:

I couldn't speak German and at the beginning my communication with people was very basic; that was hard. Fortunately I did have some friends in Geneva who spoke Spanish and that helped my socialization and adaptation.

(PhD student in Geosciences and Geochemistry at the University of Bern)

Furthermore, a few respondents – all women – said that they felt discriminated against at first, both socially and professionally, but that this had changed once they had learned the language or had become integrated in the professional sense. This shows how skilled Colombian women face added difficulties in their endeavours to integrate themselves into professional life and/or within study programmes. As Riaño and Baghdadi (2007) show in their study on skilled immigrants from countries outside the European Union, women encounter significant difficulties when trying to transfer their educational resources across international borders and achieve professional integration appropriate to their skills level. Skilled Colombian women said:

When you come from a non-European country, especially for women, it is difficult to get people to believe that you are capable of doing things, even more so in architecture, which is mainly a male field.

(Architect and MBA student)

When I moved to Zurich I was confronted with many difficulties. I felt discriminated against at the ETHZ because I was a woman and from a developing country. The Professor responsible of my education programme told me that it was a school of engineers, and that the programme would be very difficult for a woman; he couldn't see me making it. He suggested I should find myself a Swiss husband.

(Researcher and lecturer in Geography at the University of Bern)

A further respondent explained how she experienced huge stress at the beginning of her PhD because she felt the prejudice of people showing their scepticism about her abilities. She stated:

I had a lot of stress at the beginning; I felt I had to work a lot more than 100% on the project because I am Colombian and I am a woman, so I had to show the others that I was able to do things well.

(PhD student in Geology at the University of Bern)

Some of those interviewed mentioned the hard work in a very demanding professional and/or scientific environment as being one of the main obstacles. Friction and a bad atmosphere in the laboratory, depression and, in one case, sexual harassment were other reported difficulties. The interviewees overcame these difficulties by working hard, showing determination, learning the language and in some cases seeking professional help. In many cases, the quality of life offered by Switzerland compensated many respondents for the long working hours, meaning that, overall, they gave a positive assessment of their daily life.

When I came to Zurich to start a postdoc, nobody picked me up or guided me and the reception I got was very cold. However I received a very good logistical support in terms of finding an apartment for example. The main difficulties I experienced were in scientific terms. I had to work hard and long hours including weekends to achieve a constant excellent scientific production.

(Postdoc in Organic Chemistry, working in biomedical research in the pharmaceutical industry in Basel)

I do more here in my field of work and my current position than I would do in Colombia. There, in the same position I would have more free time, and in some aspects my life as professor would be better there: a big house with employees. But this is being paid in a different way because here I have more freedom and security, the education of my children is better, I live in a small, traffic-free village that nevertheless has all the possibilities that a big city could offer.

(Professor in Computing at EPFL and Dean of ICT at the HEIG-VD)

For some Colombians interviewees, their arrival in Switzerland brought a mixture of good and bad experiences. We have the paradigmatic case of one Colombian woman scientist who had a two-sided experience: first a very positive experience upon her arrival in Lausanne and after, and in contrast, a negative

experience on arriving in Zurich, showing that Switzerland can offer very different environments for qualified migrants, and also showing how crucial it is to speak the language.

I lived in Lausanne for 2 years and my experiences were very positive; I learned French easily and people accepted my skills. When I moved to Zurich I started to be confronted by many difficulties. At ETHZ my diploma was not recognised whereas they did recognise it at the EPFL. I also felt discriminated against in society because of my racial origins; it was harder to feel accepted in German-speaking Switzerland.

She went on to compare her experience in Switzerland with the one she had in Canada, where she had lived before. She said:

My ethnicity in Canada was something positive due to the principle of visible minorities and diversities; the opposite occur here. There they first see your qualifications and then your physical aspect. Here I always had to prove that I was better than people thought. I worked very hard to study German alongside my Diploma and even followed a course to understand the dialect. When I learned the language people started treating me differently.
(Researcher and lecturer in Geography at the University of Bern)

Personal Identity in Question

Some respondents raised the issue of being confused about their personal identity, their *individual uniqueness* (Jenkins, 2008), and their feeling of belonging, after a hard first experience upon their arrival to Switzerland.⁴³ As Jenkins argues, “While many of us are able to take identity for granted, [...] there are occasions when identity becomes an issue” (p. 1). He stresses that the process of identification both as individuals and as members of a group often has an emotional charge attached to it. Some skilled Colombians experienced this. It is worth mentioning that those respondents who stated that they felt an emotional charge during their first experiences in the host country were all women. Skilled Colombian women said:

My first experiences were not easy. I was pregnant with my first child and did not speak German, plus I decided to change my name, all of which added up to a big identity crisis. It ended when I recovered my last name.
(Senior Economic Counsellor and MBA student in Geneva)

43 Jenkins (2008) describes identity as the human capacity to know “who is who,” which involves knowing who we are, knowing who others are, their knowing who we are, us knowing who they think we are, and so on. The process of identification implies a multi-dimensional classification or mapping of the human world and our places in it, both as individuals and as members of a group (p. 5). In reference to the conceptual nexus “identities-borders-orders” as a feature of migrants’ trans-nationalism, Vertovec (2004a) observes that identities concern “matters of membership, belonging, loyalty and moral and political values” (p. 37).

I had good first experiences. I find it easy to integrate myself into new cultural and social environments. I took it as an intellectual and personal challenge. However, I had some emotional negative feelings but I decided to assume that I was in Switzerland and that I had to see everything in a positive manner.

(Molecular Biologist and Project Manager in the food industry in Vevey)

Two Colombian PhD students explained how their process of identification with the host country was influenced by their change of status. While they came to Switzerland (for different reasons: one for personal reasons, the other one on a language study course), they found upon arrival that migration meant a loss of status in professional terms (Riaño and Baghdadi, 2007), since they had developed professional experience in their home country and in Switzerland they were not allowed to work. However, when they chose to start a PhD, the change of status (from *foreigner* to *student*) was a positive boost for their sense of self. These skilled Colombian women said:

When I was in the position to start my PhD, I no longer felt like a foreigner but I started to feel like a student.

(PhD student in Soil Physics at the University of Bern)

Initially it was hard to be in the Swiss German part due to the language; now as a student I feel to have a safer status and I feel more relaxed than before about being a foreigner.

(PhD student in Geology at the University of Bern)

Another example is that of a Colombian woman who came to Switzerland in 1975 after marrying a Swiss citizen. She stressed the hard moments she lived through when she received a Swiss passport (which at that time was done immediately on arrival in view of her being married to a Swiss citizen) and lost her Colombian nationality,⁴⁴ and her difficulties with the language. In this case, as in others, we can also observe how once a migrant decides to stay definitively, his or her willingness to integrate is often greater, facilitating the identification process with his/her new identity.

Right upon my arrival I became Swiss through marriage and when I received my passport I felt completely deprived of my roots and background; administratively, neither my family name nor my place of origin nor my place of birth figured on my passport. I felt confused

44 As Faist and Gerdes (2008) explain, in the past, women used to acquire their husbands' citizenship automatically after marriage, thus their citizenship status depended entirely on that of their husbands. Recently, the right to retain their own citizenship, independently of their husbands, has been recognised by the citizenship laws of an increasing number of countries, including Switzerland. In the particular case of Switzerland, up until 1991, foreign women automatically acquired Swiss citizenship by marrying a Swiss citizen. Since 1992, foreign men and women who marry a Swiss citizen need to live in the country for at least 5 years and be married for at least three years before they can apply for Swiss citizenship.

about my own identity. I felt the distance that separated me from my family and my country, and that hurt. The language barrier kept me quite isolated at the beginning, but when we finally decided to stay for good, I was able to integrate quite fast after having followed French courses.

(Educational psychologist working in a government institution in Lausanne)

Balancing Work and Family

As far as gender roles are concerned, particularly with regard to combining one's private and professional lives, most of the interviewed women with children find it a major challenge to balance their responsibilities as mothers and as professionals or scientists in Switzerland. They expressed their disagreement with the role that society gives mothers in this country in the sense that it is assumed that they will stay at home to look after their children. Additionally, they stressed their professional sacrifices to raise children and have a family in Switzerland, while in Colombia the system is made so that everybody can work. Besides social expectations that discourage mothers from continuing their professional activities, Riaño and Baghdadi (2007) mention that "the prevailing value that good mothers stay at home has generated a lack of institutional facilities for childcare." Some additional difficulties faced by qualified migrants with small children who try to combine their private and professional lives are that school timetables force one of the parents to stay at home; their dependence on external childcare since their relatives live abroad; and the limited number of places at day-care facilities (mostly a shortage of them), which are in addition very pricey. To overcome these difficulties, some women respondents had to bring members of their families from Colombia to take care of their children for a while and others had to take a work break because they couldn't find a place at day-care facilities. One respondent stressed: "I had to bring my mother-in-law to Switzerland for two months to help me with the children until I finally got a day-care place." In this regard, other Colombian women stated:

Switzerland lives in a big paradox since it is a very developed country but its society is still very conservative in its mentality towards working mothers – women are supposed to stay at home taking care of their children. Day-care places are very limited and pricey. I stopped my job for one year because I did not have any day-care place for my son. Now I work 60% or 3 days a week.

(Engineer in Electronics, SAP consultant in Logistics working in Geneva)

The Swiss system is not designed for working mothers, but instead discourages them in their personal decisions of wanting to do both tasks, unlike Colombia. It is rare that you find here women that want to pursue a career and have children. If you get married and have children, you are staying at home.

(Senior Economic Counsellor and MBA student in Geneva)

I have fought a lot to be able to reconcile my life as a mother and my life as professional woman. [...] When my daughter was 2, I finally got a place for her at the university day-care centre and that facilitated my professional work. The great difficulty was to establish yourself academically in Switzerland you have to invest 100% of your time, and if you are a mother and work only part-time, you don't have enough time to publish.

(Researcher and lecturer in Geography at the University of Bern)

In the same tone, one Colombian (male) stressed: "Despite the fact that Latin countries have a reputation for machismo, Switzerland is not very different." Another Colombian mentioned the high representation of Colombian women in the government as an indicator of it being socially more advanced than Switzerland with regard to gender issues when asked whether she saw any differences between her country of origin and Switzerland concerning the reconciliation of family and professional responsibilities. She declared:

I see enormous differences, which for me as a woman is basically the toughest part. In Colombia, the system is made for everybody to work. In the Colombian government about a year ago, seven out of thirteen ministries were headed by women. From the school system all the way to day care nannies, it is made so that women can go out. Here on the contrary the school system is designed so that women stay at home and for me that's very shocking.

(Architect and MBA student)

Moreover, the lack of family back-up to help working couples care for their children and the lack of domestic help with the housework are two additional elements that influence the way people combine private and professional lives in Switzerland; this is in contrast to the situation in Colombia. Nevertheless, it is important to mention that sharing the housework and family tasks is common practice among qualified Colombians in Switzerland, while this practice is not so widespread in Colombia. Some women stressed the fact that the support and help of their partners or husbands has been essential in their efforts to combine their professional and private lives. Many Colombians overcome the lack of family backup by encouraging kinship links with the community and neighbourhood.

Becoming a mother and balancing work and family was quite a hard task. At the beginning I tried to overcome the obstacles by sheer determination. I developed links with a supportive community which helped replace the family links.

(Senior Economic Counsellor and MBA student in Geneva)

Here the daily housework is shared more. Men are ready to help, while in Colombia "machismo" is common and women are supposed to do the housework. My husband (Colombian) encourages my decision to work and frankly we share the housework well.

(Engineer in Electronics, SAP consultant in Logistics working in Geneva)

I have a nanny and a husband who helps 50%. I also have a day-care place that I can totally trust. I can combine work and family because I trust those who take care of my children and

can count on the support of my partner. Since my work requires more than a 100% commitment, it would be impossible without their help, since we have no family here.
(Scientist in Neurosciences, working for a pharmaceutical company in Basel)

Leisure Activities and Swiss Quality of Life

Doing outdoor activities and sports as well as participating in cultural activities are things that many skilled Colombians find important in their private lives. Respondents mentioned singing; reading; playing an instrument; performing theatre; practicing yoga, ballet, biking; going to the cinema; being a member of a cooking club or a sports club or association; supporting NGOs and civil society associations; hanging out with friends and learning foreign languages among the activities they did in their own time. The interviews revealed how some respondents participate actively in various charitable activities. Some also often get together with their Colombian friends and relatives at the weekend.

I practice Nordic walking with a group of Colombians, and also yoga. I also participate in an association that fights against breast cancer; I am actually president of the association in the French-speaking part of Switzerland, and a member of the association at European level. I really enjoy doing outdoor activities with my friends and being close to nature.
(Molecular Biologist and Project Manager in the food industry in Vevey)

The respect that is shown for one's free time, one's family and private life in Swiss working culture is a positive value that is recognised by the respondents. The flexibility offered by academic life and the possibility of part-time jobs are other elements that make it easier to combine one's private and professional lives. Respondents mentioned:

When we decided to have a child, I decided to go down from 100% job to a 50% but this was not accepted at my former job and I resigned. Now, I work 60%, 3 days a week, and I am with my son 2 days a week. My husband takes my son to day care when I work and he picks him up too.
(Engineer in Electronics, SAP consultant in Logistics working in Geneva)

I admire and respect how the issue of the balance between private life and professional life is handled and considered here. The system helps to integrate both – it allowed me to be responsible for my own professional and personal development. The free time outside work is very much respected.
(Molecular Biologist and Project Manager in the food industry in Vevey)

Other Colombians highlighted the fact that the Swiss system provides more advantages and possibilities to combine private and professional responsibilities than the Colombian system, in which they find it very hard to reconcile both.

In Colombia I had to work twice as hard to achieve the same goals; I had no time there to do anything other than work. Here everything is more organised and there I had to take care of

jobs I wasn't supposed to do such as secretarial or as a receptionist, while here everybody does his own job.

(PhD Student in Basic Sciences at the UNIL)

In Colombia, the socio-cultural environment limits your possibilities to give time to your personal development. There is a significant amount of poverty and thus it is more competitive than here if you want to reach a good academic or professional position, and then you have to work hard so you don't lose what you have achieved.

(Supply Chain Project Manager in the packaging industry in Prilly)

However, it is also observed that many scientists and professionals in senior positions work long hours every week and that they have little time left for family life. Many stressed their reduced time to do other personal activities besides work and take care of their family responsibilities. The responses thus show contrasting experiences: while many Colombians cite having a family – especially small children – as the reason they have no time for other personal activities outside work, others mentioned that because they don't have a family, they spend more time at work and therefore don't have free time for other activities.

Contacts with Other National Communities and Bi-national Couples

The interviews revealed that Colombians foster contacts with other national communities, with the local community, and with the Colombian community, thereby strengthening their social capital. Many respondents, due to the nature of their work, have contacts with international groups and various different nationalities from different parts of the world, while in their private life they have contacts with the local community or the international community. Colombians said:

I have contacts with South Americans, Africans and people from lots of different countries. I have many contacts with international groups because the NGOs and civil society associations come from all over the world. These are mainly professional contacts. I know lots of Swiss people too, as I was brought up here in Swiss schools.

(International official at the United Nations in Geneva)

Most of my contacts are with the international community, and less with the local community and Colombians, mainly because of my work environment. I have a few Swiss friends and mostly Americans because my wife is American and has a big network of contacts. We both have Swiss nationality, but we spend most of our time with the international community.

(Postdoc in Organic Chemistry, working in biomedical research and the pharmaceutical industry in Basel)

Some respondents raised the issue of the Swiss intercultural/international social environment reflected by their social networks. One respondent, who lives in Geneva, declared:

I have quite a few English friends and Swiss friends. I have a well-established network of people; many of my friends are foreigners from all over the world. I guess it is because Switzerland is very international. I do not know anybody who is 100% Swiss and married to a Swiss-Swiss.

She went on to highlight the fact that, despite her broad palette of international contacts, she feels different when she meets Colombians:

When I meet Colombians, I feel a different kind of closeness.
(Architect and MBA student)

This feeling, however, is not shared among all respondents since some of them stressed the fact that they wouldn't meet up with Colombians just because of common nationality or culture, but only if they had the same interests or common activities. It would be interesting to analyse to what extent being part of a bi-national couple (with one national from the host country) means that skilled migrants would have more links to the local people and thereby contribute to their integration in the host country. There is much conceptual and empirical work that remains to be done with regard to the significance of bi-national couples. A skilled Colombian, who has lived in Switzerland for the past 7 years and is married to a Swiss woman said:

I have lots of contacts with local people because my wife is Swiss, and this has helped me to integrate better here than typical Colombians.
(Supply Chain Project Manager in the packaging industry in Prilly)

In his study on international students and skilled migrants in bi-national couples in Switzerland, Ossipow (2004) observes that how well a bi-national couple fits in varies according to the migrants' pre-migratory context, the conditions of their migration and the reception in Switzerland, and highlights that there are great differences for each national group.⁴⁵ He examines how students' mobility and bi-national marriages influence the relations between the country of origin and the country of residence from a perspective of "skills circulation" in which diasporas are seen as having the potential for positive investment in the country of origin. Interestingly, Ossipow concludes that the migration paths of students in bi-national couples (composed of one Swiss partner) very rarely end up returning to the country of origin. The same applies to skilled Colombians in Switzerland living in bi-national couples, having left their country to study and/or train.

45 Ossipow's (2004) piece is based on research carried out from 1996 to 1999 on bi-national couples. The couples are made up of one Swiss partner and one foreign partner who came to Switzerland from Cameroon, the Democratic Republic of Congo, Morocco, Poland and Turkey with the aim of studying and/or training.

2.2.4 Integration in the Host Country

The research provided evidence of the fact that for skilled Colombians, the institutional and professional contacts, as well as social relationships, are decisive for their integration in the host country. For those who have come for the purpose of studying or for scientific training and advancement, as well as the few who come through job contracts, the crucial elements for successful integration were already in place. While many Colombians were able to make use of the social capital they brought with them upon arrival in the host country, others needed some time to access new social and cultural resources that could be decisive for their integration, either through the development of professional activity, by completing a study programme, mastering the language, or participating in not-for-profit activities. As such, the *social networks*⁴⁶ (Vertovec, 2003; Bruggeman, 2008) and *social capital*⁴⁷ (Bourdieu, 1986) derived from such networks are essential elements that boost their integration into the host country. As previously mentioned, those that had contacts with the ACIS members and its not-for-profit activities were able to take advantage of the collective support of this type of association, benefiting from the wide and valuable set of *network benefits* (Bruggeman, 2008). As Riaño and Baghdadi (2007) argue, migrants' involvement in associations may play a decisive role in facilitating integration given the fact that they have "the potential to sustain their access to social resources" (p. 167).⁴⁸

The interviews revealed interesting information regarding skilled migrants' perceptions of their integration in the host country. Most Colombians say they feel comfortable living in Switzerland and consider themselves to be well integrated into Swiss social and/or professional life. Some reasons for this that were mentioned by the qualified Colombians are: being able to communicate

46 Following Vertovec (2003), the social network approach "sees each person as a node linked with others to form a network." Networks are a social construct and as such they are constantly being altered by their members. According to Bruggeman (2008), the pro-sociality of individuals "enables them to specialize in few activities, and renders them dependent on others for their remaining needs and desires to be fulfilled." As such, individuals prefer to affiliate themselves with others in groups and communities of diverse sorts, and are able collectively to support each other.

47 As regards social networks, social capital exists in and is drawn from an individual's web of relationships (Vertovec, 2003). For Bruggeman (2008), social capital is "the smorgasbord of network benefits."

48 Riaño and Baghdadi (2007) address the question of the interaction of class, ethnicity and gender to understand the labour market participation of skilled immigrant women in Switzerland, showing the extent to which they are able to make use of their imported social and cultural capital to gain access to positions in the Swiss labour market appropriate to their skills and experiences. The authors consider this to be central to understanding the social integration of skilled migrants.

in one of the local languages; making friends and spending time with local people; having a job and opportunities in the labour market; contributing to the economic prosperity of the country by working; participating in public events and in local activities; participating in activities as part of Swiss associations and ones at their children's schools; enjoying the Swiss way of life; following Swiss politics; voting; owning a house in Switzerland; etc. In this regard, these are some of the testimonies heard during the interviews:

I feel comfortable at work and at parents' meetings at my children's school. I master the language; I vote. Working and being active have been fundamental to making me feel integrated. (Senior Economic Counsellor and MBA student in Geneva)

I feel well integrated; I speak the language, have Swiss friends, eat Swiss food most of the time and do the same activities as Swiss people like skiing or hiking. (PhD student in Basic Sciences at the UNIL)

I consider myself integrated in the French-speaking part of Switzerland. I feel at home here. After a few weeks in Colombia, I feel I need to go back to Geneva. I have a house, family and a life here. When you feel like you could spend the rest of your life in a place, you are integrated. I started to feel this way five years ago. (Physicist and engineer working at the ITU in Geneva)

When the Colombians were asked how integrated they felt, some of them reflected on the meaning of integration. One respondent said: "The concept of integration varies from one person to the next." Another Colombian said, "To answer if I feel integrated, I first need to clarify what integration means?" One respondent said:

I went through all my schooling here. I feel totally integrated. I coach a Swiss football team and participate in the activities of Swiss associations, but for instance I have never wanted to run for a position in the Swiss government. That's the only way I am perhaps not integrated. (International official at the United Nations in Geneva)

It was observed that skilled Colombians feel that they contribute to the economic success of Switzerland through their jobs and professional activities and, as such, the fact that they have a job makes them feel integrated. Colombians elaborated on this issue:

I do consider myself integrated because I have a job and contribute to the economic prosperity of this country. Furthermore I have friends here and enjoy the Swiss way of life, its culture and outdoor activities. (Engineer in Electronics, SAP consultant in Logistics working in Geneva)

Given the fact that I speak one of the national languages, follow politics, have Swiss friends and that I work for a Swiss institution, and when I publish my work under the name of the Swiss institution, I would say that I consider myself integrated. (Research scientist on brain-computer interfaces at IDIAP Research Institute)

I feel very much integrated because I was the first Latin American woman to be elected to the city council of Lausanne, and the first Latin American to get dual nationality in the canton of Vaud. I was on the city council for 7 years and in the cantonal parliament. I directed the project that developed the first concept for internal training for the entire staff of the cantonal administration (20,000 employees). Also, in 1999 I represented Swiss women in the International Congress of Socialist Women.
(Educational psychologist working for a government institution in Lausanne)

It is worth mentioning that for some skilled Colombians, their active family members (wives, children) have an important role in encouraging and facilitating their integration in the host country. One Colombian mentioned:

My family has helped a lot to make me feel integrated. My wife is very active socially, and we integrated ourselves at a very early stage. She organized a lot of cultural activities where we live; she even created a theatre company. Her social dynamism helped a lot. We have a lot of friends. The fact that my daughters are here and that they are dynamic too also helps.
(Professor in computing at EPFL and Dean of ICT at the HEIG-VD)

A skilled Colombian woman who had already lived in Switzerland for 11 years at the time of the interview, stressed:

I feel integrated here because even if I have a precarious residential status and I am not married to a Swiss, there are other parameters; I have friends and I do activities that make me feel integrated.
(PhD in Biology, researcher in Immunology at the Bern University Hospital)

Trans-national Identity

The increasing research on migrants' trans-nationalism over the last two decades makes it possible to analyse how migrants build and reshape their lives while being simultaneously embedded in two or more societies. Various recent studies on migration that consider the modes of transformation of migrants' lives and families pay attention to how trans-nationalism changes meanings, attitudes and experiences both in the migrants' host country and their country of origin. There is also a change in migrants' identity and meaning of home.⁴⁹ Migrants' lives taking place simultaneously "*here*" and "*there*" allow the creation of forms of identity that reach beyond one particular space, enabling a new trans-national sphere to emerge in which traditional contiguity and face-to-face contact are not dominant (Vertovec, 1999). Following Vertovec (1999), "diasporas' consciousness is marked by dual or multiple identifications" (p. 4);

49 For example, Vertovec (2004a) reviews various literature that addresses the impact of migrants' trans-nationalism particularly in regard to the modes of transformation affecting socio-cultural, political and economic changes.

a sort of parallel living, a “home away from home,” or for instance being Colombian and Swiss simultaneously.

Accordingly, the interviews aimed to find out whether or how migrants might be “*bifocal*” (Vertovec, 2004a) with regard to their social links and personal attitudes. The retention of a *bifocalism* or a sense of a *dual frame of reference* was a remarkable point observed among the majority of skilled Colombians in Switzerland, since in their daily lives they persistently compare their condition in their country of origin “*there*” with their situation in their country of residence “*here*”. It must be stressed that a strong trans-national identity was generally noticed in long-term skilled Colombian migrants and those who have settled permanently in Switzerland. In a recent publication Fibbi and d’Amato (2008) recall, first generation migrants are those who put more energy into maintaining trans-national links (p. 10), as evidence from other studies of trans-nationalism shows (Guarnizo et al., 2003; Portes, 2005; Portes et al., 2005; Vertovec, 2004a, 2004b). In addition, skilled Colombians highlighted their “*feeling of Colombia*,” mentioning the importance of their roots, culture and identity as being independent of their level of integration in the host country. One respondent, who came from Colombia to Switzerland 17 years ago and is married to a Colombian, said:

I feel integrated while remaining a proud Colombian. I naturalised Swiss three years ago, but I am Colombian overall in my culture and roots, despite the fact that I master the language and feel comfortable here.

(Senior postdoc researcher in Immunology at the UNIL)

Another skilled Colombian, who had been in Switzerland for only one year at the time of the interview, but who is married to a Swiss citizen and has plans to stay for good, said:

I feel integrated here, but my family will always be, along with my country, culture and origin, part of my daily life.

(Scientist in Microbiology at EPFL)

As Vertovec (1999) asserts, while some migrants identify more with one society than with the other(s), the majority of migrants seem to maintain more than one identity that bonds them to more than one nation. A skilled Colombian elaborated on this issue stressing:

I feel partially integrated. I am naturalised Swiss and that is an important element of integration. I feel that I have kept a duality. Although I do not go to shows, I am well informed about current events. I participate in society through my professional work at the university and through my research. In the more daily aspects of life, in folklore for instance, I am still Colombian. My position is dual.

(Medical doctor, professor and researcher in Immunology at the UNIL)

A few Colombians mentioned their multiple trans-national links. The testimony of one skilled Colombian woman, who holds dual citizenship (but not Swiss citizenship), provided evidence of her plural identification and loyalties, and her links with her family through communication and mutual visits. She stated:

I am Colombian and Austrian. [...] I have multiple trans-national links since part of my family is in Canada. I am in constant communication by telephone and Internet. We visit each other; every other year I go to Colombia and my family comes also every other year.
(Researcher and lecturer in Geography at the University of Bern)

The trans-national identity of (most) diasporas entails a residence “*here*”, while assuming a solidarity and connection “*there*”. As such, following Vertovec (1999), migrants’ links to other places is what makes being “*here*” different for them, and these links are part of their uniqueness. Furthermore, the mere nature of diasporas enabling specific “transformations of (migrants’) identities, memory, awareness and other forms of consciousness” (p. 5), encourages migrants to connect with others who share the same path and culture. Regarding this point, interestingly, one respondent spoke of her feeling that her positive integration had to do with the fact that she did not miss her home country. This PhD student in Soil Physics at the University of Bern, who had been in Switzerland for 4 years at the time of the interview, said: “If integration means that I can communicate and that I do not miss my country, then I believe that I am integrated here.”

Skilled Migrants’ Residential Status and Dual Citizenship

The study on skilled Colombian migrants reveals how migrants’ identities are influenced by their residential status and citizenship regimes. The empirical evidence shows that skilled Colombians in Switzerland acquire a more stable migrant status with time. This is mostly based on their length of stay, attaining a stable job and, to a lesser extent, marriage to a Swiss citizen. A stable residence permit has been shown to be a significant condition for their being able to settle down as it provides them with the stability and the possibility to think about their mid- to long-term plans. This in turn might encourage their identification with the country of residence and thus their integration and trans-national feeling and identity.

In the Colombian case, the issue of dual citizenship arises, since it became evident that, while the great majority were Colombian citizens when they arrived in Switzerland (only one respondent had dual nationality), the migrant status of respondents changed during their stay and one-third of the Colombians have become naturalised Swiss while still retaining their Colombian nationality.

In fact, first Switzerland and then, more recently, Colombia have adopted tolerant policies with regard to dual citizenship,⁵⁰ as part of their nation-state politics (Faist and Gerdes, 2008), following a worldwide tendency that “reconciles principles of nationality with the trends of multiple identities” (Vertovec, 2004a: 31).⁵¹ In this regard, it is worth examining the extent to which dual citizenship enables or hinders integration in the host country, as well as to what extent it influences migrants’ trans-nationalism. Some recent studies provide answers to the question of whether dual citizenship enables or hinders integration; the answer depends on “both how one defines integration and how one views the mutual relationship between naturalization and integration” (Faist and Gerdes, 2008: 3). Although it depends on the legal framework of the country in which migrants have settled, holding the citizenship of that country in many cases facilitates their integration into the job market, since it bypasses the need for a work permit, decreases administrative obstacles, and provides further advantages. Along with citizenship, these do indeed enhance the possibility of socio-economic integration. Additionally, migrants’ children can also be more easily integrated in countries where dual citizenship is accepted.⁵² As Faist and Gerdes (2008) observe, empirical evidence suggests that dual citizenship may increase political participation and socio-economic opportunities, yet the authors state that there is no evidence providing that dual citizenship contributes to “spirals of non-integration, exclusion and segregation” (p. 12). Riaño and Wastl-Walter (2006) assert that analytical studies of trans-nationalism “have to become more differentiated, looking at the variety of the national contexts and at the influence that different regimes of citizenship have on the constitution of immigrants’ identities” (p. 1709).

Skilled Colombians who are dual citizens perceive that this situation has indeed encouraged them to feel better integrated in Switzerland. Despite their diverse understandings of integration, the majority expressed an opinion that their Swiss naturalisation was an indication of their integration in the host coun-

50 Current Colombian legislation applies the policy of dual nationality, according to which “No Colombian by birth may be deprived of his/her nationality. The status of Colombian nationality is not lost as a consequence of acquiring another nationality” (Article 96 of the Political Constitution, reformed in January 2002). The same is true of Switzerland, which is among the *tolerant* European countries that accept dual citizenship (Faist and Gerdes, 2008). In fact, Swiss law has tolerated dual citizenship of immigrants since the early 1990s.

51 For Faist and Gerdes (2008) the two most important factors explaining the increasing tolerance towards dual citizenship are, firstly, the evolving relationship between individual nation-states and, secondly, the changing relations between citizens and the state.

52 As Faist and Gerdes (2008) assert, empirical evidence suggests that children can be more easily integrated in states accepting dual citizenship, given the fact that the state is likely to encourage such children to develop particular skills related to a trans-national background like bilingualism or interculturality.

try, and many mentioned that this had made it easier for them to get into the job market. As such, the citizenship status has helped skilled Colombians to perceive themselves as full members of the host society. Further studies draw attention to the interplay between citizenship, migrants' trans-national commitments and their involvement in migrants' integration in the host country (Faist 2000, 2007). Concerning migrants' trans-national commitment, as Faist (2007) argues, "it might be safe to assume that migrants' trans-nationalism is fostered by dual citizenship" (p. 17), suggesting that dual citizenship might be considered the political foundation of the trans-national experience, making it possible for migrants to lead multiple lives across borders.⁵³

Skilled Colombian migrant status has also changed in terms of the types of residence permits. In some cases, those who came with a student permit received a B permit once they got a job. Others expect to get the C permit thanks to their length of stay and to having a permanent work position. Respondents said:

I originally came to study German for 6 months. Upon arrival I started to look for opportunities. I got the chance to start my PhD here. First I had a student permit for 6 months; then they offered me this job and the university organised my B permit.
(PhD student in Soil Physics at the University of Bern)

I have been in Switzerland with a B permit since I came 10 years ago; this year I have a stable work position and I hope I will get the C permit.
(Molecular Biologist and Project Manager in the food industry in Vevey)

Besides that, most of the respondents hold a B residence permit, only a few hold a C permit, whereas one holds an L permit.⁵⁴ Moreover, one Colombian scientist said that she had a registered same-sex partnership with a Swiss citizen. Under Swiss law, foreign partners of Swiss citizens are entitled to a residence permit from Swiss immigration authorities. She told us about her experience:

53 On the interplay between dual citizenship and trans-nationalism, dual citizenship might be perceived as a symbolic recognition of trans-national living conditions, such as growing up with different cultural backgrounds, and as such it can encourage integration. Faist (2007) underlines, however, that it should be noted that not all dual citizens are trans-national migrants, as not all trans-national migrants are dual citizens (p. 17).

54 The L permit is a *short-term residence permit*, valid for a maximum of 18 months for further vocational educational or private activities. The B permit is a *year-round renewable residence permit* given to qualified specialists and based on a federal quota system; permits with a maximum four-year span can also be granted. The C Permit is a *permanent residence permit* granted after an uninterrupted 5- or 10-year stay in Switzerland (depending on the country of origin); those in possession of this permit have almost equal rights and opportunities as nationals.

Some private reasons made me come to Switzerland. I have a partner relationship – a registered partnership – and that’s why I got the B permit; we live in the Canton of Zurich. This status has now been accepted at national level, so this year we will register as a federal registered partnership.⁵⁵

This confirms, as Nyberg-Sorensen and Guarnizo (2007) have stated, that migration induced by sexual orientation⁵⁶ creates different forms of relatedness and links that may lead to new family types.

Lack of Integration Feelings

A few respondents revealed their uncertain level of integration and of identification with the country of residence’s *nation state* (Riaño and Wastl-Walter, 2006). Riaño and Wastl-Walter (2006) examine historical changes in the representation of foreigners within official Swiss state discourses and their consequences for the integration of migrants into Swiss society. The authors show that in Switzerland, a country where the high percentage of foreigners is due to citizenship laws that are not based on place of birth but on the principle of blood-based descent as well as on restrictive naturalization practices, migrants may remain foreigners for generations. Therefore, this hinders migrants’ identification with their host countries’ *nation state*, which might have important consequences for their integration in Swiss society and thus for their transnational identity.

There is the example of a Colombian woman researcher in immunology at the Bern University Hospital who had been in Switzerland for 11 years at the time of the interview:

I am integrated into the labour market but only on a temporary basis. I would like to have more stability and to settle down without depending on a working permit but of my own free will. This situation does not let me make any long-term plans, and my decisions are based on a residence permit. [...] Switzerland has not provided me with the conditions that would enable and guarantee my successful integration.

55 In Switzerland, same-sex partnerships can be registered in some cantons, at cantonal level, or at the federal level since 2007 as result of the 2005 referendum in which a partnership law put forward by the federal government was approved. Under this law, the *federal registered partnership* gives couples of the same sex who register their partnership with the government, the same rights as a married couple. *Federal registered partnerships* are recognised throughout Switzerland, whereas cantonal registered partnerships may only be recognised within the cantons that offer *cantonal registered partnerships*. While *federal registered partnerships* entail a change in the registrant’s civil status, a *cantonal registered partnership* does not.

56 Migration caused by sexual orientation refers to that of lesbian, gay and transsexual persons (Nyberg-Sorensen and Guarnizo, 2007).

A further skilled Colombian woman who had been in Switzerland for a total of 14 years in three different periods (1+6+7) at the time of the interview, said:

There are different levels of integration. At the level of communication in daily life with neighbours and work colleagues I am perfectly integrated because I speak the language and can communicate well. I would say that I'm not integrated in the sense of sharing Swiss values and having a national identity with Switzerland, because we are foreigners. Here, unlike the other two countries (Austria and Canada) where we have lived, we know that we are not part of Swiss society, so we do not feel integrated but we do not wish to feel so either. (Researcher and lecturer in Geography at the University of Bern)

A few other respondents consider that they are not integrated into Swiss life. They said they have almost no contact with local people, due to the fact that they are not very sociable or have cut themselves off. Others think that there are some specific areas of life in which they do not feel integrated.

I am tolerant about my environment but I do not feel integrated, at least in the German-speaking part of Switzerland. In the French-speaking part I felt differently. (PhD student in Geology, University of Bern)

I feel fine here but not because Swiss people make me feel fine but due to the system. I do not know any Swiss people; I have no Swiss friends. I think Swiss people are very reserved in respect to the Latinos but in part it was my fault too because I have been very isolated and just tried to relate to people who are closer to my culture. (Researcher and PhD student in Chemical sciences at EPFL and professor in Colombia)

Despite watching the carnival and other cultural events, I don't feel part of that; so in this sense I do not feel integrated here. I can imagine that with the time and due to my children I will have the opportunity to be involved in local activities through the school. (Scientist in Neurosciences, working for a pharmaceutical company in Basel)

2.3 Brain Gain Mechanisms, Social Remittances and other Trans-national Practices

2.3.1 Scientific Diaspora Networks, R&D initiatives and North-South Scientific Collaborations

The project identified three brain gain mechanisms⁵⁷ which have great potential to enforce science and technology, as well as socio-economic development

57 Prior to the execution of the fieldwork, the project team identified these three brain gain mechanisms, based on the fact that in different country case scenarios, they have had a positive impact on development and poverty reduction in the countries of origin through a systematic use of knowledge, experiences and resources (for example, through their participation in the creation of micro-enterprises, employment generation, scientific and technical co-operation, the implementation of community development projects, the creation of scientific and technological centres, attracting investment for research and experimental development, etc.).

in the country of origin by encouraging the transfer of knowledge and other resources from skilled persons abroad to their homeland: 1) scientific diaspora networks⁵⁸ and associations; 2) investment strategies in research and experimental development (R&D);⁵⁹ and 3) North-South scientific collaborations.⁶⁰ All these three brain gain mechanisms involve knowledge transfer, and in the best cases they also involve knowledge circulation.⁶¹

To identify the extent to which these mechanisms and other scientific diasporas' trans-national decentralized practices and initiatives have been used and/or promoted by qualified Colombians in Switzerland, the interviews focussed on the relations between the migrants and their country of origin while also bearing in mind the professional contacts and exchanges these migrants had in Switzerland and internationally. Following Vertovec (2004a), trans-national practices can be referred as "(a set of) sustained long-distance, border crossing connections" (p. 1).

With regard to the first mechanism, we have highlighted Colombia as a case in point for the creation of *scientific diaspora networks* (Kuznetsov and Sabel, 2006; Barré et al., 2003) thanks to the Caldas Network. As has already been mentioned, some respondents took part in setting up this network by establishing the Swiss node hosted by the ACIS. It is worth mentioning that most of the founders of the ACIS were among our survey respondents. One of them told:

- 58 Examples of the first scientific diaspora networks established are the Colombian Caldas Network (Charum and Meyer, 1998) (Charum et al., 1997); and the South African network, SANSA (South African Network of Skills Abroad) (Brown et al., 1999; Brown, 2003).
- 59 According to the OECD (2008) definition, research and experimental development (R&D) entails creative work undertaken on a systematic basis aiming at increasing the stock of knowledge, and the use of this stock of knowledge to devise new applications. As such, R&D covers three different activities: basic research, applied research, and experimental development. The best-known example of R&D as a brain gain strategy for diasporas is that of skilled Indian expatriates, mainly those active in the information and communication technologies (ICT) sector, who during the 90s were at the root of an estimated third of all foreign investment in India, (Tarifica Ph. Ltd., 1998), creating a development model with the potential to be replicated by other developing countries threatened by brain drain (Khadria, 1999, 2001; Saxenian, 2000).
- 60 North-South scientific collaborations (KFPE, 2001; Bolay, 2004) encourage research between developing and/or emerging countries (the South) and developed countries (the North), promoting temporary exchanges, joint publications and giving skilled migrants from the South access to the knowledge, infrastructure and equipment of the North; and giving the North the possibility of doing research, and applying and adapting their technologies and innovations in developing country contexts. This mechanism has the potential to act as a bridge for the circulation of these valuable resources to the mutual benefit of the North and the South.
- 61 By examining the function of these mechanisms within skilled Colombian trans-national practices, brain gain should be considered the result or expected outcome of a practice, rather than an a priori component of the practice itself, with a real impact and/or contribution in the country of origin.

In 1991 I started Colext, linking up Colombian students all over the world. I was the administrator for 2 years; then the Colombian government took it over and this became the Caldas Network.

He goes on to mention the goals of the ACIS and how it lost support from Colombian institutions:

In 1994 the ACIS was a network of some 20 people, most of them in Lausanne. The goal was to use people and their resources abroad for positive development, but not necessarily encouraging them to return. But 1994 also saw a change in the government. The new boss of Colciencias cut down on funding for the project. [...] Today the ACIS needs to recover the good image it once had.

(Physicist and engineer working at the ITU in Geneva)

A further respondent, who was President of the ACIS at the time of the interview, stated:

At the beginning, the ACIS was created with the support of Colciencias, due to the initiative to create the Caldas Network; this support lasted for only 1–2 years.

(PhD in Biology, researcher in Immunology at the Bern University Hospital)

Respondents said that the ACIS was created by bringing together people working in the science field who were all friends. It was created as a social and knowledge-based group. While most of its original and current members are from the EPFL, now there are people with different backgrounds and from various different fields, for instance from the social or political sciences. The President of the ACIS stated: “While the ACIS’ links to the local community are mainly professional, strong kinship and friendship links have formed among its members as well as the professional links.” Skilled Colombian members of the ACIS mentioned that over time the ACIS has become a larger community group with the main crucial challenge of channelling the enormous amount of knowledge the members have. However, it does not count on infrastructure and logistics to transfer this knowledge to good hands in the country of origin. As one Colombian said:

Its impact on Colombian socio-economic development could be enormous. I believe the ACIS is a gold mine that Colombia has not taken advantage of.

(Scientist in Chemistry and Microtechnics in the healthcare and life sciences industry in Lausanne)

Skilled Colombians who are members of the ACIS repeatedly mentioned the lack of support the ACIS has received from Colombian institutions. One Colombian, who was also one of the original founders of the ACIS and who is still one of its main supporters, described how Colciencias could benefit from this association:

The ACIS has not got any material support from Colombian institutions; it is actually the ACIS that has benefited Colciencias; and the Caldas Network benefited from the ACIS too without giving anything in exchange.

(Medical doctor, professor and researcher in Immunology at the UNIL)

The ACIS is a very significant example of a scientific diaspora association having an impact on science and technology in the home country, as some of its members have contributed to strengthening the fields of environment, ICT and medicine in Colombia, to name but a few, and to creating a critical mass in these fields locally by establishing scientific collaborations that have endured over time despite being based on individual efforts without any institutional or financial support.⁶² The founders of the ACIS as well as other currently active members who were among the Colombian respondents, recalled the objective of their association as being “the promotion of the implementation of collaboration projects with Colombia”, as well as “to facilitate the interaction of the Colombian scientific diaspora based in Switzerland with institutional actors involved in science, technology and innovation both here and there.”⁶³

Concerning the role of the ACIS in the reinforcement of scientific capacities and in the socio-economic development of Colombia, respondents said:

The ACIS has the possibility to contribute, to identify collaboration opportunities in a range of areas such as environment, engineering, ICT and biomedicine, among others; and these collaborations would have implications for Colombian development. It is indeed a mine that should be exploited.

(Medical doctor, professor and researcher in Immunology at the UNIL)

Despite its ups and downs, the ACIS is still strong and a very powerful tool for communication, information and networking and exchange of contacts; it eventually reinforces capacities.

(Researcher and PhD student in Chemical sciences at EPFL and professor in Colombia)

Capacity building or reinforcement, high-level scientific publications, and research projects applied to development issues in Colombia are some examples that demonstrate the impact of the ACIS’ activities on strengthening scientific capacities and encouraging socio-economic development in Colombia. While no immediate economic development is brought about by the ACIS, it is true to say that it has a long-term impact by building capacity. It has been observed, however, that these activities are carried out through the individual efforts of

62 At the forum on scientific cooperation between Colombia and Switzerland, organised by the ACIS in June, 2007, one of the key members of the Colombian scientific diaspora gave evidence of his record of collaborations with Colombia and the lack of institutional support in a presentation entitled: “Memories of a combatant”.

63 <<http://www.acis.ch>>.

the ACIS members, and not by the association as a whole. Regarding the development impact of the ACIS' activities, some skilled Colombians stated:

There are at least 20 PhD students that have passed through the projects of some of the ACIS' founders; there are high-level publications; there has been participation in and/or organisation of training programmes in Colombia; transfer of technology. One example has been a project to reuse water by biodegradation and this has an economic, social, scientific and technological impact on Colombia.

(PhD in Biology, researcher in Immunology at the Bern University Hospital)

The ACIS contributes to the creation of a different vision of Colombia beyond violence and that has a significant social impact.

(Researcher and PhD student in Chemical sciences at EPFL and professor in Colombia)

Recently, the ACIS encouraged a project with scientists in Colombia, involving the Swiss and Colombian governments, who provided funding for research; this collaboration has brought together the School of Engineering of Yverdon and the Institute of Tropical Agriculture in Cali.

(Research scientist on brain-computer interfaces at IDIAP Research Institute)

Besides the ACIS, skilled Colombians participated in the establishment of other scientific associations, one example being the Colombian meteorological association. One respondent said:

I was involved in the creation of SOCOLMET (the Colombian meteorological society); I was a founder and in charge of a scientific journal, which has professional and scientific goals; we organised Conferences and seminars enhancing the possibilities of Colombian students to get postgraduate studies in industrialized countries.

(Senior scientific officer at the Secretariat of the Basel Convention of the UNEP in Geneva)

The Colombian case study shows how scientific diaspora networks and associations play a very important role since they facilitate the implementation of the other two brain gain mechanisms, namely strategies for investment in research and experimental development (R&D), and North-South research collaborations. On the one hand, as far as R&D is concerned, the following initiatives have been carried out by Colombians: transfer of technology at an industrial-university level; research projects linked to industry; the design of the Alpha Bio-2000 project;⁶⁴ giving courses, conferences and advice to industry; advice on creating and developing the Internet in Colombia; direct assistance to PhD students in the fields of science and technology linked to industry, etc. Some skilled Colombians talked about their brain gain initiatives in this area, highlighting a lack of interest from their Colombian counterparts, a lack

64 The Alpha Bio-2000 project was a multinational technological project involving research groups from 4 European and 5 Latin American universities. Its goal was to apply instruments that were originally developed to detect basic particles to biomedicine. Charum and Meyer (1998) document details of how the project was built and how it failed to be implemented.

of financial support, and the lack of an enabling environment as the main obstacles with which they were faced. They said:

When I was working at the CERN, I built a consortium of universities from Europe and Latin America to create the Alpha Bio-2000 project. My idea was to go back to Colombia with financed projects and engage those living there, as funding was a problem in Colombia. The project was on biomedical applications of detectors; but these areas were not a priority there. The European Union was going to fund it, but administrative constraints within the partners in Latin America shown that there was no interest; thus the project failed.

(Physicist and engineer working at the ITU in Geneva)

We tried to set up a company to do technology transfer and provide technologies that were non-existent, but there was an international situation that did not help much and many political interests were involved. Colombia was going through a process of selling a huge stake of their telecoms industry. It did not work out.

(Architect and MBA student)

During the last year I have been in contact with the private sector a lot, trying to implement a channel of technology transfer.

(Scientist in Chemistry and Microtechnics in the healthcare and life sciences industry in Lausanne)

On the other hand, the North-South research collaborations identified by the project, in which respondents were or had been involved, and which deserve a mention include the Cooperation Programme in the Environmental Field between the EPFL and Univalle; the joint project between the EPFL and the University of the Andes “An Inexpensive Method to Validate Road Transport Emission Inventories” financed by the EPFL-SDC Fund; the Swiss-Colombian Cooperation in Biomedical Research between UNIL and Univalle; the design and implementation of the Colombia-Switzerland Collaboration Project on Agro-ecological Models between HEIG-VD and Biotec Corporation, to name but a few.

The ACIS, in collaboration with the Colombian Embassy in Switzerland, has completed an inventory of the projects that have been implemented in cooperation with participants from both countries. The list offers evidence of a number of projects on Colombian core development issues which are being implemented through collaboration arrangements between institutions. These projects have been motivated by the scientists and have some key members of the Colombian scientific diaspora as their initiators, and involve different Swiss academic and research institutions.⁶⁵ One skilled Colombian explained one of his initiatives:

65 From a total of 11 scientific cooperation projects, 1 was signed at governmental level between the SER and Colciencias and the rest 10 have been implemented through collaboration arrangements between academic and research institutions from both countries. The EPFL has been involved in 5 of these projects; the University of Geneva in 4 projects; and the University of Zurich, the University of Lausanne and the HEIG-VD in 1 project each. See Annex 2: Scientific cooperation projects between Colombia and Switzerland.

I have been working through the ACIS during the last year to initiate a research project on small industry at the UNIL and the Univalle in Cali on Malaria, the idea being to present this type of project evaluated by each country's scientific entities and in which each part brings matching funds to finance a part of the project.

(Medical doctor, professor and researcher in Immunology at the UNIL)

Skilled Colombians who have been involved in North-South collaborations with their home country stressed the richness of such experiences as well as the lessons learned from working in research partnerships. Their knowledge of both contexts and of the local language is certainly an asset, as well as a significant opportunity they can offer along with their professional and scientific strengths. Respondents said:

An important lesson of working in partnerships is that one has to have a lot of patience and be very open to understand the mentality of a person who grew up in another culture and background and who might be used to other ways of working. My knowledge of both was definitely an asset for the project.

(PhD student in Environmental Engineering at EPFL)

During my joint research projects with Latin American countries, I was in direct communication with researchers from the South. I have the advantage that I speak the language; and a relationship of trust develops faster because of my origins.

(Researcher and lecturer in Geography at the University of Bern)

2.3.2 Knowledge Transfer, Social Remittances and Other Trans-national Practices

The interviews found other initiatives that had a significant knowledge transfer and/or knowledge circulation component.⁶⁶ The actions and practices of skilled Colombians involving a transfer of their knowledge to the homeland include carrying out evaluations for Colciencias and other public bodies in key areas of development such as medicine or ICT; maintaining/encouraging relations with government officials in Colombia; finding niches for research; giving advice to Colombians who wish to apply to Swiss research or academic programmes or institutes; giving lectures and tutorials; carrying out research projects there; promoting student and researcher exchanges; participating in scientific conferences and congresses; accepting advisory contracts with private firms; providing research advice on an informal basis, etc. The words of these Colombians

66 Knowledge transfer and sharing describes the process of disseminating and making knowledge available. Knowledge circulation implies a two-way process in which knowledge flows to and from different sources. While knowledge transfer could be an isolated or repetitive action in which knowledge is moving only in one direction, knowledge circulation implies a cycle where knowledge is flowing permanently in more than one direction. Various literature illustrates how knowledge circulation show strong potential for effective and mutually beneficial cooperation North-South (Gaillard and Gaillard, 1999, 2002).

with regard to their initiatives based on knowledge transfer and/or circulation in benefit of their country of origin show how many of these took place during their temporary stays or short visits to Colombia:

When I was in London, I once went to Colombia during holidays to teach mathematics. It was an adult learning programme via radio. I learned about this project through a friend at the Universidad Javeriana.

(PhD student in Mathematics at EPFL)

I gave graduate level courses in the University of Antioquia for five years, every summer; I have been an evaluator of projects for Colciencias; I have given conferences at congresses of the Colombian Community of Chemists, as well as at various universities like Cali, Bogotá or Javeriana.

(Postdoc in Organic Chemistry, working in biomedical research and the pharmaceutical industry in Basel)

Furthermore, beyond the three brain gain mechanisms and knowledge transfer and/or circulation, skilled Colombians in Switzerland carry out personally-motivated initiatives considered to be social remittances (Levitt, 1996, 1999; Nyberg-Sorensen, 2004), understood as “practices, ideas, identities and social capital that migrants channel from the country of destination to the country of origin,” which could create a positive impact in Colombia. The actions and practices of skilled Colombians identified as social remittances in benefit of the homeland include providing resources for the initiatives of Colombian organizations; linking NGOs in Colombia with social entrepreneurs and philanthropists in Switzerland; giving talks to different audiences on a specific subject; etc. A skilled Colombian mentioned an initiative involving ICT in collaboration with an NGO that unfortunately did not work out. She mentioned:

I contributed to setting up a project with coffee-planters, which was trying to set up an e-health network for a big organization (Café Colombia) to provide telemedicine services for their employees. There was interest but for political reasons it got stopped.

(Architect and MBA student)

Finally, regarding technology transfer initiatives, one respondent mentioned her initiative to send scientific equipment used in the pharmaceutical industry that was not being used at her work place to Colombia.

2.3.3 *Impact on Development in the Home Country*

When Colombians were asked about the impact⁶⁷ that their professional and scientific activity could have in their home country, they noted some essential

67 Impact refers to the effectiveness of a project or initiative and its success in contributing to its purpose and aims.

conditions for achieving an impact through their initiatives and practices. Some of these that are worth mentioning are: finding the appropriate channels, counting on political support, getting financial funds, having an enabling environment, finding the right partners, having persistence and ongoing enthusiasm, etc. While some activities of skilled Colombians might have a specific and local impact, other activities were regarded as having a much greater influence. There is an extensive palette of activities with an impact mentioned by the Colombians, as they mention below.

The impact of my activities in Colombia has been mainly specific and local. I have collaborated with the Colombian Embassy in Switzerland as a consultant on science and technology. I have been an advisor to the Colombian government here. I have given courses, promoted exchanges and training programmes. Some activities might have had a greater impact, like when I took part in advising on the creation and development of Internet in Colombia, and I once worked as consultant at the national level on defining scientific policy with Colciencias.

(Professor in computing at EPFL and Dean of ICT at the HEIG-VD)

My activity had a significant impact, like better control of industrial production, and also in the health sector. I work with sensors to control the maturation process of fruit and with diagnostic systems (for AIDS and cancer).

(Scientist in Chemistry and Microtechnics in the healthcare and life sciences industry in Lausanne)

My activities here had an impact there through 1) individual contacts; 2) my activities as an advisor on immunotherapy for cancer – in this role I can give my point of view on the standards; 3) my activities as an assessor for Colciencias; and finally 4) by the image I have (of a professionally very successful Colombian abroad).

(Medical doctor, professor and researcher in Immunology at the UNIL)

A skilled Colombian, who has lived in Switzerland for more than 34 years, linked his potential impact to the fact that he has encouraged Colombians trained in Switzerland to return; and he has maintained strong contacts and fluent exchanges with them. He stressed:

I have contributed to the creation of a critical mass in my area of research; Colombians are trained here and then they return to Colombia. We have played our part in gaining regional recognition in this field of study.

(Scientist in Chemical Sciences and Engineering at EPFL)

Some Colombian PhD students thought that their theses could have some impact in their country of origin. They said:

The greatest impact is the possibility to contribute to an understanding of the problems of pollution in Bogota; where does it come from and where is it leading.

(PhD student in Environmental Engineering at EPFL)

My thesis was the first to be done on biodiversity of micro-organisms in Colombia. Now more and more people consider micro-organisms as an important part of the biota; so we are advancing knowledge at microbial level.

(Scientists in Microbiology at EPFL)

Two Colombian women scientists in neurosciences and immunology talked of the greatest impact that their scientific activities could have for the society:

My work might have implications for the whole of humanity because if a medicine works, it is a great achievement. The problem is that many things are handled under very strict confidentiality. The work can only be shared when it is finished.

(Scientist in Neurosciences, working for a pharmaceutical company in Basel)

I am taking part in a project that aims to develop a vaccine against malaria. I am developing a vaccine to know the infectious mechanisms of the parasite, a very complex organism; the impact could be tremendous.

(Senior postdoc researcher in Immunology at the UNIL)

Further respondents spoke of contributions in the reinforcement of scientific and technological capacities in Colombia, or through their influence in the support of cooperation projects there while they were abroad.

I aid specialized NGOs on training in new ICT. I get NGOs in Colombia on board to help improve technology to benefit people, so that people can have greater access to technology. Before I was an advisor at the Federation of Cooperation in Geneva, a group that provides aid and has a budget of about CHF 10 million per year. NGOs receive this money for projects; a certain number of them were in Colombia.

(International official at the United Nations in Geneva)

When I arrived in Switzerland I made contact with the Centre for Human Ecology and Environmental Sciences at the University of Geneva, and contributed to establishing an agreement for student exchanges to come and do research with me as interns. Since 2002, international students have been coming from all over.

(Senior scientific officer at the Secretariat of the Basel Convention of the UNEP in Geneva)

Some respondents carry out grassroots-based initiatives, social projects and philanthropic activities that benefit some of the most vulnerable sectors of the population in Colombia; they provide financial support to this kind of project either on a one-off or a regular basis. This research therefore provides evidence of skilled Colombians' trans-national practices through significant ways in which they are committed to local development.

I have developed social assistance and philanthropic activities. In concrete terms, I sponsor children at a school with limited resources in Cali. We organized an event here last year to support the project and promoted this initiative among our friends. My husband and I sponsor one child each.

(Engineer in Electronics, SAP consultant in Logistics working in Geneva)

I have participated in social projects supporting children and women in Colombia. For example, helping women who have been victims of domestic violence to enable them to become economically autonomous, as well as supporting children so that they can have better future prospects.

(Educational psychologist working for a government institution in Lausanne)

Some Colombians support by giving advice and ideas that might encourage NGO activities and social projects to benefit vulnerable sections of the Colombian population. One Colombian said:

When there are NGOs in Colombia who need help, resources or funding for developing projects, I personally help them, give them ideas and provide contacts.

(International official at the United Nations in Geneva)

2.3.4 Links with Families in the Country of Origin

Following Vertovec (2004a), the daily origin of most migrants' trans-nationalism is to be found within families, and considers kin support as "migrants' most valuable asset in the country of origin" (p. 16). Existing evidence based on migration research suggests that family life has been significantly changed by trans-national practices. This study of skilled Colombians gives evidence of the links they maintain with their families in the country of origin. All skilled Colombians are in constant communication with their families by telephone, Skype or email, and visits. The majority of Colombians encourage links with their friends and relatives back there. Many exchange presents with their relatives back home by sending parcels by mail and/or with people who are travelling to Colombia. Similarly, migrants' relatives there send things that those in Switzerland miss from their homeland.

Furthermore, the extensive possibilities of communication tools and media have certainly encouraged and improved the flow of information and have made it possible to remain in regular contact with their families back home. As Vertovec (2004a) indicates that, an important (but as yet under-researched) type of trans-national practice is the ability to call members of the families as they try to stay in contact with those in their home country. According to Vertovec, the personal and close contacts in real time that international telephone calls provide "transform the everyday lives of innumerable migrants" (p. 13). This fact has been highlighted in recent years by the significant fall in the cost of international telephone calls. One respondent declared:

When I was here in 1997, a one-minute phone call to Colombia cost CHF 3.70. Now I speak for an average of 7 hours per month with my Colombian relatives.

(Architect and MBA student)

Another Colombian stressed that the fact that a member of his family works at an academic institution in Colombia facilitated professional contacts and exchanges with Colombian counterparts:

My brother is a university professor in Colombia, at the Universidad del Quindío. He is a scientist and a writer; so I keep in contact with him on a regular basis.
(International official at the United Nations in Geneva)

Moreover, while some skilled Colombians have houses and property in Colombia and send money to pay for the running costs, it is worth mentioning that more than half of the respondents systematically send back financial remittances to their families and relatives. As Adams (2003) observes, financial remittances have become the most visible evidence and measuring of the links between migrants' countries of residence and origin countries in the migration-development nexus. In the case of Colombia, a few cases have been observed whereby skilled Colombians were sending remittances by providing their family back home with a bank card for their own account which their family could use whenever necessary. While a few skilled Colombians only irregularly send financial remittances, some respondents send money mainly to fund education or infrastructural investment by their relatives. Therefore, it must be stressed that by sending money back to their families, skilled Colombians contribute to forms of consumption that can be considered a "productive use of remittances" (particularly on housing and education), which as Vertovec (2004a) argues "are a good form on investment that will lead to higher productivity" (p. 41). Other skilled Colombians send money to their relatives to buy plane tickets to come to Switzerland. Respondents declared:

I try to support my family in Colombia. I have made a personal commitment to providing undergraduate education for my brothers' and sisters' children. I help by providing loans to them mainly for education but also to help fund housing.
(Senior scientific officer at the Secretariat of the Basel Convention of the UNEP in Geneva)

I communicate with my family there by telephone and Internet; I send financial remittances regularly to support my mother who has just turned 100.
(Educational psychologist working in a government institution in Lausanne)

My links with my family in Colombia are very close; they involve sending money to support my father and talking to my family every week. Remittances are the third most important source of income in Colombia; I contribute to this by sending money systematically once a month.
(Senior postdoc researcher in Immunology at the UNIL)

Some individual respondents say that their experiences abroad contributed to better social practices in their family circles because they provide a good

model to follow. *Optimal brain drain* could be one of these positive impacts.⁶⁸

I feel I have had a positive impact on my relatives since I was the first one in my whole family (including cousins and brothers) who got a university degree. They have followed my example and have studied and tried to improve their skills and education levels.
(Supply Chain Project Manager in the packaging industry in Prilly)

2.3.5 Further Positive Impact

An additional positive impact of skilled Colombians' trans-national practices and activities that has been observed is their contribution, through their work and activities in the host countries, to building a good reputation for Colombians and/or raising awareness about Colombia in an attempt to improve people's perception of the country. One respondent highlighted the fact that Colombian PhD students at the EPFL "*have had very good results and they have even won some prizes.*" Another respondent mentioned how she supported the organization *Yo Creo en Colombia* (I believe in Colombia)⁶⁹ by encouraging the founder to make speeches at public events. Other respondents stated:

I am very keen to build up the reputation of Colombians all over the world. I have been very proud to show that Colombia has the potential to produce scientists like me.
(Senior scientific officer at the Secretariat of the Basel Convention of the UNEP in Geneva)

I believe that by doing good work outside my country I am already making a contribution. It is maybe also a sign of resignation since I originally wanted to go back and do things in Colombia, but this did not happen.
(Scientist in Neurosciences, working for a pharmaceutical company in Basel)

A further respondent mentioned the limited vision of Colombia that prevails in Switzerland, stressing:

There are many misconceptions about Colombia here, since most of the information shown in the media is incomplete. The picture that is presented of Colombia should be broader. In addition, people are very ignorant. I see young people with FARC slogans on their T-shirts, which is something that is unacceptable!
(PhD student in Soil Physics at the University of Bern)

68 *Optimal brain drain* (Lowell and Findlay, 2001; Lowell, Findlay and Stewart, 2004) refers to the effect that occurs when a moderate emigration of skilled persons of a country causes an increase in the education level of this country's population.

69 The private organisation *Yo Creo en Colombia* was established 9 years ago, aiming at building trust and competitiveness in Colombia through a positive promotion of the country at Colombian and international audiences (<<http://www.yocreocolombia.com/>>).

Finally, the information from the interviews shows that skilled Colombians in Switzerland consider that they are carrying out other type of initiatives for the benefit of Colombia like helping Colombians whenever they come to Switzerland, showing them around or providing them with useful information, and helping them to make contacts and get to know people “in order to make people who come here feel comfortable.” Some also stressed that by receiving delegates from Colombian civil society or scientists and professionals in Switzerland and meeting them when they travel abroad; they transmit their experiences and knowledge. Furthermore, it emerged that skilled Colombians can influence the general development of Colombia through their work in inter-governmental organisations, by encouraging Colombian scientists to participate in projects, capacity building, awareness-raising about environmental issues, improving respect for human rights, increasing democracy, and encouraging peace and dialogue, as well as participating in dialogue on other key issues for Colombian development. Some Colombians stated:

My work helps Colombia by making the country more democratic, by raising awareness about environmental issues, by improving human rights, by opening up Colombia to the world, through better participation of civil society, and by tackling questions of peace and dialogue between people.

(International official at the United Nations in Geneva)

When I was in Nairobi, working as a scientist for the Ozone Secretariat for UNEP, Colciencias sent research projects that were being funded for screening because they wanted to be sure that projects were feasible and helpful to Colombia. I tried to help Colombia to be at the forefront of research, find niches for research. I tried to get developing world scientists on board for different projects/work related to ozone.

(Senior scientific officer at the Secretariat of the Basel Convention of the UNEP in Geneva)

Table 2 shows cases in point of initiatives of the different type of brain gain practices involving skilled Colombians in Switzerland, and offers a brief description of the project and their concrete contributions, that are creating an impact in the home country.

Table 2: Examples of brain gain initiatives, knowledge transfer, social remittances and other trans-national practices involving skilled Colombians in Switzerland

Project	Type of practice	Description	Types of contributions creating impact
Creation of the Association of Colombian Researchers in Switzerland (the ACIS).	Scientific diaspora association	The ACIS was created in 1992 by a group of Colombians gathered at the EPFL as an association of people linked to S&T and research activities with a goal of promoting the implementation of collaboration projects with Colombia. During the 1990s, the ACIS functioned as the Swiss node of the Colombian Caldas Network. Today the ACIS has around 100 members, who promote scientific collaboration with Colombia. Its main objectives are: to establish and maintain a network of individuals involved or interested in the development of scientific cooperation between Colombia and Switzerland; to maintain and provide accurate and up-to-date information about experiences of scientific cooperation between the two countries; to promote the interaction of the Colombian scientific diaspora with academic and political institutions related to S&T.	<ul style="list-style-type: none"> • Knowledge transfer and sharing through the implementation of joint research projects, organization of training courses and scientific events, promotion of student exchanges; communication and mobilisation; contribution to the design and implementation of public policies. • Bottom-up enhancement of bilateral scientific cooperation.
Establishment and implementation of the Cooperation Programme in the Environmental Field between EPFL, Univalle and other Colombian institutions.	North-South research collaboration	The programme aims at providing solutions to Colombian environmental problems through: a strengthening of the scientific capacities of Colombian institutions through courses, training and research; providing added value to EPFL and other Swiss researchers/students through training in Colombia; launching cooperation projects between EPFL and Colombian institutions.	<ul style="list-style-type: none"> • Implementation of long-lasting research in collaboration with Colombian institutions, boosting individual and institutional capacities through knowledge circulation, seminars, conferences and meetings, student and scholar exchanges and joint publications. • Production of: 17 PhDs and Post-doctorates; 19 MA Degrees; 5 undergraduate students; 25 trainings; publications of more than 50 papers and communications in international scientific journals and congresses. • Encouraging the return of Colombian scientists. • Contributions to the design and implementation of public policies related to environmental problems in Colombia. • Contribution to the development of a critical mass of Colombian researchers in the field of the environment.
Implementation of the Colombia - Switzerland collaboration project: Precision agriculture and the construction of field-crop models for tropical fruit species, between HEIG-VD and Biotec Corporation (COCH project).	North-South research collaboration	The COCH project agreement was signed in April 2005 by representatives of Colciencias and the Swiss State Secretariat of Education and Research (SER) and was the first bilateral collaboration project between both countries signed at the governmental level. The collaboration involves the HEIG-VD from Switzerland and the Biotec Corporation, a centre of technological development and innovation promoted by the Univalle which works on the application of biotechnology in the bio industrial sector and the community. The aim of the project is to develop computing tools to model fruit cultivation in order to forecast and describe the behaviour of these crops and increase their productivity.	<ul style="list-style-type: none"> • Knowledge transfer and sharing through joint research; joint publications; promotion of student and researcher exchanges. • Promoting the circulation of competences that can have an impact on S&T in Colombia and contribute to the development and/or strengthening of local capacities. • Adaptation of technologies to the Colombian context in order to contribute to the advancement of the quality of life, and the design of suitable public policies in the fields of ICT and biotechnology. • Three Colombian postgraduate students have been involved.

Project : An Inexpensive Method to Validate Road Transport Emission Inventories.	North-South research collaboration	North-South research partnership project between EPFL and Universidad de los Andes, financed by the EPFL-SDC Fund and implemented between 2004 and 2007. The aim of the project was to find an innovative and inexpensive technique that could enable the validation of road transport emissions. The technique was extended to the entire city fleet and the pollutant modelling was carried out for the purpose of testing abatement strategies that could improve air quality in Bogota.	<ul style="list-style-type: none"> • Knowledge transfer and sharing through joint research; joint publications; promotion of student and researcher exchanges. • Promoting the circulation of competences that can have an impact on S&T in Colombia and contribute to the development and/or strengthening of local capacities. • Adaptation of technologies to the Colombian context to contribute to the quality of life, and the design of suitable public environmental policies.
Swiss-Colombian cooperation in biomedical research between UNIL and Univalle.	North-South research collaboration	The cooperation in biomedical research has established ongoing collaborative ties between the Faculty of Biology and Medicine at the UNIL and the Faculty of Medicine at Univalle, and this has been supported by an interfaculty exchange agreement signed in 1992. Within this context, a long standing collaboration has existed between two research groups at these two institutions, in the field of biochemistry. In addition, other bilateral collaborations have been encouraged and these involve some of the following institutions : Instituto de Inmunologia at the Universidad Nacional with the Swiss Tropical Institute in Basel (on Malaria, Immunogenetics in Aotusmonkeys); the Centro Internacional de Entrenamiento y de Investigaciones Médicas (CIDEIM) in Cali with the Faculty of Biology and Medicine at the UNIL (Leishmaniasis); and the Swiss Institute of Bioinformatics with the Department of Biotechnology at the Universidad Nacional (Training in bioinformatics).	<ul style="list-style-type: none"> • Promoting the circulation of competences that can have an impact on S&T in Colombia and contribute to the development of local capacities. • Contribution to the resolution of public health problems through participation in the design of public health policies. • Knowledge transfer and sharing through joint research; joint publications; organization of scientific events; promotion of student and researcher exchanges. • The joint PhD training programme in parasite immunology has produced: 3 PhD theses; 13 scientific publications; 4 international workshops; frequent exchange visits of scientists to both countries. • Contribution to the development of a critical mass of Colombian researchers and institutions in the field of medicine.
Alpha Bio-2000 project.	Investment strategies in R&D	Multinational technological project created by Colombian scientists at CERN, involving research groups from 4 European and 5 Latin American universities aimed at applying instruments that were originally developed to detect basic particles in bio medicine. The project could not be launched because of various administrative constraints and a lack of support.	<p>The probable impact would have boosted:</p> <ul style="list-style-type: none"> • Promotion of the circulation of competences and the use of cutting-edge technological resources to develop instruments that make a contribution to improving the quality of life. • Employment creation. • Technology transfer that encourages the creation/strengthening of technological industries. • Development and/or strengthening of local capacities.
Promotion of student and researcher exchanges; participation in scientific conferences and congresses; providing research and scientific advice on an informal basis, implementation of research from PhD theses on subjects related to Colombia.	Knowledge transfer/circulation	Through diverse individually-motivated initiatives, skilled Colombians boost knowledge transfer and knowledge circulation through the promotion of student and researcher exchanges, participation in scientific events (congresses, seminars, conferences), provision of research and scientific advice on an informal basis, promotion and implementation of research on issues related to Colombia, all of which are implemented either on a systematic or a one-off basis.	<ul style="list-style-type: none"> • Promoting the circulation of competences that can have an impact on S&T, and education as well as on innovation in Colombia, • Contributing to the development and/or strengthening of local capacities. • Participation in the design of public policies.

Appointment of diaspora members as scientific advisors to public and private bodies, both in the countries of origin and of destination.	Knowledge transfer/circulation	Diverse key members of the Colombian scientific diaspora in Switzerland have been appointed as scientific advisors by Colciencias, the Swiss State Secretariat for Education and Research (SER), the Colombian Embassy in Switzerland, private industry representatives both in Colombia and in Switzerland, to mention just a few. Through these appointments, skilled Colombian migrants have been able to transfer their knowledge and establish strategic links with key public and private actors in crucial strategic development areas.	<ul style="list-style-type: none"> • Promoting the transfer of competences that can have an impact on S&T as well as on the reduction of poverty through participation in the design of public policies in S&T and in socioeconomic development.
Promote the use and adaptation of ICT for NGOs in Colombia to improve their technology standards and to benefit people's quality of life.	Social remittances and philanthropic activities	The use of ICT that can benefit civil society is promoted through diverse projects focussed on Colombian NGOs. These include a project initiative to support coffee-planters through the creation of an e-health network to provide telemedicine services for coffee industry employees, which was designed but could not be launched.	<ul style="list-style-type: none"> • Contribution to poverty reduction and improvements in the quality of life. • Improvement of communication systems used by civil society groups. • Increased awareness of labour rights and quality of life standards.
Involvement in social projects supporting vulnerable women and children in different Colombian regions.	Social remittances and philanthropic activities	Through diverse initiatives and philanthropic activities, skilled Colombians participate in projects that benefit vulnerable children, schools in rural areas, groups of women who are victims of domestic violence, and other vulnerable groups of the population.	<ul style="list-style-type: none"> • Contribution to poverty reduction among disadvantaged social sectors of the population. • Encouraging the advancement of respect for human rights. • Increasing awareness of the importance of human rights. • Contributing to the empowerment of vulnerable civil society groups.
Promotion of capacity building and awareness-raising about the improvement of democracy, governance, the respect of human rights, and the enhancement of peace and dialogue.	Knowledge transfer and social remittances	Through their work in intergovernmental organizations and NGOs, skilled Colombians are able to transfer their experiences and knowledge for the benefit of Colombia. The areas they promote include Colombian development issues related to the political arena and peace on the international agenda, and in some cases their initiatives attract scientists, professionals and NGO representatives based in the home country.	<ul style="list-style-type: none"> • Contribution to the empowerment of civil society to ensure their participation in public and social life. • Contributions to improvements in the political framework. • Reinforcement of the importance of Colombian interests in international dialogue.

Source: Tejada, data collected during the 2007 survey of Scientific Diasporas project.

The survey showed that most of the Colombian interviewees have or have had contacts and/or scientific and professional exchanges with their country of origin at various levels of intensity and in a variety of ways. Accordingly, one third of the respondents maintain scientific and/or professional exchanges with Colombia on a permanent and systematic basis, as the following testimonies show:

At an individual level, I have contacts with some researchers who have followed a similar trajectory but who went back to Colombia. I help them whenever possible. I am a member of the Editorial Committee of the Journal Biomedica; I have academic commitments on a sporadic basis; I act as an evaluator of projects for Colciencias; I advise a private company on a project on immunotherapy in Cancer.

(Medical doctor, professor and researcher in Immunology at the UNIL)

I give courses and teach in Colombia; I have research projects there; I do student exchanges, joint publications with Colombian partners and maintain a permanent level of scientific cooperation with Colombia.

(Scientist in Chemical Sciences and Engineering at EPFL)

Other Colombians are exploring ideas of how to work in and for Colombia without being there in person. One PhD student said:

In the long term, I would like to work in Colombia and right now I would love to start working in Colombia without being physically located there. I have not come across possibilities to do this up to now within my field of research, and also I am not in a position right now to be able to start something by myself.

(PhD student in Mathematics at EPFL)

The Colombians interviewed have a wealth of additional skills and knowledge to offer both to the country of residence and to the country of origin due to their international scientific and professional contacts and experiences. Most of respondents maintain permanent exchanges with the international scientific community and professional organisations in Switzerland, Europe and worldwide. Accordingly, respondents are members of different professional, academic and scientific associations, consortiums, networks and societies in the fields and areas in which they are involved. Those worth mentioning include physics, engineering, biology, medicine, immunology, neurosciences, chemistry, environmental engineering, development studies, ICT, mathematics, management and administration, geography, geology, and architecture. Moreover, Colombian researchers and professionals are members of associations, regional and/or international scientific committees, advisors to research consortiums, and/or reviewers for scientific journals in some of the above-mentioned disciplines and fields. All these contacts and activities indicate that Colombian skilled migrants have a wide range of interests and professional linkages to offer with the potential to influence their country of origin.

I am frequently invited to international congresses and take part as an expert in the evaluation of various programmes (like the German Institute of Cancer Research, the Institut National de la Santé et de la Recherche Médicale (INSERM) in France; etc.), and of research theses in France and Italy, as well as a regular evaluator for the Netherlands Cancer Institute, and of the Research Fund on Leukaemia in the UK. I am a scientific leader for PANEL, a cancer vaccine consortium in the USA; I am a member of the Board of Directors of the International Society of the Biological Therapy of Cancer; I work closely on projects with the Ludwig Institute in Brussels and with Glaxo Smith Kline in Brussels....

(Medical doctor, professor and researcher in Immunology at the UNIL)

I belong to a project involving 12 different countries from the European Union; it is a consortium of research into malaria, HIV and tuberculosis.

(Senior postdoc researcher in Immunology at the UNIL)

2.3.6 Brain Gain Strategies and Lessons Learned

Although most of the Colombians interviewed do not follow specific brain gain strategies and base their pursuits purely on their opportunities, personal motivation and interests, it is also true to say that constant communication, networking, finding the adequate partners, institutional contacts, scientific and professional contacts, capacity development, taking advantage of their knowledge of both cultures and contexts, and forming part of scientific and research associations (mainly the ACIS) are elements which have helped to push their initiatives forward. Other respondents stressed the importance of embassies in promotion and support of their initiatives. Others mentioned that the good reputation of Switzerland in Colombia has also helped. Respondents declared:

A good strategy has been to encourage communication with people, to attend congresses, to contact researchers directly – this has given good results. I have tried to take advantage of my own knowledge and of my personal motivation. Here I am working in state-of-the-art technologies and in Colombia people are interested in these issues. Moreover, I try to apply the technology in other research fields that promotes multidisciplinary.
(PhD student in Geosciences and Geochemistry at the University of Bern)

Networking and the establishment of links are necessary conditions for a successful strategy. Involving the Ambassador by providing the right connections would really help out; official channels are reliable.
(Architect and MBA student)

A Colombian scientist provided a roadmap with some key guidelines that brain gain initiatives should adopt. His experience is based on many years of scientific collaboration projects with Colombian counterparts in the area of chemical sciences. He said:

It is important: 1) to establish partnerships that act as bridges, and that train the partners at the highest level to enable them to wield initiative and influence; 2) to reinforce the existing resources, both at institutional level and in terms of human resources; 3) to open spaces and share the available network of contacts and facilitate the exchange; 4) to create a basis of mutual trust.

He went on to mention some of the favourable circumstances that have helped his initiatives and practices that benefit Colombia:

Some favourable circumstances that have helped are the good reputation I have, my basis of scientific interests and the clarity of my motivations.
(Scientist in Chemical Sciences and Engineering at EPFL)

When asked about the lessons they have learned from their brain gain initiatives, skilled Colombians mentioned the lack of financial support and the lim-

ited financial resources, a lack of interest from Colombian counterparts, conflicts within institutions, and a lack of institutional continuity as some of the main difficulties that they have faced while developing their activities. Limited time was also mentioned as an impediment together with bureaucratic constraints, mainly in the home country. One Colombian said:

I once thought about sending equipment that was not used here anymore to the University of Colombia. But all the bureaucratic obstacles there frankly put me off; it was very difficult to arrange for the import of these devices. Since then I have not done anything to continue that first initiative.

(Scientist in Neurosciences, working for a pharmaceutical company in Basel)

As stated previously, a few respondents emphasised the constraints related to the non-recognition of diplomas, a fact that limits every initiative. Respondents revealed that this does have a positive side in that, despite the obstacle of not having their diplomas recognised, in their professional lives, Colombians are well accepted and have a good reputation in the research laboratories. Others stressed the fact that a high level of goodwill is required if people are to give up some of their free time, which entails extra work hours.

A significant obstacle that we Colombians have is that the diplomas that we get in Colombia are not recognised; and people have problems being accepted into a PhD Programme. It is not easy to make contacts mainly due to the fact that universities do not recognise our diplomas.

(PhD Student in Basic Sciences at the UNIL)

At the initiative of the 'Grupo Antioquia', the goal was to map the competences of Colombians here, a mind map identifying extraordinary skills, but we did not know how to put them to the service of our home country. A problem was the lack of time despite a great deal of goodwill, and also the bureaucracy.

(Supply Chain Project Manager in the packaging industry in Prilly)

Skilled Colombians said that they first need to settle professionally "here" before starting to develop initiatives "there." Accordingly, the research shows as it has been mentioned previously, how a stable residential status facilitates regular exchanges, while the lack of a stable status seriously hinders migrants' transnational practices. Moreover, when asked about the reasons for her lack of contact with Colombia and of initiatives that might benefit her homeland, one skilled Colombian replied:

My goal is first to lay down strong foundations in this new research area I am now starting, and then to take off and start offering my knowledge and experience, as well as potentially teaching in Colombia. However, in the private sector, the sphere of freedom is restricted through confidentiality clauses. Moreover, I have been concentrated all these years on my life here and on providing a future for my children.

(Molecular Biologist and Project Manager in the food industry in Vevey)

Others mentioned the lack of commitment by their counterparts in some of their experiences of joint projects. Respondents think that there are often lofty ideas, but they require a lot of effort to get done and sometimes people are not determined to see them through.

Initiatives in favour of Colombia require a lot of constancy and perseverance. The idea of collaboration is that everyone agrees that the project should be done, but most of the time this is not how it is; not everyone is keen on developing resources and seeing these initiatives undertaken.

(Research scientist on brain-computer interfaces at IDIAP Research Institute)

The lessons learned by respondents on their initiatives for the benefit of their home country indicate that their messages are addressed to both the country of origin and the country of destination. There is a need for structured and sustainable efforts; support has to come from both sides (the country of origin and the country of destination); and suitable partners have to be found, especially official sources that can contribute to turning their initiatives into genuine projects.

2.4 Motivation, Ability to Mobilise, Perception of Enabling Environment and Policies

The scheme proposed by J. Brinkerhoff (2006) is useful to identify specific determinant factors that facilitate scientific diasporas' initiatives to support their homelands. She identifies motivation, the ability to mobilise, and an enabling environment and policies as the three main determinants. An analysis of the information given by Colombian respondents about their initiatives, experiences and strategies involving their country of origin in the interviews helped us to identify how and to what extent the three factors anticipated by Brinkerhoff influence Colombian scientific diasporas' possibilities to have an impact on their homeland.

2.4.1 Motivation

Drawing on Esman (1986) Brinkerhoff explains *motivation* as the inclination to preserve solidarity and exert group influence. As Séguin et al. (2006) declare, skilled migrants feel a moral responsibility to give something back to their countries of origin. Motivation or *affective capital*, which is an entrenched characteristic of diasporas' identity, is strong among skilled Colombians in Switzerland. The empirical evidence shows migrants' deep desire to give back to their homelands. The majority of skilled Colombians show a lively and impassioned sense of motivation towards Colombia. "I would love to do some-

thing for my homeland” was an oft-repeated phrase throughout the interviews. In this tone, respondents said:

My initiatives towards Colombia are based on a strong affective element I have for my country. It is also due to a need to fulfil a feeling that I am giving something back because I am not there; and also my desire to play a central role in my homeland.

(Scientist in Chemical Sciences and Engineering at EPFL)

There are no specific strategies behind my initiatives; they are based on goodwill and this is becoming more and more intense due to my links and my personal motivation.

(Medical doctor, professor and researcher in Immunology at the UNIL)

I have not been very active and I feel sorry for this. But in my current position I could and would be delighted to do anything that benefits Colombia. I have a lack of information; a lack of discipline and maybe also a lack of time, but if I can make a contribution... I am ready to go ahead!

(Scientist in Neurosciences, working for a pharmaceutical company in Basel)

Some of the “giving-back” initiatives and practices of skilled Colombians targeted their family circles; others have their roots in personal inspiration and ambition of making knowledge and experiences available to the society by way of a sort of “payback” reaction. Skilled Colombians indicated:

I send remittances sporadically. I am supporting a young cousin by financing her studies to enable her to get into university; without my support she wouldn't be able to do it. I come from a medium level social class with scarce opportunities and I have found my way. I feel obliged to help other young people to find their way too.

(Medical doctor, professor and researcher in Immunology at the UNIL)

I am very satisfied and grateful for the education I received in Colombia and my contribution is to offer what I do and what I know. It's a way of giving something back.

(Scientist in Microbiology at EPFL)

2.4.2 Ability to Mobilise

The Colombian case study shows how trans-national initiatives towards the homeland tend to be informal and based on individual motivation and personal aspirations. However, it is worth mentioning that the mobilization of the resources of skilled Colombians in Switzerland also takes place through collective efforts, principally through their participation in the ACIS, where they share a sense of community (Esman, 1986; Brinkerhoff, 2006). For Brinkerhoff (2006), identity expression as a motivation can be encouraged through the formation of diaspora organizations and the development of collective activities in favour of the home country. Skilled Colombians in Switzerland gathered in associations have a mutually reinforcing inspiration to have an impact and also to share a sense of community. As such, while a sense of community encourages their wish to have a positive impact in the home country, influencing mat-

ters in the home country also stimulates the creation of a shared sense of identity. Brinkerhoff (p. 21) states that “much of the motivation to mobilise will derive from the diaspora itself – from individuals’ own inclinations to reinforce and express their homeland identity and from the supportive diaspora communities and identities they co-create.”

As far as cooperation initiatives with the country of origin are concerned, the Colombian scientific diaspora in Switzerland can be classified into three specific groups: 1) An active core group formed by a number of scientists and researchers who maintain close links with the homeland on a dynamic and ongoing basis. Even though the level of intensity of their practices has varied and the level of their motivation has also suffered some ups and downs, the members of this group have impacted scientific cooperation with Colombia through various cooperation and scientific collaboration projects based on the systematic transfer of knowledge. 2) A group located on the periphery but close to the core, and made up of researchers and scientists including students, with specific trans-national practices, most of which are planned (not spontaneous) but with an uncertain scope. 3) A group situated on the periphery and far from the core, which consists of researchers, scientists and professionals with spontaneous and isolated trans-national practices and initiatives. The Colombians situated at the core are active members of the ACIS (some are founding members and at some stage they have held management positions within the association), as are most of those who are located in the near periphery. The Colombians who are situated in the far periphery are not members of the ACIS and some of them are even unaware of its existence (See Table 3).

Table 3: Groups of Colombian scientific diaspora in Switzerland according to level of cooperation with the homeland and link to the ACIS

<i>Colombian scientific diaspora group</i>	<i>Level of cooperation intensity and links with the homeland</i>	<i>Link to the ACIS</i>
<i>Core group</i> made up of scientists and researchers mainly in permanent job positions in top Swiss academic and research institutions.	Very active role in terms of boosting scientific cooperation; close links with the homeland on a dynamic and ongoing basis.	Active members of the ACIS, some are founding members.
<i>Close periphery group</i> made up of researchers, scientists, students and professionals.	Mostly planned (not spontaneous) transnational practices but with uncertain scope; close links with the homeland.	Active and passive members of the ACIS.
<i>Far periphery group</i> made up of researchers, scientists, students and professionals.	Spontaneous and isolated trans-national practices and initiatives; weak links with the homeland.	Not members of the ACIS and some even unaware of its existence.

Source: Tejada, data collected during the 2007 survey of Scientific Diasporas project.

Scientists who are involved in the ACIS represent a structured group that works at both an individual and a collective level, which seeks to have a positive impact – mainly by enhancing scientific and technological collaboration be-

tween Colombians in Switzerland and research institutes and universities in Colombia. The evidence shows that some Colombian scientists in top academic and research institutions in Switzerland, who are founding members of the ACIS, have initiated projects without any institutional support, fuelled simply by their inspiration and their desire to create positive change. As such, the ACIS has functioned on the basis of the personal inspiration and collective enthusiasm of its members for over 15 years with no bilateral framework agreement or institutional support. Even today, the ACIS organises events and gatherings that enable members to meet and get involved in various initiatives. These events have helped nurture a fertile environment in which ideas can be developed and they also provide members with a chance to build collectively on already existing ones.

While two-thirds of the respondents that participated in our survey are members of the ACIS and four of them are founding members, a few respondents had never heard of this association. The testimonies of the ACIS members show the following as some of the main obstacles/worries for the positive development of the ACIS' objectives. The lack of permanence of its members does not allow any continuity; there is no clear formulation and awareness of its objectives towards the community; there is a lack of human resources and time to maintain the website; there is no list of the projects that have been developed, no permanent infrastructure, no continuity in the support received; it is a challenge to keep the Association alive and active; there is too much mobility among its members (many leave Switzerland, and many do not have stable jobs); etc.⁷⁰ A skilled Colombian stressed:

Some of the main challenges of the ACIS are to be able to survive and to grow. One problem is the lack of institutional continuity; we received support, but every 4 years the representatives of the government as well as the policies change; the support remains dependent on the economic situation.

(Medical doctor, professor and researcher in Immunology at the UNIL)

About the expectations of people in regard to the ACIS, one skilled Colombian said:

People think that the ACIS can serve two purposes: 1) help skilled Colombians to return to Colombia in better conditions; or 2) help them build collaboration projects; but the ACIS does not do that. (Moreover) there is no memory in a database in which the Association could show what it has done; maintaining the website is a problem.

(Professor in computing at EPFL and Dean of ICT at the HEIG-VD)

70 It is worth to mention that Colciencias has provided recently a financial support of USD 10,000 to the ACIS, in the framework of an agreement signed in 2008. This punctual contribution will be used by the Association to complete a data base of researchers and financial sources, as well as to organise events.

In the same tone, a skilled Colombian woman, who was President of the ACIS at the time of the interview, mentioned:

One major challenge has been to have people working permanently for the Association; we are all volunteers and that limits its operations. If the activity does not pay you back somehow, it is not easy to continue; it is difficult to keep constant work. Other limitations are the time and the physical space; we organise the meetings in different members' homes.
(PhD in Biology, researcher in Immunology at the Bern University Hospital)

A further element respondents mentioned that hinders the ACIS initiatives and activities is the bureaucracy of Colombian institutions. One respondent said:

The administrative and bureaucratic obstacles in Colombia are enormous. I was the first President of the ACIS and I gave up because working with Colombia is difficult. People have a different work rhythm there and a different level of commitment.
(Professor in computing at EPFL and Dean of ICT at the HEIG-VD)

Some of the strengths of the associations that were mentioned by skilled Colombians were its contribution to establishing contacts and providing support to skilled Colombians arriving in Switzerland, mainly by providing a network of social and professional contacts. It is indeed recognised as an important gathering place and as a platform for the recognition of the potential of the Colombian scientific diaspora in Switzerland. A further positive impact that was mentioned was related to the integration of the scientific and professional Colombian community in Switzerland. In this regard, the ACIS President mentioned: "the ACIS plays an important role in the integration of the skilled Colombian community in Switzerland." This view was not however shared by all respondents. One Colombian said that the ACIS has not succeeded in linking and including the whole Colombian diaspora. He stressed:

The ACIS is very much centred on engineering at the EPFL. It should be more global. It also lacks a link component. Many people working in banks or the private sector here are hidden and remain unknown; the ACIS should bring them together. Many people have good influence or high level positions that could create opportunities.
(Supply Chain Project Manager in the packaging industry in Prilly)

About the role that the ACIS and other scientific associations might play in social and economic development, as well as in developing scientific and technological capacities in Colombia, the testimonies of Colombians show their scepticism about their evident development impact. Colombians said:

It would be pretty optimistic to say that associations have the power to foster the development of these capacities. Individually each person keeps in contact with institutions in Colombia. That is the role they play there, but it is hard to assess the impact of their work so far. They are very one-off initiatives.
(Research scientist on brain-computer interfaces at IDIAP Research Institute)

Associations might be good platforms for improving S&T levels in Colombia through community activities that achieve specific goals. They can of course help, but they need to do more, for instance to involve international partners and personally dedicated people, and they need the support of governments. The governments on both sides – in the country of origin and of destination- and members must come together and be dedicated and willing to bring about change.

(Senior scientific officer at the Secretariat of the Basel Convention of the UNEP in Geneva)

Finally, the interviews provided some information about the strategies that the ACIS has been following in order to survive and remain active in recent years. Conferences and a cooperation forum are some of the activities that have been organised in this regard. One respondent asserted:

There is a low level of commitment and no budget but we take advantage of the privileged position that some of us have in the scientific and academic world in Switzerland. Two colleagues and I are continually boosting this; we are the engine of the ACIS and its stalwarts, but we have no time.

He went on to stress that an additional important challenge was to keep in contact with those members who either return to Colombia or move to a third country. This is an excellent idea but there are also considerable obstacles.

A great potential would be to be able to maintain the links with people who go back to Colombia and to develop our collaboration further. But for this to be done, we need a clear strategy and funds. The Association can only earn around CHF 600 in membership fees.

(Medical doctor, professor and researcher in Immunology at the UNIL)

The information from the interviews shows that other associations of Colombians have been set up in Switzerland and that respondents have participated in founding them. *Presencia Latinoamericana*⁷¹ or *DePapaya*⁷² are a couple of examples.⁷³ One further example is the Network of Colombians in Geneva,

71 It was created with the aim of gathering together different associations and initiatives by Latin American communities in Switzerland. The motivation was to join forces by integrating them into one sole association. It aims to display the diverse cultures of the different communities; to develop a common perspective; create/reinforce Swiss – Latin American exchanges; and facilitates integration (<<http://www.presencialatinoamericana.ch>>).

72 Association for Colombians in Switzerland: created to promote the integration of Latin American immigrants in Switzerland making use of ICT through an informative communication portal (<<http://www.depapaya.org>>).

73 There are many associations and groups involving Colombians in Switzerland, which mainly aim to promote cultural and social activities. A few examples are: *Aguapanela* (group of Colombian folklore dancers), *Jorcamba* (Colombian musical group), and *Colombia Vive*. Furthermore, there are also social projects in which skilled Colombians are involved or which they have supported, one example being the *Afromogica* project, a community project in Cali.

which was founded by a skilled Colombian in the 1980s with the aim of contributing to greater democracy in Colombia, then later changed its name to the Association of Colombians in Geneva. He stressed:

I took part in founding a network of Colombians abroad; there were different nodes and the one for Europe was based in Geneva. The objective was to contribute to democratization in Colombia. We found funding, held conferences and meetings in Europe and Colombia to inform and denounce, and hoped that things would change; it became the Association of Colombians in Geneva.

(International official at the United Nations in Geneva)

A further respondent said:

I created the association *Presencia Latinoamericana*. It was in response to the need I perceived that people have to organise and act together in order to achieve something.

(Educational psychologist working in a government institution in Lausanne)

Despite these examples of collective actions by Colombians on behalf of their home country, it is worth noting that not all Colombians become members of an organisation and not all of them tend to encourage their mobilization through collective action. As has been previously mentioned, many disparate, one-off individual initiatives came to light. Analysis of the information contained in the interviews showed that some skilled Colombians thought there was a clear “dispersion of diasporas’ initiatives” and this was in some sense seen as a result of the political polarization of the home country. Some Colombians stressed the fact that every Colombian has his own vision of the political situation in the country, and insisted that these interests would have to be reconciled if they wanted to reach a common goal. One respondent said:

People reproduce the polarization here that you see in Colombia. Extremely well-qualified people from the left do not mix with those from the right; there is no dialogue. Someone once tried to bring together all the Colombians working for international organizations. They met once. But different people with different (especially political) interests would not mix. People with different political notions or from a particular neighbourhood in Bogota won’t mix with people from another neighbourhood.

He regretted that scientific associations or networks are exclusive. He stressed:

The creation of diaspora networks is a good idea to bring together Colombians, but we have to bear in mind that diasporas are social, cultural and political, while scientific associations or networks are for scientists only, hence exclusive.

(International official at the United Nations in Geneva)

Another skilled Colombian also mentioned that the political polarization of Colombian society was being reproduced in its diaspora. He stated:

When Colombians meet there is always a lot of social stratification. They are sceptical about meeting Colombians outside their usual circle and they do not trust them (are they refugees? asylum seekers? prostitutes?). The Colombian diaspora lacks a unifying component, and this cannot be created through an association.

(Supply Chain Project Manager in the packaging industry in Prilly)

It would therefore be pertinent to examine how migration reproduces the social groups of the home society in the host country, or else produces new social groups. As Bejarano Rodríguez (2007) states, it is important to identify the forms in which class structures of the home country are reproduced in the migratory context, as well as “the image of social inequality that is reconstructed through migration” (p. 225). The weak social cohesion experienced by Colombian society is reproduced in its diaspora, and one of its implications is the difficulty of gathering together and forming solid associations. As Riaño-Alcalá and Goldring (2006) recall, the legacy of four decades of conflict in the social fabric of communities and the social relations of Colombians is visible during the migration process as well as in efforts by Colombians outside the country “to come together and form associations regardless of their aim” (p. 19).⁷⁴ This fact lies at the root of the apparent heterogeneity of the group of Colombians who left their country in the late 90s and early 2000s.⁷⁵

Furthermore, Colombians said that nostalgia was a common feeling among migrants. While this feeling endures over the years, it does not seem to be a decisive element in terms of encouraging common activities with their fellow nationals while abroad. In this regard, some respondents mentioned:

I know that, unlike many other nationalities, Colombians are very nostalgic. They long for their country and they always go back. So if they can somehow help their country, they certainly will. The only thing is that you do not know how to, and the longer you stay abroad, your links begin to be just family and friends; contacts with industry and academia weaken a lot.
(Architect and MBA student)

74 Drawing on their research on Colombians in Canada and their trans-national commitments, Riaño-Alcalá and Goldring (2006) state that the interest and capacity of Colombians abroad in their home country depend to a great extent on how groups negotiate membership in their country of origin. This negotiation includes the political relationship between migrants’ groups who construct one aspect of their identity based on their context of departure.

75 Despite our research focused on skilled migrants (one might therefore be tempted to think that the Colombian respondents might have a shared identity in this regard), our perception from the interviews is that skilled Colombians come from a variety of socio-economic backgrounds, as well as different reasons for departure which might influence their propensity to associate and their motivation to develop initiatives that benefit their home country. As Riaño-Alcalá and Goldring (2006) mention, the group of Colombians who left their country of origin during the five-year period from 1999 to 2003 is a very heterogeneous one in terms of their regions of origin, their rural or urban background, their socio-economic status, their level of education as well as their reasons for leaving.

I am not a member of any association related to my country of origin. I probably share the same feeling of nostalgia with other Colombians, but who says we are going to share a lot simply because we are both Colombians.

(Senior Economic Counsellor and MBA student in Geneva)

Finally, it is worth mentioning that skilled Colombians' ability to mobilise to transfer their resources in benefit of Colombia based on individual motivation and aspirations, through collective action within the ACIS and other diaspora organizations, shows continuity in time. This confirms, as argued by Vertovec (2004a) that once migrant colonies become well established abroad, a flow of trans-national resources starts, "ranging from occasional remittances to the emergency of a class of full-time trans-national entrepreneurs" (p. 55). Following Vertovec (2004a) the swelling effects of this dynamic come to the attention of national governments who reorient their international activities in such a way to recapture the loyalty of their expatriates and guide their investments and mobilizations. However, the general perception of skilled Colombians towards the governmental, national, pro-diaspora policies is evident scepticism.

2.4.3 Enabling Environment and Policies

The interviews tried to tease out the perceptions that skilled Colombians have of both *policies and the enabling environment* that might encourage their flow of resources and knowledge. An enabling environment conducive to diaspora resources and to pursuing positive initiatives for their homeland is mainly based on the initial structures and available opportunities that encourage such an environment. These might for example include: support from state institutions both in the country of origin and in the country of destination; access to infrastructure and resources; institutional programmes; encouraging science and technology policies; a stable political system; appropriate social and economic conditions in the country of origin, etc. With this in mind, skilled Colombians were asked to give their opinion regarding their country of origin, focussing mainly on social problems, the economic progress made in recent years, scientific policy, and the political challenges.

Some of the people interviewed sense that the economic situation of Colombia has improved. They cited macroeconomic stability, business dynamism, a growth in exports, the boom in the construction sector, an increase in direct foreign investment, and the vitality of the markets. Some skilled Colombians mentioned they were surprised that a country with so many problems should be capable of reaching such a level of economic development. However, inequality was a source of worry for the Colombians – a majority of them mentioned the growing gap between rich and poor. Only two Colombians showed any optimism about the possibilities in the long run. Some stressed that the country

might be doing well in macroeconomic terms but that this does not seem to be having any impact on individual living standards. One respondent stressed:

The economic situation in itself is sustainable, I think; but it starts being complicated when you link it to the social situation. I know a lot of entrepreneurs and economically it seems that the country is peaking and becoming stable, but when we link this to the social reality, that is when questions start to be raised.

(Architect and MBA student)

Regarding the social panorama, the qualified Colombian interviewees were pessimistic and worried about a situation which they described as being “*difficult*,” “*problematic*,” “*extremely complicated*,” “*unfair*,” “*serious*” or “*catastrophic*,” because of social polarisation, inequalities and the unequal distribution of wealth, poverty, insecurity, instability and violence, as well as the serious problem of the internally displaced. The overwhelming tone was one of worry:

The central problem is the unfair distribution of economic resources in the country. We must improve opportunities for everyone, as well as increasing the involvement of the local population.

(Senior scientific officer at the Secretariat of the Basel Convention of the UNEP in Geneva)

The economy is doing well but people are doing badly. The macroeconomic situation is good, but the gap between rich and poor is increasing. There is greater job insecurity and instability. The wealth of the companies does not work its way down to the people that work for them.

(Research scientist on brain-computer interfaces at IDIAP Research Institute)

As regards the political environment, some of the skilled Colombians have the perception that their home country is immersed in a politically unstable situation because of the armed conflict and the drug cartels. In terms of governance and the rule of law, the Colombian interviewees believe that there is still a long way to go as weak institutions, corruption and the lack of transparency, restrictions on freedom of expression, the lack of a consensus between the government and the opposition, a lack of political dialogue between polarized groups, and human rights abuses are all typical of the political scene. One Colombian said that “*political attitudes are increasingly polarized, and the governmental elites do not react; political evolution is going too slowly and not keeping up with people’s needs.*” The criticism towards Colombian institutions was evident from skilled Colombians’ perceptions of their homeland. Respondents said:

Colombia is a country with great potential. It has great human resources, hard workers, good education, universities and hospitals, a good resource base, plenty of water and natural resources, great food... all components for development. It just needs better management.

(Senior scientific officer at the Secretariat of the Basel Convention of the UNEP in Geneva)

The elites haven’t understood that there is a link between economic and political development. There is a need of more democracy to help unblock economic problems. There are

highly qualified people and the country contributes to the global economy; unfortunately a large part of the population works in the informal sector since the formal economy doesn't provide sufficient resources for its people.

(International official at the United Nations in Geneva)

Our perception was that Colombians are interested and informed about what is going on in their country of origin. In general, they seem to be worried about Colombia's socio-economic and political situation. The effect that this could have on them is that their desire for security, stability and opportunities to better themselves will influence them more than any other considerations when it comes to deciding whether they want to return to their homeland:

Unfortunately we have got used to the misery in the country, to violence, impunity, and to a lack of respect; and I think this is the root of the problem. It seems like we have no memory; we take for granted things that seen from other perspectives are not normal. I know that Colombia has positive and negative aspects, but I feel sad that we have got used to violence.

(Scientist in Microbiology at EPFL)

I think the social situation in Colombia is very dark. The important values in which our society has been built have been more and more destroyed, mainly due to drug trafficking; the drug trade has ended up degrading our social values.

(Scientist in Chemistry and Microtechnics in the healthcare and life sciences industry in Lausanne)

The interviews provided some interesting information about Colombian scientific policy and scientific and technological research there. One scientist emphasised the excellence of some areas of research in Colombia. He thinks Colombia is third in Latin America behind Brazil and Chile, which are now at the vanguard of science and technology. Interviewees' main concern is the lack or insufficiency of institutional support and of resources for research and science. "Scientific research is not a priority" was a sentence that was repeated by many Colombian scientists. Others highlighted the lack of continuity with regard to scientific policy as a major problem as it changes a lot from one administration to the next. On this issue, one Colombian said, "You never know if the new person in charge is going to keep the same policies as the previous one; you don't even know how long this person will stay in that position." Additionally, one respondent said she was surprised to see how so many positive things are done with so little investment in scientific research:

I see how little money is given to scientific research and there is a lot of talent. More support should be given so as to enable more things to be done. Colombia is at a relatively good level compared to many other countries.

(PhD in Geology at the University of Bern)

The following were seen as the main challenges and proposals for a Colombian scientific policy: establishing a long-term scientific policy; the need for the private sector to show greater commitment to science; less decentralization and greater involvement by the private sector in science; the need to increase the focus on education in order to make it more accessible to poorer sections of society so that they can develop their own capacities; providing more resources for research to bring it up to international levels; transparency in the handling and distribution of funds and in the institutions responsible for scientific policy; and establishing evaluation committees with members of the diaspora so that they can guide and advise universities and educational and research centres. One scientist stated:

Scientific policy is a key area for Colombian development. Colombia has excellent levels of research in some areas. The investment in science should be increased to at least 1% of GNP; but unfortunately this depends on the prior resolution of some priorities like poverty or the armed conflict.

(Medical doctor, professor and researcher in Immunology at the UNIL)

One respondent stressed there are some “*privileged groups*” that benefit from current scientific policy; he declared: “Colciencias manages the financial funds for science, but unfortunately their management is totally political and not scientific.” He went on to say: “Most of the resources are given to private universities and this is a scandal. In general terms, science is not a priority, nor is education important – they are something reserved for the ruling class.”

A further respondent also stressed corruption in the allocation of research funds as one of the most important weaknesses in Colombian scientific policy:

There is corruption without limits in the access and distribution of funds. There is no transparency in the support of scientific capacities. Always the same people are those that have funds for research. Moreover priorities are not clear and many people do not have a scientific mentality.

(Molecular Biologist and Project Manager in the food industry in Vevey)

A skilled Colombian recognised that despite the lack of governmental support for science in Colombia he perceives, his home country has excellent research groups in certain areas. He mentioned some examples:

There are some research groups with a very good standard, for example Mr. Patarollo’s looking at malaria; he has managed his public relations quite well and has created a very good centre for genetics. Tropical medicine is also of a very good standard. There is a Centre of Software Production in Cali, the technological park with contacts to Australia and the USA.

(Professor in computing at EPFL and Dean of ICT at the HEIG-VD)

Finally, one of those interviewed highlighted the increased number of doctorate students in Colombia in recent years. This is due to new opportunities to obtain research positions at universities as a result of the vacancies created by some lecturers retiring and also because many researchers are leaving the country.⁷⁶ Another Colombian mentioned:

My university back home is requesting that their professors and lecturers have at least a Master's degree and encourages them to finish their PhD. This certainly helps to boost scientific activity in the country even if it has slowed down a lot due to political problems.
(PhD student in Soil Physics at the University of Bern)

Respondents draw attention to the fact that opportunities must be created at home if return migration is to be encouraged and/or if emigration is to be reduced. Skilled Colombians believe that their home country does nothing to retain its citizens. The lack of opportunities encouraging skilled people to stay is seen by many as one of the main problems. Some even perceive the general context of the country as being so bad that people want to leave:

10% of the population live outside the country. Colombian policies should be focussed on providing opportunities and developing infrastructure for people to work in top-level jobs. Sustained economic development is a central challenge.
(Senior scientific officer at the Secretariat of the Basel Convention of the UNEP in Geneva)

Economic or political reasons are often the main reason. People move and sometimes lose their links with their families, houses and jobs to start all over again in other countries. There are many political refugees, and also many people leave to study abroad because there are better facilities there.
(International official at the United Nations in Geneva)

The interviews attempted also to tease out skilled Colombians' perceptions of the enabling environment in the host country, which might encourage their flow of resources and knowledge. They were therefore asked to give their opinion on Swiss scientific, cooperation and migration policies. The interviewees have a very positive perception of Swiss scientific policy, recognising that investment in science is a priority and that the public resources available for research are enormous, leading to a high level of scientific productivity. Those interviewed also recognised that the considerable investment in science and technology and in R&D by the private sector in Switzerland is a great plus.

76 Here again, we need to ask ourselves at this point whether this situation is provoking an *optimal brain drain* effect, as explained by Lowell, Findlay and Stewart (2004), which could be a positive element giving the fact that each year only an average of 46 Colombians obtain a PhD in their home country (average of the period 2000–2006, as stated in Table 1).

I have always admired Swiss productivity; that such a small country could have such a high standard of scientific publications and so many Nobel prizes. Some very important findings have been generated here.

(Scientist in Neurosciences, working for a pharmaceutical company in Basel)

In contrast, almost half of those interviewed regarded Swiss co-operation policy towards Colombia as insufficient or inadequate. In this context, Colombian researchers pointed out that if policy were oriented differently, there would be greater possibilities for multiplying and increasing co-operation. A scientist with many years of scientific collaboration with Colombia said:

Analysis of North-South cooperation at a scientific level and as a conceptual, theoretical and practical space still has to be done, and it cannot be based on development aid; it cannot be a copy of it. Many people in scientific cooperation in Switzerland come from the development aid sector and I think that puts scientific research at risk.

He went on to say:

Switzerland should integrate diaspora members to enrich dialogue in public policies. Swiss institutions should encourage people with cooperation experience to participate in its institutions. The cooperation sector is a very sensitive one; it is based a lot on goodwill and not on science. Support is provided by cooptation; it is a highly protected sector.

(Scientist in Chemical Sciences and Engineering at EPFL)

According to other Colombian scientists and active members of the scientific diaspora:

Switzerland should ask itself what it wants from the international scientific community; higher funds should be allocated to carry out research with developing countries. Developing countries should be treated as equals. Each partner should contribute according to its strengths, not just rich countries doing research on health and poor countries providing humans for clinical trials. (Research scientist on brain-computer interfaces at IDIAP Research Institute)

One of the main difficulties for the initiatives on behalf of Colombia is the lack of funding from the Swiss side. It is difficult to motivate Swiss partners in engineering. It is hard to convince them that there will be good results; they consider the level of engineering in Colombia as low. (Professor in computing at EPFL and Dean of ICT at the HEIG-VD)

As far as Swiss migration policy is concerned, the Colombians interviewed are worried about the restrictions on migration for Latin Americans. Many mentioned the three circle model policy⁷⁷ which limited student permits. “*Restric-*

⁷⁷ According to the “three circles model” the Swiss government introduced in 1991, immigrants from the European Economic Area had preferential status (first circle). If demand for labour could not be satisfied by immigrants from these countries, workers from the United States, Canada, Australia and New Zealand could be recruited (second circle). All other countries formed the third circle.

tive,” “tough,” “negative” and “exclusive” were some of the adjectives used to define this policy. Some respondents were troubled by the conceptualisation of foreigners as a threat to Swiss identity (Riaño and Wastl-Walter, 2006) and to national security. A young scientist, who has already lived in Switzerland for seven years, pointed out that “Swiss migration discourse shows how many foreigners there are in the prisons, but it doesn’t show how many there are in the universities.” Other skilled Colombians feel that it is unfortunate that the migration debate in Switzerland does not give a clear idea of what migrants might contribute to Swiss society and that debates on migration always focus on certain aspects of migration, which are often negative such as violence, false claims for social security, crime and other costs of migration – never the benefits.

Riaño and Wastl-Walter (2006) stress that while Switzerland has succeeded at the international level in presenting itself as multicultural and humanitarian, at the national level it has applied restrictive citizenship policies that have brought about selective social exclusion of its immigrants. The authors show that in fact, by portraying skilled migrants as “better able to integrate,” the Swiss state discourse on foreigners introduces a distinction between immigrants by class. In practice, this is clear from the decision to replace the “three circles model” with the “two circles model,”⁷⁸ prioritising immigration from the European Union (EU) while at the same time authorising the entry of skilled migrants from non-EU countries.⁷⁹

Skilled Colombians see Swiss migration policies as unfortunate or even incoherent and contradictory:

I don’t think Switzerland has a coherent migratory policy and I am very critical of this. At the moment its attitude is very exclusive and xenophobic because it excludes mainly countries from Africa and Latin America. However it has to be recognised that in the humanitarian sense Swiss society shows an extraordinary level of solidarity but this is visible within the population but not at of the level of the state.

(Educational psychologist working for a government institution in Lausanne)

78 The “two circles model” or *dual system* (Becker et al., 2008) introduced in 1998 replaced the “three circles model” by a classification that only differentiated between European Union/ European Free Trade Association countries and all others.

79 In a recent study, Becker et al. (2008) point out that the selective immigration policies of the “three circles model” introduced in 1991 and the “two circle model” which replaced it in 1998 led to a significant increase in the share of skilled immigrants over the last few years. Their study on *the Swiss migration policy and industrial structure* comes to the conclusion that the current admissions policy has made a positive contribution to structural change in Switzerland (Becker et al., 2008). Similarly, as Pecoraro and Fibbi assert in a further chapter of this book that the transition to a knowledge-based economy, along with the selective admission policies of Swiss immigration legislation based on selection by skill level and nationality, might have contributed to today’s migrant flows being better qualified than before.

I feel it is an insult to have to show a paper certifying a marriage to a Swiss in order to be able to set foot in a university.

(PhD student in Soil Physics at the University of Bern)

Respondents mentioned Switzerland's mistakes as being its failure to take advantage of qualified migrants who have spent some years in Switzerland and who are well integrated; not making a selection of immigrants in accordance with their capacities but rather according to their nationality; not facilitating their integration into the labour market; and not introducing a skills-based points policy like other countries as Canada.

Swiss migratory policy has a great problem which is that it creates a system of dual rights: those of EU member countries and those of third countries. This creates barriers to professional integration for people that come from those third countries. Firms prefer to employ people with a C permit rather than a B permit, so the policy discriminates according to your origin and not according to a migrant's skills. Moreover, there are no programmes to facilitate integration by skilled migrants.

(Researcher and lecturer in Geography at the University of Bern)

The Swiss migratory policy is hypocritical and is based on a knee-jerk reaction. On the one hand it favours skilled migrants, but on the other hand we should ask ourselves how positive that is and for whom. Switzerland keeps the best trained people and, in the final analysis, this represents a loss for the countries of origin.

(Scientist in Chemical Sciences and Engineering at EPFL)

One respondent raised the question of brain waste:

I think that personal experiences are not exploited, and there is a high level of brain waste due to the separation between industry and scientific knowledge. Both should be fostered equally: on the one hand, personal and professional experience, and on the other hand the experiences on scientific knowledge.

She went on to consider the particular difficulties faced by women from developing countries:

People get a work permit only when they are highly qualified and when they are able to do something that no one here would be able to do. This policy is very restrictive and it is even more difficult for women who have in many cases followed the longest and hardest paths before they were accepted.

(Molecular Biologist and Project Manager in the food industry in Vevey)

Respondents raised the issue of difficulties faced by students when they finish their study programmes, since they are forced to go back, or the "hypocrisy" of policies towards irregular migrants who have provided good labour during the years:

On the one hand, people say that Switzerland welcomes skilled migrants, but students are always forced to leave when they finish their studies. Many students are funded by Swiss government working on Swiss projects and then forced to leave. This feels contradictory because they do not take advantage of skilled migrants who have spent several years here and are well integrated.

(Research scientist on brain-computer interfaces at IDIAP Research Institute)

For irregular migrants who have no papers, there is certain hypocrisy because often Swiss people and institutes hire them and then they are sent back. Many Colombians who have worked for years in honest positions providing good labour will be expelled but should be regularised.

(International official at the United Nations in Geneva)

It is remarkable that some respondents raised the issue of the acceptance and good reception of Swiss migrants who moved to Colombia during the Second World War to start a new life. They mentioned that Switzerland should not forget history and should act towards Colombian migrants today in the same way. Furthermore, some skilled Colombians stressed the fact that both countries of origin and countries of destination should recognise the potential and value of scientific diasporas to contribute to both countries. Colombians think that policies in host countries should encourage this:

Skilled migrants should be recognized as people who can contribute to both their countries of origin and their countries of residence. This should influence the way research is done. There should be a space where the work migrants do that helps their countries of origin is highlighted. This should be part of the goals of scientific institutions in Switzerland.

(Research scientist on brain-computer interfaces at IDIAP Research Institute)

Switzerland should encourage Colombian scientists that temporarily stay, work or study in Switzerland to either go back and really help Colombia, or to assist them by establishing mechanisms to transfer their skills to the homeland.

(Senior scientific officer at the Secretariat of the Basel Convention of the UNEP in Geneva)

It is worth pointing out that some respondents mentioned the key role the Colombian Embassy in Switzerland has played in promoting their initiatives as well as recognising and promoting Colombian scientists and existing bilateral collaborations within the Swiss scientific arena. However, they also highlighted the need for somebody in the embassies to be dedicated to science and scientific collaboration, which has not been the case up to now. Respondents said:

I would like to stress the fact that now it is the first time that a Colombian ambassador to Switzerland launches her mandate so quickly, and invites us to discuss with her and informs us that scientific bilateral collaboration is one of her two priorities. This is a great opportunity. The speed of this ambassador is certainly based on what the former one did. There is a sense of continuity.

(Medical doctor, professor and researcher in Immunology at the UNIL)

Embassies should have people in charge of science much like they have people in charge of culture. This would help link people and initiate scientific activities. Switzerland was chosen to test this idea, but it wasn't pushed through.

(Research scientist on brain-computer interfaces at IDIAP Research Institute)

One scientist explained how the Colombian government did once have the idea of creating the position of scientific consul, aiming at encouraging science and technology through the appointment of key representatives of the scientific diaspora in four specific Colombian embassies in Europe. Unfortunately, the project did not come off. He explained:

Some years ago the government wanted to establish the post of scientific consul. Four of us were ready to take up those positions. But the four countries in which those scientific consuls would be appointed (Switzerland, France, Spain and Germany) did not accept this diplomatic figure; it was a mistake of the Colombian government since it started the process without any prior consultation.

(Professor in Computing at EPFL and Dean of ICT at the HEIG-VD)

A further respondent stressed the importance of her links with the Embassy in her efforts to encourage a brain gain towards Colombia:

The last Colombian ambassador here in Switzerland was a good friend. She would always give me ideas of how to provide something for Colombia.

(Architect and MBA student)

The perceptions of skilled Colombians of the enabling environment provide evidence of the support and enabling policies that are required to give systematic encouragement to initiatives by skilled Colombians. It is therefore worth mentioning that the ACIS' considerable experience and the increasing visibility of initiatives for Colombia's benefit testify to the lasting motivation and the persistence of the most active members of Colombian scientific diaspora in Switzerland. However, there is a need for a supportive and consistent scientific policy in Colombia as well as greater scientific recognition in Switzerland (which might encourage an appropriate institutional framework for bilateral scientific collaboration) to capitalise on the resources of skilled Colombians.⁸⁰ As one Colombian professor clearly pointed out:

80 For example, with regard to Swiss bilateral scientific collaboration with the other case study countries of our project, India and South Africa, it is worth mentioning that both have an institutional framework supporting science and technology exchanges since both are priority countries in the current bilateral cooperation strategy of the Swiss State Secretariat for Education and Research. Various instruments within the institutional framework guide and promote scientific and technological cooperation at an inter-university level as well as at scientist-to-scientist level. At the other extreme, there is no institutional framework for scientific collaboration between Switzerland and Colombia despite the fact that many collaboration

Diasporas on their own cannot do much without the active participation of governments. Diasporas contribute with the human element “here” but the human element “there” is also essential. Up to now, one-off things have been achieved but there is no continuity; there is no sustainable bilateral strategy. The diaspora is the starting point, but it does not represent anything on its own.

(Professor in Computing at EPFL and Dean of ICT at the HEIG-VD)

2.5 Migrants' Future Plans and Expectations: Settlement, Return or Circulation

The interviews took account of skilled Colombian migrants' future plans and expectations by asking them how they envisage the development of their scientific and work careers over the next ten years. They gave varied and interesting answers. The scientists and researchers in the sample showed greater commitment to research and teaching, scientific achievement, professional stability and a better position in their workplace (particular for PhD students and postdoc researchers). Additionally, many mentioned that they would like to establish and or increase links with their country of origin and thus hope in future to have concrete projects running with counterparts in Colombia. Their future plans and expectations include being more involved in project management; directing a lab and research projects, if possible with the country of origin. When asked “How do you see your life in 10 years concerning your country of origin?” one skilled Colombian responded categorically: “I love my country and I will always remain involved in activities there.”

Colombians stressed that a stable professional situation allows them to make plans for the future. Accordingly, well-established Colombians see themselves as being a lot more professionally active in the future and as being in the privileged position of being able to decide what they want to do. Both men and women mentioned looking for increased international recognition as well-established professionals or scientists. Some respondents would like to explore new research fields and enjoy scientific recognition in a new area. Some think about staying in the host country, others would like to go back to Colombia.

I would like to be back in Colombia, but probably not in the academic sector. I am in an exploration phase.

(PhD student in Mathematics at EPFL)

initiatives have been carefully established on a bottom-up basis over the past two decades at both university-to-university and scientist-to-scientist level. Most of these have been promoted by members of the Colombian scientific diaspora. Since collaborations without institutional support are fragile, it is time for a response in terms of Swiss scientific policy.

I would like to explore a new research field and to reorient my research themes and be recognised for a relevant contribution in that new area.

(Scientist in Chemical Sciences and Engineering at EPFL)

Other skilled Colombian expressed her flexibility and openness for new opportunities; she has not yet defined her future.

I feel well settled here but I remain flexible and anyway in 10–15 years I'll probably have different thoughts. I have difficulty projecting myself in the long term; I do not make plans. I will solve my future later but will be opened to opportunities.

(Molecular Biologist and Project Manager in the food industry in Vevey)

Some Colombians raised the issue of students abroad and the granting of scholarships in return for a commitment to return. Some scholarship programmes insist on the students going back to Colombia to pay back the grant and to apply what they have learned abroad in the home country. However, Colombian institutions are now finding out that people with grants decide not to go back.

Colombian institutions should accept that not all people will go back. But there should be possibilities for these people to stay in contact with the scientific community in Colombia and share their knowledge. It seems a shame otherwise. There should be some open doors and greater mechanisms for collaboration to ensure continuing interaction.

(Research scientist on brain-computer interfaces at IDIAP Research Institute)

I have some friends that came on scholarships from Colfuturo that they are now supposed to pay back. But students took on debts in US dollars to study abroad with the idea of returning to Colombia. However they did not get the opportunity to go back in good conditions while here in Switzerland they found possibilities, so they stayed.

(Supply Chain Project Manager in the packaging industry in Prilly)

Some researchers and scientists mentioned they would like to link science with society and have plans to carry out activities with a significant social component, if possible ones that involve their country of origin. This social approach was also shared by some professionals and staff in international organisations, who see themselves in a higher managerial position in the host country but somehow linked to their homeland through projects into which they could plough back their expertise. They declared:

I see myself involved in development and entrepreneurship, helping business to create greater social value. I might leave to create my own company to benefit my country of origin.

(Senior Economic Counsellor and MBA student in Geneva)

I see myself doing research and also having a sort of association in which I would have on the one hand the experience and the money, and on the other the possibility of applying what I have learned. I would like to open a consultancy on environmental issues to contribute to the development of Colombia in some way, both scientifically and socially.

(PhD student in Soil Physics at the University of Bern)

Skilled Colombians would like many things for their home country in the future. The interviews showed that those Colombians with strong links to institutions in their home country are keen to keep up these links, not only to their universities but expanding them to other institutions. Some would like to see more investment in research and a growth in the self-confidence of Colombian science, so that there is less dependence on external technology and a real boost to Colombian industry. Some believe that this could have a greater impact of everyday life of Colombians.

In gender terms, different and interesting information emerged about the decisive factors in the future plans of skilled Colombian women. Young female Colombian PhD students who have lived in Switzerland for less than 5 years and do not have any children came across as adventurous, dynamic and enthusiastic about their own strengths and choices to determine their own future. Despite their unstable situation, some of them turned out to be optimistic, and willing and ready to take decisions to plan their professional futures on their own terms and to explore new challenges in the host country. These attitudes show once again that unlike unskilled migrants, skilled migrants have wider choices that allow them to shape their own future. There were however some women respondents who were more worried about their future. For these Colombian women, mainly scientists and lecturers with greater professional experience and who had lived in Switzerland for longer than the previously mentioned cohort of women, their unstable professional situation seems to be a significant factor that prevents them from setting out their future. These respondents with unstable positions said that they would like not to have to be worrying the whole time about how to get enough funding to pay their salaries in the short and medium term. Some respondents pointed to their precarious jobs and regretted the fact that they have not yet been able to obtain a permanent work permit and settle down. They declared:

I would like to be in a more stable position and not always have to run around looking for funds to finance my position. I would also like to have some projects with my country of origin.

(PhD student and lecturer, Institute of Geography, UNIBE)

The keyword is settling; either here or there or in a third country, I would like some stability. If Switzerland can provide me with this, I'll stay; if it is a third country, I will move there. Stability is based on the possibility of being able to settle down, to put down roots, to be able to say that I do not depend on a work permit or a visa, but on my own personal decision. I am searching for opportunities in countries where I might get a permanent work visa (like in Holland or Canada, or even in the USA).

(PhD in Biology, researcher in Immunology at the Bern University Hospital)

Other respondents mentioned their desire to find a system by which they could come and go on a regular basis, but they recognised that this is not easy. One respondent said:

I would like to come and go on a regular basis but the reality is that I might stay in Switzerland; I do not leave the idea of moving to a third country since my situation here is very unstable.

(Scientist in Chemistry and Microtechnics in healthcare and life sciences industry in Lausanne)

A critical dimension of skilled migration is that the person returns to his or her country of origin (Tani and Mahuteau, 2008; Skeldon, 2005). Half of the respondents do not intend to return to Colombia but do intend to build or strengthen the bridges between their country of origin and their country of destination. Only a few intend to return in the short term or have plans to return to Colombia after they retire. While respondents showed that they were open to developing professional and/or scientific activities in their countries of origin, in fact only a few Colombians see their future plans as involving their going back to Colombia. While these respondents expect to be able to go back to their homeland and apply there what they have learned here or else to have research projects managed here but implemented there, only one Colombian seems sure that he will definitely go back in the short term and will remain in Colombia permanently. This Colombian came to do postdoc research and plans to have his own research group once he gets back to Colombia. This respondent has contributed through his work, which has been consistently supported by his adviser, who is one of the leading figures in the Colombian scientific diaspora in Switzerland, to the development of a critical mass in his field of research in his home country.

I see myself at the Universidad de Antioquia heading a well-established research group that could be of the same standard as any European research group; and working with research networks in Europe, mainly in Switzerland and France.

(Researcher and PhD student in Chemical sciences at EPFL and professor in Colombia)

Some respondents are willing to go back but are sceptical about the professional opportunities that Colombia has to offer. One skilled Colombian woman said categorically: "If I get a good job position with good conditions in Colombia I will go back, with all its advantages and disadvantages." Further respondents stressed the fact that most of the skilled Colombians that leave their country do not go back, for all kinds of reasons, one of which is that they feel they would be making a big professional sacrifice by going back and they are not ready to do that. Many of those who are conscious of the sacrifice their return means are unable to integrate themselves and leave again. In other cases, scepticism about the professional opportunities on offer in the home country are

mixed up with the personal and family situation of respondents. Some respondents stated:

A friend of mine went back to Colombia after being in the USA and she found it hard to find her place in academic life in Bogota. They wanted to hire her but at that time the university was not ready to take on people with a PhD and there were many administrative obstacles; then she couldn't get a job as a scientist in the private sector. So she went back to the USA. I don't know how things are going to turn out for me in my field.

(PhD student in Mathematics at EPFL)

Colombia has to create the conditions to keep and attract its skilled people back. I was talking with a friend who works at the CERN and is involved in state-of-the-art research about the possibilities of returning to Colombia and he stated, "I'd have nothing to do there".

(Senior Economic Counsellor and MBA student in Geneva)

In Colombia there are no projects that make skilled people want to go back; there is no policy that supports skills return. In my own case there are personal reasons that won't make me go back since my wife is Italian and has a research position in Turin, so I might be moving there. However I do not see any possibility of developing projects in Colombia that are comparable to what I am able to do here.

(PhD student in Geosciences and Geochemistry at the University of Bern)

In this regard, recent approaches to return migration (Cassarino, 2004; Tani and Mahuteau, 2008) provide evidence of return skilled migration, with its human, financial and social capital implications (Ammassari and Black, 2001) as being one of the most frequent ways the sending country stands to benefit from migration.⁸¹ Docquier (2007) shows that when skilled migrants transfer their knowledge and/or technology back to developing countries upon their return, they can increase productivity and economic development in their home countries. Similarly, Skeldon (2005) mentions that once the process of return is under way, return migrants contribute to the development of their countries of origin by bringing their skills with them but also by bringing capital, and entrepreneurial and political ideas. He argues that return migrants are unlikely to be the key factor in the development of their homeland, yet they can play a significant role.

In the Colombian case study, there were various interesting testimonies related to this. What particularly came across from the responses was the need for an enabling environment in the homeland that could encourage return migration. Indeed, diverse studies have shown that appropriate policies, institutional frameworks and infrastructure in the home country are necessary to encourage migrants to go back to their home countries, as well as to ensure that returned

81 Recently, migration literature has addressed aspects such as return procedures, policy frameworks, and principles and guidelines for return (Ghosh, 2000; King, 2000), while international organizations have attempted to provide some tips for managing return migration.

migrants stay long-term (Black and Gent, 2004; Gent and Black, 2005; Cassarino, 2004; Tani and Mahuteau, 2008). Evidence has shown that, in fact, only a suitable environment in the home country will enable the return of its skilled nationals and their commitment to producing endogenous socio-economic development. Colombian respondents said that there would have to be opportunities at home if return migration was to be encouraged and/or emigration reduced:

Colombian policies should focus on providing opportunities and developing infrastructure for people to work in high-level jobs. There is a crucial need for sustained economic development.

(Senior scientific officer at the Secretariat of the Basel Convention of the UNEP in Geneva)

Colombia has to create the conditions to encourage scientists to return. There is still a long way to go, but some efforts are perceptible, at least in my field. Some calls have taken place and some incentives to encourage scientist to return have been implemented.

(Medical doctor, professor and researcher in Immunology at the UNIL)

Some respondents stressed clearly that they do not want to go back to their home country, mainly due to the fact that they have better professional prospects in Switzerland. One Colombian responded to the question on how would she see her relation with her home country in 10 years' time with a categorical refusal to return and was sceptical about the opportunities her home country has to offer:

I see myself far away from Colombia. I do not want to go back; I do not believe that I would be able to do what I do here; there are a lot of constraints on basic research there. Moreover it is neither easy to live in Colombia nor to progress there.

(PhD Student in Basic Sciences at the UNIL)

One Colombian raised the issue of financial remittances as an element of attraction and motivation for other Colombians to leave the country, but also mentioned the risks this might entail. She thought that the government's current support for migration policies does not allow those abroad to bring something back and/or to transfer their skills, and is based only on illegal migration:

So many people left Colombia in the 90s and there are so many funds coming into the country every year now that many Colombians have realized the huge potential for them abroad. I think this has become more of an issue than in the past [...]. There are programmes set up for other kinds of migration – for those emigrating for economic reasons and illegally to survive, but there are no clear and official channels that might help scientific diasporas.

(Architect and MBA student)

Those who feel settled in Switzerland have no plans to go back to Colombia. Some respondents mentioned that owning their own house in the host country

contributed to a feeling that they had settled for good, but they nevertheless expected to maintain their professional links with their homeland.

We will stay in Switzerland; we've built a house here. I expect though to have the same fluid relation with Colombia as I have today, with professional and familiar links. I cannot expect more because I have actually no time to get more involved.

(Medical doctor, professor and researcher in Immunology at the UNIL)

The data we gathered revealed how personal and family relations are ever more important factors in decisions to migrate or return. This illustrates that the decision to migrate or return to the home country is made for a combination of personal reasons and potential professional and training opportunities. One respondent, who has just finished her PhD, mentioned that she was getting married here. She had no clear vision of the path her professional life would take, but she was sure that she would be staying in Switzerland in the short and medium term. In this case, the initial reason to migrate – to study – changed to family reunification or marriage as the reason for staying in Switzerland. As in other similar cases, the Colombian case shows that skilled Colombian who migrate to study and /or train but then establish a bi-national couple with a Swiss partner seldom end up returning to the home country. Ossipow (2004) has concluded that the migration paths of students living in a bi-national couple (composed of one Swiss partner) very rarely lead back to the country of origin. This skilled Colombian stressed:

I came to do my PhD. I have just finished my thesis and I have no clear idea of what I'm going to do next professionally, but I have no plans to go back to Colombia, I think I'll stay in Switzerland or move to a third country.

(PhD student in Environmental Engineering at EPFL)

Respondents with children of school age mentioned that educational opportunities and an adequate environment for their children had made them decide to settle permanently in Switzerland or to go back to Colombia in the future or even to move to a third country. The information from the interviews shows that children often determine the future migration paths and patterns of skilled migrants. This was not the case for single migrants whose future migration paths are based on purely personal and individual decisions. Some respondents with children also stressed that wherever they may live in the future, they will encourage links with their country of origin since they want to ensure that their children will remain in contact with their relatives, their roots and their culture. Their experiences provide evidence, as stated by Vertovec (2004a), that children of migrant parents may get entangled and end up feeling that they are caught between two (or more) cultures, nations, educational systems and ways of growing up, “conveying one of the risks of trans-national childhoods, i.e.

feeling marginal in both places” (p. 15).⁸² The accounts of skilled Colombians give some clues to the need for deeper research and analysis of such trans-national children.

I do not know if I could go back to Colombia or not. My son is 12 and he identifies greatly with the “Swiss.” [...] It is hard to know where he will be in 10 years. My contacts with Colombia will probably be less sporadic. The enthusiasm will decrease over time. However I wouldn’t like to lose contact – if you don’t have friends or family, the existing contacts vanish.

(Postdoc in Organic Chemistry, working in the biomedical research and pharmaceutical industry in Basel)

My daughter (13) has three different passports: Colombian, New Zealand and Austrian. My migration project depends on where she is going to live and where we are going to live. If my daughter has children, we might stay in Switzerland; if not we would live for 6 months in New Zealand (my husband’s homeland) and 6 months in Colombia.

(Researcher and lecturer in Geography at the University of Bern)

My husband (Colombian) and I see ourselves living here but going there often enough to give our son the opportunity to have contacts with the family and culture back there. This is very important to me.

(Engineer in Electronics, Consultant SAP in Logistics working in Geneva)

One respondent mentioned that speaking about going back to Colombia is always a paradox for her, because she was raised in Colombia but her mother is Swiss. Furthermore, insecurity is an issue for her in Colombia, especially in terms of the living conditions for her children. There is the additional issue of her identity. She further declared:

I was raised in Colombia, but my mother is Swiss. I have both nationalities. So every time I go to Colombia, I feel a little bit further apart in terms of the realities of being a resident there. Having a family there seems very complicated to me, especially now I have children. Security is an issue. I was a child there and I was happy, but I was sort of one of the lucky few.

(Architect and MBA student)

The testimony of this skilled woman with dual nationality shows how the acceptance of dual citizenship is some kind of recognition of the specific symbolic and emotional ties that trans-national migrants have, and as such is, as stated by Faist and Gerdes (2008), official legitimisation of their multicultural identity.

82 According to Vertovec (2004a), for migrants’ second and subsequent generations, the socialization process within the parents’ trans-national-oriented environment and practices “often has a substantial influence on long-term configurations of attitude, activity and identity” (p. 23). He adds that second generation youth culture might become “a place of struggles to define notions of authenticity” (p. 23).

Colombian skilled migrants who will retire in coming years plan to adopt a system by which they spend some months per year in Colombia and the other months in Switzerland. Some have great expectations about the personal contribution they will be able to make to their country's development. Others are planning to return despite the fact that their children might be staying in Switzerland.

I plan to go back to Colombia to retire and my wife agrees. I will perhaps start to write books again, which I used to do 15–16 years ago. I hope to have the chance to contribute to some research initiatives; I hope to really help with ideas and projects for the UNEP.

(Senior scientific officer at the Secretariat of the Basel Convention of the UNEP in Geneva)

My wife and I are planning to go back to Colombia when I retire. We have a house in Cartagena. I have siblings here and my children might stay here in Geneva. I will be probably travelling abroad for a little while before that because my work at the United Nations always makes that possible.

(International official at the United Nations in Geneva)

Finally, one respondent pointed out that he did not want to expose his daughter, neither now nor in the future, to the unsafe environment he expects from his homeland. Interestingly, he, along with other respondents, thinks he has more opportunities to help his country of origin from the distance. They stressed the importance of the presence of skilled Colombians abroad for the home country, and the significance of having a trade-off between people going back and people staying abroad. In a similar manner, another skilled Colombian stated that members of the Colombian skilled diaspora should build bridges and support people in their scientific endeavours by encouraging the transfer of knowledge.

I am very bound to Colombia, but I don't want my daughter growing up in an unsafe environment. In the future, I might stay in Switzerland and not retire to Colombia. I feel I can do more help from here than by moving back there.

(Physicist and engineer working at the ITU in Geneva)

It is good for Colombia that not everybody goes back. Sometimes I feel I can help more by staying here than by going back, for several reasons. I will not be able to do the kind of work I do here so if I go back it is a waste for me and I will be taking the place of someone else. If I stay abroad I can act as bridge and expand my contacts and connect people from Switzerland and Colombia, and encourage people to do science and research, and to transfer knowledge.

(Research scientist on brain-computer interfaces at IDIAP Research Institute)

In this regard, it is now fairly common knowledge that many countries expect and even encourage migrants to stay abroad not only because they send financial remittances home (Vertovec, 2004a) but because it has also been recognised that the presence of skilled nationals abroad is an extremely important factor in encouraging national science and technology systems, particularly in developing countries. For this, however, various mechanisms need to be put in place to mobilise the valuable capital of skilled migrants for the benefit of their

homelands by linking them up with skilled nationals at home. Although the Colombian government has shown its readiness to consider scientific diasporas a source of knowledge, ideas, skills and further resources through initiatives aimed at involving them in its development agenda, the encouragement of the ownership of the public initiatives by diaspora associations and organizations is certainly necessary to make further progress in this area and capitalize on their potential.

Conclusions and Policy Recommendations

In the current international debate on migration and development, the role of the scientific diasporas that bring together skilled migrants as agents of development is becoming an increasingly relevant factor thanks to their status as carriers of valuable capital which can be mobilised for the benefit of their homelands. With a view to offering some clues that can help make a contribution in terms of capitalizing the potential of skilled migrants from developing countries, the research project “A Swiss Network of Scientific Diasporas to Enforce the Role of Highly Skilled Migrants as Partners in Development” carried out an empirical study during 2006 and 2007 based on a series of qualitative in-depth interviews with skilled migrants from three countries: Colombia, India and South Africa, from the perspective of one country of residence (Switzerland).

The case of Colombian scientists and professionals in Switzerland is paradigmatic. Indeed, Colombia is a global reference point in terms of scientific diasporas and in particular the engagement of the Colombian scientific diaspora in Switzerland in the advancement of socioeconomic development in the homeland is exemplary because of its initiatives over time to mobilise its resources and skills using dynamic methods beyond the official state structure and without the help of institutional support. However, it is not very well known in Switzerland or abroad and its activities and its achievements are also relatively unknown, and the same can be said about the obstacles that limit the capitalization of its potential and resources for the profit of Colombia.

This chapter offers empirical evidence on 27 skilled Colombians in Switzerland, and it analyses the reasons for their decision to migrate and their migratory paths. It also builds a sociological portrait of their living experiences in Switzerland and explores the favourable conditions and obstacles that they face in their attempts to implement trans-national initiatives and practices for the benefit of their homeland.

The empirical analysis of highly skilled migrants in Switzerland has produced the conclusions that are outlined below.

The Colombian scientific diaspora in Switzerland mobilises its resources towards the home country using a bottom-up approach, which is centred around both individual initiatives based on personal motivation and aspirations as well as its collective efforts organized through participation in associations (principally through the Association of Colombian Researchers in Switzerland – the ACIS). The research brings to light more than 20 years of collaboration experiences between Colombian scientists in Switzerland and their counterparts in Colombia, allowing systematic bilateral scientific collaboration. However, the evidence shows the fragility of collaboration based around scientists rather than an institutional framework which can sustain it on a regular basis.

The Colombian case shows how institutional relations, social contacts and scientific links influence the class position of the skilled Colombian migrants in Switzerland through collective and associative actions, facilitating their integration into the social life and the labour market. Skilled Colombian migrants have more options than the lesser qualified thanks to their more favourable class position in the country of destination, which helps to ease their integration. Although the integration of the skilled Colombians in the country of destination enables their trans-national activities for the benefit their country of origin, the evidence shows that this is not a totally indispensable requisite to ensure the emergence and implementation of initiatives that favour Colombia.

The formation of scientific diaspora associations (specifically the ACIS) and the implementation of joint research projects are two of the most elaborate “brain gain” methods of the Colombian diaspora with the potential to impact science and technology and they also help to advance socioeconomic development in Colombia. They have contributed to strengthening a critical mass in specific and significant areas such as the environment, ICT and medicine, as a result of the development of individual capacities, and in some cases institutional capacities as well.

Those with the deepest trans-national feelings are the skilled Colombian migrants who have lived longest in Switzerland, those who have settled here permanently and those who have acquired Swiss citizenship. This can be seen through their continuous bifocalism or their double framework of reference (an ongoing comparison of their “here” and “there” situation). This goes to prove, as Guarnizo et al. (2003) argue, that trans-nationalism is not a phenomenon associated with recent arrival which tends to disappear with the passing of time as part of a process of assimilation in the country of residence.

The Colombian scientific diaspora has a broad vision of development, which is shown in various ways through their initiatives for the benefit of their homeland, such as, for example, the circulation of knowledge through courses, con-

ferences, research projects, scientific and student exchanges, joint publications, visits that promote the consolidation of science, technology and education; the promotion of business opportunities; philanthropic activities; investment links; and other similar socioeconomic actions that help to reduce poverty in Colombia.

Motivation, the ability to mobilise and a suitable environment and policies are three determining factors that facilitate the initiatives of the Colombian scientific diaspora for the benefit of Colombia. Even though affective capital and the ability to mobilise are characteristics of the Colombian scientific diaspora in Switzerland, there has been a need for support from a consistent scientific policy which can recognize their potential and capitalize their resources.

Since the Colombian scientific diaspora represents a mature community in the country of destination, the expectations are that its trans-national activities for the benefit of the development of Colombia will continue and expand over the course of time.⁸³

At the level of research on scientific diasporas, additional studies are needed to explore these conclusions in greater detail. Furthermore, in order to complement this study by providing a complete panorama of the subject, it is fundamental to analyse skilled Colombian migration from the perspective of the country of origin with a view to having a better understanding of the risks and opportunities of the emigration of the most skilled and to evaluate the conditions for their return. The research from the perspective of the country of origin should also include the identification of best practices which strengthen and promote the development of capacities in Colombia, and which stimulate the transfer of the knowledge of the skilled Colombians abroad.

Finally, there is a need for a policy oriented study, which can offer some clues as to how to ensure that the scientific collaboration and exchange mechanisms that currently exist between Switzerland and emerging and developing countries do not have a negative effect on the efforts being made to develop the capacities of the countries of origin. At the same time, there is also a need to make sure that the circulation of knowledge is promoted and the demands of the labour market are satisfied.

The conclusions of this research have the following implications for public policies both in the country of destination and in the country of origin:

83 As Vertovec (2004a) points out, the Colombian case study shows how a flow of trans-national resources starts as soon as migrant colonies have become well established abroad. Following on from Vertovec, once national institutions recognize the cumulative outcomes of this process, they try to recapture the loyalty and resources of migrants and guide and support their initiatives and investments. Colombian institutions are expected to follow this trend in the close future.

1. Only an adequate environment that strengthens the capacities and the infrastructure available in the country of origin can encourage diasporas to get involved in a physical or virtual manner in promoting the country's socioeconomic development. This will also encourage return and help to retain the most skilled in the country of origin.
2. The top-down institutional support of Swiss bilateral scientific policy must respond to the systematic collaboration of Colombian scientists with their partners in the country of origin through an institutional framework which can update and regulate scientific collaboration between Switzerland and Colombia.⁸⁴
3. In a country like Switzerland, with restrictive immigration policies that prejudice migrants from developing countries, where scientific cooperation with developing countries carries no prestige and where there is still a lack of recognition of the value and the potential of Colombians in certain academic and research institutions, a greater dissemination of information regarding the position, activities and capacities of the Colombian scientific diaspora in Switzerland is necessary in order to show their importance and their potential.
4. Both the country of destination and the country of origin must encourage and facilitate the collective action of skilled migrants and give their support to the creation and good functioning of the associations and networks of the scientific diaspora and also help them to disseminate best practices and activities that can contribute to the promotion of other diaspora initiatives.
5. An attempt should be made to reverse the trend which sees the reality of the dynamic action of the Colombian scientific diaspora in Switzerland advance faster than the local public policies which recognize and take advantage of it. This can be achieved by having it included on the development agenda of the home country. Therefore, the Colombian government must improve its dialogue with the diaspora, stay up-to-date with new endeavours and projects, help gather and provide resources, and identify areas for collaboration, while encouraging diaspora associations and organizations to appropriate public initiatives.
6. Further research on scientific diasporas should be encouraged and the results broadly disseminated in order to capitalize on their potential.

84 A good first step on this regard is the mandate by the Swiss State Secretariat for Education and Research (SER) of a scientific mission to Colombia carried out by Prof. Jean-Claude Bolay, Director of Cooperation@epfl at the EPFL, on December 2008, with the result of a report showing the potentialities of scientific and technologic cooperation between Switzerland and Colombia.

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Annex 1: Socio-demographic characteristics of respondents

Code number	Nationality and residential status	Gender	Age	Category of respondent	Area of specialization	Place of work or of study / city	Years spent in Switzerland
C-01	Colombian and Swiss (naturalized)	M	52	Scientists, researchers and students at academic and research institutions (1)	Chemical sciences and engineering	Swiss Federal Institute of Technology in Lausanne (EPFL)	34
C-03	Colombian (Permit B)	F	32	(1)	Environmental sciences and technologies	EPFL / Lausanne	4
C-04	Colombian (Permit B)	M	32	(1)	Chemical sciences and engineering	EPFL / Lausanne	8 months
C-05	Colombian and Swiss (naturalized)	M	53	(1)	Computer and communication sciences	EPFL / Lausanne and HEIG-VD / Yverdon	30
C-10	Colombian (Permit L)	F	37	(1)	Biology / Immunology	Bern University Hospital / Bern	11
C-15	Colombian (Permit B)	M	33	(1)	Computer sciences / Brain-computers interfaces	Dalle Molle Institute for Perceptual Artificial Intelligence (IDIAP Research Institute) / Martigny	7
C-18	Colombian and Austrian (Permit C)	F	52	(1)	Geography	University of Bern / Bern	1 + 6 + 7
C-19	Colombian and Swiss (naturalized)	F	46	(1)	Biology / Immunology	University of Lausanne / Lausanne	17
C-20	Colombian (Permit B)	F	33	(1)	Medicine	University of Lausanne / Lausanne	3.5
C-21	Colombian and Swiss (naturalized)	M	50	(1)	Medicine	Ludwig Institute & University of Lausanne / Lausanne	18
C-22	Colombian (Permit B)	F	24	(1)	Mathematics	EPFL / Lausanne	1 year and 2 months
C-24	Colombian (Permit B, and married to a Swiss)	F	28	(1)	Environmental microbiology	EPFL / Lausanne	1
C-25	Colombian (Permit B)	M	32	(1)	Geosciences and geology	University of Bern / Bern	1 year and 7 months
C-26	Colombian (Permit B)	F	32	(1)	Soil Physics	University of Bern / Bern	4 years
C-27	Colombian (Permit B)	F	31	(1)	Geology	University of Bern / Bern	2 years and 3 months
C-02	Colombian (Permit B)	F	40	Managers and consultants in the private industry (2)	Quality and safety assurance (food industry)	Nestle Research Centre / Vevey	10
C-06	Colombian and Swiss (naturalized)	M	48	(2)	Strategic alliances (in biomedical research and pharmaceutical industry)	Novartis Institute of Biomedical Research / Basel	21
C-07	Colombian (Permit C)	F	44	(2)	Neurosciences (in pharmaceutical industry)	Hoffmann – La Roche Ltd. / Basel	8

<i>Code number</i>	<i>Nationality and residential status</i>	<i>Gender</i>	<i>Age</i>	<i>Category of respondent</i>	<i>Area of specialization</i>	<i>Place of work or of study / city</i>	<i>Years spent in Switzerland</i>
C-08	Colombian (Permit B)	M	34	(2)	Medical diagnostics and drug discovery applications (in healthcare and life sciences industry)	Ayanda Biosystems / Lausanne	12
C-09	Colombian (Permit B)	F	38	(2)	System analysis and programme development (SAP) (in SAP services company)	Teamwork Management / Geneva	13
C-11	Colombian and Swiss (by marriage)	M	39	(2)	Supply chain management (packaging industry)	BOBST Group / Prilly	14
C-12	Colombian and Swiss (naturalized)	M	41	Staff working at international organisations (3)	Strategy and policy analysis (Telecommunications)	International Telecommunications Union / Geneva	18
C-13	Colombian (Permit C)	M		(3)	Environmental regulations (Environment)	Secretariat of the Basel Convention of the United Nations Environmental Programme (UNEP) / Geneva	5
C-14	Colombian and Swiss (naturalized)	M	55	(3)	International lobbying (UNO system)	Liaison office ONGs at the United Nations Organizations (UNO) Office / Geneva	43
C-17	Colombian, Swiss (by marriage) and Spanish	F	41	(3)	Economic management and analysis	Centre for Applied Studies in International Negotiations (CASIN) / Geneva	5 + 7
C-23	Colombian and Swiss (by marriage)	F	62	Professionals in governmental institutions (4)	Training and capacity development (Youth Protection Service)	Canton Vaud / Lausanne	32
C-16	Colombian and Swiss (one parent Swiss)	F	30	Unemployed / MBA student	Architecture	Unemployed	7

Source: Tejada, Scientific Diasporas project 2007.

Annex 2: Scientific cooperation projects between Colombia and Switzerland

	Thematic	Field	Institutions		Type of cooperation	Duration
			Colombia	Switzerland		
1	Precision agriculture and the construction of field-crop models for tropical fruit species	Agro-ecological modelling	BIOTEC, CIAT, CENICAÑA, COLCIENCIAS	Haute Ecole d'Ingénierie et de Gestion du Canton de Vaud (HEIG-VD), University of Lausanne (UNIL), Swiss State Secretariat of Education and Research (SER)	Government-Government	2005–2008
2	Biosolar Detox	Environment	UNIVALLE	Swiss Federal Institute of Technology in Lausanne (EPFL)	Institution-Institution	2004–2008
3	Programme EPFL – UNIVALLE	Environment, materials, chemistry, biotechnology.	UNIVALLE	EPFL	Institution-Institution	1996–
4	Colombo-Swiss action in nonmaterials for environmental remediation	Materials	UNIANDES – UNIANATIOQUIA-UIS	EPFL	Institution-Institution	2006–2008
5	An inexpensive method to validate road transport emission inventories	Environment, resources management	UNIANDES	EPFL	Institution-Institution	2004–2008
6	Urban violence and security policies: local public and private methods of securing	Sociology	UNIANDES – Municipality of Bogota	Geneva International Academic Network (GIAN) – LaSur (EPFL) – ONU HABITAT	Institution-Institution	2004–2007
7	Reducing human health and environmental risks from pesticide use: Reducing human health and environmental risks from pesticide use	Environment	UNI BOYACA	University of Zurich (UNIZH)	Institution-Institution	2004–2010
8	Accretionary and post-accretionary cooling, exhumation and tectonic history of the central and western Andes of Colombia	Earth sciences	UNIVERSIDAD NACIONAL DE BOGOTA	University of Geneva (UNIGE)	Institution-Institution	2005–2008
9	Thermo-chronological history of the Sierra Nevada de Santa Mart	Earth sciences	INVEMAR (Instituto de Investigaciones marinas y costeras)	UNIGE	Institution-Institution	
10	A pleistocene stacked succession of volcanoclastic mass flows in central Colombia: the Quindío-Risaralda fan	Earth sciences	UNIVERSIDAD DEL QUINDÍO	UNIGE	Institution-Institution	2001–2008
11	Soft-sediment deformation in a tectonically active area: the Plio-pleistocene Zarzal formation in the Cauca valley	Earth sciences	UNIVERSIDAD NACIONAL DE MEDELLÍN	UNIGE	Institution-Institution	2007–2011

Source: Table adapted by Tejada, based on a list completed by the ACIS in collaboration with the Colombian Embassy in Switzerland, 2008.

Chapter 6

The Indian Scientific Diaspora in Switzerland

Ibrahima Amadou DIA¹

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Acronyms

EPFL:	Ecole Polytechnique Fédérale de Lausanne (Swiss Federal Institute of Technology)
CERN:	Centre Européen de Recherche Nucléaire
EU:	European Union
GDP:	Gross Domestic Product
GIAN:	Geneva International Academic Network
FDI:	Foreign Direct Investment
IEEE:	the Institute of Electrical and Electronical Engineers
ILO:	International Labour Office
IOM:	International Organization for Migration
ISCB:	Indo-Swiss Collaboration in Biotechnology
ISCO:	International Standard Classification of Occupations
IT:	Information technology
NCEU.S.:	National Commission for Enterprise in the Unorganised Sector
NGO:	Non Governmental Organization
NRIs:	Non Indian Residents
NASSCOM:	National Association of Software and Service Companies
NSSO:	National Sample Survey Organisation
SDC:	Swiss Development Cooperation
STIO:	Scientists & Technologists of Indian Origin
TOKTEN:	Transfer of Know-how Through Expatriates Nationals
TiE:	The Indus Entrepreneurs
OECD:	Organization for Economic Co-operation and Development
PIO:	Persons of Indian Origin
R&D:	Research & Development
U.K.:	United Kingdom
UN:	United Nations
U.S.A.:	United States of America

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Executive Summary

This qualitative research holds promising findings for a better understanding of highly skilled migration from India to Switzerland and policy options relating to scientific diasporas, brain gain and development of the country of origin.

As identified through this project, the main causes of Indian skilled migration to Switzerland were the search for personal achievement, international prestige, better professional and academic prospects and the existence of social networks. Lack of employment opportunities and migration for study reasons were other factors influencing Indian international skilled mobility. For PhD students, it was about looking for curricula and diplomas with international standards, studying in institutes with excellent reputations, having the privilege to be supervised by Nobel prize winners and distinguished professors, studying in international environments to increase the chances of being recruited to the labour market and being involved in bilateral scientific exchange programs. Bilateral scientific exchange programs are also a framework that allows scientific mobility for Post doctoral fellows, scientists and researchers. Student and scientific migration occurred mostly outside of the institutional framework, as many PhD students and scientists asserted that they directly contacted the corresponding research or post graduate institute via the internet or through the recommendation of their former professors. A few respondents mentioned that they were aware of existing scientific and research opportunities in Switzerland thanks to social networks (colleagues, friends, superiors). Professional relocation, which reflects the international circulation of knowledge workers, represented one of the main reasons for immigrating to Switzerland for IT specialists (engineers, managers); staff of diplomatic missions and international organizations. Family reunification was another reason for highly skilled emigration to Switzerland. Furthermore, students were likely to seek employment after completing their studies in the country of destination, which reflected the intersection between student and labour migration.

This research shows that highly skilled professionals (especially from international organizations and multinational groups) were likely to move to different places in the course of their international careers, whereas Switzerland was "*the first experience abroad*" for most PhD students in the sampling. These findings suggest that highly skilled professionals are involved in international circulation. Countries such as Switzerland are new destinations for highly skilled Indians, which may reflect changing migration patterns as English speaking countries, notably the U.K. and the U.S.A., are traditionally the main destinations for Indian students and highly skilled workers.

With regard to their integration into society in Switzerland, language did not appear to be a major constraint for most of the respondents as English was noted as the working language in the international labour market and in Swiss universities and research centres. However, many interviewees took language courses either in French or in German, according to geographical location, to better cope with the realities of living in Switzerland. Furthermore, an interesting job does not automatically imply successful integration in the host country. There are also other elements that may play a crucial role in the integration process (familiarity with Swiss colleagues, social networks, happenings, etc.).

A couple of employees from international organizations and multinational firms mentioned the “divide between local Swiss and international groups” as a deterrent to their integration in Switzerland. Some PhD students, researchers and scientists stated that support to Swiss colleagues facilitated their exposure to Swiss realities. Others mentioned not partaking in social and cultural activities due to time constraints and family responsibilities.

To conciliate work and family responsibilities, respondents relied on various strategies: day care centres, colleagues and friends’ support and shared domestic responsibilities. Most PhD students stated that they hardly found time for activities (leisure, partying, etc.) due to long hours spent on study and research.

Scientific and professional linkages at the local and international levels are developed by joining local and international scientific and professional networks. The majority of PhD students and researchers in the survey belonged to Swiss scientific associations according to their area of expertise (chemistry, physics, etc.). By joining local and international scientific networks, scientists and researchers have possibilities to develop contacts at the international level. Similarly, managers working in international corporations have chances to enhance professional contacts at the local and international levels. Lack of institutional support and unemployment can hinder international mobility and make it difficult to have international professional networks.

One of the objectives of this qualitative research is to examine brain gain mechanisms. Previously, three types of brain gain mechanisms (knowledge transfer through skilled diaspora networks, research and development (R&D) and North–South research partnerships) were identified. Other brain gain mechanisms came out in the course of the survey, namely outsourcing activities and social development related initiatives. Knowledge transfer related activities mentioned included exchanging information through the internet, sending articles or scientific publications to colleagues, temporary return of students and professors as visiting researchers, creating scientific and technological institutes and organizing scientific conferences, training activities and seminars during visits to the country of origin.

A few respondents were involved in research & development (R&D) activities. A couple of PhD students interviewed believed their PhD research could be useful for further R&D applications. Bureaucratic constraints, lack of institutional and financial support and lack of pragmatic vision were some of the impediments to R&D initiatives. Some managers described providing outsourcing opportunities and training programs to their local Indian counterparts.

With regard to social development initiatives (improving education and health systems), the survey identified a few initiatives: donations and fund raising to former schools and institutes, support to emergencies (natural calamities) and construction of dispensaries in rural zones.

This research also looks at the reasons for success or failure of brain gain initiatives. On the one hand, social networks and institutional support, sufficient funding, relevance of goals and objectives coupled with united strategies and efforts, excellent networking skills, partnership with prestigious and internationally renowned institutions or companies, enthusiasm and commitment of local counterparts, reliability and visibility (scientific publication in distinguished scientific journals, official position in a company or institute) and supportive institutions (addressing bureaucratic and administrative constraints) are some of the elements that can allow successful brain gain projects.

On the other hand, lack of supportive institutions (especially from the country of origin), effective scientific diaspora networks, and the absence of sustainable policies on diaspora contributions on science, technology and overall development are considered impediments to brain gain initiatives. Moreover, brain gain activities tend to be disparate, singled-out, informal and mostly oriented to families and local groups, which could hinder their long term sustainability and success. There are other hindrances for effective brain gain including lack of funding, bureaucratic constraints, slow procedures, social and cultural obstacles, language barriers and lack of political support and an unfavourable economic environment.

Interviewees stated that they kept family and social ties through the internet, telephone calls, private visits and gifts. Solidarity and brotherhood were, therefore, being reinforced. There were also other types of links with the country of origin such as business links (property, financial investment, technical support to firms, outsourcing, etc.) and private links.

The examination of respondents' future plans in terms of professional, private and family life provided useful information related to return to the country of origin, migrants' expectations, concerns and aspirations for the country of origin. The PhD students wanted to have stable professional situations, to succeed in their scientific and academic careers and to become internationally renowned in the country of origin. Managers aged 50 years or younger wanted to have greater professional responsibilities (top management positions) in the

coming years, with the possibility of initiating or extending collaboration. This included outsourcing activities with local Indian counterparts. Those managers who were 50 years old would be retiring in the next 10 years; some of them wanted to enjoy retirement in India or start businesses there. Junior staff from international organizations and firms foresaw bright professional options in their companies. In the coming years, scientists and researchers wanted to have international recognition in their area of expertise and allocate more time to research, teaching and project activities including professional and scientific exchanges with Indian local colleagues in benefit of the country of origin.

With regard to future plans in terms of private and family life, the PhD students interviewed stated that they hope to set up homes and establish families. Some respondents between the ages of 30 and 40 (managers, staff in international organisations, researchers) said they wanted “to have more kids” in the next ten years. Respondents with family responsibilities (especially working mothers) asserted that one of their main preoccupations would be their children’s schooling, well being and development. Respondents who planned to retire in a few years were being torn between the nostalgia of their homeland and the practical benefits of settling in Switzerland (quality of life, children settling there).

This research looks at the issue of return to the country of origin. The decision either to settle in the country of residence, to move to another country of destination or to return to the country of origin was dependent on various factors including the situation in the country of origin and country of destination, the type of links with the country of origin, retirement and professional relocation options, the family dimension, the level of integration in the host country and an enabling environment in terms of scientific and professional opportunities.

Due to the booming economic environment and the facilities given by Indian government (property, banking, investment, higher wages, accommodation, etc.), skilled Indians are returning in greater numbers to India. The majority of the PhD students and Post doc researchers interviewed were willing to return, although they might not have had concrete plans to go back to the country of origin. A few Post doc fellows had concrete projects oriented to the homeland. Those planning to return to India wanted to create or maintain scientific or professional networks that would allow them to participate in bilateral research programs and projects. These would either be from a distance or short term mobility schemes as visiting researchers.

Respondents who stated that they would like to settle in Switzerland mentioned lack of opportunities in India, the quality of life in Switzerland, the prestige of working in internationally renowned institutes and research centres or companies, successful integration in Swiss society and mixed marriage as reasons for their wish to settle in Switzerland. Settling in Switzerland, how-

ever, was not for lack of patriotism; a couple of respondents believe they will always be loyal to their homeland despite geographical and physical distance.

Most of the scientists, researchers and managers holding Swiss passports wanted to “go and come back” between India and Switzerland. This reflects transnational practices and attitudes or a sense of “being here and there.” For instance, some respondents stated that they would like to settle in Switzerland “where children can grow and quality of life and opportunities are better,” but also visit the country of origin on a regular basis. There are also reverse “go and come back” schemes, of settling in India and visiting children, families and acquaintances based in Switzerland. Furthermore, transnationalism underlines other types of mobility: going and coming back for business and family reasons (private visits); bringing children to their homeland to recreate a sense of belonging, being visiting teachers or scholars.

For staff from international organizations and second and third generations, we observed an unclear plan with regard to the return to the country of origin. This is probably due to multiple sense of belonging among respondents (having dual or multiple citizenships or having settled in many places) that lead to a dilemma of choosing one place to settle. For this category, the decision to stay or leave depended on elements such as their employment situation (professional relocation, position in the field, etc.).

This study also tries to identify highly skilled individuals and associations’ initiatives for their homeland. A couple of respondents are implicated in scientific and technological activities in benefit of the country of origin (training on computer science, management, engineering, scientific debates, workshops and seminars, knowledge management and diffusion, fundraising, technical support, etc.). Social and cultural activities are being organized by associations to develop solidarity and create a “feeling of India.” Social and cultural associations might also provide financial support in case of emergencies and natural disasters (earthquake, tsunami).

Most of these associations functioned on a private and voluntary basis. A few associations mentioned in the survey were granted financial support (mainly from the canton of Vaud, Indian embassy and permanent mission) and other facilities (rooms and halls for meetings and festivals contributed by EPFL). The main constraints of these associations were lack of financial and institutional support, lack of new members and lack of visibility. Furthermore, lack of time due to family and/or professional responsibilities, lack of interest in programs and activities of these associations and lack of information about Indian associations based in Switzerland were some of the reasons for not joining these associations.

This research scrutinizes highly skilled migrants’ perceptions of the country of origin, social, economic and political situations, current scientific and

technological research and migration policy. With regard to the social situation, India's unprecedented economic growth and efforts at social development have been achieved by the government. However, millions of people face poor living conditions, especially in rural zones. Despite fast economic growth, this "big country appears as a third world country" and has "infrastructure lagging behind." Persisting poverty, inequalities, illiteracy and social protection are also problems leading to frequent social and political turmoil.

With regard to the economic situation, the rapidly growing economy has led to increasing opportunities at the local and international levels (outsourcing in software development, R&D, delocalisation, etc.) and a better macro-economic balance (inflation control). However, massive poverty, corruption and bad governance, social and economic gaps and neglect of key economic sectors such as agriculture are impediments to the social and economic development of India.

The political situation, independent press, secularity, the growing presence of talented people in the ruling system and moderate government have helped strengthen democracy. Improvement in becoming a more rules-based society has contributed to attracting companies and businesses. However, India, similar to many democratic countries, is facing a slow-down of political, judiciary and economic reforms, bureaucratic constraints, corruption, unequal distribution of wealth and persisting poverty and social inequalities.

With regard to scientific and technological research, India attracts outsourcing opportunities and foreign direct investment thanks to the booming economic environment. Indian companies (pharmaceuticals, biotechnology, IT) are exported all over the world. More and more Indians abroad are returning to their country of origin to start scientific, technological and business activities or to mentor local scientists and researchers. Government provides support to scientific and technological research by increasing wages and giving facilities to skilled Indian abroad. However, the scientific and technological research is hindered by obstacles including a lack of balance between IT and other sectors, lack of support for research and development and lack of visibility of scientists and researchers.

With regard to Indian migration policy, the government has elaborated on some measures to retain and attract highly skilled people (creation of a special minister in charge of migration, incentives and opportunities for investment for nationals abroad, permanent visa for Indians abroad and a proposal for dual citizenship for PIOs). However, respondents voiced the need to address constraints related to dual citizenship, neglect of less skilled and unskilled groups, lack of effective diaspora policies in Switzerland and the negative effects of brain drain in India.

This study also examines Indian highly skilled migrants' perceptions of Swiss scientific policy, development cooperation and immigration policies and

the role of the scientific diaspora on social, economic, scientific and technological development of the country of origin. According to the respondents, Swiss scientific policy is successful due to a range of factors such as international prestige of Swiss institutes of science and technology, high value given to science, focus on research and development, good funding policy for research, bilateral and multilateral exchange programs, meritocracy and great efforts in promoting science and technology. However, in order to compete with industrially advanced countries, Switzerland should be opened up and address rigidity and restrictive policies toward students, researchers and scientists from developing countries.

Promising bilateral programs and projects (ISCB) are being carried out and should be strengthened. Swiss agencies and non profit organizations are involved in various humanitarian and development projects. Swiss companies have links in India and are outsourcing to India. However, there is a need to match these bilateral programs with the specific national needs and to avoid asymmetric relations.

On the one hand, Swiss immigration policy is considered restrictive and discriminatory. Citizens from developing countries often face difficulties getting work and residence permits and are subject to bureaucratic constraints which can reinforce stereotypes and hinder their integration in Switzerland. On the other hand, Swiss immigration policy is considered selective (focus on highly qualified people), well managed, humanitarian, quite inclusive and favourable (due to naturalization). A couple of respondents stated that greater openness would lead to uncontrolled migrant inflows in a small country such as Switzerland.

Scientific diasporas could be assets for the country of origin's social and economic development by: (i) strengthening measures and initiatives aimed at attracting and retaining highly skilled; (ii) boosting investment; (iii) granting dual citizenship; (iv) supporting diasporas initiatives; (v) identifying skills and qualifications within scientific diaspora associations and areas of possible intervention in the country of origin; (vi) developing attractive and proactive programs to attract new members to scientific diasporas associations and organizations; (vii) bringing diaspora members together with policymakers, governments and local leaders to discuss opportunities to mobilise skilled diaspora.

Scientific diaspora associations could be catalysts for strengthening local scientific and technological capabilities if the role of the scientific diaspora is valued and recognized. Moreover, the highly skilled abroad should be involved in science, technology and business related activities. Resources and competences within the diaspora should be mobilised for local scientific and technological projects and programs. There should be an increase in investment on education. Finally, scientific diaspora associations could be driving forces for scientific and technological enhancement by developing bilateral

scientific exchange programs; by promoting the visibility of the highly skilled on the local and international levels and by enabling partnerships (for instance through scientific and international forums and conferences).

Switzerland could play an important role in strengthening Indian scientific diaspora associations and skilled migrants' contributions to the development of their country of origin by: (i) strengthening bilateral agreements on science, technology and development cooperation with India; (ii) developing research and exchange programs and promoting student and highly skilled mobility from both sides; (iii) providing grants and funding to Indian diaspora associations to facilitate collective or institutional initiatives related to science, technology and business; (iv) helping Indian highly skilled migrants to organize into networks and associations; (v) ensuring ethical recruitment of Indian highly skilled people; (vi) exploring opportunities for investment; (vii) easing access for Indian highly skilled people to the Swiss labour market through bilateral agreements; (viii) providing administrative support to Indian associations (fund raising, training on project elaboration and implementation, etc.); (ix) deriving Swiss comparative advantages (pharmaceuticals, precision machinery, watch industry) to developing countries such as India; (x) enhancing economic and scientific presence on both sides.

1. Introduction and Methodology

1.1 Introduction

1.1.1 Context and Research Objective

International migration of highly skilled workers involves persons that have a tertiary education and professional experience (Lowell and Findlay, 2001). Growing flows of students, scientists, engineers and researchers from developing countries to developed countries have increased concerns about the brain drain and its vicious cycle as far as the development of sending countries, especially poor economic regions, is concerned. It has been argued that the emigration of highly skilled workers can undermine local initiatives on social development, thus decreasing economic growth. Local scientific and technological capacities are also undermined by the loss of human capital and the lack of intergenerational transmission of knowledge and know how, which could deepen the technological and knowledge gap between the developed and the developing regions (Lowell and Findlay, 2001).

The changing face of brain drain, especially the increasing amount of highly skilled migrants (Saxenian, 2002a, 2002b), provides new light with regard to the trends and issues relating to international migration of highly skilled workers and scientific diasporas. Highly skilled migrants and scientific diaspora initiatives related to knowledge transfer can enhance the scientific and technological capacities of sending countries. India, with many educated and trained engineers, scientists and researchers abroad, is benefiting from this international knowledge exchange that fertilizes scientific and technological research. China, Taiwan and South Korea are also benefiting. Scientists and well qualified people can provide various types of support (remittances, technical know – how, partnerships, international experience, etc.) that can strengthen economic growth whilst improving living conditions and promoting innovation on science and technology.

It is worth mentioning that the way students and highly qualified scientists and professionals can contribute to the development of their homeland is not thoroughly investigated, although this pattern has received increasing awareness among policymakers, scholars and researchers. This study aims to provide an understanding of the causes and characteristics of international migration and scientific diasporas from India to Switzerland. This research is also devoted to analysing how brain gain mechanisms (knowledge transfer, research and development, North – South research partnerships, etc.) operate, the links between highly skilled migrants and scientific diasporas within the country of residence and the country of origin and also investigating how scientific diasporas and highly skilled people could be factors of development of India.

There is evidence in the literature that shows the fundamental role of international mobility of the highly skilled vis-à-vis strengthening capacity in science and technology of sending countries, notably India and China. Studies and research focused on India have shown that well educated and trained Indians in the United States were critical in making India one of the giants in science and technology among the developing countries by transferring knowledge, machines and funds (see among others Khadria, 1999). The extent to which highly skilled workers can be a successful part of brain gain is linked to a range of factors, including the particulars of the migrants themselves, their links with the country of origin and the country of residence, the organizational and institutional support of the diaspora, etc. One fundamental challenge of this research is to scrutinize the brain gain initiatives, their strengths, challenges, limitations and favourable circumstances and conditions. It is also important to look at the sociological characteristics of highly skilled migrants and their daily life in Switzerland.

This research, similar to many others in the field of highly skilled migration, shows that scientific diasporas have the potential to impact the develop-

ment of sending countries. This qualitative research is innovative in the sense that it provides a sociological portrayal of the highly skilled migrants and explores what favourable and unfavourable conditions and circumstances make such initiatives successful or unsuccessful. It also provides an understanding of how highly skilled migrants' perceptions and discourse vis-à-vis the country of origin, the country of destination and scientific diasporas along with their educational and professional background and the level of integration in Switzerland can impact the contribution on science, technology and development in benefit of India.

1.1.2 Literature Review

The complexity of definitions and terminology on highly skilled migration issues provides contrasting theoretical and development policy perspectives. The migration of highly skilled workers can be viewed through various lenses as a brain drain (Özden and Schiff, 2005; Kapur and McHale, 2005; Schiff, 2005), a "brain gain" (Meyer and Brown, 1999; Saxenian, 1999, 2002a, and 2002b; Gaillard and Gaillard, 1998 and 1999, etc.), a "brain waste" (Özden and Schiff, 2005), a "brain strain" (Lowell et al., 2004), "brain exchange" and "brain circulation" (Vertovec, 2002; Saxenian, 2002a and 2002b; Gaillard and Gaillard, 1998 and 1999).

According to Meyer and Brown (1999), "socio-professional" networks can be assets for sending countries. Nyberg-Sorensen (2004) highlights the use of social remittances (skill transfer, cultural and civic awareness/experience). Whereas the literature has argued for limits on viewing highly skilled migration merely as a loss for sending countries, there are other groups of scholars and practitioners that question the importance of scientific and technical diasporas in the development of sending countries (Lowell et al., 2004). These voices counter excessive optimism on brain gain. It is about finding appropriate policies so that highly skilled diasporas can create a win-win situation that can benefit both sending and receiving countries (Wickramasekara, 2003).

Multilateral agencies such as the ILO, IOM, UN, OECD and World Bank stress the necessity of mobilizing and maximising the development potential of migrants and diasporas. Migration implies benefits and costs to all sides (sending countries, receiving countries and migrants). The effects of highly skilled migration are driven by a range of factors, including the social and economic situation of the migrants, links with the country of origin and destination, the level of development of these countries and their commitment to migration and development issues.

The leading role of immigrant entrepreneurs and their communities in enabling their country of origin to benefit from knowledge and technology and

strengthen local capabilities shows that brain drain can be successfully turned into brain gain. Through the transfer of knowledge, know-how and international experience, highly skilled workers are bringing back opportunities, resources and skills to their home countries, which could upgrade the local capabilities, as witnessed in South Korea, Taiwan, China and India. Governments and firms have played a crucial role in mobilizing the highly skilled to contribute to upgrading the local capacity of firms and scientific and technological research centres (Saxenian, 2002a and 2002b). There is evidence of reverse brain drain effects resulting in the international mobility of scientists and professionals from South East Asian countries in the U.S.A. There are promising reverse brain drain situations in South East Asian countries thanks to the return of highly skilled nationals abroad who bring back wealth, technology, knowledge and know how. Due to the positive inputs of highly skilled migrants, India has emerged as one of the leading countries in software development (Saxenian, 2002a; Khadria, 1999). According to Saxenian (2002a) and Khadria (1999), there is evidence of brain gain mechanisms from Indian students and professionals in the U.S.A. However, there is still a debate whether this brain gain is or is not effectively countering “brain drain” results in out – migration of Indian scientists and engineers notably to the U.K. and U.S.A. Indian highly skilled migrants in the U.S.A. have had success in engineering, pharmaceuticals, biotechnology, IT, R&D and managerial positions. Besides this, government authorities are trying to mobilise scientific diasporas to participate in the development of the country.

1.1.3 Conceptual Framework and Definition of Some Key Words

By creating linkages with the homeland and mobilizing its skills and resources, diasporas can play a pivotal role in the development process. Information technologies can make a bridge between scientific diasporas and the country of origin (Barré et al., 2003). Scientific diasporas can be virtuous cycles promoting win-win dynamics as exemplified by the cases of China and India (Saxenian, 2002a and 2002b).

According to Mountford (1997), skilled migration can be beneficial as there are possibilities for acquiring skills, strengthening human capital and the formation of educational classes in one economy, thus minimizing the rate of under-education. International scientific mobility and the possibility to make a bridge between scientific diasporas and local scientific communities through the information technology system suggests a new approach centred on brain gain and brain exchange (Gaillard and Gaillard, 1998; Lowell and Findlay, 2001) and knowledge exchange (Mahroum and de Guchteneire, 2006). Scientific diaspora networks are ways to mobilise highly skilled migrants and con-

nect them with their country of origin. They can help identify the skills and resources within the diaspora. However, some studies underline their lack of sustainability and effectiveness (Lowell et al., 2004; Lowell and Gerova, 2004).

Migration or mobility?

Most researchers and scholars on the issue of scientific mobility have questioned the relevance of the term “migration” to describe the multiple facets of the international mobility of scientists, researchers and students. This is because migration implies short term or permanent stay, whereas highly skilled people tend to be involved in different mobility schemes (circulation, temporary migration, transnationalism, etc.) (Koser and Salt, 1997).

Skilled migrant

Skilled migrants are defined as professionals holding a tertiary education or specialized work experience such as architects, accountants, financial experts, engineers, researchers, specialists in information technology, etc. (Vertovec, 2002). Williams and Balá (2005) define a skilled migrant using the human capital approach that encompasses variables other than qualifications and income (interpersonal skills, self confidence, etc.).

The Canberra Manual’s definition of highly skilled or Human Resources in Science and Technology (HRST) is based on two main criteria: the qualification (tertiary education) and occupation (mainly scientific and technology occupation). This definition was adopted jointly by the OECD and the European Commission/Eurostat, (see OECD, 1995, p. 16). It covers a broader population compared to the International Standard Classification of Occupations (ISCO). According to Lowell and Batalova (2005, p. 4) (quoting McLaughlan and Salt, 2002), highly skilled migrants should be defined both in terms of education and professional background “if relevance to policy is important.” The Canberra definition, which is used in the European context, mainly focuses on the scientific and R&D sectors. It does not take into account workers with minimum education (baccalaureate degrees), whereas “the United States’ well-known specialty worker H-1B visa program is based on a list of occupations and a minimum degree requirement of a baccalaureate” (Lowell and Bartalova, 2005, p. 4).

Brain gain

Brain gain can be defined as the way to turn brain drain into a virtuous circle both for sending and receiving countries. It suggests that the international migration of skilled workers can provide benefits to sending countries rather than

losses. Therefore, it can contribute to the development of the sending country by contributing resources and skills from within the diasporas (remittances, knowledge and technology transfer, foreign direct investment, etc.). The brain gain perspective challenges the nationalist view that considers skilled migration a dramatic loss for sending countries, especially developing countries as it leads to asymmetric exchanges between North and South. The promise of scientific diaspora networks and the difficulty of stopping skilled migration have led to shift in the understanding of migration. Scientific diasporas are considered components of the development of countries of origin. (For further discussions about brain gain, see among others Meyer et al., 1997; Gaillard and Gaillard, 1998; Meyer, 2001; Mountford, 1997).

Scientific diasporas

Historically, the concept “diaspora” is derived from Greek and describes the dispersion of people or those that settle outside their ancestral homelands. There are misunderstandings about the concept of diasporas which is often used to mean “migrant communities, foreigners, non residents, mobility, integration,” etc. Barré et al. (2003) define “scientific diasporas” as “self organized” communities of engineers and scientists mobilised for the development of their country of origin, notably in science, technology and education. One main challenge for researchers is to provide a consistent definition of scientific diasporas as the lack of consensus has led to a range of understandings and meanings depending on the countries (sending and receiving) and the players (policy-makers, migrants, etc.). Due to growing concern about the effects of international migration on development as well as awareness of policymakers and governments on the necessity of reversing brain drain, the scientific diaspora has emerged as a key option for maximizing the role of the highly skilled in the development of their country of origin.

Transnationalism

Over the past decade, transnationalism, which is a new approach to migration that underscores the sense of multiple belonging of the migrants (connections with the country of origin, the country of residence, social networks, etc.) outside the boundaries of the nation-state (see: Glick Schiller et al., 1999; Portes et al., 1999) challenges the traditional approach of migration in terms of assimilation. It shows the process of social linkages created through migration when migrants live in different social spaces. Transnational people and transnational communities are examples of the multiple ways migrants are connected to social spaces and their ability to consolidate links with the country of origin, while being involved in daily life in the country of residence (Glick

Schiller et al., 1999). Therefore, the term transnational suggests that international mobility of highly skilled workers is not only a dual movement, but it entails circulation as the international labour market searches for skilled and talented professionals.

Knowledge transfer

A. Williams (2007, p. 361) asserts that studies have overlooked international migration as a vehicle of learning and knowledge transfer, "...even though it plays a significant role in effecting localized or face-to-face knowledge transfers" (see also Williams, 2006). In this study, knowledge transfer refers to the process of diffusion of science, technology and know how in benefit of the homeland. It is about the mobilization of the resources and skills within the scientific diasporas to enhance local scientific and technological capabilities. Knowledge transfer can be considered a long term process and implies a range of activities: visiting professors, scholars and researchers, teacher trainings, scientific conferences, workshops, special trainings, consultancies, exchanges of information. It is both demand and supply-driven (Wescott and Brinkerhoff, 2006).

Research & Development

Research and Development (R&D) refers to basic and applied research in the sciences and engineering and the design and development of prototypes and processes in order to increase the amount of knowledge and the use of this knowledge to explore new applications. One fundamental component of the innovation process is R&D. One of the most used definitions of R&D is included on the Frascati Manual according to the OECD recommendations:

R&D is an activity related to a number of others with a scientific and technological basis. Although these other activities are often very closely linked to R&D, through flows of information and in terms of operations, institutions and personnel, they must be excluded when measuring R&D. R&D and these related activities may be considered under two headings: the family of scientific and technological activities (STA) and the process of scientific and technological innovation (Frascati Manual, 2002: 18).

Non Indian Residents (NRIs)

NRIs are Indians citizens, holding Indian passports who settle abroad for an indefinite period for employment, business reasons, vocation, or for any other motive (Ministry of External Affairs).

PIO or Persons of Indian Origin

PIO refers to foreign citizens of Indian origin or descent who fall in one of the three following categories:

A person who at any time has held an Indian passport; anyone either of whose parents or great grandparents was born in and was permanently resident in India as defined in the Government of India Act, 1935 and other territories that became part of India thereafter provided he / or she was not a citizen of the countries referred to in paragraph 2 (b) of MHA notification N°. 26011 / 4 / 98 – IC. 1 dated 30 March, 1999; the spouse of a citizen of India or a Person of Indian Origin, covered in the above two categories of PIOs (Ibid).

Scientists & Technologist of Indian Origin

Scientists & Technologists of Indian Origin based abroad (STIOs) refers to persons of Indian origin residing abroad that are part of the scientific and technological pool of Indians throughout the world. STIOs include a widening range of human resources in science and technology such as highly skilled people working in industries, research laboratories, universities and scientific departments located in various countries as well as entrepreneurs, business operators in knowledge intensive sectors and venture capitalists (S&T Professionals of Indian Diaspora).

1.2 Methodology

This country case study is part of a joint research project (EPFL, University of Geneva, ILO) funded by the Geneva International Academic Network (GIAN) on highly skilled migrants and scientific diasporas in Switzerland including two other sending countries (Colombia and South Africa) in addition to India.

Various meetings and email exchanges were carried out by the research team with the support of the scientific committee members concerned with the theoretical, methodological and policy implications of this research. The main activities of this qualitative research were the following: (i) literature review; (ii) preliminary interviews; (iii) selection of the country case studies based on official statistics in Switzerland; (iv) sample strategy and identification of key persons for the snowball effect method; (v) design of the qualitative interview guideline; (vi) qualitative survey; (vii) analysis of qualitative data.

1.2.1 Literature Review

Several sources have been consulted to extend our understanding of scientific diaspora issues, especially in Switzerland, and to better design appropriate

methodological tools for the survey. These sources include: cantonal offices and the Federal Statistics Office; the Federal Office of Migration; Cantonal Bureau of Employment, registration offices, universities and Swiss schools of higher education, research institutes, local and international scientific networks and associations, migrants' associations and scientific diasporas, NGOs and international organizations, web sites, archives, newspapers, telephone directories, CD-Roms, etc.

In order to prepare for forthcoming activities related to policy consultations and roundtables, lists of Swiss academic, scientific institutes as well as cooperation and development agencies and highly skilled migrants in the sample have been compiled.

The literature review contributes to the theoretical debate on highly skilled migration to provide a brief overview of the Indian and the Swiss cases as well as the international context. This research was complemented by data and information extracted from similar brain gain studies including local and international good practices.

1.2.2 Preliminary Interviews

Preliminary interviews were carried out with university researchers and academics working on the issue, specialists from international organizations and representatives of Swiss development cooperation and migration agencies in order to better understand the migration phenomenon in Switzerland. Before highlighting some specifics of the survey, let's first give some overall indications about the sampling strategy used to select the three country case studies for this research.

1.2.3 Sample Strategy

The three selected countries were: Colombia, India and South Africa. The choice of Colombia, India and South Africa may be explained by the importance of their highly skilled nationals worldwide and their experience as regards brain gain. Colombia ranks 4th in terms of share of highly skilled migrants in the total Latin-American migrant population in Switzerland (45.8%) and falls behind Mexico (69%), Argentina (61.2%) and Peru (46.8%). Existing networks and associations of highly skilled migrants of Colombian origin and the availability of key people in Switzerland were some of the main reasons of selecting Colombia as a country case study for the Latin-American region. The table below shows that the choice of India as a country case study for the Asia region is entirely justified. The share of highly skilled migrants out of the total migrant population of Indian origin residing in Switzerland (79.7%) is higher

than that of China (61.7%). South Africa (73.1%) ranks 1st in terms of the share of highly skilled migrants in the total Sub-Saharan African migrant population in Switzerland (see table below).

Table 1. Distribution of the migrant labour force in Switzerland, by origin

	Migrant population		Recent migrants*	
	Share of highly skilled	Total	Share of highly skilled	Total
<i>Sub-Saharan Africa</i>				
Ethiopia	20.4	1036	13.8	487
Angola	15.2	1653	7.0	449
Ivory Coast	28.1	438	24.1	259
Cameroon	26.9	992	24.8	585
Kenya	22.8	576	20.9	270
Congo (Kinshasa)	35.5	1939	32.8	590
Nigeria	37.9	737	35.7	419
Senegal	37.6	514	32.9	281
Somalia	13.2	1375	8.7	490
South Africa	73.1	629	78.7	424
<i>Latin America</i>				
Argentina	61.2	759	64.3	311
Brazil	32.7	4546	31.9	2546
Chile	33.2	2428	46.0	280
Equator	38.5	550	38.5	337
Colombia	45.8	1508	41.3	894
Mexico	69.0	607	71.9	346
Peru	46.8	1604	40.9	637
<i>Asia</i>				
China	61.7	2527	65.4	1257
India	79.5	2923	83.6	1227

Source: Swiss population census data 2000.

Note: Men aged 15–65, women aged 15–61; human resources defined according to the Canberra Manuel (1995).

* “Recent migrants” corresponds to the migrants who arrived in Switzerland after 1995; only those with a number > 250 persons are taken into account. The coloured cells indicate the migrants coming to Switzerland who are increasingly skilled; so the other cells indicate the migrants coming to Switzerland who are less skilled with time.

The sampling strategy for the qualitative research was the sample by “convenient choice” (Beaud, 1984) as the objective is to provide an understanding of highly skilled migrants’ perceptions, logic, strategies and intentions in the context of scientific diasporas, brain gain and development of the homeland rather than of identifying recurring situations, statistical figures or questioning theories. Thus, the principles of saturation, heterogeneity and structure are taken into account in the sampling strategy.

The sampling strategy was based on the snowball method (or snowball effect). The strategy for selecting appropriate persons for the survey was based on the networking schemes (interpersonal relations) and web searching. The selection of the respondents has been made gradually in the course of the field work through the chain referral sampling or snowball sampling. In the course of the field research, contact information of potential persons to be contacted was collected and validated, through the snowball effect. The strategy consists of asking a question at the end of the interview: “Could you please give us the name and contact information of any person that suits our research on highly skilled migration and scientific diasporas in Switzerland?”

The sampling included professionals and students from the following sub groups, according to the ISCO: students, academics and scientists, engineers, technicians, managers and executives. The fundamental criteria for the selection of academics, scientists and technicians was possession of a tertiary education diploma (PhD or related diplomas, diploma of engineering) or relevant professional experience in the country of residence. As regards students, the selection was based on their admission into a doctoral or post-doctoral program. Places to identify potential respondents of the survey included: academic and higher education institutions, scientific research centres, banks and financial institutions, multinationals located in Switzerland as well as national and international organizations recruiting highly skilled migrants (PhD fellows, engineers, etc.).

Regarding the Indian case study, twenty-three qualitative interviews were carried out including PhD and Post doc students, managers, scientists and researchers, engineers, staff from international organizations and physicians. The research team explored the sociological and demographic characteristics of Indian highly skilled migrants in the sampling after these additional qualitative interviews were conducted. The following table provides an overall picture of the sample by professional category.

Of significance is that in the male category, managers working in the private sector and multinational firms (28.57%) were more represented. Scientists and academic staff and those working at international organizations and NGOs made up a comparable ratio (21.42%). International organizations and NGOs staff (44.44%) and scientists and academic staff (44.44%) had a similar percentage under the female category in the sampling. Whereas PhD students ac-

counted for 21.42% of male respondents (3 out of 14); female respondents represented 11.11% (1 out of 9 respondents).

Table 2. Indian highly skilled by professional category in the sample

	Male		Female	
PhD students	3	21.42	1	11.11
Post doctoral fellows	1	7.14		
Managers in private sector and multinational firms	4	28.57		
International organizations and NGOs staff	3	21.42	4	44.44
Scientists and academic staff	3	21.42	4	44.44
Total	14		9	

Source: Dia, data collected during the 2007 survey.

1.2.4 The Interview Phase

The principle underlying the qualitative interview was to allow people to express their opinions. The research team played a “facilitating” role (through guidance, explanation of the stakes of the survey) to ensure that the interview was in compliance with the rules of anonymity and trust in order to collect relevant data. It was important to gain understanding about highly skilled migrants’ perceptions, strategies and practices with regard to the issues as follow: (i) sociological identification ; (ii) causes and characteristics of the international migration of highly skilled to Switzerland and migrants life; (iii) causes of international migration and migration paths; (iv) experiences of (highly skilled) migrants; (v) brain gain: mechanisms, strategies, opportunities, challenges and impact on development of country of origin; (vi) highly skilled migration, “brain gain” and impact on scientific and technologic research in country of origin; (vii) interrelations between the country of origin and the country of destination, settlement, return, transnationalism and circulation; and (viii) scientific diasporas and development of country of origin: which scientific policies and which development policies?

The qualitative interview guidelines were reviewed by the scientific committee members and tested prior to proper interviews with individuals selected in the sample. Five people responded to the questions during the testing phase.

The objective of the testing phase was to ensure clarity and relevance of the questions and issues to be discussed during the proper qualitative interviews.

The appointments were established through emails (which included a letter of information and a brochure about the research objectives, goals and expected results) or telephone calls. Prior to the interviews with the respondents (in cafés, at offices, restaurants), there was a phase of explanations about the fundamentals of the research (main partners, objectives, sampling and expected results).

By large, respondents were enthusiastic to answer the questions. However, lack of time due to professional responsibilities and other competing priorities along with the numerous issues and questions raised in the interview might have deterred some from being more comprehensive in their responses. Nevertheless, the ambiance during the interviews was frank and cordial. This excellent ambiance would not have been possible if trust and cooperation were not ensured. Respondents were informed that the information they offered would be strictly confidential and only used for scientific purposes. Very few refusals were recorded and only because of lack of time. Some asserted that they looked forward to the survey results if any practical implications for the development of their homeland arose.

These respondents were selected mainly through networking and also web searching, especially in the case of students in EPFL and ETHZ. A list of potential respondents was established, including names and contact information. Furthermore, the support of key persons within the three diaspora communities was crucial in identifying highly skilled migrants for the sampling, as they were well known within their communities of origin. As they had been living in Switzerland for many years, they had excellent social networks. A directory of members of Indian associations in Switzerland was also very useful in the course of the qualitative interviews. Telephone directories and internet research were also used during the interview phase.

Some practical problems occurred when using the snowball effect, especially how to identify highly skilled workers working outside scientific and technical spheres, and how to diversify professional backgrounds as the respondents often suggested their colleagues. One alternative to rectify this was, therefore, to ask them not only to focus on colleagues and friends in similar professional fields.

1.2.5 Data Analysis

A content analysis tool for the qualitative data was designed for the analysis of the qualitative interviews in a more systematic way. This content analysis was established in such a way that for each theme there were subsequent topics, in order to have a thorough understanding of the trends and issues there.

1.3 India: Social, Economic and Political Context

There is a dual India. One is prosperous and healthy with some of the best companies and businesses in the world. The other is a million Indians facing poverty, social inequalities and an array of risks. India is characterized by unprecedented economic growth, but there are many challenges that need to be addressed for better economic and social prospects.

India: A fragile economic giant?

The Indian economy has a GDP of \$ 1.25 trillion and ranks twelfth largest in the world in U.S.D exchange rate terms (Economic Times India). When measured in terms of purchasing power parity (PPP), India has the second fastest growing major economy in the world with a GDP growth rate estimated to be 9.4 percent for the fiscal year 2006–2007 (Market Watch, 2007). According to experts, India and China are expected to be worldwide leading economies in the coming years. Such substantial economic growth occurs paradoxically, concurrently with persisting poverty of the majority of the population.

India is classified by the World Bank as a low-income economy (Business Standard) based on its population per capita income, which accounts to \$ 4,542 at PPP and \$ 1,089 in nominal terms (revised 2007 estimate) (IMF, 2007; CIA World Fact book, 2007). It faces numerous social and economic gaps such as massive poverty and a fast growing population. Poverty is a persisting challenge despite governmental efforts to reduce poverty rate.

There are an array of sectors ranging from agriculture, handicrafts, textile, manufacturing and a multitude of services. Services play an increasingly fundamental role in India's economy with a 7.5 percent growth rate in 1991–2000 up from 4.5 percent in 1951–80, claiming 23 percent of the workforce. Services totalled a GDP of 53.8 percent in 2005, whereas its share in the GDP was 15 percent in 1950 (CIA World Factbook, 2007). The Indian IT industry has attracted outsourcing of customer services and technical support and significantly raised the Indian balance of payments. However, it accounted for only about 1 percent of the total GDP of services. Indian skilled workers are well represented worldwide in knowledge intensive sectors such as software and financial services, software engineering, manufacturing, pharmaceuticals, biotechnology, nanotechnology, telecommunication, shipbuilding, aviation and tourism.

Despite slowdown agriculture is one of the main important sectors of the economy, with 18.6 percent of GDP in 2005 and 60 percent of the total workforce (Ibid). It is traditionally the dominant sector, with two-thirds of the Indian workforce, and its productivity depends on the monsoons. Industry accounts

for 27.6 percent of the GDP and uses 17 percent of the total workforce. Household manufacturing claims almost one-third of the industrial labour force (Business Standard). There has been privatisation of some public sector industries following economic reforms, which enables openness of public and private sector industries to foreign competition. As a result, there is growth in consumer goods (The Economist, 2003).

In 2005 and 2006, foreign direct investment (FDI) accounted for U.S.\$ 7 and U.S.\$ 14 billion (OECD, 2007). India attracts foreign direct investment due to its comparative advantage in various areas such as information technology, chemicals, pharmaceuticals, auto components, etc. There were many hindrances to investment due to rigid FDI policies. Recently, economic reforms have contributed to reducing these hindrances, making India one of the main destinations for foreign direct investment. India, with its massive, qualified manpower and a growing middle-class of 300 million (more than the total population of the U.S.A. and the E.U.), is a “powerful consumer market” (Middle class in India has arrived, 2005).

Poverty and persisting social and economic inequalities

Despite economic progress and government measures (the five-year plans), there are persisting regional imbalances in terms of poverty, infrastructural capital, human development indicators and per capita income. Inner and backyard regions are benefiting less from urbanization, industrial development, economic liberalization reforms, infrastructure, etc. (Datt and Sundharam, 2005; Bharadwaj, 1991). Likewise in the realm of human development indicators such as health and education, there is a large regional divide in benefit of urban cities (Economy Watch).

However, despite efforts to address poor living conditions and inequalities, poverty, discrimination on the grounds of social origin (caste) and rural and urban gaps remain some of the main challenges of Indian society. According to official figures 27.5 percent of Indians lived below the poverty line in 2004–2005 (Planning Commission of India, 2004–2005). According to estimates in 2007 (NCEU.S, 2007), 70 percent of the population in India faced difficult living conditions, unemployment and lack of social protection and were concentrated in the informal economy. The social and economic gaps could be potential sources of political and social instability if not properly addressed. These include discrimination against low castes and other vulnerable groups such as women and children, child labour, gender inequalities, health risks, lack of social protection and unequal distribution of wealth. There have been various government policies and measures to reduce poverty such as the Food for Work Programme; the National Rural Employment Programme of

1980 aimed to promote income generation for the unemployed and improve living conditions and rural infrastructure. In 2005, the Rural Employment Guarantee Bill was amended by the Indian Parliament. It strives to promote minimum wage employment to rural households in India.

There is concern about increasing inflation, which continues to impoverish many households especially in rural areas, despite government efforts. Inflation is expected not to exceed 5 percent according to official objectives. The agricultural sector lies behind, although it accounts for the majority of the Indian workforce. It hardly exceeds 2 percent growth on average over three years. Many peasants face hard living conditions. Unemployment is also another major government challenge with 106 million, almost 10 percent of the population, unemployed from 1990–2000 (Government of India).

The infrastructure is scarce and poorly managed. Since independence, the five-year plan has been focusing on infrastructural development. Corruption, bureaucratic constraints, urban gaps and inefficient investment have hindered the development of infrastructure (Sankaram, 1994). With economic reforms, infrastructure has been opened up to the private sector to attract foreign direct investment (Hiscock, 2004), resulting in a sustained growth rate of nearly 9 percent for the past years (Economic Survey, 2004–2005).

The Indian political system

India has a democratic system with regular elections, respect for freedom of speech and an active role of media and civil society. The new ruling coalition government (United Progressive Alliance under the mantle of the Congress Party) strives to undertake reforms to curb poverty, inequalities and focuses on development issues, as a continuum of those carried out since 1990. A “National Common Minimum Program” has been set up that underscores modernization, women’s empowerment, rural development and the agricultural sector, providing education and employment to minority groups and low castes and poverty reduction (National Advisory Council, 2004). However, there are still impediments to political, judiciary, and economic reforms such as corruption, heavy bureaucracy and violation of fundamental human rights. Sharma Shalendra D. (2002) notes that one of the fundamental challenges of Indian democracy is to mitigate the “poverty problem” by closing profound gaps between economic growth and redistribution.

Higher education in India

Over the past two decades, there has been substantial development of higher education in India due to private sector initiatives. Though, these initiatives were not well organized and planned. Higher education in India is character-

ized by a prominent growth since independence. The number of universities remarkably expanded from 25 in 1947 to 348 in 2005 with a total enrolment from 0.1 million in 1947 to 10.48 million in 2005. Students from lower socio-economic strata are enrolling more and more (Agarwal, 2006, pp. 7–17).

However, many hindrances affect higher education in India. These include: inflexible academic structures, uneven capacity across various subjects, eroding autonomy of academic institutions and low level of public funding, dysfunctional regulatory environment, weakness of the accreditation system and lack of incentives for excellence and productivity. All of these deficiencies led to greater unemployment among graduates and a shortage of skilled manpower in various sectors. Declining standards of academic research are being observed. Lack of effective regulatory systems makes it difficult to upgrade standards and address exploitation. The number of quality institutions is low. There are many barriers to entry to these few quality institutions. Many Indians, especially those belonging to poor families, cannot get access to higher education systems due to heavy entrance tests, costly tuition and tough competition.

According to Kapur and Bhanu Mehta (2004, p. 27), the existence of some centres of excellence hides the reality of a deep crisis in higher education in India:

India is facing a deep crisis in higher education, which is being masked by the success of narrow professional schools... The fact that the system nonetheless produces a noticeable number of high quality students has to do with the sheer number of students and the Darwinian struggle at the high school to get admission into the few good institutions.

India in the international arena

By signing bilateral nuclear cooperation agreements with the United States (Squassoni, 2005) in 2006, being part of international and regional consultations and diplomatic affairs, trying to attract votes for eligibility as a permanent member of the United Nations Security Council and finally, by playing a role as a donor country in development aid (approximately US \$ 250 million per year), India aims to have a crucial role in the international arena. India has also signed trade agreements with many Asian countries and is enforcing its economic cooperation with China and the European Union. Since 2004, promising initiatives are being explored by India with regard to pacifying its relations with neighbouring countries especially Pakistan with regard to the status of Cashmere.

Indian skilled diaspora

Since independence, the international migration of Indians is characterized by two main features: highly skilled and qualified workers immigrating to industrialised countries (mainly to the United States of America, Canada, the United

Kingdom and Australia, which are the traditional destination countries for Indian highly skilled migrants) and semi-skilled and unskilled workers moving to the Middle-East. New dynamics are emerging with regard to international highly skilled migration, including new destination countries (Australia, Germany, Japan, and Malaysia) since the 1990s. Between 1950 and 2000, Indian highly skilled emigration was estimated to be nearly 1.25 million (Srivastava and Sasikumar, 2003, p. 14). In Switzerland, it represents 0.117 percent of the total population (PIOs: 8400; NRIs: 4800 and stateless: 300) (Ministry of External Affairs).

The Indian diaspora spans more than 70 countries and is composed of 20 million people (Pandey et al., 2006). Most are involved in various knowledge intensive sectors in destination countries such as the U.K., Canada, United States of America and Australia, etc.

In the U.K, the Indian diaspora numbers over 1.2 million (Ibid: 71). The U.K. has long been the main destination country for skilled Indians due to colonial legacies and linguistic commonalities among other factors. Since the 1970s, there are diverse destination countries, notably Canada, the U.S.A. and Australia that attracted more and more Indians. However, skilled Indians' presence in the U.K. is still significant. In 2000, of 18,570 foreign IT professionals granted visas for work, 11,474 were originally from India. In 2005, of the 11,800,000 non-EEA nationals, 687,000 were coming from India. The U.K.'s attractive immigration policies toward skilled persons (nurses, medical doctors, engineers and information technology specialists, etc.) led to increased skilled Indian labour emigration (Khadria, 2006, pp. 175–177).

In the U.S.A., most Indian highly skilled migrants are concentrated in medicine, law, science and engineering, information technology, management and business. In 2001, Indian born students ranked first followed by Chinese students, when measured in terms of largest share in science and engineering in the U.S.A. Some 94 percent of Indian scientists planned to remain in the U.S.A. between 1998 and 2001. In 2001, the percentage of Indian scientists, engineers and doctors granted job or postdoctoral research offers in the U.S.A. was 77 % (Pandey et al., 2006).

Some of India's highly skilled are top executives in business firms and services. They also have a significant presence in the IT sector. For instance, in the U.S.A., 40 percent of the start-ups of the Silicon Valley are owned by or have at least one founder of Indian origin. The boom in the IT sector and the shortage of programmers have resulted in the increase in the number of the H1-B quota from 65,000 in 1998 to 130,000 in 1999 and to 195,000 soon after. (Ibid: 71–88).

Non-resident Indians (NRI) that immigrated mainly to the U.S.A. in the 1960s, 1970s and 1980s and returned to their homeland over the past decade

following the adoption of economic liberalization policies have played a major role in building the Indian software system. Ten of the 20 most successful software enterprises in India were launched by Non-Resident Indians from the U.S.A. (Chakravarty, 2001, quoted by Hunger, 2002, p. 6).

Highly skilled Indians are active in organizing and mobilizing skills and resources within the diaspora into knowledge networks. For instance, the American Association of Physicians of Indian Origin founded in 1984 is the most important ethnic medical association in the U.S.A. It serves as an umbrella organization for 100 professional associations. Indian IT engineers who succeeded in the U.S.A. joined together to create non-profit organizations (TiE, the Silicon Indian Professional Association) and linked up with Indian locals to help expand the IT industry in India (Ibid: 71–88). In the 1990s, NRIs formed the NASSCOM,² the National Association of Software and Service Companies. The Indus Entrepreneur³ (TiE) is another organization created in Silicon Valley at the beginning of the 1990s by Indian software entrepreneurs to support young Indian entrepreneurs, set up new enterprises, attract venture capital and promote central IT training centres.

1.4 Switzerland: Immigration Policies and Bilateral Cooperation with India

Swiss immigration policies

After end of World War II and until the sixties, Swiss migration policies were based on a “rotation” system of the foreign labour force. The focus was addressing “over-foreignization” (*Grad der Überfremdung*) by recruiting guest workers mainly from Italy and Spain in response to economic needs. This “rotation” model ensured that family reunification and settler emigration would not augment tremendously in Switzerland and that the foreign workers could go back to their country of origin. As migrant workers were increasingly settling and integrating in Switzerland, the rotation model was challenged. The Swiss authorities adopted new policies which give facilities to foreign workers in terms of family reunification whilst addressing labour market segmentation (Efonayi et al., 2005, p. 2).

The economic upturn following the oil crisis led to massive recruitment of guest workers from Italy, Spain, Portugal and Turkey. In the late 1970s, the conversion of the seasonal permits to permanent residence permits for most guest workers was a shift in Swiss immigration policies. Such a shift was mo-

2 For more information about this association: <<http://www.nasscom.org>>.

3 For more information about this association: <<http://www.tie.org>>.

tivated by economic reasons as several economic sectors in Switzerland faced a shortage of manpower (Ibid).

Under the 1931 Alien Law (The Law concerning stay and settlement, 1931), different statuses were given to foreigners. Criteria for foreign communities outside European countries were more restrictive, although there were shifts in rules and regulations later. Clearly, this federal law was not a proper migration policy, notwithstanding its focus on the migrant population. It was more to prevent massive out-migration which would revive the *Grad der Überfremdung*, in light of increasing pressures from xenophobic groups (Ibid).

Following the Bilateral Agreement on the Free Movement of Persons between Switzerland and the EU Member States, EU nationals are allowed to live and work in this country under a quota system related to long term and short term residence permits. Subsequently, Swiss citizens can also live freely and be employed in all EU member states. This has led to increasing numbers of EU citizens in Switzerland (34,000 in 1997 and 49,800 in 2003) operating mostly in highly skilled occupations (finance, trade, services) (Ibid: 5).

There are restrictive policies with regard to non-EU nationals. A citizen from these other countries is recruited into the Swiss labour market under exceptional circumstances. The application submitted by an employer is subject to approval of the Cantonal labour market Office. An employer must certify that standards related to wage and employment conditions are ensured and that a Swiss national or a qualified worker from a European Union member country was not found for the proposed work. Under these laws, only highly skilled and qualified workers outside the EU/European Free-Trade Association (EFTA) are granted work permits. In 2000, highly skilled migrants outside the EU/EFTA accounted for 15, 500 persons in Switzerland. The regional distribution of these migrants is as follows: 6,700 from Eastern Europe; 4,000 from Asia; 2,400 from Africa and 2,400 from Latin America (Ibid: 6).

Residence permits granted to foreigners are subject to the laws and regulations of the canton which are influenced by the 1931 Alien Law. The Federal Law “Ordonnance limitant le nombre des étrangers (OLE)” was enforced in order to limit over migration through restrictive measures. Foreign workers are still recruited into the Swiss labour market under the quota system. Foreign workers especially (for work on restoration, hostels, construction) are recruited among Southern Europe countries but also among new EU member states (Ibid).

The December 2005 Federal Law adopted by the Federal Assembly of the Swiss Confederation (the National Council and the States Council) and approved by the Swiss via referendum in September 2006 (Confédération Suisse, 2006) focuses on non-European citizens. Under this law, there are restrictions related to entry and exit of non-European citizens (article 1). Only the highly

qualified workers, executives and specialists are granted temporary work and residence permit (article 23).

In 2001, Switzerland launched the Berne Initiative aimed at defining a policy framework for better management of migration and better mainstreaming of migration into development policies for the mutual benefit of countries of origin and countries of destination. Switzerland was also a key player in the high level dialogue on international migration management and was part of the launch of the Global Commission of International Migration.⁴

The remittance transfer issue has raised attention among Swiss development policymakers. According to the Swiss Federal Council for the Millennium Development Goal, in 2001, remittance transfer from Switzerland to developing countries represented US\$ 8.1 billion, excluding informal channels of remittance transfer (Efionay et al., 2005, pp. 5–6).

According to Hans Mahnig and Etienne Piguet (2003), Swiss immigration policies can be divided into three periods: the first period (1950s and 1960s); the second period (1970s and 1980s) and the third period (1990s to the present). During the first period, the proportion of immigrants in Switzerland was among the highest in Europe due to attractive policies toward foreign workers under guest workers programs with Italy, Spain and Portugal in response to increasing shortages of manpower. During the second period, there was significant growth in the number of foreigners following the shift from seasonal worker programs to family reunification that allowed most foreign workers permanent residency.

By 1970, the foreign population accounted for 17 percent of the total Swiss population, whereas in 1950 it represented only 6 percent. As an underlying consequence of increasing inflows of immigrants, especially from European countries, there were growing xenophobic and anti-foreigner movements resulting in restrictive immigration policies aimed at “stabilizing” or reducing the number of the foreign population. Responding to labor shortages to strengthen the Swiss economy whilst addressing the threat due to an increased foreign population has been one of the main policy concerns in the realm of immigration for Switzerland.

By 1990, stabilization in the number of the foreign population was noted following the adoption of quota system. While the number of seasonal workers was gradually reduced, there were alternatively increasing asylum seekers and inflows of immigrants from Eastern Europe in the aftermath of the collapse of the Soviet Union. Consequently, the third period was characterized by the adop-

4 For more information about Swiss Migration and Development Agenda and the role of the Swiss Development Cooperation Agency, please refer to the following website: <<http://www.sdc.admin.ch/en/Home/Themes/Migration>>.

tion of the “three circles” approach in order to mitigate the heterogeneity of new immigrants. The three circle approach included citizens originally from the European Union and from the European Free Trade Association (circle 1); citizens from the U.S.A., Canada and Eastern European countries (circle 2); and finally citizens from the rest of the world (Africa, Latin America, Asia) (circle 3). Under this three circle approach; priority was given to the circle 1, which led to much criticism due to its discriminatory and often racist effects.

By 1998, Switzerland moved on to a two-circle model following an increasing need of highly qualified migrants in the Swiss economy. This two-circle model seemed to match well with the European Free Circulation Zone of which Switzerland was about to join. Under the two-circle scheme, preference is given to citizens of the European Union countries in the Swiss labour market. Exceptionally, highly qualified professionals from developing regions in specific areas are admitted under specific conditions.

Swiss bilateral cooperation with India:

Since 1961, the Swiss Development Cooperation Agency (SDC) is active in India. Its main objectives are to contribute to poverty reduction and to sustainable development. Various programs are also carried out by other players (the Secretary of the State Economy, SECO, and almost 60 Swiss NGOs operating in this country, most of them supported by SDC).

New objectives related to bilateral cooperation were identified under the 2006 SDC Partnership Program (PP). The PP aims to promote bilateral cooperation based on mutual interest and a collaborative framework (joint initiatives, shared funding, etc.) with a strong emphasis on poverty reduction, knowledge and technology transfer. It is considered a shift in Swiss development cooperation policies with India when compared to the past which was based on resource transfer. Its priority areas are energy and climate (for instance, renewable energies, natural disaster management) science and technology (biotechnology, agriculture, food safety, ICT, etc.) and governance (decentralization i.e. strengthening local capabilities by training and empowering women promoting community participation and supporting NGOs working on decentralization issues).

To strengthen the capabilities and rights of the locally disadvantaged groups, especially in rural areas, the SDC focused on income generation and employment creation and mobilizing local partners including civil society organizations. The SDC strives to improve productivity and income through sustainable water management, micro finance and employment activities in rural zones and access to the formal banking system. The SDC carries out programs to support Indian organizations in the defense and promotion of the rights of vul-

nerable groups. With regard to energy and rural settlement, the main priorities are to provide support to poor people in gaining access to cheaper sustainable energy and residences built with local material that respects the environment and resists disasters.

Regarding humanitarian assistance, the priority for SDC is to provide support in case of emergency requiring effective and rapid interventions (for instance the hurricane catastrophe in the state of Orissa in 1999 or the serious earthquake in Gujarat in 2001) in collaboration with Swiss NGOs specialized in humanitarian assistance and multilateral agencies. Since 2007, priorities of the SDC are disaster management and strengthening local capabilities in the field of natural disaster prevention and management.

India and Switzerland have trade and finance cooperation. In 2004, Swiss exportation (machines and chemical products), importation (textiles, chemicals) and foreign direct investment towards India accounted for 1.2 billion CHF (more than 37 percent of total foreign direct investment, compared to 2003); 538 million CHF (more than 9.6 percent) and 165 million CHF. One of the key priorities is strengthening bilateral cooperation in the private sector. The challenge is to ensure balanced financial flows for the benefit of the two countries. This could be achieved if Indian businesses and companies also have easy access to the Swiss market. India's greater comparative advantage on high technology and service can be an asset for effective bilateral cooperation. For the Swiss side, one of the main concerns is addressing bureaucratic constraints on trade and business in India (Brookes, 2006). The two countries hold divergent views on multilateral trade agreement (highest tariff in agriculture versus highest tariff in industry for India) although they cooperate in the World Trade Organization.

In 2003, India and Switzerland signed a scientific bilateral agreement. This scientific cooperation includes life sciences and information technology communication and involves various universities and research institutes of the two countries. On 22 April and 2 May 2007, the Swiss State Secretary of Education and Research visited India to discuss possibilities to enhance bilateral cooperation in science and technology.⁵

5 The bilateral cooperation strategy has been elaborated by the Federal Council and amended by the Parliament in January 24, 2007.

2. Socio-demographic Characteristics of the Respondents, Causes and Characteristics of the International Highly Skilled Migration to Switzerland and Migrants Life

2.1 Socio-demographic characteristics of the respondents

As shown in the table, highly skilled Indians in Switzerland tend to be predominantly male. Male Indian highly skilled migrants represented a majority of the respondents, while Indian female highly skilled migrants accounted for less than half. This male predominance is reflected in the share of the total Indian migrant population in Switzerland.

Table 3. Gender distribution of the sample

Male		Female	
14	60.87	9	39.13

Source: Dia, data collected during the 2007 survey.

When considering the age group of the sample, it appears that almost half of the male Indian highly skilled migrants were aged over 50. The percentage of female highly skilled aged over 50 was a mere 11.1 percent, which reflects a large proportion of men considering the age group 50–SPA. However, when taking into consideration the age group 43–50, there was a large share of female highly skilled migrants. A little over half of the women interviewed belonged to this group, whereas only 14.28 percent of male respondents were aged between 43 and 50. A little less than half of the male respondents were younger than 40 years of age with a small percentage of female respondents falling in the same age bracket.

Table 4. Age distribution of highly skilled Indians interviewed

	Male		Female	
	Number	%	Number	%
17–25	2	14.28	1	11.1
26–33	3	21.42	2	22.2
34–42	1	0.71		
43–50	2	14.28	5	55.5
50–SPA	6	42.85	1	11.1
Total	14		9	

Source: Dia, data collected during the 2007 survey.

Most of the respondents had only Indian citizenship. Less than half had another citizenship. Four male respondents and two female respondents had a Swiss passport. There were also respondents holding U.K. and U.S.A. passports.

Table 5. Nationality

	Male		Female	
	Indian	11	61.11	5
Indian and Swiss	4	22.22	2	22.22
Indian and other country ⁶	3	16.66	2	22.22

Source: Dia, data collected during the 2007 survey.

The majority of the male interviewees (12 out of 14) were married. The single respondents included mostly PhD students. The prominence of the married group was also noted when taking into consideration female groups in the sampling. A majority of the female highly skilled migrants (6 out of 9) were married, while two were still single and one was a widow. Within the single group, the proportion of women was relatively higher than men.

Table 6. Civil status

	Male		Female	
	Single	2	14.28	2
Married	12	85.71	6	66.66
Widow			1	11.11
Total	14			

Source: Dia, data collected during the 2007 survey.

The table indicates the prominence of respondents who had one or two children. The proportion of men who had one or two children was significant. The same situation occurred for the female group; the proportion of those who had one child was comparable to those who had two children. Only one out of 14 male respondents had more than 2 children. One male respondent and one female respondent indicated they had no children yet.

6 One respondent is Indian, British and Swiss.

Table 7. Number of children for respondents with family responsibilities

Number of children	Male		Female	
	Count	Percentage	Count	Percentage
0	1	8.33	1	14.28
1	5	41.66	3	42.85
2	5	41.66	3	42.85
3	1	8.33		
Total	12		7	

Source: Dia, data collected during the 2007 survey.

As reflected in the table below, the Indian respondents operated in various fields including biotechnology, chemistry, IT services, economics, medicine, physics, etc. Some respondents were pursuing PhD research on chemistry and communication systems (IT) whereas one respondent had completed his postdoctoral research on biotechnology. Most of the scientists and academic staff interviewed were working in Swiss higher education and research institutes such as the EPFL, the University of Geneva, etc. Professionals also served in international organizations such as the International Labour Office, the International Organization for Migration and the World Health Organization. The Indian skilled diaspora living in Switzerland is therefore involved in various knowledge intensive sectors which reflects that they have a greater potential that could be critical in strengthening scientific and technological research and social and economic development of the country of origin.

Table 8. Indian highly skilled by field

Field	Male		Female	
	Count	Percentage	Count	Percentage
Biotechnology	1	7.14		
Chemistry	3	21.42	1	11.11
IT services	3	21.42		
Customer relations	1	7.14		
Communication system	1	7.14		
Sales electronic and Communication	1	7.14		
Finance	1	7.14		
Arts	1	7.14		
Public administration			1	11.11
Econometrics and economy	1	7.14	1	11.11
History	1	7.14	1	11.11
International relations – humanitarian issues			2	22.22

Table 8. Indian highly skilled by field (cont.)

	Male		Female	
Cancer pathology			1	11.11
Particle physics			1	11.11
Psychology			1	11.11
Total	14		9	

Source: Dia, data collected during the 2007 survey.

A majority of the highly skilled Indian respondents had a PhD. All the women interviewed held a PhD degree except one who had a bachelor's degree. Within the male respondents, 2 of those interviewed had completed their Postdoctoral research and 3 out of the 14 had received their PhDs. A small number of the total respondents had only a master's degree; even fewer had an engineering diploma, while only one respondent had a bachelor's degree.

Table 9. Level of studies

	Male		Female	
Postdoc	2	14.28		
PhD student	3	21.42	5	55.5
Master and related (DEA)	5	35.71	3	33.3
Engineering	3	21.42		
Bachelor	1	0.71	1	11.1
Total	14		9	

Source: Dia, data collected during the 2007 survey.

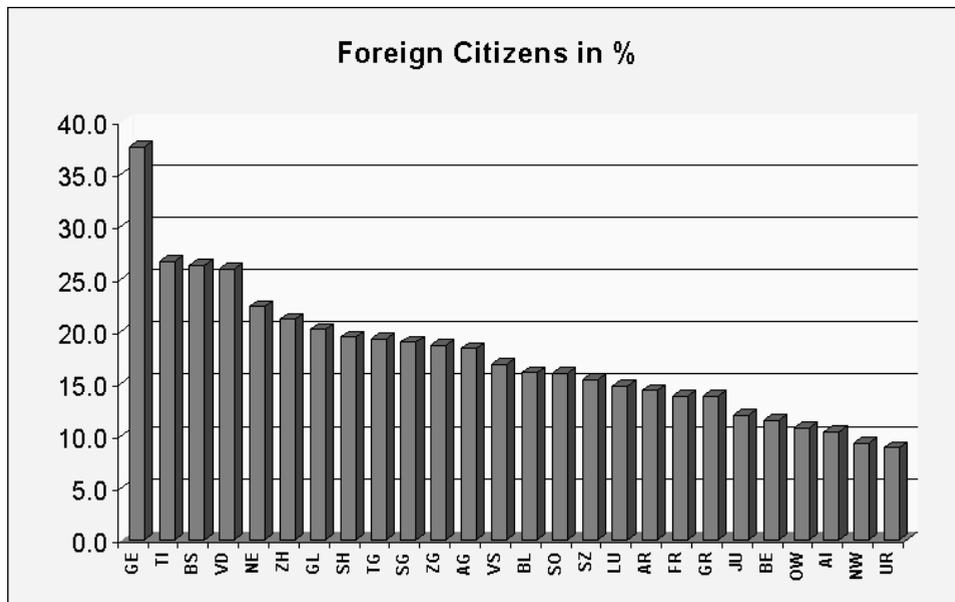
The three main places of residence of the respondents were Lausanne, Geneva and Zurich. There was a higher concentration of respondents living in Lausanne as most of them were either pursuing their PhDs or working as part of the scientific and academic staff at the EPFL. The presence of Indians in international organizations and multinational firms that have headquarters or representatives in Geneva may explain the higher concentration of skilled Indians in this city. Only one respondent lived in Zurich. However, this might not statistically reflect the real ratio of Indians residing in that city. One could assume that the ratio of highly skilled Indians living in Zurich should be more significant than reflected in this qualitative sample as it ranks first when considering the percentage of the foreign population by canton in Switzerland (see figure below) and hosts internationally renowned academic and research institutes which attract international students and researchers, including persons of Indian origin. Geneva and Lausanne were also main places of work for the persons in the sample.

Table 10. Place of residence

	Male		Female	
	Geneva	6	42.85	8
Lausanne	7	50	1	
Zurich	1	0.71		
Total	14			

Source: Dia, data collected during the 2007 survey.

Figure 1. Canton by foreign citizens



Source: <<http://www.about.ch/statistics/index.html>> (last consulted 10-03-2008).

Table 11. Place of work

	Male		Female	
	Geneva	6	42.85	7
Lausanne	6	42.85	1	11.11
Zurich	1	0.71		
Morges	1	0.71		
Temporarily unemployed			1	11.11
Total	14		9	

Source: Dia, data collected during the 2007 survey.

The ratio of Indians interviewed holding Swiss passports was quite low. When considering the distribution of the respondents by gender, a little over a quarter of the male respondents and a minority of the female respondents had Swiss citizenship. This group included scientists, researchers and academic staff that had spent over 20 years in Switzerland. The percentage of respondents who had C permits was low across the gender board. Among respondents in the sample who had C permits, there were second and third generation migrants who settled in Switzerland due to family reunification or professional relocation notably in international organizations. Most of the holders of a carte de legitimisation were working in international organizations and non-governmental organizations. They accounted for less than half of the total sample, of which the majority were women. Most of the respondents in the survey who had B permits were PhD students.

Table 12. Type of residence permit in Switzerland

	Male		Female	
Swiss passport	4	28.57	2	22.22
Carte de legitimisation	2	14.28	5	55.55
Permit C	4	28.57	1	11.11
B permit	4	28.57	1	11.11
Total	14		9	

Source: Dia, data collected during the 2007 survey.

The number of respondents who came to Switzerland very recently (less than two years) represented a minority of the total sample. Within this subgroup, more were women than men. This short duration migration may reflect student migration and the fact that Switzerland was the first residence country out of India for the PhD students. Almost half of the male respondents and a minority of the female respondents had lived in Switzerland for more than 18 years. This reflects long-term migration or permanent settlement of respondents; for these migrants, most expressed a dual sense of belonging and transnational identity.

Table 13. Length of stay in Switzerland

	Male		Female	
0-2	2	14.28	1	11.11
2-4	3	21.42	2	22.22
4-6	1	0.71	2	22.22
6-8			1	11.11
8-10			1	11.11
10-12				
12-14	2	14.28		
14-16				
16-18				
18-20	2	14.28	1	11.11
20-SPA	4	28.51	1	11.11
Total	14		9	

Source: Dia, data collected during the 2007 survey.

2.2 Causes of International Migration, Migrants' Paths and Migrants' Life

The bulk of this section is to scrutinize the emigration of Indian highly skilled migrants to Switzerland. This section is organized into the following sections: (i) the causes of skilled immigration in Switzerland, (ii) the reasons for choosing Switzerland and information source, (iii) migrants' paths and (iv) migrants' life.

2.2.1 Causes of International Skilled Migration

Search for scientific and academic achievement

Switzerland hosts some scientific and technological research institutes with excellent reputations (CERN, ETHZ and EPFL). Respondents noted that these institutes have gained international prestige in various scientific fields such as particle physics (CERN); chemical area of solar conversion and communication system (EPFL); and biotechnology (ETHZ).⁷ This could attract academics, scientists, researchers and students in search of scientific and academic achievement. The possibility of pursuing doctoral or post-doctoral programs was one of the key elements of Indian skilled emigration to Switzerland. This finding is in accordance with Mahroum's (2000, p. 374) observation relating to

7 The international prestige of a university and a research centre is often the result of an annual ranking elaborated by some institutions such as the University of Shanghai. Such ranking is based on the number of Nobel Prize winners, scientists and researchers' awards and achievements and the number of publications in scientifically renowned journals.

the importance of the excellent reputation of a research and academic institute in attracting foreign students: “[...] Centres of excellence remain global centres of scientific gravity that attract significant amount of talents from all over the world. [...] [T]he high reputation of an academic or scientific institution serves as magnet not only for local recruits but also internationally.”

CERN is the only laboratory in the world of its kind. In my field it's the premiere lab to be in.
[...]
(Physicist, female)

The first thing is after my PhD, I wanted to come to Zurich [...]. Zurich is internationally renowned because of its six or seven Nobel prize.
(Post-doctoral fellow, male)

EPFL is at the forefront in the chemical area of solar conversion.
(Chemist, male)

They are three Nobel prizes in this sector. My PhD supervisor is one of the biggest scientists in this field. Basically, it is the main reason I came here.
(PhD student, male)

Labour mobility, search of employment opportunities and family reunification

There is an intersection between student migration and labour migration. For instance, studying in Switzerland might increase the chances to work in the international labour market as many international agencies headquarter or have official representatives in this country. This marks the search for employment opportunities and labour mobility as one of the causes of Indian skilled emigration.⁸

What comes out is that labour mobility includes different schemes: students searching for employment in the international labour market; scientists and researchers recruited to academic and research institutes, highly skilled professionals being relocated within multinationals, consulates, embassies and international organizations, etc.

8 For further information about intersectionality between student and skilled labour migration, refer to Tremblay, K. (2005) “Academic mobility and immigration”, in *Journal of Studies in International Education*, Vol. 9 N° 3, Fall 196–228.

*Box 1: International labour mobility between relocation,
search for employment opportunities and family reunification*

Job offer

I got my MBA in India. After this degree, I realized that there are not many opportunities in India, so I moved to Europe to accept a better and more lucrative job (in my field). Also, I was young and single, wanted to explore.
(Manager, male)

Relocation

It was not my choice in 1980. [...] It was not part of my choice. The organization decided to transfer me to Geneva. It's transfer within the international organization. It was headquarters.
(Economist, male)

Family reunification

My husband joined the ITC and I just followed him. I just followed my husband, there was no choice. He was posted in the Indian mission and then hired by the UN.
(Professor of psychology, female)

Student migration versus labor migration

[...] Basically, I came as a student. I was based in London during 2 years. I moved to Switzerland and the reason was I was interested in conflict, migration. I did a certificate at Webster University. What brought me to Geneva is the Refugee Migration certificate program. So I came here on an educational basis. I was an intern at the Red Cross and then I got a job in September 1999. I have been in many positions since 1999. [...] One was to study and its place of international organizations. My studies were international relations. Geneva was very attractive to me in terms of plans. It was more to study and do internships to gain professional experience. My plan was to be here for 6 months. I was not aiming at seek employment. I got in touch with Webster University.
(Officer, female)

Social networks

A social network can be defined as a set of social relations that are critical in the migration process (the choice of the destination country, the information sources). Social networks include parents, spouses, friends and scientific and professional contacts. In addition, participating in scientific and professional associations and international conferences provided opportunities to emigrate in Switzerland. There is evidence in the literature to support the important role of social networks in international migration (Poros, 2001; Kearney, 1986; Portes, 1995; Massey et al., 1999; Vertovec and Cohen, 1999; Brettell, 2000). For instance, networks might help a migrant when looking for accommoda-

tion, job, etc. It might also connect a migrant with the country of origin and help alleviate solitude in a migrant's life.

A social network was one of the key elements for emigrating in Switzerland for a couple of interviewees:

Accidentally, I met someone Indian in London that was a researcher in Switzerland; I received from him an opportunity to be part of an initial research group.
(Chemist, male)

Actually, the research which we were interested in is everywhere. But the particular reason I came here is my professor, my ex-professor in India. He discussed with me about the opportunity of doing my PhD in Switzerland. Then I looked at the research and what's going on this group and so became interested. That's the whole reason. [...] My professor explained to me the research going on at EPFL.
(PhD student, male)

2.2.2 Reasons for Choosing Switzerland and Information Source

The following table presents the reasons for choosing Switzerland and the information source at the disposal of Indian professionals and students once in the country of destination.

Table 14. Reasons for choosing Switzerland

<i>Professional category</i>	<i>Information source</i>	<i>Reason of the choice of Switzerland</i>
Manager, staff at international organization	Company and friends	Professional relocation
PhD students / scientists, academics, physicians, and researchers	Referee, research programs, senior students, web site, scientific publication, scientific bilateral programs, etc.	Personal basis plus professional (post doc opportunities, financial reason, study plan and work plan, etc.)
	Spouse, parents and the conjoint workplace	Family reunification

Source: Dia, data collected during the 2007 survey.

As shown by the table, the main sources of inspiration for emigrating were career, mentor, teacher or senior, presence of family or friends in the host country. Khadria (2004, p. 27) found almost similar sources of inspiration in investigating the migration of Indian health professionals.

In conclusion, international skilled mobility is a complex combination of academic, social, economic and personal factors and determinants (Chang, 1992; Khadria, 2004, p. 10). Khadria (2004) highlighted business causes, family

reunification, employment, professional experience, additional higher education studies and professional relocation. Similarly, one of the findings of this survey is that highly skilled Indians in Switzerland were searching for better personal, scientific, academic, economic and professional prospects in Switzerland. There are specific rationales of Indian skilled mobility whether the interviewee is a PhD student (pursuing doctoral studies in higher education institutes); a scientist or researcher (opportunities in terms of scientific mobility such as visiting scholar programs or jobs in academic and research institutes); a professional working in embassies, diplomatic missions or international firms and organizations (work assignment, professional relocation) or whether the interviewee came to Switzerland for family reasons (family reunification).

2.2.3 Migration Paths

This qualitative research shows that many respondents lived in English speaking countries (U.K. and U.S.A.) before moving to Switzerland. This might reflect the importance of linguistic and historical compatibility in skilled Indians' decisions to emigrate (Srivastava R. and Sasikumar S.K., 2003, p. 14). A couple of interviewees (mainly staff from international organizations and managers, researchers and scientists) indicated that they moved to different places in the course of their international professional career. Respondents lived in other destinations such as Austria, Greece, the Middle East, Singapore and Ethiopia. This international circulation might provide multicultural, linguistic and work experience and a "capital mobility" which is defined as the predisposition of frequent travels abroad.⁹ A good example of this international circulation is stated by a senior specialist:

First movement was from India to Zambia, because my parents were based there. After finishing higher studies, I dabbled in teaching in a vocational training institute in Zambia, also taught part-time in a secondary school. I moved from India to Ethiopia (because of my parents), from Ethiopia I moved to the U.S.A. for 3 years to complete my PhD. Then back to Ethiopia, because I got a job there and for marital reasons. Then Switzerland in January 2004, I was transferred by my organization.
(Senior specialist, female)

9 For more information about the definition of the mobility capital, please refer to Sussex Centre for Migration Research, University of Sussex, and the Centre for Applied Population Research, University of Dundee (2004) *International student mobility* Report commissioned by HEFCE, SHEFC, HEFCW, DEL, DfES, U.K. Socrates Erasmus Council, HEURO, BUTEX and the British Council. July/30 Issue Paper Higher Education Funding Council for England (HEFCE): London <http://www.hefce.ac.U.K./pubs/hefce/2004/04_30/>.

Many PhD students stated that Switzerland was their first country outside India. A few mentioned that they lived in other destination countries (Germany, United Kingdom and United States of America) before coming to Switzerland.

Due to attractive immigration policy and professional opportunities, the U.S.A. is the preferred destination country for highly skilled Indians, especially IT and health workers. Because of historical and linguistic bonds, as well as similarities in their higher education systems and attractive immigration policy toward highly skilled people, the U.K. is the second main receiving country of Indian skilled migrants. Canada remains a traditional destination country for Indian migrants. Changing Indian migration patterns in the twenty first century are reflected in the diversification of receiving countries, including Germany, France, Japan, Belgium, etc. (Khadria, 2004, pp. 8, 22–23).

The global competition for skilled labour and the ensuing conducive immigration policies have facilitated the international mobility of highly skilled workers, which are described as globe trotters moving to different places in search of greener pastures (Mahroum, 2000). The international circulation as evidenced by frequent travels abroad and multiple places of settlement and resettlement of skilled labour migrants challenges the permanent settlement migration paradigm underlying most studies and research about international migration:

From a research perspective, we have to confront the situation that the bulk of our international migration data collection, much of our empirical knowledge and theory is anchored in a permanent settlement migration paradigm. We need to rethink our data collection systems regarding migration flows that often have failed to capture non-permanent migrations, or limit the amount of detail sought regarding them, compared with avowedly permanent moves. (Hugo, 2003)

2.2.4 Daily Life Experience, Living and Working Conditions of Highly Skilled Indians in Switzerland

This section provides an overview of a working day of highly skilled Indians. It also analyses the first experience in Switzerland, the strategies in order to balance work and family responsibilities and the integration in the Swiss society.

An overview of a working day of skilled Indians interviewed

The daily professional activities of a scientist, researcher and PhD student are related to teaching and research activities. Scientists and researchers are involved in research, teaching and monitoring PhD and post doctoral fellows. Daily activities of PhD students and Postdoctoral fellows are studies, experiments and teaching (as assistants). The daily activities of a manager (customer

relations, sales or IT programs on software development) are ensuring the deliverability of products, research, data collection and planning, budget controlling, coordinating between local staff and outsourcing, dealing with specific regions (Middle East, Central Asia, Africa and Eastern Regions).

A working day of a professional serving in an international organization is related to policy advice, liaising and networking, research and publication. A senior professional task includes policymaking, monitoring research, reviewing and editing publications. A junior professional is involved in research, capacity building and awareness raising issues.

Scientists and academics indicated they usually come to work around 8 or 8h30. Many PhD students interviewed have long working hours and even work during weekends. Most of them came to Switzerland one or two years ago. They live alone, have few friends in Switzerland, allocate extensive time to study and research and hardly participate to socializing or leisure activities due to time constraints.

Living in Switzerland: first experiences; constraints, disillusionment and coping strategies

Many skilled Indians interviewed stated their first experiences in Switzerland were “fascinating,” “nice,” “fantastic,” “good” and “enjoyable.” The key elements of such a positive experience were “no major problems in settling,” “nice work environment,” “familiarity of Swiss colleagues with English,” “social networks,” “support from colleagues and friends.” Alternatively, language problems, lack of familiarity with Swiss realities (food, climate, etc.), and the fact that Switzerland was the first experience abroad were some of the main constraints for a couple of PhD students during their first period in this country.

A couple of employees in multinational firms and international organizations found their first experience in the Swiss society burdensome. There was a shift in their lifestyle (housing problems, difficulty hiring domestic workers, etc.). The lack of friendship and social relations, loneliness, linguistic barriers, long working hours and housing problems were main hindrances to their social lives.

A respondent voiced constraints related to renewing residence permit and continuous precarious employment:

The first year, my father died. I came in August and he died in November. And then it was a struggle. A struggle to find a job started... Especially with the Swiss authorities. I had difficulties finding a visa because they were mean. Contrôle de l’Habitant: they were most unhelpful... I worked in the conference service with a messenger, replacing this messenger, distribution, whatever job to avoid Contrôle de l’habitant because I was working even with the break. The condition for me to stay here was to prove that I was working.

(Finance assistant, male)

A female respondent stated that she had the feeling she had to work hard and be outstanding in order to be respected by her employer:

Being a woman and coming from a developing country, you have to have an edge over every equally qualified European. I had to work doubly hard. That was really the challenge. Now I am a [permanent] staff... but this happened only 5 years ago, for 15 years I had short term contracts.

Another obstacle mentioned by a cancer pathologist interviewed was the lack of recognition of diplomas in the field of medicine. Socializing and networking, joining Indian associations, language courses, support from colleagues and friends and participating in social and cultural events such as children's school related activities were some of the coping strategies used by a couple of interviewees to alleviate the constraints in their first periods in Switzerland.

Conciliating work and private/family life

On the one hand, there are many constraints for balancing work and family responsibilities. They include extensive travels, long working hours and lack of social support from family members and friends.

A respondent noted:

Demanding. Profession demands 80 hours a week and my family wants 80 hours a week. Very big juggling act.
(Physicist, female)

Another interviewee indicated:

The difficulty as an immigrant is that we miss our family here. If we were to live in India, next to our family, then we could have had a lot more support from family members. Here we have to depend on our friends. My colleagues, who are Swiss, with their grandparents around, get a lot of help, which is what we miss here.
(Sales manager, male)

On the other hand, support from family members and friends and facilities such as day-care centres, family friendly policies at the workplace, good transportation systems, flexible working time, holidays and maternity leave and social arrangements can help conciliate work and family responsibilities:

I think the environment is quite relaxed. For example: working hours. I can go home any time I want to be with my family. There is no strict rule.
(PhD student, male)

Integration in the Swiss society

Some respondents were delighted about their life in Switzerland and thought they were very well integrated in the Swiss society. They argued that they had friends and social relationships. They were comfortable with the local language; had good exposure to the local culture and lived in a friendly environment, which helped them easily integrate the Swiss community.

Other respondents stated that they were “more or less” integrated. They indicated that they had more contact with international groups than with Swiss people. They socialized more often with colleagues at work who belonged to international groups. They reported language problems and felt no need to speak French or German fluently as English was used in their work environment. In this category is staff working in international organizations, multinational firms, diplomatic missions and embassies.

There were interviewees who believed they were not integrated in Swiss society. They pointed out a range of unfavourable circumstances and factors such as lack of time, lack of awareness of Swiss culture, constraining Swiss procedures and laws, language barriers, divides between the Swiss society and the international groups. Several mentioned that they were confined to their international work environment. A few indicated they did not feel the need to be integrated into Swiss society. Time constraints coupled with family responsibilities limited time for Swiss social and cultural activities.

To sum up, a migrant’s living experience is determined by a host of social, economic, cultural, spatial and human circumstances and factors. Respondents strategised how to better conciliate work, personal and family life; and how to get used to Swiss realities whilst *entrenching* “the feeling of India” in their everyday lives. Most of the respondents found their living and working conditions decent and their Swiss experience fascinating. According to interviewees social integration depends on an array of elements such as the social and economic conditions, social relations and getting used to social and cultural realities of the host country. In this regard, there are multiple forms of adaptation or integration in the host society and favourable and unfavourable circumstances for migrant’s integration rather than a linear conception of migrant’s integration (Bolzman et al., 2003).

3. Skilled Diaspora, Transnationalism and Brain Gain: Is the Indian Skilled Diaspora in Switzerland a Catalyst of Scientific, Technological, Social and Economic Development of the Country of Origin?

The Indian skilled diaspora's contribution to economic, scientific and technological development of their homeland, especially Indian nationals living in the U.S.A. and the U.K. has been investigated by many scholars and researchers. There are fascinating success stories in the literature related to the Indian diaspora (see for instance Khadria, 2006). First and foremost, this chapter analyses the policies and measures implemented at the governmental level in the field of skilled diaspora. Secondly, it will analyse the nature, opportunities and limitations of the brain gain practices and mechanisms initiated by highly skilled Indians in Switzerland.

3.1 Indian Skilled Diaspora and Governmental Policies Toward Highly Skilled Indian Abroad

The Indian scientific and technological diaspora is represented in different parts of the world, some of the members having gained international repute in their respective fields. The Indian scientific and technological diaspora is organized into alumni based and professional networks which are mechanisms for their participation in the development of the country of origin and deepen linkages with the country of origin and the country of destination. Scientists and technologists of Indian origin (STIOs) have provided valuable inputs for India in various fields and have enabled several IT and biotechnology joint ventures. They also contribute to the student and scientific mobility of local Indians by placing them in academic-research institutions abroad and serve as members of advisory panels in knowledge intensive sectors. Bilateral scientific and technological cooperation with the countries (U.S.A., Europe and Asia) are ways to connect scientific and technological diaspora to the country of origin (Ministry of External Affairs).

Some of the members of the Indian diaspora are likely to return to the country of origin and invest in science, technology and business and help local scientists and researchers. Despite infrastructure and bureaucratic problems, the IT industry has been remarkably expanding over the years. Besides the successful experience of local Indian IT professionals working in India, one of the key elements of the IT expansion was the return of Indian IT professionals

abroad that invested in IT companies, IT R&D, IT teaching and training and outsourcing. By mentoring early-stage companies and by building confidence with major U.S.A. corporations to ensure investment and outsourcing activities, the Indian IT diaspora played a critical role in economic growth, science and technology (Pandey et al., 2006).

Policymakers are increasingly recognizing the positive effects of migration on Indian social and economic development. Prime Minister Atal Behari in his address during the 90th session of Indian Science Congress in 2003 accentuated the major role of the Indian scientific and technological diaspora in sustaining Indian economic growth and making India a giant in the realm of scientific and technological research. R&D partnerships with leading corporations could generate foreign direct investment and scientific and technological opportunities that could be useful for the country's overall development, with the proviso that lack of funding of R&D and negative effects of internal brain drain¹⁰ and bureaucratic constraints are addressed. Furthermore, connecting the skilled diaspora to the country of origin by enabling highly skilled Indians abroad to work in Indian scientific and technology institutions and promoting their return to the country of origin is critical to the national development (PM Appeals, 2003).

A special minister is in charge of migration affairs and a "S&T Professionals of Indian Diaspora – Website"¹¹ has been dedicated to scientists and technologists originally from India residing abroad, an initiative of the Indian Ministry of Science & Technology (Department of Science & Technology – DST). This is an integral part of the overall Indian Diaspora initiative of the Government of India and the Ministry of External Affairs (See: good practice n° 1: Scientists and Technologists of Indian Origin based abroad (STIOs), Annex 1) Moreover, the government is trying to attract highly skilled Indians by increasing salaries and offering them financial, property, banking, and investment incentives. There are also government policies aimed at helping the Indian highly skilled abroad "to set up research and scientific and technological initiatives" and to create new business companies and start ups. To motivate

10 "We need to examine why a career in science is not considered worthwhile by so many of our talented younger scientists. Whatever the reason we must face this issue squarely by taking concrete steps to give promising scientists and technologists the necessary opportunities, recognition, standing, and adequate material compensation," he said. In PM Appeals to Scientific Diaspora to Return <http://www.financialexpress.com/old/fe_full_story.php?content_id=25229>.

11 Government of India Ministry of Comm. & Information Technology, S & T Professionals of Indian Diaspora (<<http://stio.nic.in>>).

researchers and other talented Indians abroad and competitive, “[...] salaries have been increased three of four times” (Post-doc fellow, male)¹².

Furthermore, the Transfer of Knowledge Through Expatriate Nationals (TOKTEN) India program has connected 650 STIOs with 250 Indian institutions from 1998–2001 in areas such as high performance construction materials, drug, diagnostics and medical instrumentation and agricultural biotechnology. The Report of the High Level Committee of the Indian Diaspora set up some recommendations for mobilizing STIOs toward the development of the country of origin. Among the recommendations are the launching and management of a website dedicated to STIOs, the establishment of joint venture companies based on technologies sourced by STIOs and enabling participation of STIOs as visiting scholars in Indian based scientific and technological institutions (Ministry of External Affairs).

3.2 Indian Skilled Diaspora in Switzerland as a Catalyst for Scientific, Technological, Social and Economic Development of India

This section tries to address the knowledge gaps relating to the contribution of skilled Indians in Switzerland as far as the development of the country of origin is concerned. What stands out is that skilled Indians maintain various links (economic, social, cultural, scientific, etc.) with the country of origin, the host country and at the international level. In the following sections, we will analyse the nature of these scientific and professional contacts and exchanges with the homeland.

3.2.1 Contacts with the Country of Origin

The scientific and professional contacts and exchanges with India include joint research projects and publications; student and researcher exchange programs; contacts with professors and juniors in similar fields; short term visits to India and outsourcing opportunities mainly in software development.

PhD students and scientists try to maintain contacts with their former schools and institutes in India. Similarly, professionals keep contact with local counterparts working in affiliate companies and back offices in India.

12 For further information, see the website Government of India Ministry of Comm. & Information Technology, S & T Professionals of Indian Diaspora <<http://stio.nic.in>> [Last retrieved 13-03-2008] and Ministry of External Affairs Foreign Secretary's Office (2001) Report of the High Level Committee of Indian Diaspora <<http://indiandiaspora.nic.in>>.

Moreover, one should highlight the sociological dimension of the contacts with the country of origin (friendship, family ties, etc.). All the respondents maintain social links (telephone calls, emails exchanges, private visits, remittance transfer, etc.) with families and communities in India. Several respondents stated that they are connected to social and economic realities in the country of origin and help improve the living conditions of local counterparts.

Private visits to India tend to be on a regular basis (annual or biannual). Family members living in India might also visit their counterparts living in Switzerland. Few respondents in this survey stated that they financially remit on a regular basis. Remittance transfer seems to be rare and occasional. Respondents asserted that they also sent occasionally gifts to families and friends in India.

Business links in India were also noted. These include owning property, financial investments, outsourcing endeavours, technical support to firms and research partnerships with the private sector.

3.2.2 Contacts with the Country of Destination

Many highly skilled migrants, especially scientists and researchers, develop scientific and professional exchanges with Swiss colleagues through research projects and publications, professional associations, activities in the workplace, neighbourhood events and school activities with their children:

My son grew up here, so I have been through every conservatoire, and public happenings in Switzerland. I have been giving séances in the school (science for kids, experiments), did MBA in Switzerland, have my DSc from University of Geneva. I am very well integrated. I am involved in the politics. Professionally, at CERN all European countries are equal; Switzerland has its place in CERN. CERN is a European institute not a Swiss institute.
(Physicist, female)

Respondents working in international organizations, firms and diplomatic missions stated that they have little interaction with the Swiss and socialize more often with people from international groups (UN system, embassies, diplomatic missions, multinational firms) who were more often their colleagues at work. Those working at the Swiss level (Swiss companies, Swiss academic and research institutes) tended to more easily create contacts with Swiss people than those serving in multinationals and international organizations:

[...] I teach language. I teach English, so that helps me at least know some students. I also take French classes and meet international people there.
(Professor of psychology, female)

Several PhD students, scientists and researchers interviewed stated that they are members of Swiss scientific associations such as Swiss Chemical Association. These scientific associations organize various activities (symposia, conferences, publications and joint projects, etc.).

3.2.3 *Contacts at Regional and International Level*

A couple of interviewees stated that travel missions, conferences, workshops and visiting scholar programs are occasions to develop regional and international scientific and professional contacts. Skilled people working in international companies can extend local, regional and international professional contacts with different member states or different markets in the world:

[...] I travel a lot for conferences. I have been giving workshops and teaching at schools in different places in Italy school of Trieste, for South Asian countries, etc... I have done several séances there. I have one Sri Lankan student who is coming to do his PhD with me. In Israel, Canada, the U.S.A., India. I also have students visiting from Colombia, from India, from Iran, Thailand, and Egypt – non member state students.

(Physicist, female)

Professionally, I have much contact with the regions I deal with. We have factories in the U.K., Germany, and a commercial operations centre in Barcelona. I work with all types of people and areas... [company name] has factories all over; headquarters is in Palo Alto, California... I have meetings, travel often to the U.S.A., Europe, Japan, Malaysia and China.

(Sales manager, male)

Suitable employment and institutional support can help develop international scientific and professional contacts, whereas unemployment and lack of institutional support might hinder scientific mobility. For instance, a respondent who is a cancer pathologist stated that she could not participate in international scientific meetings outside Switzerland due to unemployment and lack of institutional support.

3.2.4 *Knowledge Transfer*

A couple of interviewees indicated that they are involved in knowledge transfer with local colleagues in India on issues such as business know-how, disaster management, learning and teaching social psychology, communication theory, biotechnology, nuclear physics, econometrics and statistics, history and international relations, migration policies, etc. An institute of biotechnology has been created by a respondent who recently went back to India after completing postdoctoral studies in microbiology. This institute can be considered a good practice to enhance local scientific and technological capabilities through

knowledge transfer. (See: good practice n° 2: KIIT School of Biotechnology at the KIIT University in Orissa, Annex 1).

A few respondents mentioned being in contact with local researchers and scientists either on a formal or informal basis and working on research projects and scientific publications. A respondent stated:

Lots of contacts and exchanges: joint projects; sometimes even in not funded research projects (only for personal interest). I receive students and researchers from India. I visit Indian research institutions. We do publications together. I send BA and PhD students to India.
(Chemist / scientific project manager, male)

Moreover, during private visits in the country of origin, lectures, conferences, training or seminars are organized occasionally by PhD students, scientists and researchers.

3.2.5 Bilateral Research, North-South Research Partnerships and Research & Development

An Indo-Swiss Academic Alliance (ISAA) involving Indian and Swiss universities has been established to strengthen scientific and technological cooperation between India and Switzerland. This Indo-Swiss Academic Alliance is jointly financed by the two countries for the next four years; each university is being assigned specific responsibilities for the success of this bilateral scientific and technological partnership. The Memorandum of Understanding (MOU) is devoted to enhancing scientific and technological cooperation between the two countries through academic (science and engineering) cooperation in the realm of research & development, education, transfer of technology and dissemination of knowledge. The MOU intends to promote faculty exchange in terms of expertise, lectures and common research themes for mutual partnership; joint research projects and programs between universities of the two countries; graduate student exchange programs in science, technology and engineering with a focus on cultural diversity and fund mobilization to support scientific and technological endeavours.

The ISAA is composed by the following institutes: the EPFL; Swiss Federal Institute of Technology Zurich (ETHZ); Indian Institute of Technology, Bombay (IITB); Indian Institute of Technology, Delhi (IITD); Indian Institute of Technology, Gauhati (IITG); Indian Institute of Technology, Kanpur (IITK); Indian Institute of Technology, Kharagpur (IITKGP); Indian Institute of Technology, Madras (IITM) and Indian Institute of Technology, Roorkee (IITR). A Governing Board has been formed to manage the overall activities of ISAA. The Governing Board implements coherent visions, goals and strategies for the success of ISAA. The EPFL acts as a Leading House for the Indo-Swiss scien-

tific and technological cooperation. Various areas are identified for bilateral scientific and technological cooperation including computer science, telecommunication, life sciences and electrical engineering.

There are tools to enhance collaboration and cooperation between higher education institutes of India and Switzerland. These include: Faculty Exchange Fellowship (FEF) up to 1 to 3 months; research grants to support masters' and doctoral students involved in joint research; Graduate Education Fellowships for individual masters' and doctoral students to pursue their studies in the other country; IITR, EPFL & ETHZ undergraduate students to support undergraduate biotechnology students from IITs to complete their masters at EPFL/ETHZ or students from EPFL/ETHZ to complete their final year of their master program to IIT or eventually one year doctoral studies in the other country.¹³ There are various bilateral scientific programs, hosted by the EPFL, which serves as the Leading House for Swiss bilateral scientific cooperation with India. These include:

The Indo Swiss Bilateral Research Initiative (ISBRI)

The Indo Swiss Bilateral Research Initiative (ISBRI) is devoted to enhancing research partnerships between Switzerland and India by providing grants to Swiss and Indian academic staff and Ph.D. students and facilitating identification of potential scientific partnerships on both sides. The grants consist of providing funding that covers living expenses, accommodation and a share of travel costs for short term research visits up to one month or long term research visits for a duration of three months. EPFL is the coordinating and executing agency of the ISBRI which has an advisory board. The main donor is the Swiss State Secretariat for Education and Research (SER).¹⁴

The Indo-Swiss collaboration in Biotechnology

Launched in 1974 jointly by the Department of Biotechnology of India and the Swiss Agency for Development and Cooperation, the Indo-Swiss collaboration in Biotechnology (ISCB)¹⁵ aims to promote scientific cooperation between India and Switzerland in the field of biotechnology and technology transfer. One of the objectives of the ISCB program is to fight against poverty by "increasing productivity of wheat and pulses."

13 Indo-Swiss Academic Alliance – ISAA EPFL ETHZ Indian Institute of Technology Roorkee Memorandum of Understanding for the Creation of ISAA <<http://www.iitr.ac.in/living/mou/epfl.htm>>.

14 The Indo Swiss Bilateral Research Initiative (ISBRI) <<http://vpri.epfl.ch/page63138.html>>.

15 The Indo-Swiss collaboration in Biotechnology <<http://iscb.epfl.ch/>>.

The ISCB is hosted by the Cooperation unit of the EPFL. Facilitating the exchange of information and promoting a synergy between academia, government and industry are two of the main tasks of the management unit of the program. The ISCB Program Management is involved in various activities, including identifying present and future areas of interest in the field of biotechnology; formulation, implementation, monitoring and evaluation of projects; organizing scientific events (meetings and workshops); promoting technology transfer; awareness raising campaigns on issues related to biodiversity, bio safety and intellectual property rights and financial resource management.

The two main funding agencies are the SDC (CHF 4.5 million) and the DBT (CHF 2.3 million). More than 150 scientists are working on the current ISCB research projects. Two key research areas of ISCB are agriculture and environment that are critical for the development of rural and urban cities in India. The key areas identified for the bilateral scientific program are the following: disease resistance in wheat; pest control in pulses; degradation and monitoring of pesticides; improvement of soil quality and transsectoral topics. (See: good practice n° 3: The Indo-Swiss Collaboration in Biotechnology (ISCB), Annex 1).

The Indo-Swiss Joint Research Program (ISJRP)

The ISJRP¹⁶ is a joint framework to enhance bilateral scientific programs between India and Switzerland. Launched in 2004, it strives to facilitate scientific exchanges between the two countries, especially in information technology and life sciences. The main donors of the ISJRP project are the Department for Science and Technology (DST) and the State Secretariat for Education and Research (SFR), with EPFL representing the leading house and the Swiss National Science Foundation acting as the funding agency.

The ISJRP mandate is the following: funding innovative bilateral research projects; promoting bilateral science exchange and collaboration; enabling a favourable environment for the training of young Swiss and Indian scientists; encouraging sustainable contacts between Indian and Swiss leading research institutes; creating a supportive environment for possible synergies and knowledge management.

Few initiatives are related to North-South research partnerships. These include a CERN research project about detecting particles and involving four national research institutions, both North and South, and coordinated by an Indian scientist specialized in particle physics; an ETHZ project related to health

16 The Indo-Swiss Joint Research Program (ISJRP) <<http://indo-swiss.epfl.ch/>>.

and ageing; and drinking water and technology on safe drinking with Max Planck Institute.

A respondent explained the reasons for the failure of the R & D project with India:

[...] Ten years ago they brought people from India in an exchange program but from India it has not worked well, the results of investment in R&D back there were not very good. I am disappointed about that. Indian institutions were not very helpful, finances and funds were missing, there was sometimes no follow up.

(Chemist, male, Indian)

Most of the PhD students argued that they would be interested in carrying out R & D activities oriented to the country of origin. According to a couple of these interviewees, some of their current doctoral and post-doctoral studies could lead to R & D applications and impact scientific, technological and economic development of India.

Box 2. Some examples of PhD student' thesis and possible R & D application

Both in education and practice. It's about theoretical telecommunication. Because in India or third world countries, telecommunication follows Europe and U.S.A. standards. If we have our own standards and people who know, probably we benefit much more economically and socially.

(PhD student, male)

Basically, the research field I am working on is becoming very important. I can help indirectly but making research indirectly. It's about magnetic resonance. We do NMRI.

(PhD student, male)

There is no direct impact. But indirectly, I'm going to India. That means it will have some scientific impact. I learn something from here, which I can implement. What I see I can go to India with. My PhD is about developing new reaction methodology.

(PhD student, male)

3.2.6 Outsourcing and Social Development Related Activities

The support of Indian executives working in international leading corporations has enabled outsourcing and off-shoring opportunities for local Indian institutions, hiring a large pool of low cost engineers and people with doctorates (Pandey et al., 2006).

This qualitative survey shows that initiatives are being carried out by a few Indian managers in the survey to bring business opportunities to their local counterparts, i.e. new markets, outsourcing and promotion of Indian products

and goods on the international markets. Moreover, training activities on business know – how and on the consumer goods business are also undertaken to enhance business capabilities of the Indian local counterparts.

Few social activities were identified. These include children’s education (fundraising and donations (awards, furniture, etc.), care and support during natural catastrophes and improving health conditions in rural areas (building a dispensary and donating medicines). Socio-cultural events (spiritual celebration, charity foundations, cooking, festivals, etc.) are also organized in Switzerland to promote Indian culture and solidarity during natural calamities.

Box 3. Social development initiatives

[...] I take care of my older parents. In India, I will earn little for my Post doc. I have got social responsibilities. I belong to a poor village. I have taken social responsibilities. I am building a dispensary in my village...There is no hospital. I can spend the savings to build hospitals. I understand my social responsibilities. My parents are old. That’s why I want to return to help them... Social projects like developing small hospitals.

(Post-doctoral fellow, male)

We did some fundraising. Where I did my studies in an engineering institute, we raised money to build something new in the institute. We raised money here with friends and from abroad. Overall, we raised CHF 75 000 joint efforts.

(IT manager, male)

I tried to help my primary school where I studied in India in terms of money. It’s a donation from what I earn.

(PhD student, male)

More reactive type of work, where there is a natural calamity or something. Lots of initiative to provide assistance in different fields i.e. helping India where there is a big need.

(Sales manager, male)

In conclusion, as evidenced by Séguin, Singer and Daar (2006), highly skilled migrants have a “...feeling of moral responsibility or need to ‘give back’” to the country of origin. This finding concurs with the results of our qualitative survey. There is a burgeoning Indian scientific and technological diaspora in Switzerland that has ambitions to help the development of their homeland. The scientists, engineers, researchers and IT managers interviewed carried out activities in the realm of knowledge transfer, R&D and bilateral research partnerships that could help strengthen scientific and technological capabilities and the social and economic development of the country of origin. The knowledge

transfer activities are related to internet based exchange of information, joint scientific publications, visiting professors, training, research and teaching activities. The knowledge transfer practices carried out by most of the interviewees are often on a one to one basis and through informal channels, rarely through scientific diaspora networks or institutional mechanisms. Very few of the respondents were involved in R&D and bilateral and North-South research programs and projects, and scientific and technological capacity building projects in benefit of the country of origin. A few of the interviewees were interested in outsourcing and in donations and fundraising to former schools, dispensaries and institutes, or support in case of natural catastrophes.

3.3 Highly Skilled Indians' Involvement in Diaspora Networks and scientific and professional associations

This section tries to address the knowledge gaps relating to the contribution of skilled Indians in Switzerland as far as the development of the country of origin is concerned. What stands out is that skilled Indians maintain various links (economic, social, cultural, scientific, etc.) with the country of origin, the host country and at the international level. In the following sections, we will analyse the nature of these scientific and professional contacts and exchanges with the homeland.

Scientific and professional associations

Many respondents indicated that they are members of international scientific and professional associations. These include the Institute of Electrical and Electronical Engineers (IEEE), the Project Management Institute¹⁷; Forum for Engineers¹⁸, European Chemical Society¹⁹ and the American Chemical Association. Some of these scientific and professional associations have branches in different parts of the world. For instance, the Project Management Institute has international offices in many countries. The Engineers Forum Link has connections with the Swiss Chamber of Commerce. Its objectives are to seek investment opportunities and provide computer skills and technical know-how to schools.

These scientific and professional associations operate in various areas such as teaching and training on computer science, management and engineering.

17 <<http://www.pmi.org/Pages/default.aspx>>.

18 <<http://www.forumengineers.com>>.

19 <<http://ecs.chim.ucl.ac.be>>.

They are also active in “public policy debate” (debate, conferences) and knowledge diffusion (access to library, information source). Their activities include also “looking for investment opportunities and providing technical assistance to schools in terms of computer skills and technical know-how” (see Table 3).

Table 3. Scientific and professional associations and institutions oriented toward India

<i>Title of the association and contact address</i>	<i>Objectives</i>	<i>Position of the interviewee</i>
Association of Microbiologists in India (AMI) http://www.ami-india.org/ami.html	Microbiology researchers contributing to the advancement of microbiology sciences in India	Individual member
Kalinga Institute of Social sciences (KISS) http://www.kissorissa.org	Providing education (teachers, learning) to tribal people by sponsoring 3000 children’s education for free. Providing them skills (management, computer science and engineering) in order to help them earn money.	Individual member
Indian Society of Labour Economics http://www.isleijle.org	Promoting scientific studies of labour and related matters	Individual member
Indian International Centre National Association of Delhi http://www.iicdelhi.nic.in/index.asp	Organizing meetings, debates, cultural programs (theatre, festivals, etc.), conferences, and exchange of knowledge for a better understanding of amity between the different communities of the world. Wide range of research project including the Diaspora Project (2000-2001). Networks of professionals and artists.	Individual member
International Committee of Electrical Engineers and Electronics (IEEE) Indian section http://ewh.ieee.org/r10/india_council/index.html	Working toward getting their conferences in India. For the advancement of science internationally. Conferences in science. Medicine, electronics, computing. Many courses	Individual member

Table 4: Cultural and social associations based in Switzerland

<i>Name of the association</i>	<i>Membership Status</i>	<i>Objectives and activities</i>	<i>Challenges and constraints</i>
Indian Association of Lausanne www.geocities.com/ialausanne Contact : Mme Uthira Kalyanasundaram, présidente. Tel. 021 701 38 21	Founding member and president	Promoting networking and socializing. Social and cultural association. Organizing different cultural and social events related to Indian culture. Forum for all Indian nationals and those interested in Indian culture. Get together during religious festivals, etc. picnics. Giving people a feeling of India. Various member (EPFL staff, student, private sector, business world, ...)	Low number of participants. Different local languages even if people come from the same country. Personal differences and different views. Political interference. Voluntary organizations. Difficulty capturing the entire Indian community in Switzerland. Not enough membership. Not enough weight for the organization
Indian Association of Geneva http://www.india-geneva.com/newweb/iag-home.html	Individual Member	Arranging celebration for all festivals and cultural programs and food, socializing. Maintaining roots and social ties. Cultural and social activities	Lack of time of members and Indian diasporas due to professional and family responsibilities. Taking the lead due to lack of time to spend leading these organizations
Art of Living Foundation http://www.artofliving.org	Individual member	Spiritual group / organization Sri Ravi Shankar offices in 144 countries. Fund raising for calamities, etc. (school in Bangalore funded by the association; selling during festivals events, food, etc.)	
World Malayalee Council http://www.worldmalayalee.org/ ²⁰	Individual member	Cultural and social activities	Taking the lead due to lack of time to spend leading these organizations
Indian Students Association Zurich (InSAZ) http://www.insaz.ethz.ch/statutes.html	Individual member	Serve as a medium for Indian students and staff at the Swiss Federal Institute of Technology Zurich (ETHZ), the university of Zurich (UNIZH) and other research and academic institutes in Switzerland and individuals interested in India	

20 The World Malyalees Youth Forum Switzerland has gathered 150 youths representing the second generation of Malyalees in Switzerland on the occasion of Youth Festivals, Wintersports

Cultural and social associations

These associations organise different activities: meetings, debates, theatre and festivals, picnics and food, festivals, religious celebrations, other networking and socializing activities. Their objective is to develop solidarity and friendship among Indians living in Switzerland and also to create “a feeling of India” by maintaining links with the country of origin through cultural and social activities. They also serve to connect diasporas members.

These associations were built merely for social and cultural purposes:

It's just a social association and has no economic role, otherwise it would be counterproductive; it's not a chamber of commerce.

(Scientist/scientific project manager; male)

They may provide financial support to local communities in India in case of emergencies and natural disasters (fundraising during a big earthquake, tsunami).

Reasons for lack of participation in associations

Lack of time due to family and/or professional responsibilities, lack of interest in the programs and activities of these associations, lack of information about Indian associations are reasons, among others, for the lack of participation in Indian associations in Switzerland.

Box 4. Reasons for not participating in associations

lack of time due to professional and/or family responsibilities:

I hardly found the time to have a life before marrying. And since then, my quality time is limited. I have to take care of my son.

(Spokeswoman, female)

lack of interest in the programs and activities of the associations

Well, I have not been very excited by the kinds of things they are doing. If ever something comes up that interest me, then maybe. I think its mainly cultural activities, song, dance, film programs.

(Professor of psychology, female)

Day and Summersports, etc. This council has international branches in various parts of the world and youth wings in Switzerland (Basel, Zurich and Tessin). The objective is to help Malayalee communities better integrate in Switzerland and promote mutual understanding between this community and Swiss people whilst making them well rooted in their Malyalee cultural and social heritage. See Augustine Paranikulangara reports for Kaumudi Europe Email [augustine_parani@yahoo.co.in] <<http://www.kaumudi.com/LONDON/swismon.stm>>.

lack of information about Indian association based in Switzerland

There is no association which I know. I don't have any contact with them. I don't have time to participate.

(PhD student/assistant, male)

Most associations function on a non-profit and voluntary basis. Few are granted funds and institutional support. The institutions supporting these associations listed by respondents are the Canton of Vaud, the Indian embassy, the Indian mission, permanent consulate and the EPFL.

Skilled diaspora, brain gain enabling and hindering factors: strategies, difficulties, favourable circumstances and lessons learned

Saxenian's study (1999) underscored the role of international professional networks in facilitating repatriation and brain circulation. The Indian highly skilled abroad (notably in the U.S.A.) attract business opportunities and mentor local counterparts to contribute to the international success of Indian domestic entrepreneurs and companies.

The successful experience of the Indian knowledge diaspora in the U.S.A. was due to a set of favourable elements that cannot be translated to many developing countries. Among these enabling elements are the longstanding tradition of mathematics, science and education in India; the great emphasis on higher education and the large pool of well trained scientific and technological graduates per year; the lasting hands-off policies relating to services (IT, business process outsourcing, knowledge process outsourcing and medical tourism). In addition the following are also favourable: the large scale of highly skilled Indians abroad, scientific, technological and business networks; influential people within the Indian diaspora and the beneficial links between scientists and professionals abroad and their local counterparts, plus the ensuing partnerships in various fields (Pandey et al., 2006: 95).

According to Kapur (2001) quoted in Pandey et al. (2006, p. 64), the Indian diaspora was part of "...the projection of coherent, appealing, and progressive identity [...], which signals an image of prosperity and progress to potential investors and consumers."

Several respondents indicated their desire to contribute to the development of India and thought their work experience might be useful. The majority of the Indian highly skilled respondents are interested in carrying out brain gain initiatives. A few mentioned concrete brain gain initiatives. Many PhD students asserted that they are interested in brain gain mechanisms, but they were not in a position to carry them out or they did not have the institutional credibility and support.

To strengthen skilled diaspora initiatives, it is important to explore the reasons of the failure or success of brain gain initiatives. The following section examines the strategies, difficulties, favourable circumstances and main lessons to be learnt with regard to these brain gain mechanisms.

Strategies

We identify the following strategies with regard to brain gain mechanisms: one to one strategy; network strategy and strategies combining the two.

One to one strategies pertain to individual initiatives, whether one lacks institutional support or whether one cannot carry out brain gain initiatives on an official level. Most of the individual initiatives are related to informal exchanges of information (exchange of new ideas with friends, providing information to junior students, contacts with former professors in India through the internet), and training and lectures during private visits in India.

The highly skilled interviewed used various words and expressions regarding social networks: “networking,” “face to face contact,” “human element,” “personal network,” “lots of contacts,” “friends,” “professional associations,” “contacts with Indian and international groups.”

A couple of respondents stated that they combined both individual and network strategies to initiate some activities such as guest lectures, scientific conferences during private visits, student and visiting researcher programs, fundraising, joint research projects, joint publications with local counterparts. According to one interviewee, strong individual commitment plus “personal enthusiasm, initiatives and interests” and networks can be a relevant strategy to achieve brain gain.

Difficulties

According to a couple of interviewees, many obstacles (slow procedure, lack of financial resources, lack of institutional support, lack of political commitment, and cultural and social obstacles) hinder brain gain initiatives and reduce their developmental potential. The following table identifies some of the difficulties in carrying out brain gain initiatives.

Table 2. Difficulties related to brain gain mechanisms

Project on detecting particles (CERN) Student exchange and researchers visiting programs	– Slow procedures even in CERN, more in India – Lack of funding – Lack of “pragmatism”
Outsourcing with India on software development	Difficulty related to culture and expectations
Prospective knowledge transfer in learning and teaching environment	Lack of resources in India Language barriers Bureaucratic problems Lack of opportunities in R&D and North South research partnership
Joint research projects, student exchange programs, visiting scholar programs. ISCB program	Different work culture Different economic situation Bureaucratic constraints
Giving guest lectures during private visits	Individual basis Lack of job Bureaucratic and political constraints Family responsibilities

Source: Dia, data collected during the 2007 survey.

Favourable circumstances

The research shows that personal characteristics (excellence, self-confidence, networking skills, etc.), relevance of one’s project or work area, institutional support, professional and scientific contacts, funding and infrastructure are some of the key elements for successful brain gain.

Box 5. Favourable circumstances

I didn’t face any difficulties. All the leading institutes and 17 professors are helping me. Maybe they realize I am going to do a good job. I am going to take 3 Nobel prizes. [A Nobel Prize winner] is going to inaugurate my new school. You can find out the web page. I was here in 2001 for six months for the ISCB programme. And then my boss was happy with my job. I published good articles in renowned journals. I got a good offer for post doc. I got lot of confidence because every thing was going in a right direction. And then, I never stop.
(Post-doctoral fellow, male)

I come from the Indian Institute of Technology and work at EPFL; both are top institutions; EPFL is at the fore front in my research field and my own personal interest.
(Chemist/scientific project manager, male)

I wouldn't think in terms of difficulties. It was a hot topic in that time. There weren't major obstacles. People were receptive and ready to talk. I felt easy to get every body's attention.
(Officer, female)

Lessons learned

What lessons should we learn by drawing on the highly skilled “brain gain” initiatives identified in this survey? Some of the main findings are the need for organizing scientific diasporas, addressing bureaucratic constraints, networking, working at the grassroots level, and promoting solidarity and respect for diversity.

Many highly skilled respondents interviewed stressed the importance of organizing the skilled diaspora to help brain gain initiatives have a greater impact on scientific and technological research and social and economic development of the country of origin.

Box 6: A critical element: organizing the Diaspora

I think if many people like me can help, they can offer free education to many poor people. I can't make a difference with myself only. Some united actions will help make a difference.
(PhD student, male)

If you are part of an association then it helps you. Some people made inroads because they set up a small association. More work could be done, because then you're not an individual that is getting singled out, it's a whole association. Singled out for overstepping the line between personal and professional.
(Senior specialist, female)

There is a consensus among many respondents as to the importance of the state support. Governments can promote brain gain by addressing bureaucratic constraints. Bureaucratic constraints include slowness, lack of state and institutional support, lack of information about ongoing research in India and lack of identification of skills and resources within the diaspora. The following quotation underlines concern for these bureaucratic impediments:

Bureaucracy is an impediment; state-state support is something very important; lack of information available on what is going on in Indian research; I have to be patient because in India things go very slow.
(Chemist / scientific project manager, male)

Moreover, according to an interviewee,

One should try to be more specific on the key area that would receive support; there is a need to target Indian areas where such things were working.

(Chemist, male, Indian and Swiss)

The critical use of networks in scientific and professional communities has been assessed by most scholars. According to Bruno Latour, the network is part of the shaping of the scientific community and creates socialization among the scientific sphere and a sense of belonging among scientists and researchers. Drawing on the responses of interviewees, networks enable brain gain initiatives. According to a couple of respondents, collective and unified efforts might bring more credibility and effectiveness than singled out initiatives. They also asserted that personal characteristics (excellence, enthusiasm, altruism, etc.), institutional support, organization and methods and social mobilization are other key elements for successful brain gain mechanisms:

There is a very important human element involved (face to face contact is important to make things faster).

(Chemist, male)

A respondent assessed the need to ensure that knowledge transfer and any other external interventions are in compliance with local realities. Working at the grassroots level and gaining a better understanding of the culture, potential and limits of the society can help maximise the initiatives for the country of origin:

It's a complicated environment [India]. ... Complex society. [As part of the Red Cross team during the earthquake in India] I often was the link between the foreigners and the society. Translating, being almost the approach person between host society [India] and white people, which was not my job. They (local population) admire me. They were proud to see that I was in a same length with white people. They were proud that someone from the same country of origin succeeds. The main lesson is to have a leg of the culture and to have experience and knowledge of the culture of the society you want to help. I was unique in having that.

(Spokeswoman, female)

4. Highly Skilled Indians' Plans and Perceptions in Regard to the Country of Origin and the Country of Destination

4.1 Highly Skilled Indians' Future Plan

A spectrum of possibilities was noted: go and come back for business purposes or after retirement, visiting families in India on a regular basis, bringing children to the country of origin to maintain cultural identity, visiting teacher or researcher, returning to the country of origin, etc.

4.1.1 Scientific and Professional Activity

PhD students' greatest hope was to settle in a good position in India. Managers (aged between 30 and 40) expected high level responsibilities in the upcoming years, but in similar fields. Highly skilled migrants who would be retiring soon planned to go back to India or to settle in Switzerland whilst being involved in go and come back schemes:

I want to go back to India after finishing my study. I will try to be lecturer or professor in some institutes in India and carry out research.
(PhD student, male)

The future plan of a senior staff member of an international organization was a desire for professional relocation:

I would hope I am not in the same job. I would like to have either a more managerial position or go to the field. I can't imagine doing this work in 10 years. I would say there is a lot of potential for me to do things but there is no working environment that makes use of the potential. The working environment doesn't help use my experience.
(Spokeswoman, female)

With regard to PhD students, scientists and researchers in the sampling, what came across was the desire to focus more on research and teaching, professional stability and attaining a better position. It was also about scientific achievement, international reputation (publications in well-known journals, especially for PhD students, etc.) and being a role model for the country of origin. Drawn from their responses, their future professional plans were (i) to allocate more and more time to teaching and implementing projects; (ii) longer-term visits in India after retirement and regular "going and coming back"; (iii) more involvement in transnational knowledge and skill transfer for the benefit of India; (iv) to be a top scientist in ones area of research, internationally renowned and a success story

in science for third world countries; (v) to be more and more integrated in the Swiss society and research activities in Switzerland. A physicist indicated:

I see myself as a key person in the operation of these detectors. I'm responsible for non-member states to be engaged in CERN. I'm responsible for safety implementation in experiments... hopefully also as an example of a woman coming from a third world country and making it big in the institute.
(Physicist, female)

4.1.2 *Private and Family Life*

A highly skilled female Indian respondent stated that one of her major concerns was to support her children's schooling and personality development:

Son will be in university soon. I want really to support him in doing what he loves. I want to spend more time catching up with friends and in my house and garden.
(Physicist, female)

Many PhD students mentioned that their future plan was to establish themselves and settle down socially and professionally. Those respondents, aged between 30 and 40, "hope to have more kids" in 10 years:

Just want to be with parents, family. Live a very happy life.
(PhD student, male)

Some were torn between the nostalgia of their home country and the practical nature of settling down in Switzerland due to the presence of family there. A couple of respondents stated that they would stay in Switzerland with their family after retirement, with frequent visits between the country of origin and the country of residence. This brings us to the impact of migration on family and moreover, how migration processes (immigration, circulation, return, etc.) might lead to family reunification or separation (with kids because of schooling, naturalization, etc.).

4.1.3 *Country of Origin*

A study of Indian IT migrants revealed a widening range of deciding factors for their return to the city of Bangalore. These include: abundant employment opportunities, high quality of life (peace-loving, multilingual and cosmopolitan city), government conducive policies toward Indian skilled diaspora, growing opportunities for self employment, existence of modern infrastructure, better salaries, better health facilities and better education opportunities for children and proximity with the family. Return migrants stated that the skills, resources

and knowledge they gained abroad helped them in their living and working conditions back in the country of origin as it helped them cope with technological and scientific changes, international customs mainly from the U.S.A., U.K. and European countries and deal with the academic sphere. Moreover, they had a feeling of greater recognition of their skills, knowledge and professional experience by their employers and by their colleagues (Khadria, 2004, pp. 13–18).

The majority of the PhD students interviewed said they would return to India after their studies. Many PhD students had a vague plan to return to the country of origin. “Being active in companies” or having “scientific and academic positions” were some of the responses of PhD students interviewed. One respondent who completed postdoctoral studies in microbiology has created an institute of biotechnology back in India:

I got good exposure in Switzerland. That’s why I am going back to India with very good strategies, focused people. I learnt a lot in Switzerland, which is going to help me build a very good institute with international standard. I am going to impact the biotechnology education in my country.

(Post-doctoral fellow, male)

A sales manager interviewed hoped to set up business on electronics and communication in the next ten years. An IT manager expected to extend his company’s outsourcing activities on software development to India. A female scientist intended to develop further bilateral scientific programs between India and Switzerland which enable increased scientific mobility on both sides.

A female respondent expected to make her country of origin benefit from her technical expertise:

As I mentioned, I would like to support my country of origin...working around awareness raising, disaster situation, child issues, and girls’ rights. Possibly being involved in the education issues. Have no concrete plans.

(Officer, female)

4.1.4 Migration

PhD students who intended to return to India wanted to be part of scientific and visiting researcher programs (short term scientific mobility) that could help them have contact with the international scientific community:

I will settle in India but it could be nice to find some Swiss collaboration.

(PhD student, female)

Many respondents wanted to “go and come back” between India and Switzerland. This concerned the group of scientists, researchers and managers holding

Swiss passports and notably, skilled Indians interviewed who were planning to retire shortly. For instance, some respondents gave preference to settling in Switzerland to stay with their family, enjoy the quality of life and visit the country of origin on a regular basis. Another group of respondents wanted to return to India and visit Switzerland more often to see the rest of their families and acquaintances. Some interviewees planned to go and come back for business and professional reasons although the main motivation was the family dimension:

After retirement, I plan to be half year in India and half year in Switzerland.
(Chemist, male)

I might come and look at the children. I don't know. If these people give me a visa... I don't know I might return and go and come back.
(Economist, male)

The decision to settle in the host country on a permanent basis depended on a range of elements: the quality of life there in comparison with the country of origin, children's schooling, mixed marriage (marriage with a non-Indian national), a desire to live in a multicultural environment, search for greater professional and scientific opportunities, Swiss citizenship, successful integration, etc.

An IT manager interviewed has no doubt about the place to settle in:

I don't think there are better opportunities in India. And my family is here [in Switzerland]. They are not Indian nationals. My wife is Romanian. I am not sure my wife and my family will have a multicultural environment like this [Switzerland]. So it will stay as it is.
(IT manager, male)

A female physicist stated:

I will definitely stay here in Switzerland. I will work until retirement then we will spend six months in India and six months here.
(Physicist, female)

The highly skilled interviewed that spent many years outside India faced a dilemma in choosing a place to settle for the next years due to their multiple senses of belonging. They lived in various countries, which shaped an international and multicultural experience and a feeling of a multiple sense of belonging ("being here and there"). This brings up the notion of second generation, transnational identities and the issue of cultural identity.²¹

21 See Peggy, Levitt and Mary, C. Waters (edited by) (2003) *The Changing Face of Home: The Transnational Lives of the Second Generation*. New York: Russell Sage Foundation.

I am always thinking where I will end up. I wonder whether India will be the place for me to go in 20 years. Even, if I am not an Indian national. I could be if I end up having property in India. It will be double citizenship. It's about finding a place that I could live in. For the time being in Geneva because both my husband and I work here. Probably not going back to India because we don't have the quality of life there. It would depend on many factors. I say not go back to U.K. though I have my family there. Who knows with the global warming? It might be hot enough for me to live in the U.K.

(Spokeswoman, female)

For the time being in Switzerland. I may or may not move to Holland. I can't say what will happen in 10 years. Maybe going to India. Maybe moving to Holland. It depends on course of actions. I have no concrete plans.

(Officer, female)

I do not have a clear answer. I am toying with the idea of staying on in Switzerland for a few more years. And continue coming and going between country of origin and Switzerland. I have no idea of which third country I might want to settle in. I have property in Ethiopia and I don't know if I want to settle there.

(Senior specialist, female)

Two respondents, a professor of psychology and a physician asserted that the decision to stay or leave depended on where their husband was posted. This qualitative survey shows that there are female respondents that have stopped or abandoned their personal careers to follow their husbands who relocated to Switzerland. A migration plan, therefore, has gender implications:

As of now, I see myself here because my husband is here. If he decides to go back, whenever that is, then I am going to follow.

(Professor of psychology, female)

We will go back to our country. Because now the situation is changing in India, the environment is more receptive, there are more jobs, more paying. Before people were leaving, now people are returning. Not too sure, depends on my husband's next post and offers he gets and whether families can travel with him.

(Physician, female)

4.2 Perceptions of the Country of Origin

When asked about their perceptions toward their country of origin, skilled migrants who returned to the city of Bangalore positively reacted to the proximity with family and the motherland country and the "independent environment" (away from cultural alienation, feelings of isolation or even racial diatribes abroad) in the country of origin. Alternatively, they had negative feelings about the slowness of the government in addressing major challenges with regard to Indian society such as the devastating effects the corruption, pollution and scarce infrastructure in Bangalore city. Moreover, they believed their prospective con-

tribution in the development of India could take various forms: sending remittances, improving the health system (donations, medical facilities), strengthening medical organizations in rural areas by improving the capacity of the staff, benefiting the masses in India with the latest medical treatments. Some had negative feelings about the impact of mass Indian highly skilled emigration because of the negative effects of brain drain (Khadria, 2004, pp. 18–25). Our findings are in line with the study of Khadria. As shown in the following sections, there are diverse feelings among the highly skilled Indians living in Switzerland, as though the positive feelings toward the country of origin outweighed the negative feelings.

4.2.1 Social Situation

Poverty and inequalities are some of the fundamental challenges of Indian society. Despite government efforts, there is controversy as to whether poverty declined in the 1990s. Chronic poverty was noted among populations located in Uttar Pradesh, Bihar, Madhya Pradesh, Maharashtra, West Bengal, Orissa and Assam. Millions of people chronically living below the poverty line face severe economic and social hardships especially in remote rural areas (South Western Madhya Pradesh, Southern Uttar Pradesh, Southern Orissa, Inland Central Maharashtra, Southern Bihar, Northern Bihar and Central Madhya Pradesh), where hunger is widespread (rural Orissa, West Bengal, Kerala, Assam and Bihar), leading to often appalling suicide due to starvation, as reported by the media. These populations are more exposed to risks such as tuberculosis and HIV/AIDS and infant mortality, which mutually reinforce chronic poverty. Among these populations are historically marginalized groups such as lower castes and tribes, the elderly and the disabled and women. In their attempt to escape bad agro-ecological and socio-economic conditions in rural areas, most people resort to rural to urban migration (Mehta and Shah, 2002).

A respondent insisted that, “The social situation is better than 20 years ago.” It’s a “big country that is going in the right direction maybe slowly,” argued another interviewee. However, “globalisation is not benefiting all equally,” said another respondent.

Indian highly skilled respondents mentioned the huge social and economic divide between the Indian middle class, the rich and the poor that exacerbates living and working conditions of millions of Indian people. They pointed out the following paradox. Despite great potential in culture, arts, science and technology, India faces a serious human resource problem due to widespread poverty, social inequalities and discrimination:

It continues to have a huge social and economic divide. My fellow nationals have entrepreneurial skills. I think India has great potential in the world, culturally and artistically. I think the divide will be bigger because the Indian middle class and the rich are growing but it doesn't feel the poor are coming out.

(Spokeswoman, female)

Many interviewees stated that despite unprecedented economic growth, India has the profile of a third world country, as the majority of people, especially in rural zones, face poverty and have no access to facilities and social welfare. One respondent indicated:

I must say the property is not well distributed. There are rich people and a majority of poor people. The facilities are not available to the majority of the people. I must say the situation is changing. More widespread education, good education for all in terms of general school and higher education is not accessible to all.

(PhD student, female)

According to respondents, there is a need to increase awareness on castes and religious issues in order to combat discrimination, child sexual abuses and gender inequalities. There are still discriminatory and religious barriers that impede women's rights, child rights, social justice and equality:

More awareness on castes, religious issues, discrimination. People can be very traditional and structured in their practices. The government has policies and plans. It's about educating people about castes and discrimination. Fighting against child sexual abuses, discriminatory and religious barriers, women's rights. Things have been done. There is still long way to go.

(Officer, female)

4.2.2 Economic Situation

Several respondents pointed out the rapidly growing economy of India. They argued that the country is big and has great economic potential and is "on the move." They also highlighted the fundamental role of Indian skilled manpower as economic globalisation takes hold and commented on other positive features such as an increase in investment in development and controlled inflation in a context of fast economic growth.

A World Bank report echoed the same optimism vis-à-vis impressive Indian economic growth, highlighting some of the comparative advantages of the Indian economy. These key elements are, among others, its macroeconomic stability, a large scale of highly skilled and qualified English-speaking workers and a prominent scientific and technological diaspora, a dynamic private sector, progress in expanding and diversifying science and technology infrastruc-

ture, the considerable expansion of the ICT sector and a dynamic financial sector (Dahlman and Utz, 2005).

A respondent stated:

It's a very rapidly growing economy. Everyday in the newspaper there's something new about India. How the Indian community is growing population is growing. We have a huge number 1.25 billion inhabitants. It's moving, it's a big country and it's on the move.

(Professor of psychology, female)

Compared to other developing regions, the Indian economy has progressed a lot and is competing with other giants such as China. However, the poverty gap is still persisting, "with a large percentage of people facing poverty":

Growing a lot economically, but unfortunately the poverty gaps have not reduced. When I compare the mobility of people in terms of progress in the past years, there is more progress in India than in Africa, where some areas have even gone backwards. Yet, large percentage of people in poverty.

(Senior specialist, female)

The huge number of people in software creates a "channelization" and a skill gaps in other fields:

The problem is, unlike a developed world, India is growing too fast that the infrastructure is lagging behind. So as matter of fact, people have lot of money but nothing creative is done. It creates lot of channelization. Every one is in software. There is a lack of skills in all other fields.

(PhD student, male)

A couple of respondents agonized over persisting poverty, social inequalities, corruption and bad governance that impede sustainable economic development. They raised concerns about gaps between poor and rich people and urban and rural cities. The economic boom is mainly concentrated in major cities at the expense of Indian farmers and rural areas. The main focus is the rich and middle class. Paradoxically, while India is mostly rural, people from this primary sector seem to be benefiting less from the economic growth.

4.2.3 Political Situation

Several respondents mentioned that India is a stable democracy with independent press, a powerful judiciary and well functioning democratic institutions. The fact that India is a secular country may attenuate the possible negative interference of castes and religious ideas in the functioning of the State. The current democratic system presents promising features with highly qualified and intelligent people in the ruling class coming from minority groups, a moderate government with secular ideas and a broad political vision:

India doesn't have a fundamentalist government. India is a very secular country. Before that, we had a very pro-Hindu government. We should be ok if we continue to go with moderate government who has secular ideas, broader visions rather than castes or religious ideas. It's good that the government is now ruled by a highly qualified and bright Indian rather than an illiterate as in the past. We have highly qualified and intelligent and educated people to rule the country. The president and the prime minister come from minority groups, something, which is important.

(Technical Officer, female)

According to most of the respondents, Indian democracy faces similar problems as those hindering other democratic countries. There is a need to enhance secular ideas on Indian politics for a stable future. The political situation of India needs improvement, although there is freedom of speech, independent press and stable democratic institutions. The democratic system is being underpinned by persisting poverty, unequal distribution of wealth and corruption and bureaucracy:

The political situation is the main problem. The democracy in India is not really efficient. Lot of money is wasted.

(IT manager, male)

The political situation is very bad. Corruption and bureaucracy are a big problem. I have the idea that the Indian economy grows when president sleeps. Politicians are no good to the country.

(Physician, female)

Indeed, there are numerous impediments to the rule of law which underpins governance and the deepening of democracy in Indian society. In accenting awareness raising and judicial interventions on issues such as child labour, bonded labour, women's rights, etc. The Indian judiciary has made efforts toward ensuring democracy and the rule of law. However, there are major issues that fundamentally undermine democracy and rule of law:

But to exaggerate these achievements in the Indian context, given the scale of inequalities and injustices, would be completely missing the point. The Indian legal system is faced with numerous crises starting with the fundamental challenge of enforcing the rule of law. While the system of governance in India is based on law, this does not necessarily translate into the behaviour of those who govern and the governed to have respect for the law. This lack of respect translates into serious threats to democracy as the legal system may not be able to respond to the growing sense of lack of trust and faith in the institutions. [...] There needs to be a fundamental re-examination of the approaches that we have adopted to enforce the rule of law. There is a need to critically examine the effectiveness of Indian democracy, given the fact that corruption is institutionalised in all spheres of governance (Kumar, 2005).

The Indian democracy is confronted with enduring problems such as rights, governance and the impact of globalisation. The living conditions of the people of India are badly affected by inefficient policies, bad governance, lack of accountability in government, resulting in severe poverty and inequalities of which millions of Indians cannot escape. According to Kishwar, the economic reforms should be more at the grassroots level, addressing the socio-economic needs of poor people. The farm sector and industries could benefit substantially if India conducted effective negotiations with the World Trade Organization (WTO) (Kishwar, 2005).

4.2.4 Scientific and Technological Research and Policy

With 33 universities, 14 national laboratories, 88 research institutes and research centres and 54 associations related to scientific and technological research, India has a growing pool of scientific and technological facilities. While the first five year plan focused on uplifting scientific and technological infrastructure (construction of national laboratories and other research institutions), the second plan related to expanding these facilities and matching the work of scientists, researchers and university professors to various national development objectives. Accordingly, a panel of scientists has been formed to advise the Planning Commission in addressing the number of development related issues in need of scientific and policy oriented studies and investigations. The Council of Scientific and Industrial Research is responsible for the overall management of scientific and technological research including promotion, guidance, coordination and the financing of scientific research projects. The government plans to support universities and scientific and technological research organizations in terms of research facilities and higher technological education by allocating more funds. The Ministry of Education and the University Grants Commission provide financial support to science departments in universities. Indian scientific and technological research associations contribute to the dissemination of scientific and technological results and facilitate networking and exchange of information between scientists, researchers and any other related players. Funds have been allocated for the various development programs of the Council of Scientific and Industrial Research under the second five year plan. The Council of Scientific and Industrial Research is also supporting a few specialized research institutes collaborating with industries. Following the recommendation of the Scientific Manpower Committee, a large number of research fellowships and scholarships were granted to universities and research institutes. Rural scientific centres (*vigyan mandins*) have been established to support villagers' well-being and critical programs on agriculture, health and sanitation have been established by disseminating scientific information rel-

evant to the rural population. The government intends to expand such *vigyan mandins* experience in other rural areas in India by setting up 90 to 100 such centres (Government of India, 2002–2007).

India has more than 50 international scientific and technological cooperation programs and is also active in many regional and international scientific and technological initiatives such as the South Asian Association for Regional Cooperation (SAARC), the Association of South East Asian Nations (ASEAN). India is also involved in various international research projects such as CERN's Spring-8, Electra. In the realm of science and technology capacity building, emphasis is on developing educational infrastructure and promoting scientific exchange which enables highly skilled mobility across nations. For instance, India's participation in CERN's scientific activities has been a long process facilitated by individual Indian scientists' involvement. India, who is admitted as an observer, participates in various CERN programs (Photon Multiplicity Detector-concept; LHC machine-ALICE; CMS). Tata Institute of Fundamental Research (Mumbai), Bhabha Atomic Research Centre (Kolkata), Saha Institute of Nuclear Physics (Kolkata) and Delhi University are some of the Indian participating institutions to these programs (Ramamurthy, 2003).

Most of the respondents were fascinated by the excellent results of Indian scientific and technological research in various domains. A respondent was pleased to note that in space technology, satellite communication and computer science, India has highly skilled and qualified people. An interviewee welcomed the prominence of human capital in scientific and IT fields, making India possibly one of the biggest pools of human resources worldwide and an "Asian tiger." Another interviewee noted the benefits induced by outsourcing, foreign direct investment and delocalising R&D on the Indian economy. The economic growth has a positive impact on scientific and technological research. Leading companies are opening offices there. Indian drug companies are exporting all over the world (low price drugs). The following statement of an interviewee stresses the prominence of Indian scientific and technological research, especially in the IT sector:

India is coming up with strong ICT. India is the best in computer science. Government is increasing salaries 3 or 4 times to bring good people in research.
(PhD student, male)

Although there is progress in various scientific and technological areas, India is still a developing country:

I think the people are just as capable as any development staff. And that is probably reflected in the space technology, satellite telecommunication. But when it comes to common men, India is a real third world country.
(PhD student, male)

There is a need to identify Indian scientific and technological expertise and make it visible:

India could do with more visibility on what their scientific and technological expertise is. India is achieving a lot, but we do not hear about all of it. Lots of interesting work going on. Medicines and plants are emerging from India. Contributions of Indian scientists. So good work on this area.

(Senior specialist, female)

Many constraints should be addressed. These include lack of support for research and development; imbalances between IT and other scientific areas (for example social sciences are neglected) and technological fields:

Not going very well. The best and brightest go to the IT sector because it is the best paid; other research fields get neglected; there is a lack of encouragement for all sciences; for instance to social sciences which are very important for the history and culture of India.

(Chemist/scientific project manager, male)

Respondents' views of scientific policy are positive. A respondent reported government's efforts to develop science by increasing funding to higher education and research institutes and augmenting the presence of mass qualified manpower. The government's policy promotes scientific and technological research. To testify to the government's progress in promoting scientific and technological research, interviewees mentioned scientific bilateral cooperation programs signed by India and other countries such as the U.S.A. on civil nuclear energy.

One respondent stated:

Scientific policy is not bad but there is an overemphasis on IT sector, which is more a social than a political problem.

(Chemist/scientific project manager, male)

The focus on the IT sector and the neglect of social sciences and humanities is considered by a few interviewees as one of the weaknesses of scientific policy in India.

Besides, one skilled Indian noted:

It's very myopic. We don't have good people in the administration of scientific and technological research.

(PhD student, male)

This raises the issue of ensuring that appropriate scientific policies are implemented, encompassing all sectors including social sciences and humanities, which are neglected by Indian policymakers. Another interviewee suggested that more money should be spent on research and that liberalization should be balanced with national interests.

4.2.5 Migration Policy

Migration is one of the hottest issues raising ideological controversies and smacks of emotions, fear and xenophobia. The way migration is managed may depend heavily on public perceptions of migration. There are negative public perceptions often underlying a discourse based on fear and risks associated with migration, whereas positive public perceptions highlight the benefits migration may produce to the country of origin, the host country and to migrants themselves. A better management of migration, underscoring its positive aspects and addressing ensuing risks, can contribute to reversing the negative perceptions vis-à-vis migration (Canoy et al., 2006).

Some respondents were pessimistic about the increasing outflow of skilled Indians which could lead to massive brain drain, whereas other interviewees were optimistic about the positive effects derived from emigration from India. The highly skilled Indians interviewed also stated that a booming economic environment was a pull factor for the return of Indian skilled nationals abroad to the homeland. Some stated that emigrating, gaining scientific knowledge, human and financial capital and returning back helped to create assets for the country of origin:

People are moving back and bringing wealth, expertise, professionalism and their experiences.
(Physicist, female)

Others were pessimistic about the effects of mass Indian highly skilled emigration because of the brain drain or loss of human capital. One of the main concerns of the respondents was that India does not allow widespread dual citizenship for Indians abroad:

That's a problem. They don't allow a second passport. It's a pity. They're issuing permanent visa. I can't call myself Indian. It's funny I have the permanent visa of India. But I am a foreigner now in my country of origin!
(IT manager, male)

Furthermore, there was a feeling that not all Indians abroad were being given due consideration. The government policies tend to focus more on business and the highly skilled at the expense of other groups of Indians abroad (less skilled, unskilled people) despite the potential they might have for the development of the country of origin:

They will welcome Indian business to settle deals but common people like me, they don't care.
(Finance assistant, male)

4.3 *Perception of Switzerland: Scientific Policy, Development Cooperation and Immigration Policies*

4.3.1 *Scientific Policy*

Notwithstanding the excellence of Swiss scientific and technological research system, which is among the best in the world, there has been a slowdown in the growth of GDP and productivity. One of the main recommendations of an OECD report of 2006 is to grade Swiss innovative systems to improve the international competitiveness of its economy. In this regard, efforts should be oriented towards enhancing better organization, coordination and quality of Swiss educational research and development (R&D) by addressing problems of accountability and transparency²². While most researchers benefit from an excellent professional situation, enabling easier access to funding, new researchers tend to have limited opportunities which may hinder innovative research. The report suggests maximizing the performance of existing Swiss research and development institutions by harmonizing indicators and datasets, improving funding mechanisms, quantitative empirical studies and collaboration with international specialists. There are existing promising initiatives to enhance the quality of Swiss research and development institutions and create a synergy between research and policymaking, notably the establishment of the Swiss Council for Educational Research (CORECHED) and the Leading Houses through the Federal Office of Technology.

A couple of respondents viewed Swiss scientific policy as successful. From the standpoint of interviewees, the key elements of its success was the excellent reputation of Swiss scientific and technological institutes, good funding policy for research, meritocracy, creativity and innovation of the local industries, value given to sciences and R&D and the interesting exchanges developed with countries and people. However, the rigidity and strictness of the Swiss system, especially towards student migration, and the lack of innovative options in comparison with other developed countries were considered by some highly skilled Indians as impediments to Swiss scientific research:

They are doing good job. I think so. Nothing to complain except they are strict and rigid in screening students. They got very good institutes of technology and medicine, things like that.

(Economist / Head Education Programme, male)

22 <http://www.oecd.org/document/55/0,3343,en_2649_34269_38014135_1_1_1_1,00.html>.

4.3.2 Development Cooperation Policies

Switzerland, which is one of the most important donor countries, defines its overall development cooperation as small but excellent. The fact that Swiss aid is oriented to low income countries and rural development, poverty reduction and food security are proof that “the bulk of assistance is decidedly oriented toward development”:

Relative to its affluence and capacity, the development policy of Switzerland is actually too small and certainly not excellent in general. Much remains to be desired relevant to trade policy, since Switzerland is even more protectionist in the agricultural sector than the EU states. And the Swiss financial world, despite all its lip service in the wake of the Marcos accounts affair, does not give any indication that flight capital is returned to where it is so urgently needed. (Hoffmann, 1994, pp. 24–26)

Many respondents viewed Swiss development programs toward India as supportive. Business and scientific cooperation are being promoted on both sides:

There is a “Swiss-India presence – an initiative whereby Swiss companies are targeting companies in India, every year there is a fair where Switzerland showcases work and try to attract Indian companies and vice versa”.
(Physicist, female)

However, one respondent voiced constraints faced by Indian companies in gaining access to Swiss market and bureaucratic constraints from the Indian side. Another respondent mentioned the cultural exchanges between India and Switzerland but highlighted the need to question development cooperation policies:

I have a problem with all development cooperation policies. I feel that they are narrowly perceived and narrowly designed and their ultimate objective is not the countries of origin, their objectives are geared to their own priority areas and agendas. There are lots of linkages between India and Switzerland in terms of cultural exchanges (tourism and film) but benefits are limited “in terms of development”.
(Senior specialist, female)

4.3.3 Swiss Immigration Policy

Swiss immigration legislation and policies strive to create a better balance between the size of the local population and the proportion of foreigners in the Swiss territory, seeking a better balance between the demand and supply on the labour market. Swiss authorities are torn between the admission of the foreign labour force in response to economic needs and the fear of xenophobia. Furthermore, Swiss immigration policies reflect economic and political changes on local and international levels (Piguet, 2006, p. 67).

On the one hand, there is a feeling that “only white Europeans or millionaires” are given consideration and respect and “they [Swiss] don’t allow people [from developing countries] to settle here” (spokeswoman, female). Swiss migration policy is considered by many interviewees as restrictive due to difficulties obtaining citizenship when coming from developing countries and difficulties getting work and residence permits. Recent developments in Swiss immigration procedures and regulations have tightened the entry of citizens from developing countries, making it “harder and strict” for students, refugees and political asylum seekers and leading to increasing stigma, racism, discrimination and abuse against migrants.

On the other, the perception is that Swiss migration policy is screening students from developing countries selectively. A few persons agreed that Swiss migration policy should be more focused on highly qualified people. One respondent argued that selective migration policy is “something normal” as more openness would lead to massive outflows of migrants coming from different parts of the world to a small country such as Switzerland. Another respondent mentioned the inclusiveness (through the naturalization process) of Swiss migration policy, its focus on highly skilled people and its management as positive elements.

5. Conclusion and Policy Recommendations

This research provides an understanding of the causes of international migration from India to Switzerland, Indian respondents’ life in Switzerland, the interrelations between skilled migrants, the country of origin and the country of destination, the brain gain mechanisms and initiatives and the ways to maximise the diaspora’s contribution to the homeland.

Skilled Indians living in Switzerland present great potential to become assets for development of their country of origin. The brain gain mechanisms identified in this survey (knowledge transfer and scientific diaspora networks, research and experimental development, North – South research partnerships) do not have the same level of importance although they could all be helpful to India. Skilled diaspora networks can play a fundamental role in bringing brain gain activities to India, thus reducing or reversing brain drain. Therefore, competence and resources within the skilled diaspora and ways to connect with Indian local counterparts should be identified.

The highly skilled diaspora in Switzerland could be of great use in the development of one’s country of origin by moving from “[...] very mundane,

ship shop cultural events” to “[...] serious talks about diaspora contribution” (Professor of psychology, female).

The role of scientific diasporas in strengthening Indian scientific and technological research could be enhanced by paying more attention to scientific diasporas networks, by involving skilled Indians abroad in local projects and programs and by increasing investment in education, science, technology and R&D.

The first step could be helping the Indian diaspora in Switzerland to organize itself (identifying the needs and developing ideas and initiatives) through a supportive network with various institutions such as embassies. A second step would be to provide funds and resources to further brain gain initiatives for the country of origin. A third step would be a clear identification of diaspora members (skills, qualification, etc.) and key areas where their contributions could benefit India. A fourth step would be establishing ways to bring together scientists, highly skilled professionals and policymakers to identify diasporas skills and qualifications, opportunities and key areas for their practical interventions in the development of the country of origin, especially on scientific and technological research. In this regard, there is a need to develop appropriate migration policy that permits people to move and, equally, allow them favourable conditions for return to the country of origin. Retaining and attracting skills should be one of the policy targets in order to ensure economic growth and competitiveness at the international level.

Policymakers should address the negative effects of brain drain and maximise the positive role of the highly skilled abroad in national development in close collaboration with the migrants themselves and concerned players (country of destination, bilateral and multilateral agencies, civil society, private sector, etc.). Universities, research centres and graduate institutes in the country of origin and the country of destination should also be included in policies aimed at mobilizing the highly skilled diaspora.

Government measures such as providing dual citizenship, mobilizing all persons of Indian origin (PIOs) under a special ministry for migration; short term visiting professor schemes; researcher or scholar programs and diaspora forums are some of the incentives to mobilise highly skilled migrants for development goals and objectives. However, in order for scientific diasporas networks to be catalysts for the development of their country of origin, the Indian diaspora should be included in development policies and in the fight for fundamental challenges that affect India’s societies today, such as mass poverty, health risks, illiteracy, natural calamities, imbalance between economic growth and demographic growth. Accordingly, diasporas associations and other concerned players should be granted sustainable support from the country of origin and the country of destination, for instance, through bilateral and multilateral co-

operation (administrative recognition, financial and institutional support, more involvement in scientific bilateral cooperation).

Furthermore, Indian presence in Switzerland at the scientific, technological and business levels should be sustained. Existing institutional frameworks such as Swiss India Business Forum can play an important role in enhancing bilateral cooperation with India and Switzerland. EPFL as the Leading House for bilateral scientific cooperation with India can serve as a catalyst for the Indian diaspora's greater involvement in scientific and technological research in the country of origin, by providing support to Swiss-based Indian scientific networks increasing their visibility and their synergy with Swiss partners and local counterparts. Existing scientific joint research and student exchange programs are windows of opportunities for sustainable scientific and technological cooperation between India and Switzerland and, therefore, should be strengthened.

Recommendations

Switzerland can play a fundamental role in helping Indian scientific diasporas to create a sustainable network linked to the country of origin through the following measures:

(i) *Mainstreaming Scientific Diaspora into development policies through the Leading House and other existing agencies and institutions*

Scientific diasporas should be mainstreamed into development policies (agricultural sector, rural cities, and health sector, etc.). In order for India to best make use of its diaspora, benefits resulting in skilled emigration such as remittances and knowledge and technology transfer should be directed to the fight against poor education and health systems which are considered major causes of India's low productivity in labour in the world (Khadria, 2006).

Quoting Khadria (2006, p. 182) in his study about migration of Indians in the U.K., there should be "joint appointments in India and abroad for teaching and research faculty of the best Indian universities" for the Indian highly skilled based in Switzerland. The Indian government should provide some "guarantees of return" whereas research institutions, colleges and universities should be "more accommodating to foreign assignments, so that people are not forced to resign and go."

EPFL as the Leading House for Swiss bilateral cooperation offers possibilities in terms of organizational and funding support with regard to bilateral scientific, technological and business programs. This leading house can also serve as a database of Indian scientific diaspora associations and Indian highly

qualified and skilled people interested in work in the country of origin on a short term basis, as in the case of TOKTEN Programme. Existing institutions and mechanisms such as the SDC,²³ Indian embassy and mission, multilateral agencies, NGOs and academic institutes along with the EPFL could serve as focal points to promote Indian scientific diaspora associations' participation in development projects and programs in benefit of the country of origin. Subsequently, highly skilled and qualified workers should be granted funding and facilities to enable knowledge, technology and skills transfer and the formation of scientific diaspora networks. The Leading House has an important role in strengthening scientific and professional exchange programs and connecting Indian researchers, students, scientists and businesses based in Switzerland with their local counterparts and policymakers. There should be forums or workshops to identify ways to ensure sustainable bilateral cooperation including on science, technology, development and migration. Migrants and scientific diaspora associations should be part of the bilateral partnership program agendas.

(ii) Helping highly skilled abroad organized into associations and organizations

This qualitative research shows that a couple of respondents wanted to be part of scientific associations but were not aware of existing associations and organizations or were not interested in their current programs and activities. Leaders of the Indian diaspora in Switzerland should therefore develop initiatives in order to bring together Indian highly skilled migrants in Switzerland into Indian scientific diasporas associations and organizations by developing attractive activities and programs. Obviously, the above mentioned scientific network or institutional support with the support of Switzerland can help migrants and diasporas associations increase visibility, thus attracting new members.

(iii) Implications for research

The debate on whether international migration is profitable to the country of origin is not over, although there is increasing awareness of the impact of migration on development. Assessing its developmental impact merely on the basis of migrants and diasporas' perceptions and discourses cannot satisfactory explain the complex interlinkages between international migration and development. Therefore, a "country of origin" perspective would be important as it would lead to a better understanding of local communities' expectations, needs and aspirations as well as migrants and diasporas' initiatives' strengths and

23 SDC has a special unit on Migration and Development <<http://www.sdc.admin.ch/en/Home/Themes/Migration>>.

limits in relation to their homeland. Such research would scrutinize the extent and impact of brain gain mechanisms; the social origin of highly skilled migrants and scientific diasporas; the types of linkages with the country of origin; the demographic, social and economic characteristics of the recipients of the brain gain mechanisms; the country of origin's perceptions about the role of highly skilled migrants and scientific diasporas in strengthening scientific and technological capabilities and social and economic development and policies and measures to maximize their development potential.

Most respondents stated that they wanted to go and come back (between India and Switzerland). An instance of this "go and come back" scheme is research being undertaken to analyse how mobility (immigration, circulation, transit, return, etc.) and professional situation (relocation, retirement, unemployment, visiting program, short term or permanent contract, etc.) could impact the family structure (family reunification, separation, etc.) and the settlement process. The fact that highly skilled women respondents in the sampling correlate their migration plan to their spouse's career suggests that gender relations within the migration process is in need of a better understanding. Research should be undertaken to analyse how the migration process impacts gender roles.

According to the Reserve Bank of India, remittance transfer of Non Resident Indians (NRIs) has increased over the years, especially from U.S.A., which accounted for 44 percent of the total remittance and from the Gulf States. India continues to rank as the leading country in terms of remittance in the world (World Bank). Seemingly, remittances transfer is not a widespread practice among the skilled Indians interviewed. A couple of respondents stated that remittances were not needed or requested by families. The extent of remittance practices among the Indian diaspora in Switzerland needs quantitative research. Further cross-country studies should be undertaken to assess the evidence and magnitude of remittance transfer practices among the Indian highly skilled diaspora in the U.S.A., Europe, etc. and to look at links with the country of origin and the different migration policies in destination countries that might impact remittances transfer.

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Annex 1: Good Practices

Good Practice no. 1: Scientists and Technologists of Indian Origin based abroad (STIOs)

Title of the initiative	<i>Scientists & Technologists of Indian Origin based abroad (STIOs)</i>
Type of initiative according to level of involvement	Institutional level
Type of initiative according to kind of brain gain mechanism	Scientific diaspora network
Aims and objectives	The objective is to create a synergy between local Indian counterparts and STIOs. The website is guided by "the Government of India to strengthen this networking for enhancing India's excellence and global competitiveness".
Authors and actors	This project was initiated by the Indian Ministry of Science and Technology. The Department of Science and Technology (DST) is the responsible of the website (S&T Professionals of Indian Diaspora Website) as part of the overall initiative of Government of India on Diaspora (Ministry of External Affairs).
Geographical scope	Scientists and technologists of Indian origin worldwide
Brief description of the initiative	The STIOs is a network aimed at mobilizing overseas scientists and technologists of Indian origin. It includes a wide range of skilled and qualified personals in industries, research laboratories, universities and scientific departments in destinations countries as well as scientists and technologists of Indian Origin involved in transnational business activities (technology intensive business and venture capitalist).
Main enabling factors	Indians skilled abroad have an array of competences and skills, some being success stories in scientific, technological and business fields. Policy makers in India have increasing awareness of the potential of diasporas. The website includes opportunities to mobilize and make use of the skills and resources of the Indian diaspora.
Contact details; links to further information	http://stio.nic.in/

Good Practice no. 2: The School of Biotechnology at the KIIT University in Orissa

Title of the initiative	<i>KIIT School of Biotechnology at the KIIT University in Orissa</i>
Type of initiative according to level of involvement	Individual practice
Type of initiative according to kind of brain gain mechanism	Knowledge transfer
Aims and objectives	The objective of the KIIT School of Biotechnology is to provide knowledge and skills in biotechnology to master students in accordance with international standards.
Authors and actors	The project was initiated by a former Indian post doctoral student at the Swiss Federal Institute of Technology in Zurich (ETHZ) with support from Swiss agencies and Nobel Prize winners
Geographical scope	State of Orissa
Brief description of the initiative	This institute strives to extend knowledge and skills in the field of biotechnology in India mainly in Orissa which is one of the poorest states in this country. The staff includes Indian local scientists and researchers as well as scientists and researchers abroad of Indian origin (Switzerland, Germany, etc.) including Nobel prizes winners and distinguished professors as a visiting professor and scholar and members of the scientific advisory board. The disciplines are structural biology, environment, and human nutrition, infectious biology. According to the founder of the institute, the main priority is "looking for funds" "because biotechnology is an expansive area". His desire is to contribute to extend biotechnology education, one of the "most neglected areas", in India, his country of origin.
Main enabling factors	<p>Motivation and affective capital: Enthusiasm. Willingness and commitment vis-à-vis enhancing scientific and technological institutes in India in the field of microbiology. Commitment to return to the country of origin in order to use skills, social capital and networks acquired in Switzerland for the benefit of India.</p> <p>Ability to network: Scientific and social networks both on the local and international level. Meeting with lots of Indian highly skilled and academics in the field of biotechnology and related sciences to convince them to teach or support him in his project to create the institute of biotechnology. Hiring Indian talented abroad and local. Support from Nobel Prize awards.</p> <p>Enabling environment and policies: Receptiveness of the fundamental role of scientists and researchers abroad in development, science and technology among policymakers in India. Existence of bilateral scientific programme between Switzerland and India in the field of biotechnology (the ISCB project). Supportive environment thanks to social and scientific networks gained by the director in India, Switzerland, Europe, USA, etc.</p>
Contact details; links to further information	Dr Mrutyunjay Suar, Director, msuar@kiitbiotech.ac.in http://www.kiitbiotech.ac.in/

Good Practice no. 3: The Indo-Swiss Collaboration in Biotechnology (ISCB)

Title of the initiative	<i>The Indo-Swiss Collaboration in Biotechnology (ISCB)</i>
Type of initiative according to level of involvement	Institutional level
Type of initiative according to type of brain gain mechanism	North-South Research Partnership and R&D
Aims and objectives	Establishing equitable research partnerships between Indian institutes and their respective counterparts in Switzerland. Mandate is: 1) developing products and biotechnological processes which have an impact on poverty reduction and the sustainable management of natural resources in India; 2) focusing on innovative technologies in agriculture and environmental research; and 3) building capacities and R&D partnerships between Swiss and Indian Institutions and private companies with strong economic, social and ecological relevance.
Authors and actors	Program jointly funded by the Swiss Agency for Development and Cooperation (SDC) and the Department of Biotechnology (DBT) of the Government of India. Overall coordination and implementation of the programme being assigned to a Programme Management Unit located at EPFL, Lausanne. The project implementers are Indian and Swiss research institutions
Geographical scope	Currently the programme involves 23 research groups in India (all over the country) and 13 in Switzerland (all over the country).
Brief description of the initiative	The ISCB program supports joint projects with at least one Swiss and one Indian partner to create synergies across institutes and national borders. In order to enhance the quality of the collaborative projects and to ensure that the research activities lead to product development and diffusion, the ISCB has adopted the concept of the 'integrated value chain', which is widely used in the biotechnology industry, but it is also applied as a planning and management instrument to move research activities to product development and diffusion. The concept is best understood as a chain of events that starts with the definition of a problem and ends with sustained market penetration of a new product, process, or service.
Main enabling factors	Real willingness to enhance scientific bilateral cooperation. Strong support of responsible agency. Good geographical coverage as an illustration of the commitment both from Indian and Swiss side. The ability to mobilise underlines the principle of partnership. By selecting scientists with outstanding experience and background on the basis of scientific competence, this project aims at making more visible Indian researchers and enables them bilateral collaborative research programs with Swiss counterparts.
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Chapter 7

The South African Scientific Diaspora in Switzerland

Francelle KWANKAM¹

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Executive Summary

The Swiss Network of Scientific Diasporas to enforce the role of highly skilled migrants as partners in development project analysed the skills, expertise and linkages Colombian, South African and Indian highly skilled migrants living in the diaspora in Switzerland have with their countries of origin. This report highlights brain gain and transnational initiatives and connections that the highly skilled South African diaspora maintains with its country of origin. South Africa was chosen, because of its dynamic and active global diaspora network and considerable presence in Switzerland. In terms of the total share of highly skilled migrants from sub-Saharan Africa residing in Switzerland, South Africa ranks first claiming some 73.1 per cent of the population.

The study on South African highly skilled migrants in the diaspora in Switzerland provided detailed insight into the motivations for emigration, obstacles in transitioning and the links migrants foster and strengthen with their country of

origin. The project interviewed twenty-six highly skilled migrants working in fields ranging from education and research to private companies and even international organizations. Interviews were conducted in Geneva, Lausanne and Bern. Of the total respondents, ten were women, sixteen were men. There were five students and 21 professionals working (or who had previously worked) in different private companies, universities, ministries and international organizations. The overwhelming majority of the respondents lived in various locations before settling in Switzerland. Only eight indicated moving directly to Switzerland. Nine respondents are binational, five South African-Swiss dual citizens, and the rest had B Permits, Legitimation Cards, C Permits and one has an L Permit.

Respondents represented the following racial groups: Caucasian/white (21), Indian (2), colored (black and white racial origins), (2) and black (1). This does not give a particularly thorough view of the highly skilled diaspora. More representation is needed by the black, colored and Indian highly skilled populations in the diaspora in Switzerland. Although they are a small percentage, their contributions are still valuable and their perceptions and migratory paths could differ from those of white South Africans. However, the majority of the highly skilled South African diaspora is white (Bhorat et al., 2002). Within South Africa, 72 per cent of the skilled population is white, a mere 26 per cent is black (Brown, 2003).

The respondents presented an array of reasons for their relocation to Switzerland. Most sought greater educational and research-based opportunities; others looked for improved financial and professional prospects abroad. The high crime rate and incidence of rape encouraged some to emigrate, as did affirmative action policies that aim to level the political and social playing field in South Africa. Still others felt generally disenfranchised by the apartheid regime and fled in pursuit of better life prospects.

With regard to gender roles, stark contrasts between South Africa and Switzerland were drawn. Several female respondents stated that the Swiss system does not cater to working mothers. The schooling system in particular was cited for its rigidity. The lack of affordable domestic care, space in daycare centres and distance from family were further difficulties faced by working mothers. One respondent stated that the Swiss mentality forwards the notion that women should stop working after birth, whereas in South Africa there are daycare facilities and familial support.

Another noted, "For young women professionals, it's easier in South Africa as efficient home help is available." After school care is also available at affordable prices. Despite these huge hindrances, one of these respondents indicated that the safety and punctuality of the transportation system means that children become independent more quickly, gradually placing less strain on

mothers. Many of the women interviewed still grapple with such constraints after many years of living in Switzerland. These women were living in both the Swiss German and the Swiss French regions, indicating that such constraints are nationwide.

Half of the respondents hoped to return to South Africa – some to retire, others to start or further initiatives to impact the development of their country, and some to find employment in their respective fields (IT, business and finance, research). Several plan to make a bridge between South Africa and Switzerland, by commuting between the two and starting up businesses and community improvement initiatives. Others emphasized their desire to stay linked to South Africa (through personal and professional channels) but indicated they would remain in Switzerland due to the high quality of life and minimal crime.

The South African respondents indicated having contacts ranging as far afield as Canada, the United States, Germany, and Belgium at the regional and international levels in the following areas/fields: academia and research (in the anthropology, psychology, history, science and technology, intercultural communication fields), air navigation, business, handcrafts/art, public health, at the governmental level, between UN agencies, inter-governmental organizations and NGOs. Networking, both in the professional and personal arenas, was used to secure and increase local, regional and international contacts by the majority of the respondents.

Brinkerhoff (2006) identifies three key factors as determinants of the breadth of diasporas' contributions to their countries of origin: ability to mobilise, motivation and an enabling environment.² Ability to mobilise refers to the presence of a sense of community as the preliminary enabling mechanism to diaspora contribution to their country of origin. Motivation to act is defined as the foreign nationals' desire to enhance solidarity and collectively exert influence (Brinkerhoff, 2006; Esmán, 1986). Thus, these two factors are mutually reinforcing – a sense of community stimulates desire to positively influence one's home country and impacting one's country of origin helps create a shared sense of identity. Thirdly, opportunity structures are important in creating an enabling environment conducive to diaspora investment.

While motivation was strong among the South Africans in Switzerland, the first and last criterion were lacking. In order to mobilise, one needs to have a shared sense of identity and community. This was lacking in the South African diaspora due to its legacy of cultural and racial social fractures. The upcoming bilateral agreement on science and technology between the South African De-

2 This is based on Esmán (1986) three factors: "material, cultural and organizational resources available to them 'diasporas'; the opportunity structures in the host country; and their inclination or motivation to maintain their solidarity and exert group influence" (336).

partment of Science and Technology and the Swiss State Secretariat for Education and Research, which is to be signed by year's end 2007 and implemented by 2008 will go lengths towards creating an enabling environment for top-down diaspora initiatives. The signatories pledge to increase interaction through joint scientific research, cooperation programs, exchanges and seminars on the areas of public health and bio-medicine, biotechnology and nanotechnology and human and social sciences.

Along with this important agreement, this research enumerates the South African highly skilled diaspora, depicts its skills and expertise and links members up with each other. In so doing, it creates a sense of community and acts as an enabling mechanism to foster and galvanize diaspora members towards partaking of and creating greater opportunities to positively impact the development of their country of origin.

In terms of the three brain gain mechanisms identified by this project – knowledge transfer through scientific diaspora networks, research and experimental development and north-south research partnerships, six initiatives were highlighted although only two are linked to science and/or technology. These include: acting as a cultural ambassador for South Africa, giving lectures while visiting South Africa, using country of origin as a module in psychology lectures in Switzerland, working with the South African Centre of Epidemiological Modelling and Analysis to highlight the linkages between mathematical modelling and disease progression and transmission and a student exchange program between South African students from the University of Capetown and the University of Basel.

Other philanthropic initiatives beneficial to the social and economic development of South Africa were identified, including: linking up under-funded NGOs with resources and organizations in Switzerland, transportation and distribution of clothing to HIV orphans, donation of funds for the creation of a classroom and launching a market for South African hand-made goods in Switzerland. For those who were not involved in any activities, lack of visible opportunities, free time and motivation from Swiss institutions were highlighted as key reasons.

The South African Embassy was cited as an asset to those interested in involving themselves in projects dedicated to their country of origin. In fact, South Africa has a leading role in the process of developing a shared vision for sustainable development in Africa and incorporating the contributions of the diaspora as Africa's sixth economic region. The nation has been appointed by the African Union to present the African Union-African Diaspora Summit with the theme of "Towards the realization of a united and integrated Africa and its Diaspora: a shared vision for sustainable development to address common challenges" in 2008. This is the first regional agenda of its kind that endeavors to

include the diaspora as part of the continent's development agenda. The efforts of the Embassy to link up diaspora members in Switzerland with resources are exemplary.

Each respondent retained a deep desire to give back and positively benefit South Africa although the channels through which they facilitated this exchange varied. The task now is to enhance and deepen these exchanges to increase the beneficial impact on development.

The diaspora should increase its awareness on current initiatives and collaborations between South Africa and Switzerland in the academic, professional, scientific and research-based spheres is necessary. Increased dissemination of information on the content and skills of the South African diaspora in Switzerland is also pertinent. The South African government should increase communication with the diaspora to remain informed of different initiatives, provide financial and other types of resources, propose policies and new projects and enhance collaboration with Swiss academic and scientific entities.

Academic, inter-institutional exchanges should be increased and formalized to broaden channels for the flow of knowledge, technology, financial and other resources and social understanding, as is currently being done through the bilateral agreement. Greater forums for communication, including conferences and seminars devoted to engaging the diaspora and promoting their role in development should be opened. Associations oriented towards South Africa should increase their visibility, providing information on their objectives, structure and undertakings. Furthermore, associations should expand their mandates to include having a positive impact on the economic, social, technological or research-based development of South Africa. By deepening all of these channels of interaction, the South African nationals who comprise the scientific and professional diaspora can have a great impact on the social, economic, technological and academic development of their country of origin.

1. Introduction, Methodology and Context

1.1 Introduction

The Swiss Network of Scientific Diasporas to Enforce the Role of Highly Skilled Migrants as Factors for Development project traced Colombian, South African and Indian migrants living in the diaspora in Switzerland. The goal of the project was to identify mediums through which highly skilled expatriates could influence development, namely the circulation of knowledge and brain gain

initiatives known to impact development. By investigating these linkages the project sought to create further connections between skilled populations from the three target countries and encourage positive synergies that could impact social and economic development. The project also highlighted best practices and policies to enhance the potential contributions of highly skilled migrants. Data analysis was undertaken on a country-specific basis towards the creation of case studies.

The Swiss Network of Scientific Diasporas project brought together the Ecole Polytechnique Fédérale de Lausanne (EPFL), International Labour Office (ILO) and the University of Geneva (UNIGE) and was funded by the Geneva International Academic Network (GIAN). With the goal of greater comprehension of highly skilled migrants' perceptions, concerns, personal and professional trajectories couched in the framework of identifying brain gain mechanisms towards the development of countries of origin, these three entities came together to form a positive synergy, each contributing expertise to this complex topic.

The analysis aims to provide recommendations to deepen and enhance these initiatives to create a greater impact on South Africa. Taken together, the case studies provide a more comprehensive understanding of these migrants' contributions and accomplishments, in terms of development, methods to further deepen this impact and encourage networking and fostering linkages and cooperation among the three communities. The project also drew comparisons to highlight lessons learned from each community's experiences and brought good practices and policies to light that would encourage further development.

The objective of this report is to highlight brain gain and philanthropic initiatives and other transnational endeavors and connections that the highly skilled South African diaspora maintains with its country of origin. Twenty-six highly skilled South African migrants were identified. They represent a broad swath of society, painting a picture that weaves in different professions, home regions and cities and socioeconomic backgrounds. Their testimonies give unique insight into the underlying causes and motivations for migration, current socio political and economic trends unfolding in South Africa, ongoing efforts to positively impact these trends and ways to expand on these efforts.

To contextualize the findings, the report will provide an overview of the current social, political, economic and migration-related situations unfolding in South Africa and a brief summary of Swiss-South African relations. These will serve as an introduction to the country, highlighting key trends and concepts that will subsequently be highlighted through the report. A section on the causes and characteristics of international migration will follow. The next section deals with the living and working conditions of the highly skilled. Subsequently, the report provides an analysis of brain gain, philanthropic and other

transnational initiatives underway. In the penultimate section the report highlights different associations and organizations geared towards South Africa. Finally, conclusions are drawn with the aim of highlighting good practices and making recommendations to further enhance migrants' development efforts.

1.2 Methodology

This section will elucidate the methodology used to bring the Swiss Network of Scientific Diasporas project to fruition. The research plan consisted of six parts: literature review, preliminary interviews, selection of the country case studies, designing sampling strategy and identification of key people as respondents, design of the qualitative interview and analysis of qualitative data. The objective was to identify students, academics, researchers and professionals considered to be "highly skilled" defined as those with a tertiary level education or relevant professional experience (OECD, Canberra Manual, 1995).

In order to expand understanding of the key themes to be addressed by the project, a broad-based literature review was completed. Researchers consulted information detailing highly skilled migration and its linkage to development of countries of origin, plus sources elaborating on the functioning and productive uses of scientific diasporas. Researchers relied heavily on the International Labour Office's Multilateral Framework on Labour Migration which defines a set of guidelines for policymakers, employers and workers for a rights-based approach to labour migration (2006). With regard to development, the Framework states that: "The contribution of labour migration to employment, economic growth, development and the alleviation of poverty should be recognized and maximized for the benefit of both origin and destination countries" (ILO, 2006: 29).

Among its proposed guidelines, the Framework indicates a need for,

... adopting policies to encourage circular and return migration and reintegration into the country of origin, including by promoting temporary labour migration schemes and circulation-friendly visa policies... facilitating the transfer of capital, skills and technology by migrant workers, including through providing incentives to them... promoting linkages with transnational communities and business initiatives. (ILO, 2006: 30)

The project's objective of promoting development through the circulation of knowledge, expertise and skills is couched in this statement. Information gathered through the literature review was looked at both generally, theoretically and specifically, with regard to Switzerland and India, Colombia and South Africa respectively. Various sources were consulted including the Swiss Federal Bureau of Statistics, Federal Office of Migrations, Cantonal Bureau of Employment,

various local and international scientific networks, universities, research institutes, international organizations and expatriate associations.

Researchers conducted preliminary interviews on academics, professionals and Swiss federal authorities working on migration and development cooperation issues to test and improve the qualitative interviews. Subsequently, the project identified the three target countries – Colombia, South Africa and India – because of their dynamic and active global diaspora networks and considerable presence in Switzerland. In terms of the total share of highly skilled migrants from sub-Saharan Africa residing in Switzerland, South Africa ranks first claiming some 73.1 per cent of the this population.

A snowball sampling method, or chain referral strategy was used whereby interpersonal connections were tapped to identify respondents. Each respondent provided several names at the end of the interview of further contacts who might be interested in the project. Respondents were students or professionals from institutes of higher education, research centres, international organizations, multinational corporations, finance institutes and banks. Internet searches and networking were highly utilized to find potential respondents. The project identified 26 highly skilled South African migrants.

The finalized qualitative interview asked a multitude of questions on the following areas: sociodemographic information;³ causes and characteristics of international migration and migrants' lives; brain gain: mechanisms, strategies, challenges and impact on development of country of origin; interrelations between country of origin and country of destination: return, circulation, settlement in Switzerland and perceptions of country of origin and scientific diasporas and other expatriate diaspora organizations.

Researchers met respondents in their offices, public cafés and restaurants or university campuses to conduct the interviews, which lasted between 1.5 and 2 hours. Appointments were committed to through emails and phone calls. The interview session began with an explanation of the objectives, anticipated results and overall conceptual frame and structure of the project. Conversation generally flowed easily and a candid and diplomatic environment was established between researchers and respondents. Some potential respondents lacked the time to participate. Even these people, however, were generally eager to hear project results once available.

The committee of researchers designed a data analysis template used to categorize and analyse responses to the questions on the qualitative interview. In this way researchers could highlight trends, commonalities and socio-demo-

3 The socio-demographic characteristic section of the template has categories for variables, including: gender, age, profession/field, level of studies, place of residence, length of stay and migration status/residence permit.

graphic characteristics of the respondents. The template allowed researchers to analyse experiences and deduce main findings, conclusions and first recommendations of the project.

The South African Embassy in Bern was of great use to the project in linking the researchers up with scientists working on exchanges with South Africa, inviting participation in events attended by potential South African respondents on topics relevant to the country's social and economic development and providing a wealth of information and potential collaborations.

Difficulties included diversifying the profiles of the respondents and tapping into variegated social circles. Given the small sample size, this problem was exacerbated. This problem was partly rectified by asking respondents to provide names not only of colleagues and personal acquaintances but those coming from different professional, scientific and social circles.

1.3 Social, Political, Economic, Migration Contexts and Overview of Swiss-South African Relations

From the night of apartheid arose multifarious possibilities for re-birth through the creation of an egalitarian state in which the color of one's skin and gender would have no bearing on your quest for life. The year 1990 saw the toppling of the apartheid regime. Four years later South Africa witnessed the election of Nelson Mandela as the first black president and the inception of a long and arduous political, social and economic transition. From a policy of extreme racial stratification, the country took its first steps towards non-racialism and reconciliation. Thirteen years later progress is palpable, yet large inequalities remain.

1.3.1 A New Political System

Among the slew of delicate challenges facing South Africa on the eve of its re-birth in 1990, was the creation of a non-racial, democratic government system. Up until then, the main purpose of the state had been to maintain the provision of exceptional public services to the white minority. Today South Africa is a constitutional democracy. An egalitarian, progressive and world-renown constitution was drafted that is founded on these principles:

Human dignity, the achievement of equality and the advancement of human rights and freedoms, non-racialism and non-sexism, the supremacy of the constitution and the rule of law, universal adult suffrage, national common voters roll, regular elections and a multi-party system of democratic government to ensure accountability, responsiveness and openness. (Constitution of the Republic of South Africa, 1996: 1243)

Chapter two of the Constitution continues on to spell out a multitude of freedoms including freedom of expression, association, plus rights to property, education, healthcare, housing and political involvement. Among its most widely discussed stipulations is one banning discrimination based on sexual orientation. Aside from human rights and freedoms, the constitution names eleven official languages and upholds each person's right to express him/herself in the language of his/her choice (Constitution of the Republic of South Africa, 1996). The Constitution also establishes checks and balances to ensure democratic practices, including term limits, specifications on how representatives are elected and necessitating that amendments to the state's founding principles require a 75 percent majority in the National Assembly. With such a torrid history of extreme racialism and sexism, South Africa was able to draw on its experiences and those of its democratic compatriot states in creating a truly progressive, durable and reputable constitution.

South Africa has a three-tiered governmental system, an independent judiciary and a mantra of cooperative governance. The legislative, executive and local governmental branches have specific authority and duties, but work harmoniously together. Advisory bodies composed of traditional South African leaders complement both national and provincial leaders' expertise. The parliament exercises legislative power and is comprised of two houses – the National Assembly and the National Council of Provinces. The National Council of Provinces is another smaller arm of the legislative branch of government. It is comprised of provincial representatives and helps join local and national interests.

The executive branch consists of the president and his cabinet. The National Assembly elects the president from among its members. The head of state then appoints his deputy president and 25 ministers, of whom all save two must be selected from National Assembly members.

South Africa has multiple political parties, 16 of which are represented in the National Assembly. The African National Congress holds the majority of parliamentary seats. The main opposition party is the Democratic Alliance, followed by the Inkatha Freedom Party.

Despite the enshrined checks and balances in the Constitution, South Africa has witnessed a consolidation of power. The president elects his own ministers, the provincial premiers and mayors of large cities where the African National Congress (ANC) won the majority of votes. The Democratic Alliance appeals primarily to the white and colored contingents; a mere one-tenth of its supporters are black. This bodes ill for the party in a country where blacks comprise some 80 per cent of South Africa's 47 million people (The Economist, 2007, website).

Without a vocal opposition group, the ANC could slide into a monolithic role, silencing pluralist views and diverse political voices. Consolidation has

given rise to fears of President Thabo Mbeki perhaps seeking a third term in 2009, despite constitutional term limits, and of South Africa falling into the post-colonial, despotic, authoritarian state mould of so many of its African compatriots (Szeftel, 2004). Alongside this worry is the fear that the ANC will reach the requisite two-thirds majority in parliament and change the Constitution – the foundation for the fledgling South African democracy. Opposition would then be silenced and the country would fall in step with other failing African states (Lundahl and Petersson, 2004). Many respondents voiced such fears.

Accusations of corruption have also recently surfaced in South Africa. In terms of overall corruption, Transparency International ranks South Africa 51st from the top, just ahead of Costa Rica, Greece and Dominican Republic, with a score of 4.6 (Lundahl and Petersson, 2004). Deputy President Jacob Zuma was sacked last year for charges of rape and corruption, shortly after his financial adviser Shabir Shaik was convicted of fraud and corruption. Zuma supporters believe that the charges were a ploy to outmaneuver him from the political game and upcoming elections. He still retains much influence over ANC leaders in KwaZulu Natal and the ANC Youth League who pledge that he is their presidential candidate of choice. Although his charisma has been known to impassion crowds, the bitter taste of the fraud charges still lingers, and his statement that a mere shower can prevent the transmission of HIV will not soon be forgotten.

Health Minister Manto Tshabalala-Msimang has been implicated in charges of alcoholism, theft and has been accused of abusing power to skip to the top of a waiting list for liver transplants. Her deputy minister Nozizwe Madlala-Routledge was sacked allegedly for making an unauthorized trip to attend an AIDS conference in Spain. Stories abound of the latter's clashes with President Mbeki and Health Minister Tshabalala-Msimang, because of her more progressive approaches to tackling the HIV/AIDS epidemic. Much of the rest of the world commended for her innovative perspectives on tackling HIV/AIDS. Political consolidation, the supposed rooting out of corruption and the potential for regional instability due to political-social-economic collapse in Zimbabwe are current key trends in South Africa.

1.3.2 Mitigating Social and Economic Inequalities

South Africa has long been home to a people with a plethora of creeds, ethnicities, beliefs and races. Dubbed by Archbishop Desmond Tutu as “the Rainbow Nation,” this rich cultural character is both what gives the country its strength and makes it difficult to govern. A leveling of the social playing field has been underway, as decades of racial disenfranchisement are being undone. An at-

tempt at providing greater opportunities for non-white South Africans has manifested itself in numerous government policies. Racial segmentation can still be seen in the civil and security services, land distribution, property rights and the legal arena. Although racial tension still exists, it bears only a blurry resemblance to the “prejudice and animosity of the past” (Szeftel, 2004).

Black economic empowerment (BEE) programmes have been established to compensate for apartheid-era disenfranchisement. Mercy Brown elaborates on this phenomenon stating that,

policies during the Apartheid era... saw an under-investment in the education and training of the majority of the country's population as well as a historical weakness in terms of science and mathematical teaching at all levels of education. (Brown, 2003a: 20)

These schemes have sought to rectify this. The ANC's strategy for the BEE programmes was to promote the private sector, small, medium and microenterprises, cooperatives family and village economic activities, and the development of poor and under-resourced areas (Iheduru, 2004). Legislation, preferential procurement, privatization of government-owned companies, management of natural resources, business licenses and quotas and investment credit provision and promotion of the black capital market have all been used to encourage BEE. Some programmes have focused on inciting black shareholders to join white-dominated, state-owned companies. Amendments to the programmes require companies to comply with seven criteria, including having a number of blacks in high management positions and paying for skills training (The Economist, 2007). Through these programmes, the government endeavored to empower the smaller workers and businessmen, not simply those who already had a large share of the economic pie. Whether this was truly achieved is debatable. Adam notes, “as embourgeoisment proceeds apace, with more and more blacks enjoying a lifestyle that is commensurate with their newly attained corporate positions, South Africa's fledgling black middle class is visibly growing” (Adam, 1997: 236).

Fears surface that this has bred a nouveau black aristocracy that is benefiting at the expense of the lower class, largely low skilled and unemployed majority black population. Between 1991 and 1996, the richest 10 percent of blacks accounted for over half of the total black South African incomes. While the richest 10 percent of blacks witnessed an increase in average income of 17 percent, the poorest 40 per cent lost 21 percent of their incomes (Lundahl and Petersson, 2004). Critics argue that more attention must be paid to training and promoting black men and women who have fewer skills, focusing on literacy and skills acquisition. Many acknowledge the importance of BEE but stress that corrective action should be undertaken to address class-based issues including poverty, as South Africa moves towards a truly non-racial society. Critics highlight a need to distinguish between the relatively privileged and the disad-

vantaged within a racial stratum (Adam, 1997). Iheduru warns against a “re-racialisation of capitalism and a small number of ‘empowered’ black capitalists” (2004: 26). Szeftel (2004) decries the lack of job creation for the millions of unemployed and impoverished blacks, stating that current efforts are simply not enough, and a majority still live in poverty.

Affirmative action tenets include the 1998 Employment Equity Act which stipulates that employers with fifty or more workers, or who earn a certain income, must ensure that designated groups are represented in their companies, including blacks, women and those with disabilities (The Economist, 2007). The Act also formalizes rights for employees and job applicants to institute proceedings against employer discrimination through the Commission for Conciliation, Mediation and Arbitration. The Promotion of Equality and Prevention of Unfair Discrimination Act of 2000 stipulates provisions to prevent and eliminate discrimination and to promote greater racial and gender-based quality (Allanson et al., 2002).

While in 1970 whites accounted for 71 per cent of the personal income in the country and blacks another 20 per cent, by 1990, the percentage of white personal income had fallen to 54 per cent and blacks’ had risen to 33 per cent. Similarly, the richest 10 per cent of the population in 1975 was 95 per cent white; these figures had changed to 22 per cent black, 7 per cent colored and 5 per cent Indian by 1996 (The Economist, 2007). It is apparent that expansion and progress are occurring, albeit gradually.

1.3.3 Improving Educational Opportunities

Educational opportunities for blacks have also expanded considerably since the end of apartheid. Almost all South African children are now frequenting primary school. According to Statistics South Africa, the majority of children aged 8 to 13 were attending school in 2001. From the age of eight years, 95 per cent of children were also attending school (Statistics South Africa, 2005). The government allocates 20 per cent of its budget to this cause, but despite this, many complain of the low quality of education offered in public schools. Those who can afford it are turning to the increasing number of independent schools offering lower tuition and better quality teaching. The schools offering the highest levels of quality education are the formerly white state schools, which are still predominantly white (59 per cent–77 per cent white) (The Economist, 2007).

State-funded higher education rates have increased and greater numbers of women and Black students are attending schools. Current trends, including the breakdown of larger households and consequent increase in the overall number of households, plus rural-urban migration and work force growth have made grappling with poverty, educational inequalities and other such social

pathologies more difficult. In 2003, 5.2 per cent of blacks surveyed aged 20 years or older had completed higher education, compared to 29.8 per cent of whites. Reciprocally, some 22.3 per cent of blacks and 1.4 per cent of whites indicated they had “no schooling” (The Economist, 2007). Among 18-year olds, 63.7 per cent of blacks had some secondary education, but only 10.3 per cent had completed a full 12 years of schooling. For the colored population, only 60.7 per cent had some secondary education, but 21.5 per cent had 12 years of schooling. Among Indian and Asian populations, the percentages were 40.7 per cent and 51.0 per cent respectively, for the two categories. Data on 33-year old South Africans indicates that 7.5 per cent of blacks, 6.4 per cent of colored people, and 19.5 per cent of Indians or Asians had post-secondary school qualifications, while whites had 37.7 per cent post-school qualifications (Statistics South Africa, 2005). This highlights a need to further encourage the provision of quality education at all levels, especially to non-white South Africans.

1.3.4 Addressing Social Pathologies – Poverty, Crime and HIV/AIDS

The legacy of inequality can be observed by South Africa’s high rate of poverty. In 1995, 48 per cent of the population and 28 per cent of the households were living below the poverty line.⁴ By 1999 this number had increased to slightly less than 33 per cent or 3.7 million households of a total of 11.4 million living below the poverty line. Although a portion of this increase is due to the unbundling of larger households into smaller ones, this figure is still significant (South Africa Yearbook, 2005–06). The year 2001 witnessed a slight decrease in these numbers, but some 34.1 per cent of the population still lives on less than \$2 USD per day, indicating that while progress has been made, poverty remains a key issue facing the country (UNAIDS, South Africa Country Situation Analysis, 2007).

Key policies have been established to alleviate this situation including social income grants, expanded public works programmes, housing and shelter subsidies, and land redistribution and electrification schemes. In 2005, beneficiaries of housing grants increased from 325,086 to 1.6 million; 3.1 million hectares of land had been re-distributed, and 66.3 per cent of South Africans had access to free basic water by the end of the year. Electrification has been supplied to some 3.5 million households since 1994 and current figures put access at 71 per cent nation-wide (South Africa Yearbook, 2005–06).

Crime is another significant obstacle facing South Africa. Statistics indicate that overall crime is decreasing and/or stabilizing (S. A. Yearbook, 2005–06 65). Murder decreased by 5.6 per cent, attempted murder by 18.8 per cent,

4 This figure is calculated by looking at expenditure without access to services and assets.

common robberies by 5.3 per cent and aggravated robbery by 5.5 per cent between 2003/2004 and 2004/2005. Some areas of crime did witness an increase, including drug-related crime by 33.5 per cent, robbery of cash in transit by 14.6 per cent, indecent assault by 8 per cent and rape by 4 per cent.

In South Africa, a serious assault occurs every two minutes. Last year alone, more than 18,000 people were murdered. South Africa's poverty has led to a state in which "private security guards outnumber police by at least two to one." Government efforts have stepped up to clamp down on crime. In 2004, 3 per cent of GDP was spent on criminal justice – a high number when compared to the average 1 per cent the rest of the globe spends on this threat (The Economist, 2007). South Africa, ranking close to Colombia and Russia, is the global murder capital, with 67 murders occurring a day. Lundahl and Petersson note that in South Africa, "20 times more rapes are committed than are reported, i.e. over one million per year in a population of about 20 million women" (2004: 731).

The HIV/AIDS epidemic has also drastically affected the fledgling democratic state of South Africa. According to UNAIDS (2007, website), some 5.5 million people are living with HIV, and close to 1000 people are killed from AIDS every day. There are 240,000 children living with virus and 1.2 million have been orphaned because of it. The government's National Strategic Plan for HIV, AIDS and STIs and the implementation of the Operational Plan for Comprehensive HIV and AIDS Care, Management and Treatment have been established to address prevention, treatment, care and support services to improve the situation. The AIDS budget for 2005/2006 was 2.6 billion rand, which enabled 111,827 people access to free antiretroviral treatment by the end of December 2005 (South Africa Yearbook, 2005–06). Although efforts have been made, President Mbeki is openly hesitant to clearly state that HIV does indeed cause AIDS and the health minister Tshabalala-Msimang has advocated beetroot, garlic and traditional medicine as treatment for the virus. Ambiguous views and ideas on HIV treatment and its link to AIDS have meant the crisis rages on seemingly unabated.

1.3.5 Economic Expansion and Challenges

The end of apartheid and ensuing shift towards democracy instigated economic development and South Africa's re-entry into the global market (Marks, 2006). Increased export markets are being developed and relations increased with areas ranging from South America to neighboring African states and Asia. Through various international cooperative agreements – Trade, Development and Cooperation Agreement with the EU, SADC Trade Protocol – South Africa has been able to expand its network of trading partners and encourage foreign direct investment.

The nation is benefiting from a level of macro-economic stability it has not seen for 40 years. During apartheid, per-capita growth was negative. Since

then it has steadily increased at an average rate of 2.94 per cent per year. In terms of real growth, South Africans benefited from a 1 per cent increase in wealth per year since 1994 (South Africa Yearbook, 2005–06). In the past three years it has grown by more than 4 per cent. In his budget speech of 2007, Minister of Finance Trevor Manuel noted that the country had a budget surplus for the first time in history (Manuel, 2007). Up until 1999 both private and public investment fell due to lack of confidence in the government's ability to mitigate the national transition. However, since then investment has risen, particularly in the form of portfolio investment and foreign direct investment (South Africa Yearbook, 2005–06). While claiming only 6 per cent of sub-Saharan Africa's population, South Africa brings in over a third of its GDP system (The Economist, 2007). This relative excellence is due in large measure to the weak economies of the region, as significant challenges have yet to be surmounted.

Between 1995 and 2004, the number of unemployed people increased from 1,909,468 to 4,532,000. However, since the year 2000, the overall unemployment rate has fallen. It remains high at about 25.5 per cent (Statistics South Africa, 2006). It is highest among black South Africans and women and is prevalent in the rural areas (Lundahl and Petersson, 2004). Part of the reason for this high rate is the restructuring that has disadvantaged many low-skilled workers. South Africa has been undergoing a shift from the predominance of agriculture and mining to the service sector, notably the financial and business services. South Africa has also observed a rise across all labour sectors in capital-labour ratios, as a greater preference for machinery over labour gains ground (Bhorat et al., 2002).

These currents also entail a shift in demand from primarily low skilled labour to high skilled labour, as the latter category makes up the majority of the labour force in the services sector. There is a lack of supply of highly skilled migrants as many have moved abroad seeking more stable, gainful life and work experiences. The shortage of high skilled individuals is placed under increasing pressure, as there has been no reciprocal immigration of highly skilled into South Africa. In response, efforts have increased to encourage the return of highly skilled South African workers and to promote migration within the Southern African region (Bhorat et al., 2002).

1.3.6 Swiss-South African Relations

There has been much current debate on Switzerland's role in financing the apartheid regime in South Africa. Law suits have been filed against certain Swiss and international banks and corporations for their dealings during apartheid. In 2002 the pioneer *Khulumani vs. Barclays et al.* case came before the Federal District Court in Manhattan. Credit Suisse and UBS are among the corporations named. The case alleges violations of extra-judicial killing, torture, sexual as-

sault, prolonged arbitrary detention and crimes against humanity. According to the Khulumani Support Group website, the corporations supplied the financing, technology, transportation and other resources (arms and oil) to support apartheid even after the United Nations had declared it a crime against humanity.

By December of 2004, Judge Sprizzo of the New York court dismissed several “apartheid lawsuits,” even later calling them “frivolous.” The Khulumani Support Group launched an appeal and was successful only in October of 2007. Consequently, with the help of Truth and Reconciliation Commissioners, international civil society organizations, non-governmental organizations and passionate individuals, the court will have to re-assess its decision. Apartheid-era reparations have again come to the world’s attention.

Another important group is the Jubilee Debt Campaign which brings together aid agencies, trade unions, churches and activists demanding the cancellation of unfair third world debt that could never be paid. According to their website, these campaigners took a particular focus on Switzerland, drafting an “Open Letter to the Swiss President” at the time, Mrs. Ruth Dreifuss. It notes that Switzerland was a leading creditor of the apartheid regime, as it refused to comply with international sanctions and benefited from investments and exchanges with South Africa. In the late 1980s these exchanges provided capital to the apartheid government, while Switzerland made huge profits. The letter stresses that reparations must be made to South Africa in the form of debt cancellation in order to improve living conditions, provide housing, clean water, educational and health services (odiousdebts.org). Jubilee has well documented Swiss-South African relations, especially with banks. They indicate that during the 1970s the Swiss Bank Corporation (now part of UBS), and UBS/SBG Union Bank of Switzerland marketed and shipped some 80% of South Africa’s exported gold. Credit Suisse aided the Republic of South Africa by financing some CHF 110 million in loans by 1979. After 1979 this title passed to UBS who had given more loans to South Africa than any other bank.

A Swiss inter-departmental working group was established to investigate Swiss-South African relations during apartheid, whose findings were published in 1999. They indicate that there was a high degree of interaction between Switzerland and South Africa in terms of the former financing loans, trade credits and government bonds. The volume of commercial exchanges between the two countries increased from 172.7 million Swiss francs to 1,063 million Swiss francs during the period from 1963 to 1998. The report stresses that South Africa never had debt to the Swiss state, only to private Swiss entities. Switzerland never broke off the diplomatic relations established in 1952 with South Africa.

The country did, however, verbally make a moral condemnation of the apartheid system as early as 1968. In addition, during the 1980s the Swiss Federal Council demanded the liberation of political detainees and saw contin-

ued dialogue between the South African government and other interested parties as vital to achieving harmonious political solutions. Some 50 million francs were also sent from 1986 to 1994 to aid non-governmental organizations in promoting dialogue and defending human rights. While most of the Western countries imposed strict economic sanctions on South Africa starting in 1978, Switzerland refused, stating that this measure was inappropriate to correct the existing political situation and could destabilize the entire Southern African region. Switzerland's desire to retain its neutrality was also posited as a reason for not imposing sanctions.

Recently, a study has been undertaken by the Swiss National Science Foundation. The NFP 42+ research programme on "Swiss-South Africa Relations" was published in 2005 and gives greater insight into the relationships maintained between the two countries. Interesting highlights included the fact that the Federal Council altered its legislation on the release of government documents after 30 years of protection when researchers tried to gain access to archives on dealings between the two countries. The Council stated its intention to extend the date of release for documents that explicitly state the names of companies and those that contain information on trade, especially capital exports, in order to prevent Swiss corporations from being disadvantaged. The Kreis study also indicates that the two countries shared intelligence information with the goal of signing deals to improve weapons development and battling apartheid opponents through propaganda.

Research highlights that throughout the years, these two nations maintained strong ties. Even today South Africa remains Switzerland's main partner on the African continent, and most large Swiss companies and firms have established offices throughout South Africa.

1.3.7 Skilled South African Migration

South Africa has long been a destination country for citizens of its neighboring states in Southern Africa seeking better employment opportunities and wages. In the 1980s migrants originating from Zimbabwe, Zambia, Ghana, Uganda, Congo, Mali, Nigeria, Senegal, Kenya and Zaire landed in South Africa with hopes of bettering their lives. South Africa has become a viable alternative to emigration to the United States and Europe (Waller, 2006).

As defined by research undertaken by both the Africa Institute of South Africa and the Southern African Migration Project (SAMP)⁵, the typical pro-

5 The South African Migration Programme is a network of organizations who conduct research, propose policy advice, offer training and public education on the linkage between migration and development.

file of a skilled South African is a person aged 20 years or older who has either a technical diploma or a university diploma and is economically active (Waller, 2006). The skilled population is predominantly white and male and living in Gauteng, the Western Cape and KwaZulu-Natal. Blacks make up a portion of this population, albeit to a lesser degree. Among black skilled South Africans, women are more represented than men. The majority of the skilled South Africans are between the ages of 35 and 49 and employed in secondary education, retail, medicine and manufacturing (Waller, 2006). There are also significant differences between the fields of employment between black and white skilled populations. More blacks are employed in education and research, whereas whites dominate the finance and banking sectors.

The official resource for national statistics, Statistics South Africa, captures data on citizens' departures and arrivals in collaboration with the Department of Home Affairs. Their records, however, are incomplete. Immigration is documented using the number of people granted permanent residency in South Africa. In theory, departure forms are filled out by those leaving the country, but this is not strictly enforced. Furthermore, some migrants do not indicate the permanency of departures, and data is only collected from Johannesburg, Cape Town and Durban airports. Despite the broad-ranging type of data gathered – including age, gender, occupation, mode of travel, citizenship – the information is often inaccurate and incomplete (Bailey, 2003).

Table 1. Percentage South African total emigration of the 5 major receiving countries

<i>Countries</i>	<i>1990–1996</i>
SSA-UK	41
UK	50
SSA-US	11.5
US	15.5
SSA-AU	24
AU	15
SSA-CA	10.5
CA	10.5
SSA-NZ	12.5
NZ	9

Source: Meyer, Brown and Kaplan, 2000: 4. Percentages from both Statistics South Africa and official country statistics.

These inefficiencies cloud the overall picture of migration to and from South Africa. It is generally understood that the official figures are an undercount of real migration numbers. Meyer, Brown and Kaplan's study on the accuracy of official statistics on emigration from South Africa found that receiving countries indicated three times the number of skilled South Africans in the ten years leading up to 1997 than did Statistics South Africa (Meyer et al., 2000). They go on to state that between 1987 and 1997, South Africa lost 233,609 emigrants as opposed to the 82,811 documented by South African statistics.

Meyer et al. (2000) indicate that recent emigration figures are not exceedingly high, but corresponding immigration has been low, therefore a real brain drain has occurred. Over the past decade leading up to the year 2000, South Africa lost 4,600 professionals each year. There has been a consistent loss of professionals and a concurrent decrease in immigration (Bailey, 2003). Brown notes that, "The immigration of highly skilled people to South Africa is falling and it is at its lowest point in South African history" (2003a: 4). As such, needed skills are not being replaced and the brain drain is exacerbated. According to the Taipei Times online, overall, more than five million South Africans live abroad.

Table 2. Professional emigration figures according to the Countries' and Statistics South Africa Data

	1993	1995	1997
AUS (SSA)	356	308	310
AUS	353	765	1122
NZ (SSA)	93	209	286
NZ	551	462	631
CAN (SSA)	136	173	118
CAN	407	421	421
US (SSA)	153	235	258
US	461	538	538
UK (SSA)	661	368	444
UK	2068	924	2417

Source: Meyer, Brown and Kaplan, 2000: 11. Data from both Statistics South Africa and official country statistics.

Push factors are the local and national conditions motivating nationals to emigrate from their countries of origin, while pull factors refer to those beneficial situations and opportunities available in countries of destination that motivate individuals to immigration to foreign countries. The main push factors encour-

aging South Africans to emigrate include a deteriorating quality of life, especially dissatisfaction with high levels of taxation, cost of living, deteriorating safety and security and a lower quality of public services (Bhorat et al., 2002). Skilled South Africans generally do not expect to observe an improvement on these areas in the future. Crime and high unemployment were also significant push factors.

While some 65% of white skilled South Africans interviewed by Bhorat, Meyer and Mlatsheni indicated their standard of living had deteriorated since 1994, the same percentage of blacks witnessed an improvement in this respect (2002). The same study found that overall, skilled whites were dissatisfied with governmental policies. They distrusted the government and believed it disregarded their interests. Skilled blacks, however, professed much more positive views on the government. Affirmative action in particular was noted as a strong push factor by the majority of whites interviewed and some 20% of blacks. Bailey corroborates this fact noting that the political situation contributed to the emigration of professionals from South Africa (2003). Thus, governmental policies and especially affirmative action, acted as strong catalysts encouraging white skilled South Africans to emigrate.

Big pull factors include improved wages and professional opportunities, improved quality of life, better educational opportunities and greater job security (Fourie, 2006). Another significant trend is the technological revolution and ensuing spike in demand for IT engineers and other service sector employees. Increasingly professionals from the developing world and South Africa in particular, are stepping in to fill these vacancies in developed countries.

Bailey's (2003) study on skilled South African migration highlights that the bulk of skilled emigrants are between 25 and 34 years old and 35 and 44 years old and are increasingly women. According to this source, the proportion of women has increased from 26 per cent of all skilled emigrants in the 1970s to 43 per cent in the 1990s. Emigrants have moved in the largest numbers to Europe (45 per cent namely to the United Kingdom), Australasia (24 per cent), and North America (14 per cent). In 1996 overall emigration from South Africa was 11,400 individuals to the United Kingdom, 2,966 individuals to the United States, 3,211 individuals to Australia, 1,526 individuals to Canada (Meyer et al., 2000). By the year 2000, these numbers had increased to 15,045 (UK), 3,962 (U.S.), 8,932 (Australia), 2,970 (Canada) (Bailey, 2003).

Along with the increase in the overall number of South African emigrants, there has been an upswing in the number of those seeking residence in Switzerland. In 1995, 717 South Africans were residing in Switzerland. By 2005 this number had nearly doubled to 1,365 individuals (PETRA Population Résidente Permanente de Nationalité Etrangère/Office Fédérale de la Statistiques, 2006). With respect to the share of skilled South African migrants in the Swiss labor

force, 73.1 per cent are highly skilled and 26.9 per cent are low skilled. South Africans accounted for 0.2 per cent of the overall highly skilled migrant labor force in Switzerland in the year 2000. In terms of naturalized Swiss citizens of South African origin, some 51.1 per cent are highly skilled and 48.9 per cent are low skilled.

Geographically, the highly skilled South Africans are spread across Switzerland. In the year 2000, the majority resided in the canton of Zurich, followed by Geneva, Zug, Basel and Neuchatel. With regard to the branch of the economy in which the highly skilled South Africans work, the majority are in the real estate and other business activity category (19.6 per cent), followed by the finance and insurance (18 per cent), trade (12.5 per cent) and manufacturing and energy (12.2 per cent). Switzerland's lure has enticed a significant number to seek opportunities within its borders (PETRA/OFS, 2006).

2. Sociodemographic Information, Causes and Characteristics of International Migration, and Migrants's Lives

2.1 Sociodemographic Characteristics of the Respondents

The project interviewed twenty-six highly skilled migrants, working in fields ranging from education and research to private companies and international organizations. Sixteen men and ten women were interviewed. Of the total respondents, five were students and two were completing the International Organization Masters in Business Administration programme at the University of Geneva. Another was concentrating on sports administration at the Ecole Polytechnique Fédérale de Lausanne, one was completing her PhD in geology and one was doing his Masters in Anthropology and Postcolonial Studies at the University of Basel. Most were professionals working (or who had previously worked) in different private companies, universities, ministries and international organizations. The overwhelming majority of the respondents lived in various locations before settling in Switzerland. A minority indicated moving directly to Switzerland.

Table 3. Sociodemographic characteristics

<i>Professionals: 21</i>	<i>Students: 5</i>
Working for private companies, including Ayanda Biosystems, Man Investments, Holcim, Cemex, Investec Trust; universities such as the Ecole Polytechnique Fédérale de Lausanne and University of Basel; the South African Permanent Mission to the United Nations; international organizations.	Including IOMBA Program at UNIGE, Masters in Sports Administration at EPFL, PhD in Geology, Masters in Anthropology and Postcolonial Studies at the University of Basel.

Source: Kwankam, data collected during the 2007 survey of Scientific Diasporas project 2009.

This differs from Meyer’s research which highlights that, “Most diaspora members have settled in the country to which they initially migrated when they left the country of origin” (2001). Nine respondents were binational, and the rest had B Permits (10), Legitimation Cards (4), C Permits (2) and one (1) has an L Permit. Fourteen of the interviewees lived in the French-speaking areas, while twelve were based in the German-speaking part of Switzerland.

Table 4. Migration trajectories

<i>Came directly to Switzerland: 8</i>	<i>Had intermediate stops: 18</i>
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Source: Kwankam, data collected during the 2007 survey of Scientific Diasporas project 2007.

2.1.1 Racial Breakdown of the Respondents and Studies on the Skills of South Africans Disaggregated by Race

Respondents represented the following racial groups: Caucasian/white (21), Indian (2), colored, black and white racial origins, (2) and black (2). This does not give a particularly thorough view of the highly skilled diaspora. More representation is needed by the black, colored and Indian highly skilled populations in the diaspora in Switzerland. Although they are a small percentage, their contributions are still valuable and their concerns, perceptions and migratory paths often differ from each other and those of white South Africans.

The majority of the highly skilled South African diaspora is white (Bhorat et al., 2002). Within South Africa, 72 per cent of the skilled population is white, a mere 26 per cent is black (Brown, 2003a: 3). This is due to the legacy of apartheid, which limited blacks’ opportunities for professional and educational attainment. The study conducted by Crush et al. (2000) for SAMP on skilled South Africans residing in their country of origin, noted a rapidly growing black skilled sector that was represented by its study, which had 26 per cent

non-white respondents – 18 per cent black, 8 per cent colored and 3 per cent Indian (Bhorat et al., 2002). Lyndith Waller (2006) indicates that the skilled population is predominantly white. Slowly an equalization process has gained ground, but the much lower numbers of skilled blacks in the diaspora is a testament to South Africa's history.

Further studies should be conducted to differentiate and compare the skills and projects to impact South Africa of Black, Indian, Coloured and white South Africans in the diaspora in Switzerland and beyond. While much work has been done documenting who comprises the South African diaspora and debating the brain drain (Bailey, 2003; Bhorat et al., 2002; Brown, 2003b; Crush et al., 2000; Waller, 2006), little has been written about the contributions of the diaspora. Meyer and Brown (1999) and Brown (2003a) detail the South African Network of Skills Abroad (SANSA).

Anco Fourie (2006) elaborates on highly skilled South Africans living in the United Arab Emirates, finding many similarities to the Swiss Network project in terms of push factors and pull factors and future migration paths).

In "Brain Drain and Brain Circulation: A Study of South Africans in the United Arab Emirates," Fourie describes main push factors as: desire to gain international experience, crime and violence, economic reasons (high cost of living and levels of taxation) and affirmative action. Pull factors include: job opportunities, higher income levels, lower crime rate and no taxation. In terms of migration trajectories, a significant number of South Africans want to retire in South Africa and raise their children there, but hope for improved crime and salary levels; some plan to stay in the UAE longer than 10 years. Their findings indicate that the respondents were 87.3% Caucasian, 5.75% Coloured, 4.0% Indian, 1.7% Black and 1.1% Other. The number of studies that detail the racial characteristics of the diaspora and their contributions are limited. There is still little known about the racial breakdown of the global South African diaspora and the initiatives they are involved in.

2.2 Causes for International Migration: Professional Attainment and Financial Attraction

Respondents indicated a range of reasons for initiating their migratory paths. These include pull factors: professional attainment, educational opportunities, love, and push factors: the high domestic crime rate, affirmative action, and the restrictions of the apartheid regime. Financial and professional attraction and the promise of higher wages lured some into migrating. About half of those surveyed underscored their desire to emigrate in order to excel professionally; a smaller number were transferred by their employers and looked forward to

the new opportunities. One person noted that it is easier to find work in Switzerland than other European Union (EU) countries as a non-EU national. For some higher wages provided incentive. Bailey (2003) underscores this fact, noting that attractive salaries offered by companies in North America, Europe and Australia create an impetus for migration. Repeatedly, respondents bemoaned the lack of professional opportunities in their country of origin. Similarly, one interviewee noted having reached the top of his field within South Africa as the catalyst for his move. These variegated fears cemented the South Africans' decisions to emigrate.

A lack of educational resources and facilities was the second main area cited. The Bantu Education Act of 1953 stipulated segregated school systems for whites and blacks (Ka Choeu, 1991). While the former engaged in an array of standard subjects including science and maths, the latter received training focused on agriculture to gear them towards non-skilled, non-white and non-threatening labor. Faced with the prospect of such restrictions and a low overall level of research and higher educational opportunities, a number of people fled the country to pursue better educational opportunities. One woman remarked on

...the opportunity to study in a more first-world place with laboratory facilities that do not exist in S.A.

(Masters student, University of Bern)

She also noted that Swiss educational institutions were home to some of the best researchers in the earth sciences field. Not only were there greater opportunities to be had beyond South Africa's borders, but some had the opportunity to receive quality education at no cost. One such binational (Swiss-South African) respondent noted the availability of free higher education for Swiss nationals in Switzerland. This created a large incentive to migrate.

The high crime rate in South Africa and increasing incidence of rape – 4 per cent increase between 2003/2004 and 2004/2005 (South Africa Yearbook 2005–06: 65) – discouraged a few respondents from staying in their home countries. As rape disproportionately affects women, it was not surprising to note that these respondents were women. Such fears are warranted in a country where between 2003–2004, 52,733 people were raped. One migrant recounted spending all day “counseling victims of violence and people with AIDS.” She had enough. These migrants' views and the statistics speak volumes about the need to curb crime and provide greater chances for people to pursue life's opportunities in their country of origin regardless of their race.

Affirmative action was cited by several respondents as a key deterrent to staying in South Africa. Studies conducted by Bhorat et al. (2002) and Waller (2006) on skilled labour migration in Southern Africa identified affirmative action as an important factor influencing white highly skilled South Africans to

emigrate. While these studies highlight that skilled whites are adamantly opposed to this policy, the project's findings revealed that it was an important determinant of migration. Although they were not vocally opposed to it, affirmative action was noted as a deterrent to finding gainful employment for skilled whites and coloreds in South Africa. The legacy of racism and current policies to counteract this history make excelling in life more difficult for racially mixed and white South Africans. Such worries held weight for one migrant.

Finally, the censorship of the apartheid regime forced some from their homes. One respondent recounted that due to censorship, those who vocalized views that deviated from official credos were branded communists, often rid of their passports and/or sent into exile. He was one such individual. Another woman fled as she refused to raise her children in such an oppressive environment. Restrictionary policies in education, lack of professional opportunities and extreme censorship all encouraged the migration of the highly skilled migrants surveyed. Bailey (2003) and Crush et al. (2000) corroborate this fact noting that political upheaval often precedes massive emigration.

Other studies found similar conclusions, namely that migrants main push factors included a deteriorating quality of life, dissatisfaction with safety and security. Low levels of crime, adherence to rules, safety and stability were the main attractions for the migrants in their study income (Bhorat et al., 2002; Waller, 2006; Crush et al., 2000; Bailey, 2003). Bhorat et al. (2002), continue on to say that potential emigrants were less dissatisfied with the education system, healthcare and personal economic situations. The skilled South African population in Switzerland, however, cited personal economic and professional situations as key motivators for migrating, and the latter two as concerns deserving greater attention by the government. However, not all of the motivations behind migration were purely negative.

Love was a significant reason for emigration cited by a few South Africans. While one was in a cross-racial relationship and felt it would not be accepted in South Africa, the other four (two males, two females) fell in love with Swiss nationals who became their partners. Yvonne Riaño (2003) describes such people as "love migrants." She indicates that,

the reasons that convince this type of migrant to leave her country or to permanently stay abroad are a combination of love, gender and economic factors... Migration is not her priority but she realizes that in order to have common lives with the person she loves she needs to consider migration. (Riaño, 2003: 8)

This was the case for these South Africans. Familial or friendship-based relationships emerged in ten cases as secondary motivations for migration, as many people had either family or friends living in Switzerland who encouraged them

to seek employment or pursue educational studies here. Established support systems in Switzerland played an important role in convincing them to migrate.

Looking specifically at women, the majority moved to Switzerland either as a part of family relocation, often when one parent or spouse was Swiss, or with their husbands who found employment here. Only two of the women interviewed moved primarily for professional and educational reasons. Of the men interviewed, only two noted having moved to Switzerland because their wives are Swiss. For one this was not the primary deciding factor in his choice to emigrate. Three of the male respondents indicated family reunification or friendships in Switzerland as driving factors behind their emigration. Thus, the majority of the males moved for better employment and research/educational opportunities. Respondents across the gender board noted security and high cost of living as deterrents to staying in South Africa.

2.3 Migrant's Lives

2.3.1 Living and Working Conditions of Highly Skilled Migrants in Switzerland

Along with uprooting oneself comes a host of difficulties including language barriers, finding housing, gainful employment, friendships and relationships, adjusting to different cultures, lifestyles, mindsets and weather patterns. The migrants interviewed cited many such challenges in their transition to living in Switzerland.

While South Africa and Switzerland are polyglot countries claiming eleven and three official languages, respectively, the two countries share none in common. Consequently, language was the most significant obstacle faced by respondents upon arrival in their new country of residence; a majority of the twenty-six total respondents underscored this impediment. The South Africans overcame this obstacle through courses and family support, and also by forming relationships with francophones. This hindrance was highlighted by both migrants living in the German-speaking and French-speaking regions.

Among other issues associated with transition were finding housing, employment, adjusting to the higher cost of living in Switzerland and the non-transferability of degrees. To deal with these encumbrances, migrants relied heavily on their families and colleagues, and some took on multiple jobs to earn enough money. Three South Africans voiced frustration over the lack of transferability of their South African degrees. One described the situation:

One of the big things was getting registered at the university, because they didn't accept my South African qualifications. It was an uphill fight with the administration. I felt very different and stood out.

(Masters student, University of Bern)

Another respondent recounted that in Switzerland, she was encouraged to repeat her entire training in order to work. Riaño (2003) emphasizes this as a key deterrent to (Latin American) women's participation in the Swiss economy stating, "Swiss employers do not accept these degrees and therefore they cannot be used when applying for a job... (Latin Americans) ... are obliged to repeat almost their entire studies" (Riaño, 2003: 14).

By creating barriers to employment, Switzerland is discouraging these women from working. They are highly talented and offer skills that could be of use to Switzerland, including expertise in scientific research and psychology. These respondents are examples of brain waste. Brain waste occurs when skilled migrants emigrate, but do not make full use of their expertise and education (Mattoo et al., 2005). Wickramasekara (2003) states that brain waste minimizes gains for both countries of origin and destination, as migrants can neither contribute to the economy in their host country nor develop the skills and ability to contribute back to their home country. By deterring these South African scientists from working, both Switzerland and South Africa lose the potential benefits of their training and expertise. Other obstacles were mitigating rigid gender roles. One woman recounts:

The hurdle of the mentality is great; my husband comes from a small and conservative canton (Schwyz) and people are very conservative "a woman should know their place"; the role of the women I was supposed to have was not what I was expecting! This region is very conservative in comparison to Zurich.

(Communications coordinator)

It took her time and increased dialogue with her husband and his family in order to adjust to these expectations for women. Another woman described needing her Swiss husband's assistance to accomplish even the small tasks such as opening a bank account, renewing her residence permit, etc. During the interview she exclaimed,

I was reduced to an eighteen year-old!

(Social activist)

She noted that once she received her Swiss passport these constraints lessened. Adjusting to different communication patterns and business management styles were also noted. Gradually, these people learned to accept or at least, understand Swiss value systems and norms. While language ranked first as the larg-

est obstacle, these cultural differences posed barriers to respondents' living comfortably in Switzerland.

2.3.2 Cultural Barriers Faced by Migrants: Xenophobia, Discrimination and Racism

With regard to non-logistical types of transitions, adjusting to the Swiss culture was highlighted by almost half of the migrants who had strong views on this issue. A majority of this subgroup described the Swiss as unsocial, making it difficult to interact with people and build friendships. Two people believed the Swiss to be "slightly xenophobic" and observed a lack of mixing between Swiss and international communities. Migrants poured out their experiences on living in Switzerland. One woman felt completely isolated as she could not speak French. She said,

Nobody would let me in to the local community.
(Financial specialist)

She bemoaned the insular Swiss attitude. Another person noted that he was repeatedly told to "act Swiss." By this he was meant to comply with certain social norms – speaking Swiss German, not mowing his lawn after 19h, not making noise at home after 22h.

Discrimination was another significant obstacle noted by two migrants. One stated:

Obstacles for me were more negative attitudes of people... people thinking because you're from Africa you don't know anything and they still need to teach you something... The way foreigners are treated here as well as the mentality of political parties reminds me too much of the apartheid era in South Africa.
(Masters student, University of Basel)

Overcoming these "small-minded obstacles," as he described them was difficult, as he had to prove his worth as a person, an intellectual and an African. This respondent elaborated on the wave of *fremdenangst*, or xenophobic fear of foreigners, that grips Switzerland. By increasing his friendships with both Swiss nationals and foreigners, he was able to integrate himself more fully, although the process was difficult. Another respondent described an extremely racist event that occurred upon her arrival in Switzerland. When she offered her seat to an elderly woman on the tram, she was violently rebuffed by a screaming, "Go away! I want nothing to do with you."

Racism and discrimination are significant issues faced by Africans and migrants from other foreign communities living in Switzerland. Consequently,

one South African political activist and respondent started the organization SOS Rassismus, which counsels victims, records acts of racism in Switzerland and disseminates information on these important topics. Acts of racism are catalogued into a database and distributed to human rights organizations, including Amnesty International and Human Rights First. SOS Rassismus takes its work one step further by partnering with the Swiss Africa Forum and acting as an umbrella organization for the African diaspora in Switzerland and through linking Swiss institutions and organizations to their African counterparts. Disseminating information on SOS Rassismus and the Swiss Africa Forum would help newly-arrived South Africans with integration. Tapping into this organization would also enable the expansion of the network of skills and expertise of the diaspora that could be transferred back to South Africa.

2.3.3 Difficulties with Social Integration

Riaño (2003) defines social integration as “equivalent to participation.” Those respondents who felt integrated believed similarly, and noted speaking an official language, participating in community events and having Swiss friends as key indicators. Some South Africans adapted fairly easy; such migrants learned the language of their region relatively quickly and consider themselves integrated in their communities.

While a little less than half of the interviewees felt comfortable and integrated in Switzerland, several of these expressed feeling professionally integrated, but not socially. These respondents were both women and men. A minority of these respondents indicated feeling they could never be 100 per cent integrated, because of all the cultural differences separating them from the Swiss. Several people noted the difficulty of integrating with the Swiss, although these people felt comfortable in Switzerland in general. Those who had difficulties integrating lived in both the French and German-speaking areas of Switzerland. This suggests that cultural and social integration is difficult regardless of one’s location in Switzerland.

Feelings of cultural isolation were voiced by women and men from both the German and French-speaking regions, as were difficulties in accepting static gender roles. However, the majority of those who indicated being professionally integrated were living in the French-speaking area and did so by finding their niche in the vibrant international atmosphere so dominant in Geneva and to a lesser extent, Lausanne. Those living in the Swiss German parts of the country became more integrated in their societies and to a lesser degree, their professional circles but could not simply blend into the international mosaic.

A small number of people felt partially integrated and comfortable living in Switzerland, but not fully accepted. Others did not feel at all integrated, as

they were not fluent in an official language and did not have many relationships with Swiss people. However, this statement was not synonymous with feeling uncomfortable in Switzerland. Indeed, many were not bothered by their lack of integration with the Swiss, as they had friendships, family, employment or some combination of those aspects in their lives here.

2.3.4 Positive Impressions of Countries of Destination

On a different note, several people described positive impressions and experiences. A few respondents made observations about Swiss efficiency, politeness, cleanliness and the aesthetic beauty of Swiss cities. A couple indicated respect for the high caliber of research and amount of funding available in Switzerland. One woman elaborated on the open way she was received by the Swiss, noting that perhaps it was partly because she was a woman. This dispelled preconceived notions she had that women were not accepted in positions of authority in Switzerland. These opinions express the gratitude these migrants have for the possibility to live in Switzerland.

2.3.5 Reconciling Professional and Private Lives

Another significant area of concern for migrants in transition is the conciliation between the professional and personal spheres. Our research indicates that responses to this merging of worlds are very individualized, with answers ranging from one end of the spectrum to the other. Many South Africans noted their attempts to achieve a balance between work and personal life. Several others stated their desire to keep private and professional lives completely separate. One stressed,

Weekends are exclusively for family life – during the week it is mainly business.
(HR specialist)

Quite a few underscored the need to focus more on the professional aspect, especially in the beginning of their relocation to Switzerland. Alternatively, a small number of respondents noted that their lives are concentrated on their private and personal lives. A few people stated that their personal and professional lives were intertwined. Opinions on this topic were clearly varied.

During the interviews numerous differences in the way to conciliate private and professional lives in South Africa versus Switzerland were voiced. While some respondents saw no difference between the two countries, a couple others noted a greater focus on family life in South Africa, and one saw work and private responsibilities as very intertwined – work colleagues become friends

in South Africa. Of these, one person described a pervasive “mental slavery,” whereby professionals living in Switzerland are chained to their work and neglect their family lives.

In terms of differences in the reconciliation of private and professional lives in the Swiss versus South African contexts, interesting views were expressed. Lack of regimentation in South Africa, which makes it easier to structure one’s life, was highlighted as a key difference. The high crime rate was a de-motivating factor to socializing as stated by one South African. Many South Africans put a greater onus on their professional lives.

2.3.6 Differing Gender Roles

With regard to gender roles, stark contrasts between South Africa and Switzerland were drawn. Several female respondents stated that the Swiss system does not cater to working mothers. The schooling system in particular was cited for its rigidity. Lack of affordable domestic care, space in daycare centres and distance from family were further difficulties faced by working mothers. Riaño (2003) highlights in her study,

Lack of child-care facilities and the discontinuous school schedules for children in Switzerland forces one of the parents to remain at home, and this is usually the mother...Child-care facilities... are very limited... demand is so high and the offer is so low, there are usually long waiting lists (Riaño, 2003: 15).

Similar constraints were voiced by these five South African respondents. One stated that the Swiss mentality forwards the notion that women should stop working after birth, whereas in South Africa there are daycare facilities and familial support. She stressed:

I don’t see my friends in South Africa having to choose to work or have a family, but this is the mentality in Switzerland.
(Business Administrator)

For young women professionals, it’s easier in South Africa as efficient home help is available.
(Financial specialist)

After school care is also available at affordable prices. Despite these huge hindrances, one of these respondents indicated that the safety and punctuality of the transportation system means that children become independent more quickly, gradually placing less strain on mothers. Many of the women interviewed still grapple with such constraints after many years of living in Switzerland. These women were living in both the German and the French-speaking regions, indicating that such constraints are nationwide. In general, women tended to try to

achieve a balance between their professional and personal responsibilities, and they were very intertwined. The male respondents, however, indicated a greater focus either on the private sphere, the professional or a complete separation of the two.

2.3.7 Relationships with Foreign Communities, other Nationals and Local Swiss

Upon arrival in one's country of destination, migrants are tasked with the job of creating an entirely new social circle. While some choose solely to associate with other nationals from their home countries, others focus on interacting more with the local population, and a further group often creates friendships with other foreigners from an array of nationalities. Our respondents fell in between these categories.

Most of the respondents stated that the majority of their friendships were with foreigners, while they also retained relationships with some South Africans and Swiss. Many highlighted that the bulk of their social contacts are Swiss, and to a lesser degree, foreigners and South Africans. Several respondents noted equal relationships with all communities. This indicates a great degree of mixing of South African highly skilled migrants with the local Swiss population, each other and other foreign communities.

3. Brain Gain: Mechanisms, Strategies, Challenges and Impact on Development of Country of Origin

Highly skilled migrants can use various strategies to tap into development channels to contribute skills back to their countries of origin. This section of the report emphasizes strategies and mechanisms migrants can expand on to positively influence development of countries of origin. Interviews revealed that migrants maintain complex networks of contacts and linkages with individuals and institutions locally, regionally, internationally and with countries of origin.

The project identified three brain gain mechanisms as highly successful in transferring knowledge from the highly skilled in the diaspora to their counterparts in the South – knowledge transfer through the creation of scientific diaspora networks, research and experimental development (R&D) and north-south research partnerships. This section analyses migrants' contacts and exchanges with their country of origin, brain gain initiatives, including social and financial remittances and strategies to achieve these initiatives.

3.1 *Contacts with Country of Origin, Country of Destination, Regional and International Contacts*

3.1.1 *Contacts with South Africa*

A majority of the respondents maintained contacts with South Africa. Of these, most described them as professional – either instigated through the formal channels of their work or in hopes of possibly collaborating in the future, while the rest were overwhelmingly personal links. These contacts were in the areas/fields of: academia and research (in the anthropology, psychology, history, science and technology, intercultural communication fields), air navigation, business, social activism, handcrafts/art, public health, at the governmental level, between UN agencies, inter-governmental organizations and NGOs. Male and female respondents were sprinkled across the board professionally, having positions as directors, managers, ministers, supervisors, advisors, professors and students.

In order to have a developmental impact on South Africa, there needs to be a critical mass or the appropriate infrastructure to take on endeavors in the aforementioned areas and fields. Further research needs to be conducted to determine whether such infrastructure exists.

A couple of people noted membership in associations oriented towards their professions – the Health Professional Council of South Africa, which is a statutory body funded by professionals which sets standards for professional education, training and practice and the International Institute of Traumatology and Crisis Intervention in Johannesburg which trains students and offers courses for professionals in traumatology. One noted her participation in the Fair Trade in Tourism Network which encourages local communities in South Africa to provide tourism services. Another person kept close academic-based ties with the geology department of her former university, the University of Witwatersrand, in Johannesburg.

3.1.2 *Contacts with Switzerland*

Half of the migrants kept contacts with their country of residence, all save one of which were described as “professional contacts.” The South Africans were part of university associations and professional organizations, including the English Teachers Association of Switzerland, the Academie Coaching Romande, alumni of University of Fribourg and the *Kantonalverband der Zürcher Psychologinnen und Psychologen*, a cantonal federation for psychologists living in Zurich. Through his profession, one scientist and entrepreneur noted that he was appointed to develop a scientific cooperation strategy between Switzerland and South Africa; his company also receives EU Grants for various programmes. One social activist

is involved in the Swiss-African Forum and SOS Rasismus-Deutsche, which help monitor xenophobia, racism and discrimination in Switzerland.

Before 1994, some respondents noted their engagement in anti-apartheid movements, which although discrete, brought them into contact with compatriots working against the South African apartheid regime from within Switzerland. There were a significant number of anti-apartheid undercurrents and movements in Switzerland. Political exchanges were established to bring activists and church leaders, politicians, educators and those in the health field together to discuss ending apartheid. Events were held between churches, trade unions and civil society groups that addressed this issue and how to begin the process of reconstruction. A European network of anti-apartheid movements was even established. Since apartheid’s end, many groups have linked up to African diaspora groups to promote scholarly and cultural exchanges, strengthen civil society and confront the problems facing South Africa (security, HIV/AIDS, poverty, etc.).

Table 5. Groups/organizations to which respondents belong

<i>Health Professionals Council of South Africa:</i>	<i>English Teachers Association of Switzerland:</i>	<i>Academie Coaching Romande:</i>	<i>Kantonalverband der Zurichser Psychologinnen und Psychologen:</i>	<i>European Foundation for Management Development:</i>	<i>World at Work for International Compensation Managers:</i>
sets standards for professional education, training and practice	links up nation-wide educators	connects psychologists and those involved in coaching others	for psychologists in Zurich	links partners in academia, business, public service to disseminate research on management development	coordinates compensation research and development

Source: Kwankam, data collected during the 2007 survey.

3.1.3 Regional and International Contacts

Within Europe, many of the respondents maintained contacts and exchange, of these the majority were work-related contacts. Most of the respondents had international contacts also, mainly created through duty travel. A couple of people underscored membership in professional associations, notably the European Foundation for Management Development, which is a network of partners in academia, business, public service and consultancy that creates forums for the dissemination of research, and innovation in management development, and the World at Work for International Compensation Managers, which coordinates compensation research and development. Another respondent indicated that she does some research for the University of Bochum in Germany – dating geological material.

Another female is a founding member of Cran Fra, platform to curb anti-black racism, and the Coalition of Europe organizations that monitor racism and support minority groups in Europe. She is also active in the Black European Women's Network, which encourages women to be socially and economically active. These contacts indicate that the migrants are very engaged within Switzerland, Europe and internationally and have a broad-ranging set of interests and professional linkages that could be tapped into to create synergies of skills.

3.1.4 Reasons for Lack of Contact

Only a couple of migrants did not indicate contacts and exchanges at any level. Status as a student, lack of knowledge of available opportunities to engage with South Africa and lack of professional activity were cited reasons for minimal involvement in this area. High work load was stated by one person as limiting the time he has to engage with his home country, although he indicated some contact. Meyer (2001) indicates that South African expatriates have more personal links with their country of origin and more professional connections with host countries. Project findings underscore this fact. Varied levels of contact and exchanges can be observed within the South African highly skilled community, but the desire to engage was clearly stated by almost all respondents.

3.2 Mechanisms

3.2.1 Knowledge Transfer and Research and Experimental Development initiatives

In terms of knowledge transfer specifically, many interesting initiatives that implicate and benefit South Africa were noted. None of these, however, are being facilitated through scientific diaspora networks. Several respondents indicated that they informally act as ambassadors for South Africa while living in Switzerland by increasing awareness of the country's social, economic and cultural environment. In so doing they hope to promote intercultural understanding and South Africa's standing on the world stage. A third shared his experiences and business knowledge of the functioning of Swiss banks and institutions with former colleagues working in banking in South Africa. One woman described giving lectures on her geological research on South African fossils and rock specimens when she goes back to Johannesburg.

In the academic sphere, one professor highlighted her efforts to fuse knowledge about South Africa and its economic and business potential into the cur-

ricula for her courses. She also tried to establish an exchange program with her institution and one in South Africa, but lack of motivation from the former meant the initiative was halted. Another used South Africa extensively in the classroom for modules on violence, gangs, cross-cultural issues. This proved an effective way of introducing students with little exposure to South Africa.

One social activist started the Fair Trade in Tourism Network that works with small, local communities in South Africa, encouraging them to open up to tourism. The network supports communities in providing transportation, accommodation, tours, and walking trips that explore the political and social history of South Africa. An example of a successful touristic endeavor was when a group of foreigners visited and slept in local townships to gain a greater understanding of South African history.

In the research and experimental development field, one scientist highlighted his work accelerating the quality of science and technology in South Africa by developing new products and technology to combat the problems of his country of origin and transferring these skills to South Africa. He gave the example of developing drugs to fight tuberculosis using research and experimentation with nanoparticles or developing low cost, high quality diagnostics machines for HIV in children.

Table 6. Transnational initiatives and practices (including brain gain) of respondents

<p><i>Knowledge transfer</i></p> <ul style="list-style-type: none"> • Cultural ambassadors for South Africa (5) • Giving lectures in South Africa whenever possible • Using South Africa as a module in courses 	<p><i>North-South research</i></p> <ul style="list-style-type: none"> • SACEMA Project highlighting link between math and public health • Student exchange program based in Basel • Student practicums in South Africa
<p><i>Research and Experimental Development</i></p> <ul style="list-style-type: none"> • Accelerating the quality of science and technology in South Africa by developing new products and technology 	<p><i>Other initiatives</i></p> <ul style="list-style-type: none"> • Transportation of their children’s old clothing to South Africa to be distributed to orphaned children with AIDS • Donating 15,000 CHF towards the creation of a classroom in Onderstepoort. • Linking up under-funded NGOs with resources/organizations from Switzerland • Writing articles and taking photos of events associated with Africans residing in Switzerland for AfricaLink magazine • Launching a market in Switzerland for South African fine arts and handcrafted goods

Source: Kwankam, data collected during the 2007 survey.

3.2.2 North-South Research Partnerships

Looking at north-south research partnerships provided different insight. Three very interesting projects were cited. The first is entitled, The South African Centre of Epidemiological Modeling and Analysis (SACEMA). It is a joint South African Department of Science and Technology-National Research Foundation initiative that involves improving the research capabilities of South Africa and investigating the linkage between math and public health towards the creation of better governmental policies. The project runs masters level courses for African students, supports relevant projects and organizes workshops on math and epidemiology. Housed at the University of Stellenbosch, this initiative uses mathematical modeling of disease transmission and progression to identify the leading causes of disease in South Africa. SACEMA/AIMS modelers were also integral in mitigating the SARS epidemic of 2003 and have already begun examining ways to limit the spread of the impending avian influenza epidemic. This information is then provided to health policy makers, helping them to make informed decisions. Working jointly with the African Institute for Mathematical Sciences (AIMS), SACEMA also leads three-week courses in epidemiological modeling. The National Research and Development Strategy underscores the need for centres of excellence in science and technology to enhance human capital and stimulate research; SACEMA is the seventh such centre to be established. Students and professionals come from all over the world to partake in workshops.

The second project highlighted is a student exchange program that brings South Africans to the Centre for African Studies at the University of Basel to study and participate in seminars and conferences. South African lecturers have traveled to Basel to do joint teaching, attend conferences and give lectures in the history discipline and within the frame of the Centre for African Studies. Since the inception of the fledgling program in 2006, one student has come from the University of Cape Town (UCT) to do research on social security in South Africa. Another is scheduled to be arriving from the same university to do research on post conflict situations in KwaZulu-Natal. Two students from the University of Basel have gone to study at UCT. The program hopes to expand to include a greater number of students and two other universities – the University of Witwatersrand and the University of the Western Cape.

A third respondent has sent two students doing their Masters in psychology at Webster University to do their practicums in Cape Town by linking them up with her contacts there. The students teach life skills, including stress management to HIV positive mothers and young children in coordination with the NGO Yabonga. They work in the townships, helping people learn to live with their HIV status. The program has been underway for two years and hopes to

continue and expand in the future. Students gain practical experience in the field and come back to present their findings to other students at Webster University. One student even returned upon graduation to work and live there. This initiative created positive spillover effects, as larger numbers of students are now opting to do their practicums in Cape Town.

On a much smaller and less formal scale, one person helped initiate youth exchanges in South Africa. The youth would do apprenticeships with NGOs and civil society organizations working on supporting the needs of youth, enhancing the role women play as caregivers and educators and addressing HIV/AIDS. These were not initiated through formal academic channels, but personal connections within the structure of the anti-apartheid movement.

Although not personally engaged, one respondent stressed the need to encourage African institutes to engage in such initiatives. This would allow Africans to help themselves and each other, rather than be completely overshadowed by aid from the North. Overall, a majority of the respondents were involved in some kind of knowledge transfer, research and development or north-south research related project. For the remaining respondents, reasons ranged from a lack of opportunities, high work load and lack of time to initiate personal projects, living in exile during the apartheid regime which necessitated keeping a low profile and difficulty finding one's bearings in Switzerland.

3.2.3 Social and Financial Remittances

Diaspora engagement takes so many different forms and occupies so many different spheres that it is difficult to generalize about it...ranges from the purely personal level of family ties to the level of international financial markets. (Newland and Patrick, 2004: 17)

Research for the project deduced the same conclusions. One of these forms is the notion of social remittances. Social remittances refer to the highly skilled migrants' initiatives that cannot be categorized in the three brain gain mechanism categories. This includes philanthropic and other beneficial initiatives mentioned. These are defined as "ideas, practices, identities and social capital" that migrants channel from country of destination to country of origin (Levitt, 1996; Nyberg Sorensen, 2005). A majority of the respondents highlighted different types of projects in which they have played a role. They indicated namely personally-motivated initiatives that can be labeled social remittances.

These initiatives included building partnerships between community-based organizations in South Africa and those in Canada with the Nelson Mandela Children's Fund, and a cultural exchange program between choirs based in South Africa and the U.S. was highlighted by one migrant. Exchanges facilitate cultural education on both sides. Some of those involved have even begun

helping AIDS victims and donating computers, software and setting up computer centres to under-resourced, rural areas. Another South African elaborated on how she linked up her old contacts in the NGO the AIDS Foundation of South Africa with the American International Women's Club in Geneva. The latter supplied the NGO with funds and other needed resources.

Other philanthropic initiatives include two women's transportation of their children's old clothing to South Africa to be distributed to orphaned children with AIDS and those emerging from dysfunctional homes and another donated 15,000 CHF towards the creation of better classrooms in Onderstepoort. Still more initiatives include writing articles and taking photos of events associated with Africans residing in Switzerland for the Swiss-based AfricaLink magazine, and launching a market in Switzerland for South African fine arts and handcrafted goods.

In terms of retaining personal links with those who remained in South Africa, strong connections were noted. A minority of the respondents sent some form of financial remittances back home to South Africa. Several people owned property and/or had investments in South Africa. However, all of the South Africans interviewed underscored their strong links with family and friends or former colleagues who remained in South Africa through communication and visits.

3.3 Relevant Strategies to Accomplish these Initiatives, Negative and Positive Circumstances

Different strategies were used to accomplish these challenging initiatives. Many migrants established contacts through their professions or universities, consulted the South African embassy and eventually started creating an informal network. A further three respondents noted that they networked very informally to create contacts for possible future initiatives. With the unfolding of these endeavors comes difficulties and favorable circumstances. Language barriers between Switzerland and South Africa, lack of local South African capacity in different areas, long-term country plans and the dearth of foreign scientists wanting to travel to South Africa were serious encumbrances. Alongside these difficulties were positive circumstances.

Favorable circumstances included the usefulness of the South African embassy in providing information and resources, the extensive amount of support and funding for research in Switzerland and South Africa's positive overall reputation within Africa and abroad. As far as lessons learned from these initiatives, networking was underscored for its utility in creating strong professional linkages and laying the foundations for potential collaboration.

3.3.1 Potential Future Endeavors

A couple of the interviewees stated their intention to be more involved in the development of their country. One of the South African professors was trying to get South Africa involved in a multinational research project that endeavors to reverse engineer the brain to better understand its functions and dysfunction, called the Blue Brain Project. Another person indicated his desire to get involved with the Imbewu-Suisse foundation that encourages cultural exchanges and provides financing of various grassroots projects.

Table 7. Skills migrants have to offer

<p><i>Skills to Offer:</i></p> <ul style="list-style-type: none">❖ Promoting opportunities to expand South African trade and exports❖ Building capacity in small and medium enterprises❖ Improving and extending financial services to South African banks and individuals❖ Aligning new technology and capacity building for business leadership❖ Knowledge of air traffic European license and competence schemes❖ Infusing information about South Africa into educational curricula in universities in Switzerland❖ Knowledge of foreign language acquisition programs❖ Competence in the psychology field

Source: Kwankam, data collected during the 2007 survey.

Clearly, many interesting initiatives are already underway between the diaspora and South Africa. Through their various professions and expertise, the pool of highly skilled migrants interviewed has a wealth of skills to offer their country.

4. Scientific Diasporas, other Diaspora Organizations and Bilateral Agreements

This section analyses the various scientific diaspora groups and other diaspora organizations oriented towards South Africa that have been established throughout Switzerland. In particular, it looks at the goals and orientations of these various organizations to consider whether they might have an impact on development in South Africa. It also analyses certain migration and development schemas designed by cooperative entities working towards African development, specifically the African Union and the New Economic Partnership for African Development. Finally, it elaborates on bilateral Swiss-South African programmes that aim to positively impact development and enrich mutually beneficial academic and research-based interaction between the two countries.

4.1 Factors Influencing Diaspora's Impact on Countries of Origin: Ability to Mobilise, Motivation and Enabling Environment

Brinkerhoff (2006) identifies three key factors as determinants of the breadth of diasporas' contributions to their countries of origin: ability to mobilise, motivation and an enabling environment⁶. Ability to mobilise refers to the presence of a sense of community as the preliminary enabling mechanism to diaspora contribution to its country of origin. Motivation to act is defined as the foreign nationals' desire to enhance solidarity and collectively exert influence (Brinkerhoff, 2006; Esman, 1986). Brinkerhoff (2006: 14) goes on to say that, "the incentive of identity expression can be addressed through the formation of diaspora organizations, and... reinforced through activity on behalf of the homeland." Thus, these two factors are mutually reinforcing – a sense of community stimulates desire to positively influence one's home country and impacting one's country of origin helps create a shared sense of identity. Thirdly, opportunity structures are important in creating an enabling environment conducive to diaspora investment. These range from the availability of opportunities (social, economic), access to infrastructure and resources (technology, pre-established initiatives in benefit of home countries, good relations between home and host countries, support from state institutions, governmental programmes, support to science and technology) among others.

6 This is based on Esman (1986) three factors: "material, cultural and organizational resources available to them 'diasporas'; the opportunity structures in the host country; and their inclination or motivation to maintain their solidarity and exert group influence" (336).

While motivation was strong among the South Africans in Switzerland, the first and last criterion were somewhat lacking. The project aims to help enumerate the South African highly skilled diaspora, depict their skills and expertise and link them up with each other. In so doing, it hopes to create a sense of community and act as an enabling mechanism to foster and galvanize diaspora members towards partaking of and creating greater opportunities to positively impact the development of their country of origin. Meyer (2001) indicates that South African migrants maintain personal and individual ties with their country of origin. When encouraged to form part of national support initiatives, including diaspora knowledge networks, they often respond positively making these kinds of projects semi-institutional ways to generate communities. One would hope that by creating new initiatives and projects, one could engender a sense of community and mobilise the highly skilled South African diaspora. This task will be difficult, however, given the cultural fissures that were discovered through interviews with respondents.

4.2 Cultural Cleavages among South Africans

Interesting comments about South Africa's social and cultural fabric were weaved into respondents' comments on associations oriented towards their country of origin. Perhaps these can give us insight into why South Africans do not seem to associate in the diaspora. To fully address this question, one must remember the history and breadth of Swiss-South African economic and diplomatic relations that stretched, uninterrupted from 1952 until the present.

This relationship helps explain the discrete nature of anti-apartheid movements in Switzerland and its status as a destination country for apartheid supporters who fled before its collapse in 1990. The supporters were disillusioned and angered by the impending end of apartheid, and felt as if their desires would not be regarded by the incoming pro-black government. The entrenched nature of this relationship lends understanding to the unique conglomeration of both pro and anti-apartheidists that have been drawn to Switzerland. As relations have always been strong it would make sense that South Africans of all belief systems, values and walks of life would be interested in settling in Switzerland. These differences are apparent in the diaspora and have helped create a fragmentation in this body such that they do not function as a collective unit.

A few people corroborated that the South African population is highly divided, and that these cleavages extend to the diaspora. Consequently, such migrants do not always actively seek out other nationals from their country of origin. They have disassociated themselves, somewhat, from their home country. Three different respondents stated:

South Africans do not always associate just because of common nationality, unlike others from the developing world.

(Financial Assistant)

On the one hand, we are all Africans when addressed here, but put us together and we're all different... especially for a "colored" person in Switzerland it is still difficult since the diaspora is either white or black and one still feels the racial tension from the past.

(Masters student, University of Basel)

I didn't want to associate with people I wouldn't associate with at home, just because we were all South African.

(Masters student, University of Bern)

I mix with people because I have similar interests, not because we come from the same country.

(Psychologist)

South Africans are very divided; many people leave because they do not accept changes done after the end of apartheid.

(Professor, University of Basel)

These statements seem particularly apt. Ubiquitous social fragmentation carries over to the diaspora. Accordingly, diaspora members do not represent a united group. Their interests in and desires for South Africa vary considerably depending on their reasons for leaving, links with their country of origin, and sense of racial empowerment or disenfranchisement. This is a key indicator of why there are relatively few associations oriented towards South Africa (SwissCham, South African Club of Suisse Romande), and the majority of the respondents were not members and had not heard of such groups. This is contrary to very organised groups of highly skilled diaspora members like Colombians in Switzerland who formed the Asociación Colombiana de Investigadores (ACIS). Meyer corroborates this notion, stating:

Highly skilled expatriates do not have strong links with fellow nationals in host countries. They know only a few, do not often go to national ceremonies, do not subscribe to national newspapers and generally do not register with associations (NGOs) specific to their home country. (Jean-Baptiste Meyer, 2001: 100)

A prerequisite for community mobilization is a shared sense of solidarity and identity (Ostrom, 1990). This is somewhat lacking in the South African diaspora community. William H. Dutton and Wan-Ying Lin (2001) observe that those people with a higher frequency and intensity of interactions will have a higher likelihood of creating the sense of community and participating accordingly. Once these communities are concretized, a preliminary enabling mechanism is underway that can link up diaspora skills. A second step is then required – a structure that facilitates the transfer of expertise and skills of diaspora mem-

bers. The absence of a shared sense of community and mechanisms for diaspora collaboration have meant that the highly valuable expertise of the South African diaspora in Switzerland remains trapped within Swiss national borders and sporadic and isolated, at best. The Swiss Network would act as both a source of knowledge cataloguing diaspora member profiles and as a networking mechanism enabling members to collectively work towards a greater good for their home country. Brinkerhoff states:

Much of the motivation to mobilise will derive from the diaspora itself – from the individuals' own inclination to reinforce and express their homeland identity, and from the supportive diaspora communities and identities they co-create. (Brinkerhoff, 2006: 21)

4.3 Other Diaspora Associations

Many migrants tend to create forums in which they can associate, socialize and meet their fellow countrymen while living abroad. Whether their orientation is purely social or contains an aspect of social-economic-political-cultural development for their country of origin, these organizations bring nationals living abroad together.

There is a dearth of professional associations oriented towards South Africans living in the diaspora in Switzerland. Only three groups – the South African Club of Suisse Romande, the Club of Friends of Switzerland and the Swiss-Southern African Chamber of Commerce (Zurich) seem to exist. The majority of the respondents were not part of any associations oriented towards their country of origin. Lack of visibility of these organizations and their objectives were the main reasons cited for lack of involvement. The need to create greater networks of skilled South Africans abroad was underscored by several people.

4.3.1 The South African Club of Suisse Romande

Several of the highly skilled migrants are members of the South African Club of Suisse Romande. This is a purely social association that brings people of South African origin or with an interest in the country, together for social events – Christmas parties and barbecues. The organization also has a website that allows members to post and exchange information and network with each other.

One migrant noted that perhaps the South African Club of Suisse Romande should implement projects that would positively impact the social and economic development of South Africa. Raising awareness of possibilities for beneficial exchanges, such as collective remittances or support to community-based initiatives in South Africa, could encourage associations like the Club to get

involved in development efforts. Using these migrants' professional contacts in South Africa could be a good opportunity for positive impact. One person noted a lack of professionals in the association. Perhaps the group could try to attract more professionals and make alliances with South African businesses and research institutes, linking them up with Swiss resources, organizations and companies.

The orientation of the Club is such that although sometimes they receive funding for specific events or projects – from South African Airways and Cedef Capital Services for their website. It receives little overall institutional support. As indicated above, most of the respondents knew nothing of this group's existence. This suggests that mechanisms to increase the visibility of such organizations must be improved. Perhaps information could be provided through the embassy and permanent mission to give migrants the opportunity to partake of these opportunities.

4.3.2 *Club of Friends of South Africa*

Another group, the Club of Friends of South Africa, is based in the German-speaking part of Switzerland but has similar goals to the South African Club of Suisse Romande. It is open to anyone with an interest in South Africa and organizes mainly social events (*braais* and dinners). The South African Embassy in Bern and the Permanent Mission to the United Nations in Geneva supply information about such events occasionally and tell new South African residents in Switzerland about the South African Newsletter.

Through word of mouth, it can be deduced that this organization has a conservative orientation. Several respondents underscored their disinclination to join the group, as it was originally comprised mainly of supporters of the apartheid regime who either left early on or fled as apartheid's structures collapsed.

According to the Swiss National Science Foundation's NFP 42+ research programme on Swiss-South African Relations, in 1980 this club was of the opinion that "the black man does not respect anything but force. When in doubt he obeys the most powerful" (Kreis, 2005: 132). This was published in a letter written in 1980. No new tangible information is available on the views and orientation of this group.

4.3.3 *South African Network of Skills Abroad (SANSA)*

The highly touted diaspora network SANSA, is noticeably absent in Switzerland. The network aims to connect skilled nationals in various professional arenas who want to positively influence the social and economic development

of South Africa with local experts and projects. In “The South African Network of Skills Abroad (SANSA): the South African experience of scientific diaspora networks,” Brown (2003a: 7) states that:

SANSA was borne out of the realization that South Africa has a huge pool of highly skilled human resources in the diaspora and if the country could tap into this resource it could play a significant role in boosting South Africa’s development efforts. (Brown, 2003a: 7)

The project is sponsored by the South African National Research Foundation and endorsed by the Department of Science and Technology. The website has a page intended for networking that lists various South African research projects, organizations and professional associations in South Africa that can be searched. It also has discussion groups on various topics and bulletin boards where ideas/projects/announcements/job vacancies can be posted. It is currently being revamped and expanded to reach and connect a broader audience and thus have a greater impact on South Africa.

To become a member, one simply has to fill out an information sheet that details possible contributions one can make and expertise/skills one has to offer. This information is then added to the database and made available to all members. If the skills and potential of the highly skilled migrants in Switzerland could be showcased through SANSA, they could have much greater visibility and potentially, a greater impact on the development of South Africa. With its government support and impressive reputation, expansion of this network to Switzerland could increase the visibility of bilateral projects and initiatives and the composition of the diaspora in Switzerland to boost development in South Africa. It would also be very useful for African diaspora groups to learn from and link up with previous or ongoing diaspora initiatives in Switzerland.

There are also links to other South African communities worldwide on the site; Switzerland is not listed under the countries highlighted. The only visible link this network has to Switzerland is the South African Newsletter, which is a monthly publication that provides news on South Africa and its links to Switzerland and details upcoming concerts and events relating to South African culture. As Switzerland is a key destination country for many African nationals⁷, it would be useful to have a Swiss node of SANSA (Efionayi-Mader et al., 2005). This could also be used as a model encouraging African diaspora members in other countries to become more active in the development of their countries of origin.

7 According to the OECD’s International Migration Outlook (2007), 5% of the total foreign-born population in Switzerland was born in Africa. Efionayi-Mader et al. (2005) indicate that in the past three decades, the African population in Switzerland has increased.

South Africa has a leading role in the process of developing a shared vision for sustainable development in Africa and incorporating the contributions of the diaspora as Africa's sixth economic region. This vision and the appointing of South Africa to spearhead the movement is part of the African Union Diaspora Initiative. Consequently, it would make sense that the most visible diaspora organ of South Africa (SANSA) should have a link to vibrant diaspora communities like that of Switzerland.

4.3.4 South Africa's Role in the African Union Diaspora Initiative

South Africa has a leading role in the process of developing a shared vision for sustainable development in Africa and incorporating the contributions of the diaspora as Africa's sixth economic region. This vision and the appointing of South Africa to spearhead the movement is part of the African Union Diaspora Initiative. Consequently, it would make sense that the most visible diaspora organization of South Africa (SANSA) should have a link to vibrant diaspora communities like that of Switzerland.

The African Union's (AU) Diaspora Initiative is based on this NEPAD framework. The AU has drafted a statement defining its Diaspora, stating that it consists of "people of African origin living outside the continent, irrespective of their citizenship and nationality and who are willing to contribute to the development of the continent and the building of the African Union" (2005: 3). In an amendment to its Constitutive Act, the AU states that, the organization will "invite and encourage the full participation of the African Diaspora as an important part of our Continent, in the building of the African Union" (2003: 2).

Consequently, South Africa has been appointed by the AU to present the African Union-African Diaspora Summit with the theme of "Towards the realization of a united and integrated Africa and its Diaspora: a shared vision for sustainable development to address common challenges" in 2008. This is the first regional agenda of its kind that endeavors to include the diaspora as part of the continent's development agenda. Several regional consultative conferences are being held to discuss significant issues with relevant diaspora partners. They have taken place in Brazil, London, New York, the Bahamas, Addis Ababa and Paris.

The regional conferences raise issues of concern, including identifying short and long-term objectives, promoting dialogue, creating sustainable partnerships and fostering greater cooperation on the following themes: international relations peace and security, economic cooperation and development, women and children, knowledge sharing, health and disability, youth and development. The overall goal of the Regional Consultative Conferences is to produce a consolidated report highlighting the main concerns of diaspora com-

munities worldwide and steps to achieve a common vision of sustainable development for the African continent. This report will be submitted to an international meeting of Diaspora civil society groups and African ministers planned for November 2007 in South Africa, who will draft a communiqué and working program to be presented to African heads of state at the African Union-African Diaspora Summit in 2008. In this way, agendas and processes are delineated that will establish how the diaspora can work towards the promotion of the African agenda for development.

4.3.5 NEPAD: Promoting diaspora engagement

South Africa is also involved in NEPAD's efforts to engage the diaspora for development. The New Partnership for Africa's Development (NEPAD) is a strategic framework designed to address significant issues plaguing the African continent, including: poverty, under-development, minimal participation in the global economy and the need for empowerment of women in African society. The NEPAD Programme of Action is an initiative undertaken to promote an African revival through sustainable development. Priority areas include establishing better conditions for sustainable development (peace, democracy, regional cooperation), policy reforms and greater investment (in agriculture, improving infrastructure, diversifying product exports, expanding intra-African trade), mobilizing resources (attracting foreign direct investment, expanding Africa's role in global trade). Human resource development is another important area of focus for NEPAD. In the NEPAD Framework document (2001), goals with regard to a brain gain include: "To build and retain within the continent critical human capacities for African development; To develop strategies for utilising the scientific and technological know-how and skills of Africans in the diaspora for the development of Africa" (NEPAD, 2001: 31).

International organizations and governments have acknowledged the importance of diaspora contributions to development. A growing number of "diaspora for development" oriented projects have been initiated by organizations like the International Organization for Migration. Their Migration for Development in Africa (MIDA) programmes aim to increase the capacity of African governments to implement sustainable development goals by tapping into and transferring back the skills and resources of their diasporas. Three projects have been developed to allow African nations to benefit from the investments made on their people, including MIDA Ghana, MIDA Great Lakes and MIDA Italy. The MIDA Ghana Health Project encourages Ghanaian migrants living in the EU to transfer knowledge and expertise back to their home country through temporary work assignments in local hospitals. Health workers from Ghana in turn, can partake of health-related training in the Netherlands. With support from the Belgian

government, the MIDA Great Lakes program enables the temporary return of skilled Burundians, Rwandans and Congolese living in the diaspora in Belgium to lend their technical expertise in fields ranging from banking, engineering, economics, agriculture and social sciences. The final project, MIDA Italy, encourages Africans residing in Italy to contribute to their countries through various mediums, including creating small and medium enterprises in countries of origin, facilitating the flow of remittances and identifying and expanding on networks of African migrants working on commercial endeavors both in the diaspora and in countries of origin.

While these “diaspora for development” schemes do not specifically focus on South Africa, they are part of an overall trend towards harnessing the potential of members of the diaspora towards beneficially impacting countries of origin. Within the NEPAD and AU structures, South Africa is playing a significant role on this issue.

4.3.6 South African Diaspora Network

Another important initiative currently underway is the South African Diaspora Network, launched in 2001, which links South African expatriates and those with a vested interest in South African growth and development throughout the globe. By tapping into existing alumni associations, like the South African Business Club and securing funding from the World Bank’s Development Marketplace, the Network has contributed to greater exchange between global businessmen interested in furthering development and enhancing the entrepreneurial potential of South Africa. Extensive discussion has been fostered, but no trade has occurred. The Network is now dormant due to lack of funds. Jonathan Marks notes that, “some members... come with a wealth of contacts and the drive to contribute and transfer their skills, knowledge and networks” (Marks, 2006: 181). The same could be said of the respondents interviewed for this project. All that is necessary are the proper channels to direct these resources.

The launch of this network has provided valuable lessons that could be of use to the Swiss Network of Scientific Diasporas project. Recommendations for improvement of the South African Diaspora Network include securing greater support from the public and private sectors, greater focus on marketing and promotion, increased collaboration with nonprofit and nongovernmental organizations and encouragement of the use of the diaspora model, forming greater alliances with organizations with similar goals, publicizing diaspora success stories, encouraging South Africans to remain in contact with their country of origin through awareness-raising campaigns, working with travel and relocation agents to gain access to émigrés.

4.3.7 Swiss-Southern African Chamber of Commerce (SwissCham)

One of the highly skilled South Africans is a member of the Swiss-Southern African Chamber of Commerce (SwissCham). This non-profit organization promotes business and economic initiatives, and cultural understand between the two countries. It targets small and medium-sized enterprises and provides them services in order to expand and develop to their full potential. The organization also liaises with various Swiss and Southern African governmental and non-governmental organizations, diplomatic and economic agencies. The Chamber links up over 180 Swiss and Southern African members active in the information and technology, banking, human resources, consulting, transportation and manufacturing fields. Members are able to partake of regular networking lunches and dinners with prominent leaders from industry, government and civil society. A bulletin is also issued that details current economic and political conditions, customs issues and other relevant information. Interested South African highly skilled migrants can match up their business skills with initiatives underway and network to create new collaborations.

4.4 Bilateral Agreements between Switzerland and South Africa

Switzerland has also gotten involved in the circulation of skills and knowledge with South Africa. A Memorandum of Understanding on Scientific and Technological Cooperation was signed on 28 June 2005 by Swiss State Secretary of Education and Research Dr. Charles Kleiber and Minister Mosibudi Mangena of the South African Department of Science and Technology whereby the two parties pledged to increase interaction through joint scientific research, cooperation programs, exchanges and seminars on the areas of public health and bio-medicine, biotechnology and nanotechnology and human and social sciences. Each party underscored the important role of science and technology in impacting social and economic development. A finalized bilateral agreement on science and technology is to be signed by year's end 2007 and implemented by 2008.

The Council for Scientific and Industrial Research (CSIR) has been designated the Leading House (LH) for the bilateral agreement on the South African side. The University of Basel and the Swiss Tropical Institute in Basel have been chosen as the Leading House (LH) and Associated Leading house on the Swiss side. The role of the Leading House is to coordinate cooperation interests and existing initiatives for all the Swiss institutions (Cantonal Universities, Federal Institutes of Technology and Universities of Applied Sciences). For each bilateral initiative, the LH will also identify partners in Switzerland

and South Africa and decide on the investments to be made by the Swiss entities involved.

A contact person will be selected in Switzerland and in South Africa, where he/she will comprise part of the official Swiss representation. A joint committee will be selected to launch the bilateral science and technology actions, oversee implementation of the South Africa-Swiss strategy 2008–2011 and identify areas of mutual interest. Switzerland plans to invest six to eight million CHF towards research and development. South Africa plans to invest R9 million towards the program. The Swiss/South African Bilateral Research Programme will resource joint projects of strategic relevance to both countries. A total of seven or eight projects are to be funded throughout the three year duration (2008–2010) of the program. The first call for project proposals was issued with a due date for submissions of 31 August 2007. Proposals were submitted on the following subject areas: public health and bio-medicine, biotechnology and nanotechnology, and human and social sciences.

The bilateral agreement also lists several possible areas of collaboration, including: the training of post-graduate South African scientists at the Synchrotron facilities in Switzerland, Swiss help towards the establishment of a Foundation for Technological Innovation in South Africa and an agreement in biotechnology focusing on innovation and commercialization.

Another existing initiative is the Memorandum of Understanding for Cooperation in Science and Technology signed in 2002 by the Swiss National Science Foundation and the South African National Research Foundation, which promotes scientific seminars and greater cooperation between scientists in various areas – humanities and social science, mathematics, natural and engineering sciences, biology and medicine by providing support for conferences, workshops, visits and pilot projects. January of 2006 saw the acceptance of four out of twenty-one proposals. Seminar dates and locations were decided and in September of 2006 a new call for proposals was made. This initiative aims to support scientific and research-based collaboration between Swiss researchers and South African institutions. The need for increased funding sparked discussion on the aforementioned Swiss/South African Bilateral Research Programme.

Such programmes should be encouraged and enhanced to cement good scientific relations between the two countries and take advantage of diaspora expertise. Respondents voiced the need for a greater number of bilateral projects (scientific and research based, humanitarian, academic) when asked how they could positively influence their country of origin.

The Swiss Agency for Development and Cooperation (SDC) also works on cooperation projects with South Africa under the Regional Programme Southern Africa (RPSA). Broadly defined in the SDC Strategy 2010, work in the

Southern Africa region will focus on the following fields: crisis prevention and management, good governance, income generation and employment, increase of social justice and sustainable use of natural resources. The overarching goals of the programme include poverty reduction and conflict prevention. In terms of positively impacting South Africa in particular, the programme hopes to contribute to the consolidation of democracy and reduction of economic disparity.

A bilateral South Africa component of the RPSA has also been agreed to. Four key projects have been identified: the SDC and Swiss private companies with a presence in South Africa support the Swiss-South African Cooperation Initiative (2006–2010) which empowers unemployed youth by providing them with skills and knowledge acquisition opportunities. The Small Claims Courts project (2006–2009) aims to re-structure the Small Claims Court system within South Africa to provide improved and freer access to justice for disadvantaged people. The Media in Education and Training Project (2005–2007) seeks to improve HIV/AIDS knowledge and awareness by designing community strategies to improve healthcare for vulnerable children and orphans. Finally, the Masibambane II – Water Sector Services Support Project (2005–2009) endeavors to improve local government capacity in the water sector through knowledge sharing. Information on successful water management approaches and lessons learned will be documented and disseminated.

5. Future Plans with Regard to Return, Circulation and Settlement in Switzerland, Perceptions of Country of Origin and Country of Destination and Views on how to Enhance Development in South Africa

This section discusses future plans the highly skilled have with regard to their country of origin and their perceptions of South Africa in terms of the economy, social issues, politics, migration and citizenship policies. This section then presents the respondents' views and opinions on Switzerland – development cooperation and migration policies. Finally, the highly skilled migrants voice their opinions on how to enhance development in South Africa.

5.1 *Future Plans*

Half of the respondents hoped to return to South Africa – some to retire, others to start or further initiatives to impact the development of their country and some to find employment in their respective fields (IT, business and finance, research). The initial push factor for the respondents in the latter category was to pursue greater professional opportunities, thus it is interesting to see that after working abroad they would like to return. They were all completing a course of study and looked forward to applying this knowledge to their professions in South Africa.

Several planned to make a bridge between South Africa and Switzerland, by commuting between the two. While one hoped to start a business based here that implicated his home country, another hoped to work on community/non profit initiatives and a third to retire. These South Africans planned to spend a portion of their time in Switzerland and another portion in South Africa, linking up the two and encouraging the flow of resources and knowledge.

Many respondents emphasized their desire to stay linked to South Africa (through personal and professional channels) but indicated they would remain in Switzerland. One such woman would like to develop an air navigation systems program with South Africa to improve safety standards. A couple people highlighted their desire to remain linked with their homeland, but thought to live in Europe or the U.S. Crime was the main deterrent, followed by affirmative action policies for all the migrants not wanting to reside in South Africa. The depth of the links connecting these highly skilled migrants with their country of origin can be seen by each's desire to remain in contact and engaged with South Africa.

5.2 *Perceptions of South Africa*

5.2.1 *Social Climate*

Migrants' perceptions of their country of origin provided detailed insight into the main accomplishments achieved and challenges facing South Africa. Poverty, crime, HIV/AIDS, unemployment and an increasing gap between the rich and poor were all noted by the interviewees. With regard to the social situation, key themes were highlighted. Half of the respondents forwarded the notion that a slow improvement and equalization of opportunities for different races is underway in South Africa. Black economic empowerment schemes and affirmative action provide examples of programs instated to provide greater economic and professional possibilities for blacks (Szeftel, 2004). While laudable, these efforts are not enough. Migrants' opinions corroborated this fact. One person specified that he would like to see a further amelioration of living standards and

better practices that can combat HIV underway in his home country. Another voiced her opinion on the social pathologies afflicting her country, stating:

These are effects from our historical background of repression to people with a different skin color; human rights were constantly violated... black people needed a special pass to walk at night.

(Professional in communications)

Poverty was also highlighted as an important challenge facing the migrants' country of origin. A majority of those interviewed underscored crime and poverty as significant issues. One person said that racial tensions and social cohesion were key problems facing South Africa. Forty-eight percent of the South African population lives below the poverty line (South Africa Yearbook, 2005–06). This alarmingly high rate, among other factors, has increased crime in the country. Half of the migrants named crime as one of their main worries with regard to South Africa's social situation. With 18,000 murders last year alone, crime has become an entrenched fear faced daily by many South Africans. This fear extends to those in the diaspora, many of whom have family and friends who remain in their country of origin. Migrants recounted,

Every single family I know in South Africa has been a victim of crime.

(Financial specialist)

My daughter had her house broken into twice in three days... This is not a constructed fear, it's real. The first thing people are telling you about is the horrific experiences they have had. This is not black or white either, it's across the spectrum.

(Social activist)

Several South Africans noted that HIV/AIDS was a significant problem that deserved greater attention. With an adult HIV prevalence of 21.5 percent, these migrants voiced the firm opinion that efforts should be increased to combat this disease (UNAIDS, 2007). One such person noted that poverty and HIV were killing as much as one in four economically active South Africans. One respondent was optimistic about the situation, claiming:

I am very positive for the future of South Africa. Things have changed so much in the past thirteen years. We are advanced in acknowledging our problems and doing something about them.

(Masters student, University of Bern)

5.2.2 Economic Picture

Economically, both positive and negative issues were brought to light. Many of the migrants believe there has been an overall improvement of the economic situation, but each added that the income gap between the wealthy and the poor

was increasing as was crime. Unemployment was also noted alongside crime as a large problem facing South Africa.

The staggering 25 per cent unemployment rate is reflected in respondents' comments – five migrants cited unemployment as one of the biggest issues facing the country. One person discussed the racial disparities in the economic and social conditions of the country, believing that the government must increase professional opportunities to reduce poverty and unemployment. Currency depreciation and only short-term economic improvement were concerns for one migrant.

5.2.3 Political, Scientific and Technological Environment

The migrants' observations highlighted the most significant issues facing the fledgling democracy in South Africa. With regard to the political sphere, a variety of observations were made. Several migrants indicated that South Africa has a stable political position; one stated his belief that South Africa is recognized as a democratic state and full partner in the international community, and another that a stronger opposition is emerging concurrent with the increased level of education of South African voters. One respondent proclaimed his faith in the government and enumerated positive efforts in terms of housing, supply of essential services and primary schooling.

Several respondents worried about potential political conflict as President Mbeki's control over the country is consolidated and elections approach. A few people emphasized that extensive corruption plagues the government and one called for a stronger democracy. One stated that corruption at every level and within everything was taking away from the good work being done to strengthen the economy and improve race relations. For others there was a fear that the highly regarded and reputed constitution, which steers the political reins, could be changed, having deleterious effects on the country. Lundahl and Petersson (2004) documented this fear stating that: "This... would be devastating for democracy and pave the way for the type of corrupt one-party state that has had such unfortunate political and economic consequences in several countries in Africa" (Lundahl and Petersson, 2004: 736).

One South African woman reflected that:

Their hearts are in the right place, but the way they are carrying it out is not very logical... could be doing more to not create antagonisms between "South Africa's cultures".
(Psychology specialist)

The consolidation of power and corruption have been widely observed and documented in South Africa, giving credence to these migrants' fears. In the scientific and technological domain, some stressed that good research is being

done, but one lamented the lack of initiatives focusing on public health. Several South Africans believed their country has great potential, innovation and were pleased that greater funds were being allocated to scientific and technological policies and research, especially on HIV/AIDS. Migrants' impressions called attention to the racial inequality of this field and the need to encourage colored women to focus on this area.

5.2.4 Views on Migration

From a more negative viewpoint, one person stated that South Africa's lack of financing has encouraged brain drain and caused a lag in its research endeavors compared to other countries. The brain drain theme was highlighted as an important concern to several of the highly skilled migrants. One respondent indicated that scientific policy is excellent as it promotes science and facilitates education at schools and universities, especially for women. Overall, however, the migrants were not fully aware of the scientific policy in South Africa.

A few respondents noted that brain drain was occurring and reducing violent crime is necessary to encourage return. Further to this point, there has been a large outflow of white highly skilled migrants concurrent with an influx of regional migrants. Several interviewees corroborated this fact, stating that South Africa must increase its flexibility toward migration in order to compensate for the loss of skills and address restrictive laws that make it difficult to work in their country. One person noted further that regional immigration to South Africa helps fill labour gaps and encourages zero tolerance for xenophobia.

Other migrants had polar opposite views of migration stating that current policies are flexible, encourage South Africans to emigrate and gain experience working abroad. The country has significantly opened up to regional migration, which has filled gaps in employment and helped export useful lessons learned in South Africa to other areas of the African continent. Illegal immigration and its link to crime were also noted as a concern.

On a related topic, many respondents had vague notions of governmental attempts to encourage the return of highly skilled migrants. One bemoaned the few efforts to retrieve lost skills abroad. She continued on to say that government messages have been confusing and even condemnatory to emigrants. Statements like, "those who do not like South Africa should leave," discourage citizens from criticizing and thus, creating change and improvement in their societies. This encourages them to seek opportunities elsewhere. Another migrant agreed, citing a tacit government policy that when one leaves, he becomes a traitor and does not "count anymore." This deters emigrants from ever wanting to return and cuts off links they might have hoped to retain with their country of origin (social, professional, political). Migrants had notions of tax

incentives and other private initiatives have been undertaken to encourage return, and brain circulation and retention of skills schemes that were underway.

A professor remarked that promotion of advanced research and engagement by the brightest researchers should be encouraged:

South Africa lacks this vision and very few people will come back until there is a home for the best researchers.

(Professor of Neuroscience)

Improving scientific and technological research, expanding on professional opportunities and making these opportunities known could have positive effects in encouraging people to return and stay initially. Another respondent's words testify to this fact. She stated,

If I was aware of what I could do to benefit my own country within my own country professionally, then this would add more weight to the push factors "encouraging her to leave Switzerland."

(Geographer and editor)

5.2.5 South African Government Efforts to Encourage Return Migration

Respondents who noted governmental efforts to encourage return migration were correct. The South African government is working on attracting skilled labor that has emigrated. Education Minister Naledi Pandor stated that new efforts were underway to encourage South Africans to return, if even temporarily. There is a particular need to focus on professionals in the engineering and information technology fields in order to generate economic growth and reduce unemployment. Mechanisms are being developed to link the government with professionals abroad with the goal of facilitating channels of communication and the flow of knowledge. Pandor indicated that six-month lecture and research programmes could be viable options for the temporary return of academics living abroad (Warby, 2007).

Other significant non-governmental programmes that have been launched to encourage return migration are the Homecoming Revolution and the Come Home Campaign. The first was established by Angel Jones and Marina Smithers to encourage the return of South African migrants and provides an online forum with information to facilitate return – finding employment, legal paperwork, establishing a business, re-adjusting to life, testimonials of returned emigrants, even networking events in the diaspora and within South Africa (Homecoming Revolution). The latter programme enables and assists returning expatriates with finding employment, immigration documents, registering children born abroad and the like. It also discourages emigration by encouraging people, es-

pecially skilled citizens, to become more engaged with their societies and suggesting potential solutions to mitigate the social ills forcing people from the country. The initiative is jointly supported by the trade union Solidarity and the non-profit organization, the Company for Immigration (Come Home Campaign).

5.2.6 Citizenship Policies of South Africa

With regard to citizenship policies, one highly skilled migrant noted the availability of dual citizenship, but believed the policies to be confusing. Alternatively, another migrant was a dual citizen, thankful for the possibility of owning two passports. She stated:

They would lose so many South Africans if they did not do this.
(Masters Student, University of Geneva)

Two people wondered if the country even has a formal migration policy. South Africa does indeed allow dual nationalities. Section 6 of the South African Citizenship Act, 1995 (Act 88 of 1995) states that, “A South African citizen who by a formal and voluntary act acquires the citizenship of another country, automatically loses his or her South African citizenship” (South African Department of Home Affairs, 1995). To avoid this situation, a South African citizen must apply for the retention of his South African nationality before the Minister of Home Affairs before taking on another citizenship. The Department then issues a letter of Retention of Citizenship, which should be attached to the applicant’s South African passport. Those who have lost their South African citizenship may apply for resumption at a Home Affairs domestic office. Former South African citizens by birth or descent must have returned permanently to South Africa to get a new passport; former naturalized citizens must have a valid permanent residence permit in South Africa.

Recently, a slight change was made to the South African Citizenship Act of 1995. The South African Citizenship Amendment Act (Act number 17 of 2004) repealed Section 9 of the Act 88 of 1995, and information on the “use of foreign citizenship” was inserted. It states that those entering or departing the Republic cannot use a foreign passport; neither can they use their foreign citizenship to avoid responsibility or gain undue advantage. These are the main regulations concerning South African citizenship.

This information should be clearly delineated and made available. Many migrants noted their lack of full comprehension of the rules governing citizenship. Information on the possibility of dual citizenship is necessary, especially for those embarking on emigration. Allowing dual citizenship permits migrants to retain some kind of links with their country. This is the basis for the creation

of bridges between one's country of residence and South Africa. Those who have been made to feel they are traitors are less likely to want to keep contact and contribute back to their country of residence. Brinkerhoff (2006) and Alexseev (2002) highlight that governments must strike a delicate balance in helping curb brain drain and controlling diaspora activities, while encouraging potential economic and social contributions.

Bauböck et al. (2006) stress that most expatriates remain deeply attached to their countries of origin emotionally – through the formation of their identities, keeping contact with friends in country of origin. They are also attached physically – through investments, bank accounts, property. Retaining links with citizens abroad can promote economic benefits for origin countries by encouraging remittances, investments or the return of migrants with skills. It can promote national culture and the use of national languages abroad and encourage migrants to be involved in the political processes back home, even mobilizing them as lobbyists in the receiving country. The political, economic and personal experiences migrants accumulate abroad can positively shape activities and situations in countries of origin.

Bauböck et al. (2006) recommend that receiving countries should accept dual nationality for first and second generation migrants with strong links to their countries of origin. Sweden, Finland and the Netherlands allow expatriates to naturalize abroad but still retain their nationality of origin. Many countries treat their diasporas inclusively labeling them as active members of the political community, including Brazil and Ecuador (Levitt, 2001).

5.3 Perceptions of Switzerland

5.3.1 Development Cooperation Policies

Most of the migrants were unaware of Swiss scientific and development cooperation policies that implicate South Africa. Several people stated that South Africa receives a considerable amount of funding through development cooperation programs but did not provide further details. Another few remarked that there were many good programs being developed between South Africa and Switzerland. One person indicated that the approach to development cooperation policies should be changed. He observed,

Too many countries still see Africa as a poor continent and then treat all black people as if they have nothing... even some very influential black people... <are> treated like illegal immigrants or refugees at the airport pass control when they were actually coming here for business or education.

(Masters student, University of Basel)

The South Africans believed that development policies must be seen as platforms on which both countries can contribute and benefit, not as social and economic handouts from more to less privileged countries.

5.3.2 Swiss Migration Policies

Swiss migration policy induced many reactions from respondents. The interviewees were concerned that greater restrictions are being imposed on non-nationals wanting to reside in Switzerland, as the Swiss want to limit the number of foreigners in their country who threaten the traditional way of life. One person observed that migration policy has become “more xenophobic” over the years and another elaborated on the discrimination that foreigners face. He highlighted:

Migration policies create a sort of second citizen status, which you feel in all walks of life in Switzerland... many foreigners who I know here, just stay here for financial reasons but emotionally they are tired of all the policies and attitudes towards foreigners as well as being blamed for everything.

(Masters student, University of Basel)

He believed that foreigners were seen as socially and economically detrimental, which contributes to their social discomfort. While such pointed views were only voiced by one respondent, others voiced subtle statements on the lack of mixing between Swiss and foreigners and increasingly restrictive migration laws. One woman described migration policy as daunting, noting the registration process as unclear. From another perspective, two migrants described the Swiss migration system as appropriately restrictive, well-defined and clear. Of these, one stated:

Swiss legislation strikes a balance between the influx of new migrants versus the specific industrial needs of the country and the overall required amount of human capital owing to the country demographics and GDP.

(Electronic Engineer)

He cautioned, however, that the model of three concentric circles could potentially limit Switzerland from tapping into skilled labor from developing countries that could add a great deal of value to the country. Respondents then segued into their views on ways in which their skills and involvement in South African development can be enhanced.

5.4 Highly Skilled Migrants' Views on how to Enhance Development in South Africa

Perhaps the most rewarding and interesting part of the research was the opinions and suggestions offered by migrants on how to expand on diaspora efforts to improve development in South Africa. Respondents posited a wealth of potential collaborations that could enhance work in this area. A majority of the respondents voiced a coherent notion that associations geared towards South Africa should become more visible to raise awareness of these groups and their objectives. This would increase the diaspora's knowledge of its own members and the skills it has to offer South Africa. Institutions and the government in South Africa should be informed of the composition of the diaspora and maintain communication, propose policies, establish greater cooperation, support projects and be informed of current endeavors being initiated abroad. Migrants must also lobby the South African government for greater support and encouragement of diaspora efforts that benefit local communities, plus better policies to replace lost skills and encourage return. One person elaborated on this:

The problem is, you go overseas and get all these skills. I have all these laboratory skills but there's still no laboratory I could work in, in South Africa. But if they did set one up, I would be one of the only people who could work there.
(Masters student, University of Bern)

This speaks of a need to encourage return and the transfer of skills and knowledge to improve the overall level of research and academia and the human capital in this domain and increase the capacity of research and academic institutions in South Africa. Without the right infrastructure, it would be difficult for this respondent to return and contribute her knowledge to researchers, intellectuals and academics in South Africa. A formal system should be established to facilitate, encourage and support the role of the diaspora in impacting development. Overall, greater institutional and governmental support and knowledge concerning the diaspora are necessary.

Many respondents underscored the need to enhance student and faculty exchange programs between Switzerland and South Africa. One respondent elaborated on the prospect of an exchange between doctors working in Switzerland who would visit South Africa and vice-versa. The South Africans underscored that the Swiss should take advantage of those receiving their education in their country, instead of forcing them to leave once their degree programs have culminated.

As previously mentioned, with the implementation of the new bilateral agreement on science and technology between Switzerland and South Africa, greater numbers of student exchange programs, joint research initiatives and joint lectures will be held in a formalized and sustainable manner.

Formalizing these channels of exchange will increase positive interaction and encourage the transfer of knowledge and expertise in a mutually beneficial manner. Some migrants have voiced their desires to facilitate greater student exchanges between institutions here and partners in South Africa. The Swiss Network of Scientific Diasporas project could aid in linking these eager professionals up to sources of funding like the bilateral agreement.

Almost half of the migrants stressed a need to encourage forums for communication such as internet interfaces for people to discuss, network and exchange information on diaspora initiatives in benefit of South Africa and network with each other. Information on such resources should be available through embassies, consulates and regional associations such as the South African Club of Suisse Romande to really demonstrate how people can actively engage and positively impact their country of origin. This club could expand its mandate to include sponsoring grassroots initiatives in South Africa or fundraising for various causes and NGOs on the ground in South Africa. Alternatively, a new organization could be started by diaspora members hoping to positively impact the development of South Africa that would focus on key development areas (improving local capacity and responses to HIV/AIDS and tuberculosis, water provision, poverty alleviation). Respondents could come together, creating a positive synergy of skills and motivation and contribute their expertise on relevant areas back to South Africa.

The wealth of professional contacts these migrants have both in Switzerland and South Africa should be utilized to enable professionals to link up, pool resources and maximize the beneficial effect on social and economic development. Many people said that they were simply unaware of options available to influence development, but would love to partake of such opportunities. Of these, one person suggested having some kind of Swiss-South African network with information that people would receive upon arrival in Switzerland. Embassies should support diaspora engagement in activities by contacting people in their databases about opportunities and associations dedicated to the development of South Africa.

Similarly, a few respondents forwarded the notion that the Swiss authorities should gather information on diasporas. It is in their interest to be aware of potential resources, endeavors and possible collaborations that could positively impact their country. This information should be readily available, and exchanges and collaborations should be formalized in agreements. Diaspora members should also encourage foreign investments by acting as South African representatives for various initiatives. Perhaps the rewards of such exchanges can be best summarized by one respondent when he stated,

Both countries should identify areas for mutual benefit and opportunity on a concerted basis.
(Trust Officer)

6. Conclusions and Recommendations on Diasporas to Enhance the Role of Highly Skilled Migrants as Partners in Development of their Countries of Origin

The study on South African highly skilled migrants in the diaspora in Switzerland provided detailed insight into the motivations for emigration, obstacles in transitioning and the links migrants foster and strengthen with their country of origin. The respondents presented an array of reasons for their relocation to Switzerland. While some felt dissatisfaction with the apartheid regime, others felt disenfranchised in the post-apartheid period and fled to seek greater educational and research-based opportunities. Some sought improved financial and professional prospects abroad. The high crime rate and incidence of rape encouraged two respondents of the need to emigrate. A minority moved for more positive reasons – marital relocation and family reunification. The deteriorating positive aspects of life in South Africa that forced many to seek opportunities abroad indicate areas on which greater impact must be made.

Those in the diaspora, with their expert understanding of South African lifestyles and cultures, could positively and significantly influence their home country, attacking just those issues that forced them from their homes initially. Christian N. Madu (2002) elaborates on this notion, indicating that we must engage Africans in the diaspora to impact economic growth. He notes, “This is achieved when we use the wealth of knowledge of Africans in the diaspora who have gained the requisite education and experience from industrialized countries but are also well acquainted with the cultural value systems of African countries” (Madu, 2002: 52). He goes on to underscore the need to understand the catalysts for migration and in so doing, find creative solutions to mitigate these factors and positively impact the social and economic development of Africa.

While the main obstacle in adjusting to living in Switzerland was language, most overcame this barrier through foreign language classes and interaction with francophone friends and colleagues. Housing and the expensive cost of living in Switzerland were cited by several respondents as areas of difficulty in their transition. Adjusting to Swiss cultures and ideals proved difficult for some migrants, who noted many differences between Switzerland and South Africa. Others, however, were positively received and delighted by the many aspects of Swiss lifestyle they observed – cleanliness, politeness, orderliness. When it came to conciliating the private and professional spheres, answers could be disaggregated by gender.

Overarchingly, female respondents attempted to balance these two worlds, but they often merged. This was especially so for working mothers. The male

respondents interviewed tended to put a greater onus on either the professional or the personal sphere or they kept the two completely separate. In terms of friendships the migrants have created, answers were very mixed. The respondents cited having many friendships with local Swiss people, foreigners and South Africans. These indicators give us insight into the main obstacles and transitions highly skilled migrants must make upon arrival in their new countries of destination.

Networking, both in the professional and personal arenas, was used to secure and increase contacts by the majority of the respondents. Difficulties ranged from lack of local South African capacity to language barriers for non-German speakers living in the German speaking parts of Switzerland. The South African Embassy was cited as an asset to those interested in involving themselves in projects dedicated to their country of origin. For those who were not involved in any activities, lack of visible opportunities, free time and motivation from Swiss institutions were highlighted as key reasons. The plethora of skills and expertise the migrants interviewed have to offer has tremendous potential to positively influence their country of origin. Proper channels must be deepened to enhance these possible contributions.

In a multitude of ways, the highly skilled South African migrant population has expertise and knowledge to contribute to their country of origin. While some of the respondents were involved in some kind of formal brain gain projects, the majority were engaged in projects that benefitted their country of origin in different ways, from selling local handcrafts to supporting South African schools and orphanages. These efforts tended to be on an individual and spontaneous basis; they had little sustainability. There were a few efforts underway at the collective level, as the ability to mobilise the South African community appears limited due to cultural, social and racial fractures and the complex history of Swiss-South African economic and diplomatic relations

These grassroots level efforts complement the top-down approach to development that has been taken by Switzerland and South Africa, namely through the Swiss/South African Bilateral Research Programme, which came into effect in 2007 and aims to facilitate joint scientific research, cooperation, exchanges and seminars in various scientific fields. Together these structures have created an environment that will enable a beneficial impact on South African development. Another significant finding was the appointment of South Africa as a leader in presenting the African Union-African Diaspora Summit, which is the first regional meeting of its kind and will give greater valor to and spawn African diaspora movements and initiatives globally.

There is great motivation from the diaspora in Switzerland to contribute, but projects are not readily visible and most will not search for them. As such, greater awareness of current initiatives and collaborations between South Af-

rica and Switzerland in the academic, professional, scientific and research-based spheres is necessary. This information should be available to the diaspora. Increased dissemination of information on the content and skills of the South African diaspora in Switzerland is also necessary. The South African government must increase communication with the diaspora to remain abreast of different initiatives, provide financial and other types of resources, and propose policies and new projects. Furthermore, the South African government should coordinate with development NGOs in Switzerland and South Africa and enhance collaboration with Swiss academic and scientific entities. The government should widely publicize its view of the diaspora as a pertinent actor in the development of South Africa to dispel false notions (being considered a traitor for leaving the country) and encourage the diaspora to keep contact with its country of origin. Diaspora success stories should also be widely publicized, so that diaspora members, NGOs and the government can glean lessons from past experience on development. Successes also highlight the potential impact the diaspora can have and encourage motivation and further collaboration between relevant parties.

Academic, inter-institutional exchanges should be increased and formalized to broaden channels for the flow of knowledge, technology, financial and other resources and social understanding. Greater forums for communication, including conferences and seminars devoted to engaging the diaspora and promoting their role in development should be opened. Associations oriented towards South Africa should increase their visibility, providing information on their objectives, structure and undertakings. Furthermore, associations should expand their mandates to include having a positive impact on the economic, social, technological or research-based development of South Africa. Collaboration could also be sought between various global associations and groups with similar objectives and orientations (focusing on South African development). By deepening all of these channels of interaction, the South African nationals who comprise the scientific and professional diaspora can have a great impact on the social, economic, technological and academic development of their country of origin.

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Annex No. 1

Socio-demographic indicators of Respondents

<i>Nationality and residential status</i>	<i>Gender</i>	<i>Age</i>	<i>Place of work/ Place of Study</i>	<i>Number of years spent in Switzerland</i>
South African (Permit B)	M	43	Ayanda Biosystems/ Scientific Park/EPFL	12
Colombian (Permit C)	F	44	Hoffmann – La Roche Ltd.	8
South African and Swiss (naturalized by marriage)	M	56	Centre for African Studies/ University of Basel	9
South African (C Carte de Legitimation)	M	61	World Health Organization, TB Department	6
South African and Swiss (naturalized)	M	67	Retired psychologist used to work at Foyer Accueil UCF (Union Chrétienne Féminine and now Academie Romande Coaching	35
South African and Swiss (one parent is Swiss)	M	27	EPFL	5
South African (Carte de legitimization)	M	26	Trade Information Centre, International Trade Centre UNCTAD/WTO	4
South African (Student B Permit)	F	28	University of Geneva	.5
South African (B Permit)	F	34	Université de Lausanne	2.5
South African (Permit B, naturalized by marriage)	M	36	Man Investments – Pfäffikon SZ	5
South African (Permit C)	M	45	EPFL	4
South African (Carte de legitimization)	M	31	WHO	6
South African and Swiss (one parent is naturalized Swiss)	F	40	Skyguide	25
South African and Swiss	F	37	Geographica Helvetica and University of Basel	18
South African (Permit B)	F	29	Man Investments – Pfäffikon SZ	3
South African (Permit B)	M	33	CEMEX	7
South African (Permit B)	M	34	Investec Trust	4
South African (Permit B)	M	33	University of Bern, Anthropology and Postcolonial studies	4.5
South African (Permit C)	M	47	Holcim Group	13
South African (Permit B)	M	36	Swatch Group	1.5
South African (Permit B)	F	36	N/A	6

<i>Nationality and residential status</i>	<i>Gender</i>	<i>Age</i>	<i>Place of work / Place of Study</i>	<i>Number of years spent in Switzerland</i>
South African (Permit L)	F	59	Webster University and English Speaking Cancer Association	4
South African (naturalized), German (Permit C)	M	62	F. Hoffmann-La Roche Ltd.	25
South African, Dutch (Permit C)	F	61	Private practice	16
South African and British (Permit B)	F	27	University of Bern, Geology	2
South African and Swiss (naturalized by marriage)	F	53	SOS Rassismus Deutsche-Schweiz	11

Chapter 8

Colombian, Indian and South African Scientific Diasporas in Switzerland Concluding Remarks and Implications for Policy and Research

Gabriela TEJADA, Ibrahima Amadou DIA and Francelle KWANKAM¹

1. Introduction

Engaging diaspora communities in home country development is one of the priority issues in the current international debate on migration and development. An analysis of diverse contributions made by scientific diasporas to their countries of origin is the main theme of the present volume, which looks at the case of Switzerland as a destination country for skilled migrants from Colombia, India and South Africa. The objective is to provide some insights and some guidelines for policies that can promote linkages between migration and development, specifically in terms of how to capitalise on scientific diasporas as a development resource based on primary information. Previous chapters have highlighted theoretical and conceptual issues related to diasporas, scientific cooperation between developing and developed countries and specific studies of scientific diaspora communities from Colombia, India and South Africa.

This final chapter provides an overview of the main findings of the study followed by a summary of the three case studies. The final sections highlight relevant policy implications and areas for further research.

1 We have greatly benefited from the helpful comments and suggestions of Piyasiri Wickramasekara, Senior Migration Specialist at the International Labour Office (ILO).

2. Diasporas on the Current Migration and Development Agenda

For more than a decade, globalization has accelerated the flows of international migration and the mobility of qualified labour in particular. A major concern arising from this situation is the migration of scientific and professional elites from developing countries as they go in search of career and professional development opportunities. This has long been considered a loss or drain for the countries of origin while it has been generally assumed that the developed destination countries are the only beneficiaries of this situation. However, this view of skilled migration in terms of brain drain does not take into account the positive feedbacks for the countries of origin in the form of brain exchange and circulation.

The previous chapters have clearly established that the diaspora concept has moved well beyond the historic notion of the dispersion of an ethnic group outside its country of origin, and it has been shown that the term has now acquired a broader meaning with globalization and transnational forces and actors.

Today, recognition of the heterogeneity of diasporas is crucial to understanding their role and contributions (see the chapters by Caloz-Tschopp and Wickramasekara in this volume). When profiling diasporas, it is common to consider the level of education and qualifications of their members. On this basis, some diaspora members have been categorised as highly skilled or scientific or intellectual diasporas. It is estimated that one out of every three migrant workers in the world belongs to the more skilled category. At the same time, it is important to recognize that all diaspora members are capable of making contributions to their home countries. Indeed, both skilled and low-skilled diaspora members make contributions in the form of transfers of financial remittances, demand for home country goods and services, skills and technology transfer, capital investments and individual and collective philanthropy.

This is why quantifying diasporas and establishing their basic profiles is such a high priority, since it allows us to identify the most appropriate means of getting them involved in initiatives that benefit their countries of origin. Indeed, several recent global initiatives and research projects have recognized the potential of diasporas to benefit their countries of origin through various transnational practices. All of these recognize the importance of identifying the relevant channels and contexts that can have a positive impact on their initiatives.

Evaluating the contributions of the diasporas can lead to a triple-win situation, with the countries of origin, the countries of destination and the migrants themselves all benefitting from their engagement. At the same time, the role of

the diasporas should not be exaggerated as there can be a gap between the real contributions and the potential ones.

Building on the inputs of the different chapters, this book makes a significant contribution to the global debate in terms of concepts and definitions, building up profiles of the diasporas based on primary surveys, and quantifying some diaspora contributions to the home countries

3. Brain Drain vs. Brain Gain: Confrontation or Cooperation?

In the discussion on the value of scientific diasporas, which is the cornerstone of this book, the brain drain vs. brain gain debate may present two opposing visions. On the one hand, brain drain – the first of these two visions – stresses the substantive negative impacts on developing countries, emphasizing elements such as desertion, injustice, appropriation and the privatization of an extremely valuable public asset (knowledge) for the benefit of private interests. On the other hand, brain gain – the second vision (synthesized in the *scientific diaspora* option) highlights those scientific and professional elites as having the potential to generate benefits for development through creative actions. Both perspectives see the development debate in terms of the appropriation of human capital, training and education products, research or the transformation of science and technology, and as a consequence of all these, the appropriation of knowledge itself.

It is commonly accepted that progress in the level of education, the development of science and technological innovation are three key elements that feed knowledge as a key catalyst for growth and poverty reduction. International cooperation presents itself as a promising mechanism that can promote social transformations in emerging and developing countries. In this context, the book looks at the ways in which the structural inequalities, which lead to greater disparities at the global level in terms of access to technological innovations and knowledge, can be lessened by making use of appropriate and clear scientific cooperation policy, resulting in successful scientific partnerships.

Investment in experimental research and development is the main driving force behind innovation. At a global level, there is a very wide gap in terms of investment in experimental research and development (R&D) and most investment in this area is concentrated in the hands of a select group of a few industrialized countries. As a result, many developing countries, which invest little in this area, find themselves dependant on innovation, which is led and managed by the North and this leaves them in a disadvantageous position.

This situation can also be seen in the number of researchers involved in the scientific sector at a world level, as researchers from a handful of industrialized countries account for almost two thirds of all researchers on the planet. It is for this reason that international scientific cooperation is viewed as a promising alternative for advancing the development agenda of the emerging and developing countries. In this process, the scientific diasporas have the potential to play a positive and pioneering role by becoming bridges that can unite the countries of destination and the countries of origin through innovative and creative mechanisms, taking advantage of their resources and their position in the countries of destination. This is how scientific and professional elites can become key actors for development cooperation.

When analysing the links between scientific diasporas, migration and development, we need to define development in a broader sense to embody the vision of human development – which does not only include economic aspects, but the social and cultural elements of the lives and activities of people as well – as the predominant goal and vision.

The actions of scientific diasporas are carried out within a context in which transnational and non-state actors acquire importance and prominence and where the interests of public authorities confront private interests in relation to development. Even though diaspora members are becoming increasingly accepted as a creative force in international cooperation, and development cooperation in particular, they face several obstacles, which are related to the inequalities between the countries and the inequalities of opportunities that they have to face, both within the environments of the country of origin and when they find themselves in new situations (in the countries of destination). These obstacles limit their mobility options and their possibilities to create a positive impact in their communities of origin.

It is for this reason that the concept of human rights becomes important when speaking of scientific diasporas. More and more attention is being paid to the human and labour rights of international migrants at a global level. Indeed, the current international debate on migration and development emphasizes the fact that development must benefit not only the countries of origin and destination, but also the migrants themselves. According to the ILO,

...gains from migration and protection of migrant rights are indeed inseparable. Migrant workers can make their best contribution to economic and social development in host and source countries when they enjoy decent working conditions, and when their fundamental human and labour rights are respected (Mr. Juan Somavia, Director-General, International Labour Office).²

2 <http://www.ilo.org/public/english/protection/migrant/download/dg_ilo_rt3_2006.pdf>.

4. Research Opportunities: a Project on Skilled Migration in Switzerland

The growth in the scale and complexity of international migratory flows has motivated researchers and policy makers and planners to look for strategies that can contribute to minimizing the negative effects and maximizing the positive impacts of migration. As far as skilled migration is concerned, the growing knowledge gap justifies the search for alternative methods that can deal with the migration of skilled students, scientists and professionals, and reverse brain drain by promoting the value and potential of the contributions of the scientific diasporas to scientific, technological and socio-economic development in the countries of origin. In recent international debates and forums, there has been a growing optimism on the role that diasporas play as agents of development.

In looking for ways and means to maximize the contributions of skilled migrants, it is important to re-examine the role of scientific diasporas by promoting research into their experiences, environments, interests and achievements. In fact, the research into migration and development carried out over the past few years has highlighted the need to generate first-hand information through empirical studies that can show the functioning of the brain gain mechanisms and other transnational practices promoted by the scientific and professional elites.

However, empirical evidence in this area remains scarce. In specific terms, there is a need for research into the role that scientific diasporas play, their situation in the countries of destination, their interactions with the communities of origin and the brain gain and circulation mechanisms adopted, as well as the conditions that are necessary to create a tangible and sustained impact.

A desire to advance knowledge in this area and identify the opportunities of skilled migration was the main aim of the research project “A Swiss Network of Scientific Diasporas to Enforce the Role of Highly Skilled Migrants as Partners in Development”, the results of which are presented in this book. The project generated primary data and information through empirical research carried out between 2006 and 2007. An effort was made to translate the results into proposals for specific policies so as to facilitate the positive contributions of the scientific diasporas.

The field research included case studies of skilled migrants from India, Colombia and South Africa in Switzerland – an industrialized country of destination. Switzerland is also a country which has become an important destination not only for skilled migrants and international students, but it also occupies a leading position in terms of the academic level of its immigrants. As a

country which brings in human capital, Switzerland is currently faced with the challenge of capitalizing on the resources resulting from the investment in education and training made in the skilled immigrants' countries of origin. If Switzerland benefits by absorbing this critical mass of human capital from abroad, what is the return for the countries of origin of these academic and professional elites who migrate into the country? What are the risks and opportunities for the countries of origin, if skilled migrants come from developing countries?

This book shows how unequal exchanges and power relations are not only obvious in the circulation of knowledge, but it also shows how they are present in the knowledge production systems themselves and in the use of these systems, as well as in the appropriation of the cognitive capital of individuals, institutions, countries and networks within the current context of globalization. The book also illustrates how the active presence of skilled migrants from developing countries in Switzerland transforms preconceived ideas of migration, development, training, science and technology, as well as migratory policies. Both Swiss and international policies can influence the democratization of knowledge production, while at the same time they reflect the nomadic view of qualified scientists and professionals and the value attributed to the diasporas as well as the possibility of creating an impact in their communities of origin.

In presenting the results from the three case studies on qualified migrants from Colombia, India and South Africa, who have chosen Switzerland as their country of destination, this book shows some ways in which the public policies (of the country of destination as well as of the countries of origin) can move forward in terms of recognizing the value of diaspora resources and maximize their potential.

5. Colombian, Indian and South African Scientific Diasporas in Switzerland: the Empirical Evidence

The case studies, which cover 76 skilled migrants from the three developing countries presented in this book, illustrate the value of their transnational practices for the home countries. The research was based on field work involving in-depth face-to-face interviews, which used open semi-structured questionnaires to elicit information from the sample of skilled migrants from three countries (Colombia, India and South Africa) living in Switzerland. These interviews made it possible to gain a better understanding of their conditions, practices and experiences, as well as their perceptions in three main areas: 1) the

reasons and motives for migrating, migration paths and living conditions in Switzerland; 2) links with their countries of origin and brain gain mechanisms and other transnational practices they have put in place; and, 3) enabling policies and conducive environments that support skilled migrants as development partners.

The following comparative analysis of the three case studies helps us to identify the common elements as well as the specific elements of the reasons for migrating and the living experiences of skilled migrants from the three countries. It illustrates specific ways in which skilled migrants from the three countries live in the host country while maintaining links with their homelands. In doing so, they become distinctive transnational subjects and transcend traditional national identities. This analysis also offers evidence of the obstacles the migrants face and the positive elements that could enable their brain gain practices, social remittances, and further transnational endeavours to have an impact on the development of their countries of origin.

The comparison of the three case-study countries shows the different development options available to diaspora groups. Even though each group is an individual case with its own specificities, there are nevertheless similarities in the way these skilled migrant communities act on behalf of their home countries and in the good practices that can be derived from the experiences of each group.

5.1 Migration: Push and Pull Factors

The case studies reveal obvious similarities in people's motives for migrating. Respondents from all three countries – Colombia, India and South Africa – mentioned a mixture of reasons for leaving their country of origin. These included professional advancement and professional relocation, higher wages, further studies, training and scientific advancement at renowned academic and research institutes, along with the search for better opportunities and a better quality of life or family reunification.

Indeed, the evidence from the field research shows that international mobility is an intrinsic part of the scientific world, since exposure to the international arena is essential for scientific as well as personal advancement. Moreover, the density of the international labour market within various international organisations and private sector headquarters in Switzerland, as well as the country's reputation for science, academic excellence, and a high quality of life make it attractive to students, scientists and skilled workers from countries in the South.

The attractiveness of Switzerland's prestigious scientific and technological research institutes, which are at the forefront of technological progress, is one of the primary attractions for skilled Indian scientists, students and researchers, who are looking for scientific and academic advancement. Bilateral research opportunities and student exchange programmes also provide an incentive for skilled migrants to move. This is predominantly true for India and Colombia and for South Africa to a lesser extent. In particular, the long tradition of scientific cooperation between India and Switzerland, together with the excellent reputation that the Indian higher education system enjoys within Swiss academic and research institutes, has led to greater scientific and student mobility from India to Switzerland than from Colombia or South Africa.

Family reunification and marriage were further important pull factors that could be identified in all three cases, illustrating the important effect that personal and family relations have on migration.

Social contacts, networks of professionals, and scientific linkages can be crucial to the migration process. Respondents from all three countries mentioned that their main source of information about scholarship or exchange programmes and opportunities for assistantships, scientific exchanges or jobs, were relatives, friends or acquaintances, who were already living in Switzerland.

The key push factors also included a feeling of insecurity in their home countries. Some variables involving the current political, social and economic situation in the country of origin also played a role in the decision of skilled migrants to leave their home countries. Accordingly, while some Colombians cited civil war, violence and the insecurity fuelled by diverse social and political conflicts as the catalyst for going abroad, South Africans mentioned violence, a high crime rate and low security, along with scarce opportunities due to the legacy of apartheid, as significant push factors encouraging skilled nationals to leave.

5.2 Living and Working Conditions in Switzerland

Evidence from the three case studies on the working and living conditions of skilled migrants in the host country highlights contrasting first experiences, which are mainly related to their reasons to migrate, and these in turn influence the extent of their integration into social and professional life in Switzerland. Hence, skilled migrants supported by scholarships and work contracts generally have a more positive first experience in the host country and greater possibilities of integration than those who have come for socio-economic reasons or for family reunification and marriage.

The field research highlighted various constraints such as the non-transferability of degrees (diplomas and qualifications not being recognized), the higher cost of living, problems adapting to a new culture and climate, trouble obtaining a work permit, problems making friends, being away from their families, and discrimination and racism upon arrival or during their stay in Switzerland (though respondents from Colombia and South Africa mentioned these constraints more often than Indians did). Citizens holding a passport from a developing country working in protected sectors such as medicine generally had difficulties to obtain a work permit.

As far as gender roles are concerned, most skilled Colombian, Indian and South African working mothers found it hard to balance their responsibilities as mothers and professionals in Switzerland, and they were unhappy about the predominantly conservative attitude within Swiss society, whereby women are expected to stay at home to take care of their children. The rigidity of the Swiss school system, the lack of affordable domestic care, the lack of places at day-care centres, and their remoteness from family and other forms of social support were some of the issues that women mentioned as obstacles to reconciling their professional and family responsibilities. Moreover, skilled women had even more trouble integrating themselves into professional life and/or study programmes, since they encountered significant obstacles when they tried to transfer their academic qualifications across international borders and find a job that reflected their skills level. Several women from the three case study countries mentioned that they felt that people were prejudiced against them and sceptical about their capabilities in their professional lives, simply because they were women and from a non-European country.

Language barriers were not generally seen a major professional hindrance for the interviewees from India or South Africa due to the fact that their mother tongue – English – is a working language in international organizations as well as in Swiss research academic institutes and multinational firms. Although some Colombians found that their familiarity with English was most definitely an advantage in professional terms, they had difficulties learning French – although most of those who came on scholarships had intensive French courses paid for by their exchange programmes. However, the migrants with the greatest difficulties were those who had to learn German or even Swiss German.

Respondents also mentioned that speaking one of the local languages was a prerequisite for being able to integrate themselves into the host society. Therefore, most respondents from the three case study countries took French and German language courses in order to cope better with social life in Switzerland.

Skilled Colombians, Indians and South Africans working at research and higher education institutions mentioned difficult working conditions – a heavy workload, stress at work, a high degree of competition, working in a very de-

manding sector, and a sense of isolation – as a contributing factor to their difficult first experience of the host country.

On the other hand, respondents from all three countries regarded their experiences in Switzerland as positive, interesting or even fascinating. Their positive attitude can be explained by such favourable circumstances as extended social networks and friendship, better professional and academic opportunities, language skills and their previous experiences as skilled migrants. Respondents from all three countries cited the respect for their privacy in their professional lives, flexible working hours and working conditions (part-time jobs), and the wonderful Swiss public transport system as positive aspects of the Swiss system that made it easier to strike a balance between work and family life. Similarly, skilled Colombians, Indians and South Africans recognized the quality of life and security in Switzerland as major assets in their own life and that of their family.

5.3 Integration in the Host Country and Transnational Identity

In general terms, the great majority of the skilled Colombians and Indians we interviewed mentioned that they felt comfortable living in Switzerland and they consider that they are well-integrated into Swiss social and professional life. In the case of skilled South Africans, it is worth mentioning that only about half of the respondents felt well-integrated into the host country and several of these said that they felt well-integrated professionally, but not socially. Those who did not feel integrated at all cited aspects such as not being fluent in an official language and not having much contact with Swiss people as the main reasons for this. While a small number of skilled South Africans felt partially integrated and comfortable living in Switzerland, they did not feel fully accepted. This concern was not mentioned by skilled Colombians or Indians.

For skilled Colombians, Indians and South Africans, social integration in the host country depends on an array of factors, including social and economic conditions, understanding and speaking one of the local languages, having opportunities to meet local people, having friends and social relationships, getting used to social and cultural realities, participating in public and local events, and having a job or suitable opportunities in the labour market. A few of those interviewed (mainly those working for international private firms or employees of international organisations) do not need to be socially integrated into Swiss society as their daily life is confined to a very international environment, especially in Geneva which is seen as a very cosmopolitan city and treated as a “transit city” by many. In addition, respondents mentioned that they do not have any time for social activities with local people outside work.

Moreover, some respondents mentioned that they suffered from cultural isolation and a lack of friends, and the feeling that they “could never be one hundred percent integrated into this country”.

The empirical evidence shows that institutionalised relationships, scientific and social contacts and linkages influence the status of skilled migrants from the three countries studied in Switzerland, providing sustained access to social resources, and thereby making it possible for them to integrate themselves into the labour market as well as socially. The portrayal of skilled migrants as “more able to integrate” in the Swiss state discourse on foreigners has certainly had a positive impact on the status of migrants from the three countries that were studied. Certainly, the differences in status granted to immigrants under current Swiss immigration policy, which prioritises immigration from the European Union (EU) while simultaneously authorising skilled migrants from non-EU countries to enter the country, has played an important role in this.

Furthermore, collective action by migrant associations significantly improves the status of skilled migrants. These associations have also become platforms enhancing collaboration and exchanges among members of the diaspora. In the Colombian and Indian cases, associations of migrants have proved useful both in terms of establishing and developing social and professional contacts and in providing linkages between skilled migrants, thereby enhancing their social capital in the host country. This is not true in the case of South Africans.

By becoming integrated in the host country skilled Colombians, Indians and South Africans have found it easier to implement their mid and long-term plans to give something back to their homelands. However, in all three cases, it is interesting to see how integration was found to be helpful for the development initiatives of migrants, but it was not a prerequisite. While skilled migrants’ social capital and status helped some of them to implement initiatives that could benefit their homelands, others were able to carry out similar endeavours without being well-integrated.

The transnational nature of (most) diasporas means that their members reside in a host country while also nurturing a sense of solidarity and links to their homeland. An ability to maintain this kind of dual frame of reference is a frequently observed aspect of diaspora life, since they constantly contrast their condition in their home country – “*there*” – with their situation in their host country – “*here*” in their daily lives. As the empirical data illustrates, the lives of most of the skilled migrants from Colombia, India and South Africa were simultaneously taking place “*here*” and “*there*” and many share a feeling of “*being at home away from home*”, maintaining a transnational identity that binds them to their home country and to Switzerland at the same time. These

feelings allow skilled migrants to create a type of identity that is composed of more than one specific physical space, enabling a new transnational sphere to emerge that is no longer dominated by direct contact and traditional proximity.

Furthermore, both skilled Colombians and skilled Indians emphasised their “feeling of Colombia” (or “feeling of India”), mentioning that their roots, culture and identity were important to them and independent of how integrated they were in the host country. In the Indian case specifically, this “feeling of India” is shared by most diaspora members – in terms of a sense of community that transcends their various linguistic, cultural and geographic realities – through Swiss-based Indian associations. In the case of Colombia, even though diaspora members share a “feeling of Colombia”, it was observed that skilled Colombians find it difficult to come together with fellow nationals who do not belong to the ‘same’ diaspora (skilled vs. non skilled). Indeed, there is evidence to show that social stratification very often occurs whenever Colombians in the diaspora meet. Accordingly, skilled Colombians are reluctant to meet members of circles of the Colombian diaspora outside their usual circles, and they do not trust them. This shows how the political polarization of Colombian society is reproduced in its diaspora.

For South Africans, the interest and longing for South Africa varies considerably. This depends mainly on the motives for their migration and the links with their country of origin and a sense of racial empowerment or disenfranchisement. In this case, different views were expressed about the sense of belonging to both the host country and the country of origin and it was shown that members of the diaspora do not share a sense of (transnational) identity. Some of the most committed diaspora members, who felt extremely integrated in the host country and who also held Swiss nationality, felt proud to be able to contribute to the development efforts of both countries; they demonstrated their transnational thinking and interests by mentioning that their feet were in Switzerland, but every day they felt as if they were somehow in South Africa as well.

Overall, in all three case studies, long-term migrants (as well as those who have settled permanently in Switzerland) are the skilled migrant groups that were most in favour of a dual sense of belonging or transnational identity. This illustrates that transnationalism is not a phenomenon linked to recent arrival with the tendency to disappear as part of a process of integration by migrants in the country of residence.

The evidence about skilled Colombians, Indians and South Africans in Switzerland reveals the extent to which migrant identities are influenced by their residential status and citizenship. Some skilled migrants who have dual citizenship testified to their multiple identification and loyalties. Over the course of time, skilled migrants from the three countries under study generally acquire

a more stable migrant status in the host country. This is mostly based on the length of their stay or on whether they have managed to find a stable job, but to a lesser extent, is also due to whether or not they are married to a Swiss citizen. It has been shown that a stable residence permit is a significant factor in terms of enabling skilled migrants to settle down, as it makes it possible for them to plan their mid- to long-term future and thus gives them stability. It might in turn encourage them to identify more with their country of residence and thus influence their feelings of integration and their transnational identity.

5.4 Brain Gain Practices and Positive Transnational Initiatives

Most of the skilled migrants from Colombia, India and South Africa who we interviewed maintain a close relationship with family and friends back in their homeland. Accordingly, they maintain frequent and systematic contacts and conversations with their relatives back home by email, telephone, VoIP applications such as Skype, and visits in both directions.

Many respondents are involved in international, local and regional associations and networks in diverse areas linked to science and technology and other knowledge-intensive sectors. These networks of contacts and valuable links and the strategic positions that many of them occupy in the international scientific and/or professional arena, could be potential assets for the economic, social, scientific and technological development of their home countries provided that adequate brain gain mechanisms are put in place and as long as they have the necessary support and an enabling environment in both the host country and the country of origin.

Initiatives and actions by skilled migrants in favour of their homelands offer evidence of mechanisms through migrants can have an impact on development and poverty reduction in particular. Skilled Colombians, Indians and South Africans tend to implement development initiatives in their home countries on an informal, one-to-one basis. These are mainly rooted in their personal ambitions and desires, although in some cases they are complemented by institutionally-organised collective action. When we analysed various examples of diaspora development initiatives, some common forms of activity and good practice could be identified from each community's experiences.

Colombian skilled migrants stressed the fundraising efforts that had been introduced to support local researchers, organisations and entrepreneurs, as well as the efforts made to obtain institutional recognition and support for their work to sustain home country development initiatives. Indian respondents discussed the creation of scientific and technological institutes and the facilitation of exchange programmes in academic and research institutions, while South African

respondents mentioned their efforts to share their business knowledge with their compatriots back home and establish university exchange programmes.

Some respondents from all three countries are engaged in initiatives that have a significant knowledge transfer and/or knowledge circulation component. This type of engagement includes giving lectures or training sessions and participating in scientific conferences and congresses during visits to their countries of origin. They may also carry out assessments for public bodies in key areas of development, accept advisory contracts with private firms, provide investigation advice to research and academic institutions on an informal basis, encourage exchange programmes for students and researchers, and provide support to NGOs, particularly through fundraising and the establishment of strategic contacts. Respondents also mentioned working with research and scientific institutes in their countries of origin and carrying out research projects there. Many of these activities of skilled migrants take place during temporary stays or short visits to their countries of origin.

For skilled Colombians in particular – mainly the more active members of the scientific diaspora in Switzerland – their contacts with the country of origin were related to systematic knowledge transfer activities, through which they maintain a level of permanent scientific cooperation with Colombia. The empirical research revealed more than 15 years of collaboration experiences between Colombian scientists and researchers in Switzerland and partners in the home country. These had mainly come about as a result of individual inspirations with hardly any institutional support and they have led to the creation (or reinforcement) of a critical mass in key fields of development such as the environment, ICTs or medicine.

In the case of skilled Indians, knowledge transfer and knowledge circulation activities were also generally carried out on a one-to-one basis rather than in any collective fashion, and they included knowledge-sharing via the internet, temporary stays as visiting lecturers or researchers, and the systematic exchange of information and scientific publications. In addition, skilled Indians participate in scientific conferences, training activities and seminars on an informal basis during private visits to their homeland.

Skilled South Africans stated that they cooperate with local counterparts in academic and research in sectors such as air navigation, business, management development, social activism, or public health. This is mostly on a one-to-one basis or under the aegis of South African institutes. Besides this, some skilled South Africans mentioned regional and international contacts in areas such as management development, compensation and reducing anti-black racism. Their knowledge transfer and knowledge circulation activities include sharing business information and knowledge with former colleagues working in the South African banking system, giving lectures during private visits, in-

roducing topics about South Africa into the Swiss curriculum, establishing and promoting student and lecturer exchange programmes into universities, and promoting indigenous communities through local tourism.

The evidence shows how skilled Indians, Colombians and South Africans are making a greater effort than ever to use their positions in Switzerland as professors, senior researchers, deans or directors of departments, as well as their wide scientific and professional networks, to initiate institutionally backed knowledge transfer and knowledge circulation activities. For example, in the case of India, these include the creation of specialised institutes in areas such as biotechnology, particularly the KIIT School of Biotechnology at the University of Orissa, which has enhanced local scientific and technological capabilities; the creation of a Master's programme in Switzerland with a strong Indian studies component; or exchange programmes with systematic visits by professors, researchers and students from one country to the other. One particular action by skilled Colombians is the design and promotion of the Colombian-Switzerland collaboration (COCH) project on agro-ecological models, which was signed at government level.

In the case of South Africa, a typical example is the contribution to the creation of the Centre for African Studies at the University of Basle, which carries out research, exchange and training programmes in African studies as well as relations with African universities. This centre has a significant South African focus and seeks to encourage exchanges between academics, teachers and students, as well as joint research projects.

Most of these activities have been carried out with the participation and/or involvement of the most active scientific diaspora members from the three case study countries. All these activities could prove very important in terms of strengthening scientific and technological capacity in the countries of origin.

R&D initiatives are an important brain gain mechanism. Within this perspective, skilled Colombian mentioned various activities involving the transfer of industrial technology and the design of the Alpha Bio 2000 project. The scarcity of specific applications for this project was mainly due to a lack of financial support or interest from the various partners involved. Another interesting initiative is the involvement of scientific diaspora members in the development of the internet in Colombia. In the case of India, it is worth mentioning that most Indian PhD students in Switzerland believe that their research and scientific work could lead to R&D applications that could have an impact on the scientific, technological and socio-economic development of their home country.

Skilled migrants from South Africa emphasized a variety of initiatives which seek to accelerate the quality of science and technology in South Africa by developing new products and technology to address key development problems and build the country's capacity within these areas. These initiatives in-

clude the creation of technology for a rapid diagnosis of the HIV virus in children and the production of drugs for the treatment of tuberculosis.

North-South research partnerships are another brain gain mechanism, with skilled migrants from the three countries undertaking or getting involved in a wide range of research projects. Some of the important North-South research joint projects between Colombia and Switzerland involving skilled Colombians are the cooperation programme for the environment between the EPFL, the Univalle and other Colombian institutions, and the design and promotion of a research collaboration project into malaria between the University of Lausanne (UNIL) and the Univalle.

A range of research partnership initiatives with India by skilled Indians is being implemented from Switzerland. Some good examples are a particle physics project carried out by CERN, involving four different research institutions, and a project on health, ageing, drinking water and technology implemented by the ETHZ in partnership with the Max Planck Institute.

For South Africa, one example of a research partnership is the South African Centre for Epidemiological Modelling and Analysis (SACEMA) project, which is an initiative with a significant capacity-building component that uses mathematical modelling to identify the transmission of diseases, and which is also helping to improve/advance public policy in this field.

In all the countries under study, some of the North-South research partnership activities also included a significant R&D component. A good example is the Colombia-Switzerland collaboration (COCH) project on agro-ecological models, which involved HEIG-VD from Switzerland and the Biotec Corporation, a centre of innovation and technological development promoted by the Univalle, which is working on the application of biotechnology to the bio-industrial sector and the community.

In the case of India, there are some remarkable institutional programmes promoting scientific collaborations and exchanges between Swiss and Indian partners and facilitating capacity building at both an individual and an institutional level. These are the Indo-Swiss Collaboration in Biotechnology Programme (ISCB), which promotes bilateral scientific cooperation in the area of biotechnology through knowledge transfer and circulation and technology transfer, and the Indo-Swiss Joint Research Programme (ISJRP), which backs cutting-edge research that brings students and researchers from both countries together. The ISCB also encourages R&D partnerships between Swiss and Indian institutions and private firms that are significant in socio-economic terms.

Skilled migrants from the three target countries also mentioned their participation in other brain gain mechanisms such as social remittances and philanthropic initiatives. Skilled Colombians, Indians and South Africans mentioned that they were involved in grassroots initiatives such as providing sup-

port to vulnerable children, making donations to schools, or linking up resources in Switzerland with organisations in their home countries.

In particular, some of the actions and practices that skilled Colombians identified as social remittances for the benefit of Colombia include a range of social projects to support NGOs, and philanthropic activities that benefit some of the most vulnerable sections of the population in their home country. Skilled South Africans mentioned a variety of philanthropic initiatives such as donations for orphanages and support for social organisations as some of the main social remittances that contribute to poverty reduction in disadvantaged sections of the society back in South Africa.

Skilled Indians also highlighted aid efforts to mitigate the consequences of natural disasters. For India some other mechanisms that emerged during the course of the empirical research include: outsourcing activities, business links and social remittances, focussing mainly on the home country's health and education systems. Some specific examples of the business links that skilled Indians have encouraged with India including owning property back at home, investing, outsourcing, and providing technical support to private firms as well as undertaking research partnerships with the private sector.

5.5 Factors Influencing the Transnational Activities of Scientific Diasporas

Identification of factors that influence transnational activities of scientific diaspora is important for developing appropriate policy responses. The field research has enabled us to identify important factors as documented in previous chapters.

From the perspective of skilled migrants from Colombia, India and South Africa, some of the elements facilitating brain gain initiatives and practices are their enthusiasm, their knowledge of the culture of both the country of destination and the country of origin and their scientific and professional contacts. For effective impact, these need to be combined with adequate networking and communication, institutional support from both countries, availability of funding, identification of the right partners, and being part of scientific associations.

Respondents identified a number of impediments and constraints that prevented brain gain. These include administrative and financial constraints, time limitations, a lack of institutional support, an unstable professional situation and a lack of political commitment.

At the same time, some skilled Colombians and skilled Indians referred to the non-recognition of degrees and their precarious residential and/or professional status and living conditions as obstacles to their brain gain strategies and initiatives. In addition to this, skilled South Africans spoke about a lack of

information about opportunities to collaborate with their home country, the absence of a stable work situation, a lack of time and an extreme workload as some of the main hindering factors. Moreover, skilled South Africans find it hard to unify their efforts and strategies for the benefit of their home country with their fellow nationals as a result of the huge social fragmentation within the diaspora, which means that there is no shared sense of community or associative mechanisms for collaboration. This jeopardises effective structured and coordinated brain gain strategies and activities as we have already pointed out.

Both skilled Colombians and South Africans mention the precarious status of students in Switzerland as an additional obstacle, while none of the skilled Indians spoke about this issue.

An analysis of first-hand information on the experiences and activities of skilled Colombians, Indians and South Africans in Switzerland helps us to see how motivation, the ability to mobilise and an enabling environment can encourage diaspora involvement in the efforts to advance the development of their countries of origin.

The vast majority of the skilled migrants displayed an impassioned and dynamic motivation to contribute to the development of their communities of origin. "I would love to do something for my country of origin" was a frequently used sentence among all three groups of respondents, offering proof of their lasting desire and eagerness to contribute to the development of their countries of origin.

In the three cases, brain gain initiatives tended to be informal, organised mostly on a one-to-one basis and initiated through individual motivation. However, it is worth mentioning that the mobilisation of the resources of skilled Colombians in Switzerland also takes place through collective efforts, something that does not apply in either the Indian or the South African cases. The Colombian scientific diaspora has a structured organisation that strengthens the shared identity and sense of community of its members and this helps to enhance scientific and technological collaboration between Colombians in Switzerland and research institutes and universities in the home country in a coordinated and formal manner under the aegis of the Association of Colombian Researchers in Switzerland (ACIS).

However, some skilled Colombians feel that the Colombian diaspora lacks a unifying component which cannot be created through an association; for this reason they believe that the diaspora should not be separated by type (skilled vs. low-skilled) if the goal is to encourage the unifying elements and feelings of the whole Colombian diaspora. In contrast to Colombia, neither the skilled South Africans nor the skilled Indians in Switzerland have any professional or scientific associations to promote and coordinate the scientific and technological development endeavours of their diasporas.

In the case of South Africa, there is no shared identity or “feeling of South Africa” and no sense of community among the diaspora, which means that its members do not represent a single, united group. As we have already mentioned, skilled South Africans’ interest in and desire for their home country vary greatly depending on their reasons for emigrating, their links to their home country and also their sense of racial empowerment or disenfranchisement. This is simply the legacy of the racial, social and cultural fractures that typify the country’s recent history, causing the diaspora to remain fragmented.

This also explains why there are relatively few South African associations and why existing social associations which bring South Africans together, such as the Club of Friends of South Africa or the South African Club of Suisse Romande, are mainly dedicated to organising social events. In fact, whereas Colombian and Indian skilled migrants are members of associations and organisations, which act on behalf of their countries of origin and which reflect their “sense of community”, most South Africans do not belong to such associations. For skilled South Africans in Switzerland, individual and sporadic actions for the benefit of their home country are the preferred form of interaction. This explains why there are no institutionalised initiatives and no scientific or professional association that could encourage the skilled South African diaspora in Switzerland to pool its skills and resources to benefit the homeland.

In contrast, the majority of skilled Indians stressed their involvement in social associations, and these aim to reconstruct a “feeling of India”, mainly through a range of social and cultural activities. Within the Indian skilled diaspora, mobilisation is mainly articulated through their ability to organise cultural and social events that produce a sense of solidarity and brotherhood rather than gatherings with a shared objective of promoting collective scientific and technological activities that could make an impact in their home country as in the case of Indian diaspora in the USA. However, many skilled Indians mentioned their interactions with India through the institutionally backed Scientists and Technologists of Indian Origin Based Abroad (STIOs). Hosted by the Indian government, this Internet-based network seeks to mobilise overseas talent and expertise and ensure that this knowledge helps Indian development by encouraging exchanges between skilled Indians who are active in a broad variety of sectors and their counterparts in the subcontinent.

On the issue of enabling supportive environments, the Colombian diaspora has an overriding scepticism about supportive policies, both in the country of destination and in the home country. Regarding the situation back in the home country, although some skilled Colombians recognise that the economy has improved, the majority believe that opportunities have only been created for a minority of the population. Therefore, they are mainly concerned about social inequalities and polarisation and the tense political situation. In a similar way,

Colombians are worried about the inadequacy of institutional support and resources for research and the lack of a long-term vision and consistency in scientific policy. Only a few skilled Colombians express any optimism about long-term progress in their home country.

In contrast, skilled Indians regard political and economic stability and an improvement in their country's good governance and rule of law as key indicators which the environment of their home countries can use to facilitate brain gain initiatives because the more positive situation is already bringing investment and business to India.

In contrast to the Colombian case, most Indian and South African respondents highlighted their governments' efforts to foster scientific and technological research by allocating more funding to the science and technology sector as well as improving the quality of scientific research and trying to involve their scientific diasporas in this. However, skilled South Africans emphasised constraints such as the lack of public health initiatives and on how to tackle racial inequalities in the scientific and technological field, which has resulted in a low representation of coloured women.

While a number of the skilled migrants interviewed emphasized the progress made in economic growth, in key emerging economies in South Africa and India leading to broader opportunities regionally and internationally, they also mentioned persistent social and economic inequalities and problems such as corruption, violence and insecurity, conflicts, and poverty as some of the main constraints. Health problems in South Africa and internally displaced persons in Colombia are additional challenges mentioned by respondents regarding the situation in their home countries.

While respondents from the three countries have a positive perception of Swiss scientific policy and while they recognise the high level of scientific productivity based on significant investment in science, technology and innovation, they note the lack of Swiss institutional support for scientific diasporas from developing countries.

For example, the Colombian scientific diaspora has been striving to carry out knowledge transfer activities on a systematic basis for many years, but there is a lack institutional support. In order to capitalise more on their resources, skilled Colombians insisted on the need for greater recognition in Switzerland, as this might encourage a suitable institutional framework for bilateral scientific collaboration. In contrast to Colombia, both South Africa and India benefit from an institutional framework that supports science and technology exchanges and joint research projects, as both are priority countries in the current bilateral scientific collaboration strategy of the Swiss State Secretariat for Education and Research (SER). This institutional framework certainly provides increased opportunities for enhancing the development of India and

South Africa through projects in which the scientific diasporas of both countries in Switzerland are involved.

India, in particular, has a long tradition of bilateral scientific cooperation with Switzerland, which along with the outstanding reputation of the Indian higher education system and technological institutions and the positioning of India as a key emerging economy, not only facilitates Indian scientific and student mobility, but it also increases the recognition of skilled Indians in Switzerland, compared to Colombia and South Africa. Furthermore, according to some skilled migrants from the three countries, Switzerland should rethink its immigration policies by putting the accent more on skills and capabilities rather than origin and nationality, while it should also address the restrictions on student mobility.

With regard to specific pro-diaspora policies, some clear top-down endeavours designed to benefit South Africa are already underway. For example, South Africa is playing a leading role in the process of creating a common vision for sustainable development on the African continent, integrating the contributions of the diaspora by recognising it as Africa's sixth economic region. Initiatives promoting return migration and the creation of the South African Network of Skills Abroad (SANSA) to link the resources of the scientific diaspora with business opportunities and cooperation projects are further examples of efforts by the South African government. However, SANSA does not have a chapter in Switzerland.

Similarly, skilled Indians do not only see economic growth in their home country and the encouragement given to the scientific and technological sectors as positive developments but they also appreciate the range of pro-diaspora policies of the Indian government for the promotion of their brain gain activities. These are also some of the factors behind the desire of many to return to the home country in the near future. There is an institutional basis for interaction with the Indian scientific diaspora since the Indian government recognises and appreciates the strategic role it plays in supporting scientific and technological as well as socio-economic development. Likewise, the level of Indian scientific and technologic research and its growing pool of technological and innovation-intensive sectors encourage exchanges with the diaspora.

Unlike South Africans and Indians, skilled Colombians mention a lack of pro-diaspora policies in their country of origin (lack of incentives, financial support, and encouragement to get the diaspora involved in policy and decision-making), as well as a lack of institutional scientific cooperation with Switzerland and the need for the country of destination to recognize the Colombian scientific diaspora.

We can highlight a variety of significant efforts and good practices involving scientific diasporas from Colombia, India and South Africa in Switzerland.

While they all have different scopes and include various types of activities, and in some cases the participation of other actors, one thing they have in common is that they all aim to have a positive impact on the development of the countries of origin. Scientific cooperation with Colombian counterparts initiated by skilled Colombians in Switzerland has led to long-term collaborative research with institutions in Colombia and this has boosted individual and institutional capacity through knowledge circulation, seminars, conferences and meetings, student and scholar exchange programmes and joint research projects, which can be considered to have successfully addressed development challenges. It is highly significant that the Colombian diaspora has achieved this over the years without any institutional support.

In the case of India, skilled Indians pointed to the Internet-based network STIOs, hosted by the Indian government as facilitating access to a plethora of opportunities to collaborate with Indians around the world for the benefit their country of origin. The network has seen a significant number of success stories in the fields of science and technology as well as social and economic development.

One key area of good practice highlighted by the South African respondents is the Swiss-South African Bilateral Research Programme which is part of a bilateral scientific collaboration strategy that encourages joint scientific research, cooperation programmes, exchanges and seminars in the fields of public health, bio-medicine, biotechnology, nanotechnology, and human and social sciences. This initiative is a good example of a top-down approach to enhance the local capacities of developing countries by contributing directly to the development of science and technology and focusing on areas of critical need. One additional good practice identified in the three case studies is the appointment of scientific diaspora members as scientific advisors to public and private bodies in the countries of origin as well as in Switzerland.

The findings of the field research indicate that while skilled migrants from Colombia, India and South Africa harbour enthusiastic ambitions for their countries of origin, both the home country and destination country still need to play a pro-active role in engaging with their diasporas. The hope is that this will lead to a continuation and expansion of scientific diaspora activities over time, which they would be in the interest of developing their homelands.

5.6 What are the Future Plans of Migrants: Settlement, Return or Circulation?

Most professionals from Colombia, India and South Africa (including PhD students and postdoctoral researchers) share common aspirations for the next ten years. They want professional stability and a better position in their respective

field and institutional recognition both locally (in the country of origin and the country of destination) and internationally, as well as enhanced exchanges with local colleagues who can benefit from their skills and experience. Besides, there is a common aspiration to initiate activities to improve living conditions and inspire social and economic development in their countries of origin.

The empirical evidence from the three case studies shows that skilled migrants have far more choices than unskilled migrants, and as such these choices allow them to shape their future for themselves. However, a few respondents highlighted the precarious nature of their jobs and regretted that their lack of a permanent work permit prevents them from settling down. This shows that respondents whose professional situation is unstable find it hard to plan their future. On the other hand, respondents from the three countries mentioned that there would have to be good opportunities for them in their home country for them to consider return migration.

Only a few skilled Colombians and South Africans would be willing to return to their countries of origin, whereas most Indian PhD students and postdoctoral researchers intend to return to India in the short term. If this really happens, they could make a significant contribution to poverty reduction by building and developing capacity at individual and/or institutional levels, encouraging science and technology, and making business linkages. This willingness to return on the part of young skilled Indians was not evident, however, among Colombian or the South African researchers and PhD students.

Skilled South Africans and Colombians largely prefer to be involved in *go and come back* (circular migration) schemes or even to stay in the host country. Respondents from the three countries holding a C permit and/or a Swiss passport tended to be more involved in *go and come back* schemes between Switzerland and their country of origin while they attempt to build bridges between the two through their transnational activities. Moreover, some skilled migrants from the three countries dream of returning to their countries of origin after they retire.

According to the information gathered, the issue of return is clearly linked to a variety of factors. Respondents stated that their decisions about their future plans, including returning to their country of origin, mainly depend on their employment situation, professional and training opportunities (professional relocation, position in the field, etc.), as well as their personal and family situation.

In the Colombian case study, some skilled Colombians are very keen to return to Colombia, but they are sceptical about the professional opportunities and conditions that their home country has to offer. Furthermore, on the subject of students abroad, some skilled Colombians mentioned that the system of granting Colombian scholarships in exchange for a commitment to return is not working. Accordingly and despite the fact that some scholarship programmes insist on students going back to the home country to apply what they have

learned abroad and pay back the grant, many with scholarships do not go back as originally planned. Colombian institutions are now realising that people with grants decide not to return for a number of reasons. Some skilled Colombians feel that they would be making a great professional sacrifice by going back and they are not prepared to do this.

Whereas crime, a lack of security, affirmative action policies, and social and cultural divisions are said to deter skilled South Africans from returning, some skilled Indians mentioned the comparative advantage of being in Switzerland (the quality of life, better professional and research opportunities, the excellent reputation of Swiss institutions), their successful integration in Swiss society and marriage to a Swiss citizen as some of the main reasons for not returning to India. Most of the reasons skilled Indians mentioned for not returning are similar to those cited by Colombians. In addition, skilled Colombians mentioned precarious living and working conditions in the home country, social conflict, insecurity and violence, and political problems as some of the main impediments against making concrete plans to return to Colombia.

In both the Colombian and the South African case studies, scepticism about the professional opportunities on offer in their home countries combined with the personal and family situation of skilled migrants were mentioned. For skilled Indians in Switzerland – mainly those working as staff in international organisations and second and third generation Indians – their multiple sense of belonging (having dual or multiple citizenship or having settled in many places) poses a dilemma with regard to choosing any one place to settle down in the future. This does not necessarily have to be Switzerland or their home country. These worries were shared by skilled Colombians and South Africans with dual or multiple citizenship.

Moreover, respondents from the three countries with children of school-going age said that educational opportunities and an adequate environment for their children are factors that will cause them to settle permanently in Switzerland or to go back to their home countries or even to move to a third country in the future.

6. Concluding Remarks and Implications for Policy and Research

Accelerating migration flows and concerns about meeting the resulting challenges lead us to reflect on the potential of skilled migrants to be agents of development as vectors of knowledge. There is consensus that human capital is a fundamental factor in innovation and technology appropriation, and there-

fore it is a critical element in poverty reduction efforts. It is easy to understand the concerns of developing countries about losing their valuable and scarce human resources. Nevertheless, in the current debate considerable attention is being paid to links between migration and development and suggesting ways and means of turning brain drain into a brain gain, capitalising on the resources of scientific diasporas in an efficient and sustained manner to benefit the countries of origin, mainly developing countries.

The research findings have confirmed the role of skilled migrants abroad as a potential development resource that can be mobilized by developing countries of origin. The field research in Switzerland has highlighted transnational contributions to the progress made in science, technology and socio-economic development back in the home countries. The development contributions of skilled migrants are an illustration of their transnational perceptions of development and range from promoting science, technology and education to the encouragement of business opportunities, philanthropy, investment links and other initiatives related to poverty reduction.

Collective action by migrant associations can play a significant role as a platform for enhanced collaboration within the diaspora and strengthening scientific and technological capacities in the country of origin. Yet the empirical evidence presented in this book shows that the development contributions of skilled migrants to their countries of origin are mainly informal and sporadic initiatives based on individual efforts. There is very little collective action based on established associations. Similarly, there are no institutionally backed initiatives to capitalise on the skills and resources of scientific diasporas, which could be considered as crucial, since collective action is much better placed to make the scientific diaspora a real development resource for home countries.

Skilled workers, scientific diasporas, and international and local institutions, both in Switzerland and in the countries of origin, are some of the most significant actors in the efforts towards sustainable development of home countries by making creative and effective use of diasporas resources. For this to occur, policy discourse and thinking should establish more effective interactions between migration, development and scientific diasporas. Institutional support is also important as are favourable national and international environments that can transform the instruments of North-South cooperation into equitable win-win situation for both developed and developing countries.

Although we are wary of simplifying a phenomenon as complex as skilled migration and scientific diasporas, this book argues that local communities and institutions in the areas of science, technology and socio-economic development must be actively involved to ensure that the transnational initiatives of the skilled migrants have a tangible and lasting impact on their countries of origin. The importance of a conducive and enabling socio-economic, political

and institutional environment in the country of origin cannot be overemphasized in this respect. In addition, institutions in the countries of origin and destination must adopt appropriate measures that capitalise on the resources and skills of the diaspora through sustained support and backing for their activities. Institutional actors should improve their dialogue with diasporas while directing diaspora associations and organisations to appropriate public initiatives. The aim is to make sure that these elements of support enable scientific diaspora initiatives to expand them over time on a sustained basis for the benefit of home countries.

These conclusions have important implications for public policy both in the country of destination and the countries of origin:

- Both the countries of origin and the countries of destination must play a proactive role in establishing links with scientific diasporas, and they should encourage them to become true development partners. Dialogue and good communication with diasporas should be promoted, and diasporas should also be encouraged to make use of public pro-diaspora initiatives.
- Both the countries of origin and the destination countries should provide long-term support for the creation, or ongoing activities, of scientific diaspora associations and networks for maximum benefit, and they should also help them to disseminate good practices and other activities that can contribute to the promotion of further diaspora initiatives.
- There is a need for a wide dissemination of information about the position, activities and skills of the Colombian, Indian and South African scientific diasporas in Switzerland in order to show their real value and potential. This could also encourage recognition of the value of scientific diaspora groups from other developing countries.
- Only a conducive and enabling environment and infrastructure in the countries of origin can facilitate the conversion of scientific diaspora activities into specific projects that can have an impact on socio-economic development.

The discussion in this volume has identified a number of promising avenues for further research:

- Additional research into the perspective of countries of origin should be encouraged to complement this study for a more comprehensive understanding of the risks and opportunities of skilled migration.
- Further research should advance knowledge and disseminate data on the profiles of the diaspora, their networks, the operations of migrant associations and diverse mechanisms for individual and/or collective transitional involvement.

- There is a need to explore the level of socioeconomic and cultural integration of diasporas in destination countries and its impact on the nature, level and scale of their contributions.
- We need a better understanding of the enabling factors and constraints on diaspora contributions in order to optimise their potential.
- Further research should examine how effective Swiss institutional bilateral collaboration mechanisms are in terms of encouraging the circulation of knowledge and human resources. This will help to assess their impact on skilled migration from developing countries and to see whether or not the effects are in line with the development efforts being made by the countries of origin.