"Skilled Migration, Transnational Cooperation and Contributions to Development: Evidence from the Moldovan Scientific Diaspora"¹

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Abstract

This chapter examines the scientific diaspora option within the migration and development nexus in the context of skilled migration from the Republic of Moldova. Migration has been a significant component of the transition process in Eastern Europe and Moldova is one of the countries that has been most affected by the emigration of its labour force as a consequence of economic crisis and political uncertainties. The country has suffered particularly from the large-scale emigration of scientists and skilled professionals, who are an appreciated human resource in the countries of destination. Based on primary information collected through an on-line survey and complementary interviews, this chapter offers an empirical analysis of skilled Moldovans abroad and the determinants of their engagement in transnational cooperation and their potential return to the home country. The discussion shows how mobilising the resources of skilled migrants and their mobility plans depend on the environment to which they are exposed in the host countries, and on the opportunities that the home country has to offer. While skilled Moldovans see their experience abroad in a positive light and appreciate the opportunities for advancement and growth at both a personal and a professional level, they maintain strong links with Moldova and are interested in engaging in development activities there. Activities related to the transfer of knowledge and skills, academic exchanges, joint research, investment links and physical return are some of the ways through which they see themselves making a contribution. Even though skilled Moldovans may continue to emigrate, there are signs of intentions to return, especially among students. However, potential returnees are sceptical about Moldova being able to provide a trustworthy and reliable environment that can offer them specific professional career opportunities and future prospects. The policy options for Moldova show that there is a need to provide systematic institutional support in order to encourage skilled migrants to engage in transnational cooperation, as well as a need for considerable improvements to local conditions and the structural situation to ensure benefits.

Keywords: scientific diasporas, skilled migration, transnationalism, development, Moldova.

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Introduction

The emigration of scientists and skilled professionals from developing and transition countries who leave in search of better professional and career prospects and an improved quality of life is a major concern for the countries of origin. However, the discourse on skilled migration has recently shifted from a view that considers it a development hindrance to one that sees it as a potential force for development. Recent research and practical examples both show the possible benefits that skilled migration can provide through diaspora interconnections and transnational cooperation that enable the transfer of skills and knowledge, business and entrepreneurial investment, and temporary or permanent return to the home country (Kuznetsov 2006; Agunias and Newland 2012). In recent years, this has led to an increase in the interest among the countries of origin about how they can benefit from their human capital abroad and use it to the advantage of their developing and transition processes.

For the countries in Eastern Europe, the effects of skilled migration on development and the role played by diasporas are two issues that have recently entered the public agenda. Migration has been a significant component of the transition process in Eastern Europe and it is still relevant two decades after the collapse of the Soviet Union. Political and especially economic factors are the main drivers of migration, and the Republic of Moldova is one of the countries that has been most affected by the emigration of its labour force. This emigration includes large-scale flows of scientists and skilled professionals and it has become a major concern for the country mainly in the last five years.

Located in South Eastern Europe, the Republic of Moldova is a small landlocked country situated between Ukraine and Romania. Like other Eastern European countries, in the 1990s Moldova suffered significant pressure during its transition to a democracy and market economy after its independence in 1991. The country witnessed an important decline of its economic and social indicators, restricted access to basic public services and the impoverishment of a large segment of the population. While emigration is a relatively recent phenomenon in Moldova, today, the country has one of the world's highest emigration rates. During the years that followed independence in 1991, and despite the prolonged recession in the economy, there was hardly any emigration from the country until 1998 and 1999 when the collapse of the Russian economy as a consequence of the regional financial crisis resulted in the failure of the Moldovan economy. This total economic breakdown was due to the fact that Moldova was more dependent on the Russian economy than the other former Soviet Republics were. Because of the drastic reduction in agricultural exports to Russia, large numbers of Moldovan workers - many of them employed in agriculture and related sectors - were forced to emigrate on a temporary or permanent basis to search for better

employment and income prospects and a better quality of life abroad. Emigration increased progressively and represented a considerable proportion of the population compared to the situation at the turn of the century. Emigration rose from slightly fewer than 100,000 migrants in 1999 to more than 400,000 by the end of 2005 (Lücke, Mahmoud and Pinger 2007). While the first migration flows mostly involved less skilled labour workers, this trend subsequently changed and there were increased flows of scientists, skilled professionals and students.

In the first decade after independence, a severe economic crisis and a long political transition resulted in science and technology and research and innovation being neglected as national priorities, and public investment in this sector felt dramatically from 0.73 per cent of GDP in 1990 to a mere 0.18 per cent in 2000 (ASM 1990-2009). In overall terms, activities related to science, research and innovation were drastically degraded because of insufficient funding, inadequate salaries and deficient infrastructure, while the methods for managing science remained conservative and the legislative framework was more regressive than motivating. This resulted in scientists and skilled professionals emigrating in large numbers. As a result, the scientific potential of the country fell by 83 per cent in just a decade and a half, and the number of scientific researchers dropped from a total of 30,000 in the early 1990s to less than 5,000 in 2004 (ASM 1990-2009). According to the National Statistics Office, Moldova had only 5,216 employees registered in research and development activities in 1 January 2011³.

The skills mismatch in the local job market was another important factor driving young skilled Moldovans toward migration. The disconnection between the educational system and the labour market fuelled an increase in the competition for scarce job positions among higher education graduates and this was another significant and additional cause for the more recent migration of skilled Moldovans, especially younger ones (Gaugas 2004; IOM 2012). The IOM's recently completed Extended Migration Profile of Moldova (2012) indicates that Moldovans working abroad on a temporary or permanent basis now account for at least 25 per cent of the total economically active population⁴. The data series for the reference period 2005-2012 analysed by the IOM shows a high and steady annual migration outflow of Moldovans, indicating that an estimated 25-30 per cent of the population of working age were engaged in a migration project at any given time during this period. Furthermore, there is evidence to indicate that emigration from Moldova will continue in the years to come. This was suggested by a recent OECD study (2012) which showed that 37 per cent of Moldovans with a third level education and 56 per cent of people in the 15-24 age group would emigrate permanently if given the opportunity.

³ <u>http://www.statistica.md/newsview.php?l=ro&idc=168&id=3744</u> (accessed on 10 August 2013).

⁴ Based on data from the Labour Force Survey (LFS) of the National Bureau of Statistics (NBS) from the Republic of Moldova.

When discussing the challenges related to the emigration of skilled people and the policy options for the home country, there are some socioeconomic and political aspects that make Moldova stand out from the other countries in Eastern Europe, and these must be taken into consideration. Firstly, political instability in Moldova and a lack of full control over the entire territory at the time of its self-declared de facto independence from the region of Transnistria help to highlight how imperative political problems are. Secondly, the country's multi-ethnic populations, its numerous minority groups and historical frictions together with opposing political positions of those who are nostalgic about communist times and those who yearn for change, have resulted in a continuous rift in the political discourse between pro-Russian and pro-Western forces, and this makes it difficult to establish a strong cohesive national identity among the population⁵. Thirdly, today, Moldova is the poorest country in the region and in all of Europe. With a GDP per capita of US\$3,300 and with 65 per cent of the population living below the poverty line, the country ranked 113 worldwide among the 187 countries included in the 2012 UNDP Human Development Index (UNDP 2013). The country's modest economic growth was unable to check the decline in the employment rate during the last decade and the National Human Development Report (UNDP 2011) showed employment falling from 55 per cent in 2000 to 40 per cent in 2009. Fourthly, the country has one of the world's highest rates of remittance inflows in relation to GDP. These inflows account for 23 per cent of Moldova's GDP (World Bank 2011). Since the recipients, who represent 26 per cent of Moldovan households, depend on this money to meet their basic everyday consumption needs, the contributions that these remittances make to improving the deficient structural conditions are quite scant (Lücke, Mahmoud and Pinger 2007; Orozco 2008). Nonetheless, Moldovan emigrants are an essential source of financial inflows and these inflows exercise a considerable economic and social effect on the country (IOM 2009). Fifthly, the reputation of Moldova's science schools and the renowned scientific excellence and skilled quality of its highly educated people and scientists are exceptional. However, this has not prevented many of them from emigrating in search of better prospects abroad while others have left the national research system to take up other activities in Moldova, for which they are mostly over-qualified.

Because of the particular complexity of Moldova's situation, the Moldovan case-study offers a unique example that illustrates the challenges faced by a country going through a transitional stage and the policy alternatives it can use to link scientists and skilled professionals abroad to national strategies for socioeconomic progress. Given that emigration flows are of the highest concern for the Republic of Moldova, the country has implemented some concrete strategies and mechanisms to

⁵ Considering the fact that Moldovans emigrate to more democratic Western European countries as well as to less democratic Russia, Mahmoud *et al.* (2012) illustrate the influence that emigration has on the political behaviour of the people who are left behind and they show how the diaspora has influenced political change in Moldova.

help retain scientists and skilled professionals in Moldova and to eventually promote the return of those who are abroad. An important first step was taken in this regard in 2004 with the launch of a national strategy aimed at guaranteeing systematic support for science and research-related activities and offering improved conditions and prospects to Moldovan scientists. The ratification of the Code on Science and Innovation by the Parliament, the adoption of the Partnership Agreement between the government and the Academy of Sciences of Moldova (ASM), and a commitment to systematically increase investment in science and technology in the following years were the three core elements of this new strategy. Furthermore, a concrete plan was put in place to establish and reinforce linkages with the diaspora.

In 2008 the government launched an ASM-led focused approach that was specifically aimed at addressing skilled migration, and this approach sought to foster cooperation with the Moldovan scientific diaspora. As we argue elsewhere, Moldova's committed support to boosting linkages with the scientific diaspora is based on two complementary facts (Tejada et al 2013a). The first is an acknowledgment of the possible benefits that the home country can obtain from collaborating with Moldovan scientists and skilled professionals abroad. The second is the conviction that the Moldovan national system of science, research and innovation is sufficiently suited to hosting diaspora initiatives and taking advantage of transnational cooperation. Two initiatives have recently been put in place as part of this approach. The first is the programme for the temporary return of Moldovan scientists and young researchers implemented by the IOM and the ASM under the EU-Moldova Mobility Partnership scheme. IOM Moldova has been a key actor in enhancing the migration and development discussion in the country and in pushing the diaspora issue on the policy agenda. The other initiative is the research project conducted by the ASM in collaboration with the École Polytechnique Fédérale de Lausanne (EPFL) and its goal is to "connect the scientific diaspora of the Republic of Moldova to the scientific and socioeconomic development of the home country". This aim of the study was to provide empirical evidence on Moldovan scientists and skilled professionals abroad and to suggest concrete policy recommendations to engage them in cooperation activities with the home country.

This chapter has three main aims. First of all, it seeks to promote the scientific diaspora option in the discussion of links between migration and development in the Moldovan context. Second, it provides an empirical-based analysis of various determinants of transnational cooperation involving skilled Moldovans located abroad. Third, it offers specific policy options that may help Moldova. The content of this chapter is organised as follows. This first part offers an introduction to the socioeconomic and political context of Moldova and to the challenges and opportunities associated with the emigration of skilled human capital. The second part looks at the conceptualization and

definition of scientific diasporas and their transnational practices in the migration and development nexus. The third part provides an empirical analysis of skilled Moldovans abroad and it discusses the causes for their emigration and looks at their living conditions in the host countries and the determinants of their transnational cooperation links and potential return to their home country. The conclusions in the final part discuss specific policy options for Moldova and there are also some suggestions regarding areas for further research.

The conceptualization of scientific diasporas and their transnational practices

The continuous rise in international migration and skilled migration in particular over the last few decades (Özden *et al.* 2011) has stimulated discussions of new policy options about how to promote, regulate and exploit this migration. This has been encouraged by increasing academic interest in studies of the magnitude, characteristics and effects of skilled migration, which is an important part of the significant efforts to adapt conceptual frameworks to the interpretation of this complex phenomenon. This evolution responds to an intensification not just of the scale and scope of international migration but of its complexity as well (Castles and Miller 2009).

The brain-drain/brain-gain debate of the 1960s was the traditional paradigm for interpreting the process of skilled migration, and it considered migration from a nationalist perspective, seeing it as an obstacle to the development of the countries of origin because of the significant loss of human capital. The critiques of the limitations of this view mostly stress the fact that the affiliations of skilled migrants are not necessarily linked to a particular territory and that they are in fact capable of maintaining multiple identities and simultaneous connections with their country of origin and their country of destination. This has generated diverse and alternative ways of understanding and assessing international skilled migration.

A new perspective came to the fore during the 1990s and it saw skilled migrants not so much as a loss but as a potentially beneficial resource for the countries of origin. This internationalist vision is based on the idea that skilled migrants tend to establish links with their home countries and they can use these links to make contributions in the form of knowledge transfers, investment links and diaspora networks. This view, as mentioned by Meyer (2010), "*replaced the traditional emphasis on permanent loss or unlikely repatriation by a workable hypothesis of long distance association and multiple connections*" (p. XV). Under this new perspective, two concepts gained importance and evolved within the academic discussion on international migration and its linkages to development: diasporas and transnationalism. Both concepts are based on processes and their related activities that transcend borders, and their interrelation has been extensively revealed in the literature as part of the *diaspora option*. At a policy level in the diaspora option, establishing

linkages with the diaspora is the alternative to physical return. Accordingly, skilled migrants are no longer viewed just as holders of valuable human capital that needs to be repatriated, but they are also and mostly seen as "accessible mediators of social capital with the potential to be mobilized in benefit of the country of origin" (Luchilo 2011 : 14).

Diasporas consist of communities that have been established in various places outside the country of origin and which maintain a certain level of autonomy as a group in the host country and create networks and connections with their fellow nationals located in the home country as well as in other parts of the world (Butler 2001). The actions of diasporas are the result of communitarian practices, and therefore, they should be regarded as owners of a collective identity (Faist 2010). The concept of scientific diasporas was first used as part of this understanding to refer to groups, networks or associations of emigrated scientists, engineers and skilled professionals, who are engaged in producing and circulating new knowledge and creating cooperation links with their countries of origin (Barré et al. 2003; Tejada and Bolay 2010). Under this perspective, scientific diasporas can be seen as knowledge communities (Foray 2004) since they seek to encourage the impulse given to research and strengthen the critical mass in the country of origin through diverse forms of cooperation. Under the diaspora option, when skilled migrants mobilize as a group and advance knowledge and research together, they facilitate a collective impact in the country of origin and become development actors (Tejada 2012). Diaspora knowledge networks (DKN) are a related concept and these are created with a view to capitalizing on the resources and networks of skilled migrants for the benefit of the home country and making intensive use of information and communication technologies as tools for the collective transmission of knowledge, following the logic of connectivity and based on the multiplier influence of the individual interest to join a community action and boost collective influence (Meyer 2001). As Meyer (2007) suggests, DKNs provide new alternatives within three policy areas: innovation and science and technology, migration and development, and international cooperation.

Transnationalism sees individuals simultaneously belonging to several places while establishing and promoting cross-border links (Portes 2001; Vertovec 2004; Levitt and Glick Schiller 2004). Whereas studies on transnationalism were initially mostly concerned with the carriers of the links across borders (i.e. the migrants), in more recent times they have increasingly addressed migrants' experiences abroad and their interventions in their home countries in the form of transnational practices and cooperation (Faist 2010).

The literature emphasizes some concrete determinants of transnational practices, including migration motives, migrants' socio-demographic profiles, their main activity in the destination country and the length of their stay abroad. The conditions and environments that migrants are exposed to and the opportunities offered in both the host and home countries are also shown to be

important factors of influence. Furthermore, as we argue elsewhere, the concrete country setting in which migration occurs has an influence on the propensity of the development impact, and various cases illustrate how benefitting from the transnational practices of scientific diasporas is only possible when adequate scientific and technological infrastructure are provided (Tejada *et al.* 2013a).

In the following sections of this chapter, we try to shed light on the main determinants of the transnational cooperation of the Moldovan scientific diaspora, using the perspective of the diaspora option as an analytical framework.

Research methods and description of the sample

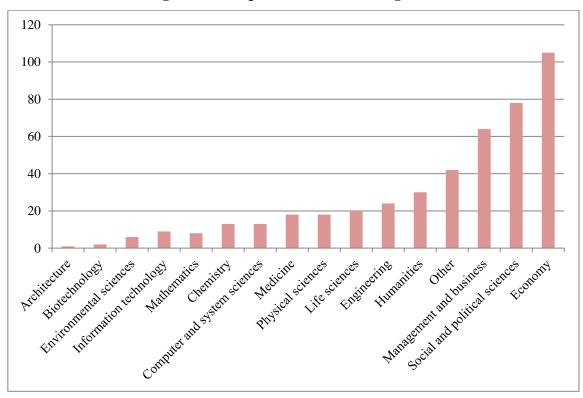
The empirical data presented here was collected between 2011 and 2012 using a primary on-line survey applied to a target group defined as "members of the Moldovan scientific diaspora", which included Moldovan scientists, researchers and skilled professionals living abroad as well as postgraduate students (MA or PhD students) from any academic discipline, professional area or sector of expertise⁶. The sample included scientists who "originated from Moldova", including some who left before the creation of the state as well as others who left afterwards. Respondents were asked about their reasons for emigrating, their experiences in the host countries, their networks and connections with Moldova, their future plans including their migration projects and their perceptions of their role in home country development. The survey was answered by a total of 197 members of the Moldovan scientific diaspora. In addition, 27 qualitative face-to-face interviews were held with a selection of skilled Moldovans from the same group.

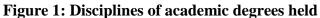
Since it is impossible to precisely calculate the entire population of (skilled) Moldovans abroad because of the absence of any accurate list, the purposive sampling technique was used to collect data. Both formal and informal channels were used to reach the target population and recruit the sample. Email invitations were sent to people on ASM lists, ASM newsletters subscribers, diaspora associations and organizations, departments of international relations at academic institutions in Moldova as well as Moldovan embassies and consulates. Potential respondents were also contacted through informal channels such as social networks and using the snowball principle. As we initially

⁶ There are two important reasons for including students as part of skilled migrants. First of all, more and more international students are entering the national labour markets of the destination countries after completing their studies (Kuptsch 2006; King and Findlay 2012). Second, there is an increasing trend that sees international students settling in the destination countries, making them part of the diaspora (Tejada *et al.* 2013b). While international students continue to be an underrepresented component on the new map of global migration (King and Findlay 2012), recent theoretical advancements on international student mobility suggest a parallel that sees international student migration as a movement of a particular kind and as part of other migration and mobility flows that intersect with each other (Mosneaga forthcoming).

had a lower response rate than we expected, further dissemination was boosted through a subsequent round of email messages after four months⁷.

The general characteristics of the 197 Moldovans surveyed are as follows. The majority (70%) were 35 years old or younger, confirming not only that the young are the most mobile group, but also that skilled emigration from Moldova mostly affects the younger cohorts. Most of the respondents are female (58%); half of them are married and less than half have children. For 92 per cent, their partners live in the same place as themselves; and for 96 per cent their children live in the same place as they do. Regarding academic level, the sample in the survey shows that around 50 per cent hold a Master's degree, and half have either a PhD or a Bachelor's degree. Most skilled Moldovans hold academic degrees in the following disciplines: economics, social and political sciences and management and business (Fig.1).

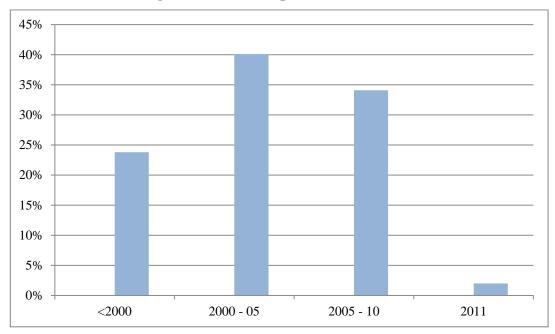


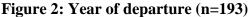


Note: The graph includes fields for up to 5 academic degrees held by respondents. Source: Field survey (2011-2012)

⁷ The application of the purposive sampling method and the lower than expected response rate indicate a response bias influencing the findings, such as an underrepresentation of respondents with weaker links with Moldova and fewer interests there, or of those who are not as professionally established abroad. Accordingly, the possible positive migration impact of skilled Moldovans may be overstated. Despite these limitations, it should be recognized that this is a first attempt to outline the parameters of the Moldovan scientific diaspora and its current and potential future transnational activities will help to extract general trends and open new avenues for further research.

In the last decade, increasing flows of young scientists and students have left the country in search of better prospects abroad because of a lack of job opportunities, inadequate wages, and poor scientific and professional prospects. The year of departure for the surveyed population shows that 40% left Moldova between 2000 and 2005, with 34% departing between 2005 and 2010. One of each four respondents left before 2000 (Fig. 2).





The main countries of residence of the respondents surveyed are in Western Europe (mostly France, Germany, Belgium and Switzerland, and to a lesser extent Italy, Spain, the Netherlands, the UK, Sweden, Denmark and Norway), North America (the USA and Canada) and the Commonwealth of Independent States and neighbouring countries (Russia, Romania and Ukraine). We observed that skilled Moldovans in our sample chose their destinations mainly because of the opportunities on offer, and less because of a shared language, cultural or geographical proximity (Fig. 3)⁸. Their choice was also based on the contacts they had already established with other Moldovans in the destination countries.

Source: Field survey (2011-2012)

⁸ As we can see in Figure 3, a comparatively large number of respondents had France as their country of destination. This is mainly due to the fact that a Moldovan consultant who was hired for the project and who helped us to promote the survey among skilled Moldovans was based in France, and the project was able to benefit from her networks of contacts there. This should be taken into account when interpreting the results.

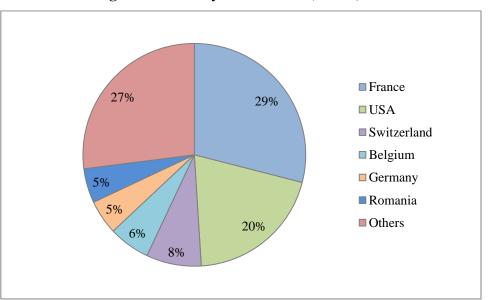


Figure 3: Country of residence (n=194)

Source: Field survey (2011-2012)

Our definition of the Moldovan scientific diaspora includes students, who represented 23 per cent of our sample. 71 per cent of respondents cited paid employment as their main activity at the time of the survey and 3 per cent were self-employed while a few respondents (3%) were unemployed (Fig. 4).

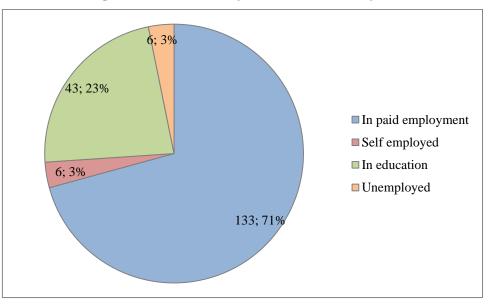


Figure 4: Main activity in the host country (n=188)

While a majority of the survey respondents stated that they had temporary residence status (55%), 23 per cent said they were holders of permanent residence status and 22 per cent had citizenship of

Source: Field survey (2011-2012)

their country of residence. The predominance of temporary residence permits can be partially explained by the recent nature of emigration from Moldova, and therefore an important share of the respondents had a short length of stay in the destination country at the time of the survey; these were mostly students and younger respondents. However, this situation could also be linked to the fact that the requirements to obtain permanent residence and citizenship status are strict in the destination countries.

Based on the data collected, the rest of this chapter draws on an analysis of the experiences of skilled Moldovans in destination countries and it mainly seeks to understand three principle issues: migration drivers, living experiences and conditions in host countries; transnational cooperation links with Moldova and contributions to development; and perceptions of the environment and opportunities in Moldova as well as return plans. The subsequent sections show some of the qualitative observations of the survey, which are supplemented by extracts of the testimonies of the Moldovans interviewed.

Migration drivers and living experiences in the host countries

The opportunities offered in the destination countries are what mostly guide the decisions of skilled Moldovans when they are choosing their destinations and these decisions are less influenced by a shared language or cultural and geographical proximity. We observed that the decision to migrate is an exercise of choice that responds to job and academic opportunities, and accordingly, the chance for professional and personal growth rather than settlement in a specific geographical location is what spurs their migration plans. Only a few of the respondents chose their host country to follow family members.

We observed two main migration determinants according to the activity profile of skilled Moldovans: Professionals and scientists are mostly motivated by the importance that international exposure has for their scientific and professional careers while students are encouraged by the prospects of further training abroad. Only a few Moldovans had other motivations for emigrating. This corresponds to the best known determinants of international skilled migration in which the mobility of skilled people is mostly associated with choice, professional career and educational opportunities (Favell, Feldblum and Smith 2007). What is particular in the Moldovan case is that, beyond the search for better career prospects and scientific progression or the pursuit of further education abroad, the main migration driver is economic: a lack of professional prospects, inadequate employment opportunities and low salaries, poor quality of life and deficient living conditions are major push factors in Moldova. The testimonies of Moldovans show their mixed motivations for emigrating. One respondent said: "*I left to pursue my studies because of the weak*

career perspectives and my concerns about the future of my children". Another respondent mentioned: "Moving abroad was the only way to avoid brain waste at home. It is better to go to a new country to operate in the field of specialization instead of staying at home to lose the competencies".

The IOM (2012) shows that within recent emigration from Moldova, there is a significant group represented by young Moldovans aged between 25 and 34 years with higher education, who did not take up work after graduation because they lacked the necessary work experience, experienced a skills mismatch or had reservations about salaries. While higher living standards and employment prospects abroad may in turn act as significant pull factors, the home-country context is the main catalyst behind the decision of skilled Moldovans to emigrate, and therefore we can see that push factors in Moldova are stronger than pull factors in the destination countries.

Many see migration as an opportunity to move to a different professional context that can offer them improved rewards for labour and an environment with fairer competition, which they think are lacking in Moldova. One respondent referred to this saying: "In France it is possible to attain fixed objectives, which is not the case in Moldova where only the network can help, not competences or knowledge. Here people with a high-level education have their place in society, but those holding a PhD there have no consideration from society". Another respondent said: "After a working period in Moldova, I was disappointed with the working conditions and the rewards; this situation motivated me to move abroad for better career perspectives and a better-paid job".

Moldovans feel their migration project will offer them overseas experience and valuable exposure that will be prized in their home country and they believe they will have the chance to use their acquired knowledge and network of contacts for the benefit of Moldova. Personal motivation is what guides the decision of skilled Moldovans to emigrate in the first place, as indicated by 80% of the respondents surveyed; the influence of family, colleagues and friends on their decision is less significant. Skilled migration from Moldova may be seen as the outcome of individual strategies aimed at improving personal conditions at both a professional and a private level. Their families back in Moldova see their emigration process as an achievement and parents prefer to see their children leave and succeed abroad rather than stay at home in frustration under precarious conditions. They experience the departure and overseas exposure of their children and relatives with a sense of pride at seeing them accomplish their professional and educational projects abroad. The recognition of the value of their experience by their families and the local community fuels their feeling of patriotism and their impetus to give something back to Moldova.

It is necessary to examine the situation and living experiences of skilled migrants in the host countries in order to understand their possibilities to contribute to their home country and to implement transnational cooperation activities. Our interest in their experiences and living conditions abroad stems from the hypothesis that the mobilization of migrants' resources depends on the environment they are exposed to in the host countries and on the opportunities that both the host and the home country have to offer. When asked about the environment provided by host countries, most skilled Moldovans have a positive overall perception of the qualities offered, particularly with regard to employment and career opportunities, wage levels, the level of scientific research and infrastructure, living environment and amenities (housing and transport facilities) and the social welfare system (schooling, health care, child care, etc.). Even though they feel it is difficult to do business and carry out entrepreneurial activities and hard to obtain a residence and working permit in the host country, the negative perceptions are below average.

Furthermore, skilled Moldovans highly rate the possibility of integrating in the local society and on the opportunities to communicate with local people. A good knowledge of the host country's language is a crucial element for social and cultural integration and facilitating social contacts and it helps to diminish the distance between immigrant communities and the local society. The majority of Moldovans believe they are socially well integrated in the host countries thanks to their proficiency in the local languages (78 per cent believe they speak and understand the local language very well and 16 per cent say they do so reasonably well). One respondent said: "Due to the advantages we have such as strong motivation, mastering a few foreign languages and open-mindedness, the local population admires us and are more open to accept us".

Skilled Moldovans also believe that their integration in the local society is constructed around the fact that they connect with the local society and their affiliation and participation in local associations and organisations. They have two main kinds of affiliations with professional associations and networks established abroad. The first are associations or professional networks that are focused on a specific discipline or area. While these are open to members of any nationality, they remain rather exclusive because of their limited scope based on the specialized field concerned. The participation of skilled Moldovans in these associations enables them to establish transnational contacts with scientists from around the world and this provides access to international collaboration opportunities, which other Moldovan scientists --those abroad as well as those in the home country- can benefit from as they allow them to strengthen their research profile and critical mass. The second kind of affiliation involves associations that bring Moldovans abroad together for the purpose of socializing, exchanging experiences and implementing collective initiatives for the benefit of the home country. These are less exclusive than the first type beyond the need to be a Moldovan, and they have important implications, mainly due to their capacity to promote collective action and forge links among the diaspora. Nevertheless, their actions, which are mostly focused on promoting social and cultural activities, are somewhat irregular and their impact in the home country remains uncertain.

Other than these two kinds of affiliation and apart from some incipient and exceptional cases, there is no exclusive formal collective structure for Moldovan scientists and skilled professionals in the form of a specialized scientific diaspora network or association which could encourage the scale and influence of diaspora knowledge transfers through collective transnationalism. Our interest in examining the collective associative actions of Moldovans is based on the assumption that the value of collective mobilization and structures in the form of networks and associations is considered to be a necessary condition for the promotion of the collective transnationalism of the diasporas (Tejada 2012). The organized actions and networks of scientific diasporas are based on the logic of connectivity and the multiplier effect of the individual interest to participate in a community project that benefits the country of origin (Meyer 2001; Meyer 2007). As argued by Foray (2004), collective work in organized systems, such as scientific networks or communities, enables the production of knowledge through decentralized cooperation mechanisms and it encourages the exploitation of its benefits, facilitating collective influence in the home country. Such connections are based on the common international exposure of migrants and their shared cultural and further collective identity links. In the case of Moldova, we can see that there is a lack of a strong collective identity within the Moldovan diaspora and this is mainly due to two things; firstly, the fact that mass emigration is still a recent phenomenon in Moldova; and secondly because of the constraint of the prevailing national identity that hinders any type of collective diaspora transnationalism. However, as Buga (2011) has said, the scattered individual efforts of Moldovans abroad, their dispersed associative activities and their informal networks are evolving towards more structured communitarian-based initiatives that benefit Moldova, and this has resulted in Moldovans being seen as an "emerging diaspora" gathering "a desire to affirm themselves as a group" (p. 331).

Skilled Moldovans in paid employment were asked to rank different aspects of their job on a fivepoint Likert scale, indicating the level of satisfaction they ascribe to each aspect. Observing their evaluations for each aspect, we can see that they are more satisfied with equal opportunities at work as a foreigner, working conditions (contractual stability, flexibility, work-family balance), the possibility to improve their communication and networking skills, and the intellectual challenge of their jobs, than with the salary level and the level of responsibility, the possibility to improve technical skills and the infrastructure and research facilities offered (Fig. 5). A majority of Moldovans in paid employment believe they are well established professionally and are satisfied with their job situation and position in the host country. They believe their stay abroad has helped them increase their skills level and improve their technical and scientific competences. Most respondents are working within their field of specialization and they feel their position corresponds to their qualifications.

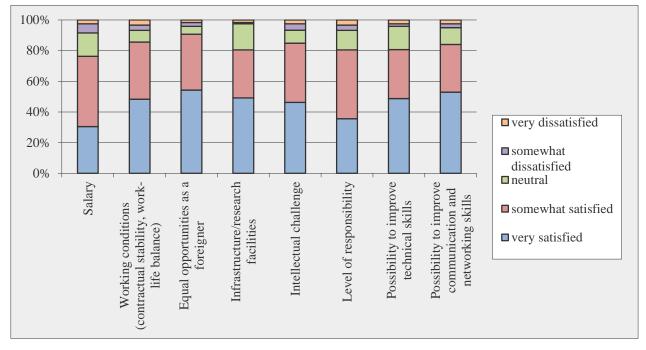


Figure 5: Employees' satisfaction with their job (n=120)

Source: Field survey (2011-2012)

With regard to Moldovan students, we can see that they select their destinations for two main reasons: the prestige of the institutions or academic programmes and because they were granted a scholarship. A further important reason behind the selection of their destination is based on their expectations of employment opportunities after graduation and their perceptions of the policies in destination countries to facilitate their migration projects⁹ (Fig. 6). One respondent referred to this categorically: "*My objective on leaving Moldova was to obtain a diploma in France and to then get a permanent job and settle definitively there*".

Within the context of skilled migration, this illustrates how student mobility is frequently a precursor to labour migration (Kuptsch 2006; Abella 2006; Castles and Miller 2009). We can see that Moldovans usually complete a Master's degree in their host country as a main path for entering the local labour market although some decide to pursue a PhD. This shows that *probationary immigration* (Kuptsch 2006) by Moldovan students usually leads to labour migration, thereby stimulating the transformation of students into skilled employees. Furthermore and as a general trend, we observe that Moldovans, including those who emigrated for professional reasons in the first place, end up completing their studies or pursuing further education in the host countries in

⁹ The adaptation of policies in destination countries, mostly in Western Europe and North America, aimed at attracting skilled human capital and increasingly enabling international students to become members of the local labour force is a current global trend. It should also be pointed out that the intensification of the competition to attract foreign talent between developed countries has also encouraged the internationalisation of academic research and higher education (Tremblay 2005; (Mosneaga forthcoming). Further research should specifically examine if and how Moldovan students have been part of this trend.

order to adapt their qualifications to the requirements of the local labour market as a necessary step towards accessing better employment opportunities.

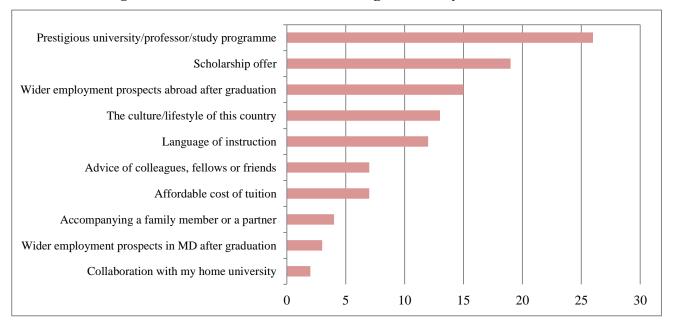


Figure 6: Students' reasons for choosing their study destination

In overall terms, skilled Moldovans rate their experience abroad as positive and they appreciate the opportunity for advancement and growth at both a personal and a professional level. One respondent said: "I obtained a scholarship after the completion of my studies in French at the State University of Moldova. In France I was able to obtain studies of a very good quality and acquire a very rich professional experience".

Transnational cooperation links and contributions to development

Moldovans are keen to promote their links with the home country and the majority of them communicate with their relatives, colleagues and acquaintances back home on a regular basis. They usually follow the news about current events in Moldova, and they return there at least once a year, mostly for the purpose of visiting family and friends during holiday periods, and to a lesser extent for scientific or academic exchanges. Only a few are sent on temporary returns by their employers. The majority of respondents (59%) had not sent any financial remittances back to Moldova in the 12 months prior to the survey; however, those who did (41%) mentioned that the main recipients were family members who mainly use the money received to cover their daily expenses (mostly

Note: The graph is based on respondents' three top reasons for choosing the study destination. Source: Field survey (2011-2012)

food and housing). With the aim of identifying the incidence that the main activities of skilled Moldovans in the host countries have on their feelings about contributing to Moldova's development, the respondents to our survey were divided into three different groups according to their activity profile: students –persons in training and education- (36 persons), scientists and researchers employed in research or academic institutions (41 persons) and professionals in paid employment or self-employed (88 persons).

When we spoke to skilled Moldovans about their possible contributions to development, we observed that their main focus was on helping to improve the situation of the families they had left behind and they believe that by doing so they can indirectly contribute to improving the general situation in Moldova. We see a high level of interest in Moldova's development among the three groups of respondents. The majority (86% or 151 persons) think they can play a significant role in the socioeconomic progress of their home country and they believe that they could contribute through their activities abroad, specifically in terms of promoting a better image of Moldova abroad, encouraging investment in Moldova, increasing the pool of better-trained students and improving the quality of science and research.

They consider that they can engage in the development of Moldova through activities related to knowledge transfer and social remittances in the form of ideas, behaviour and social capital transferred to the home country (Levitt 1999). Furthermore, the concrete plan to physically return to the home country is another even more obvious instrument for development imagined by them, especially the students. One respondent said: *"When I return to Moldova during vacation I represent an example for the local population and I observe that I indirectly influence the mentality of my family and relatives."* A student said: *"If return occurs, Moldova can benefit from the exodus of qualified people. Return migrants can play an important role in development through their experience, knowledge and financial resources"*.

Moldovans are keen to get involved in specific projects, such as temporary visits, joint research projects, public policy advice, technology transfer and the promotion of foreign investment. We can see that scientists and researchers feel a strong connection to their home country through science and they feel they can give something back through reverse knowledge transfers within their specific field of study. Students see themselves contributing through the education and skills they have gained overseas, which they believe they can transfer to the home country, while professionals feel they can encourage foreign investment in Moldova. While the majority of skilled Moldovans show a high level of interest in Moldova's regional and national development, we can clearly see that Moldovans in training and education have a higher interest than professionals and scientists and researchers.

An analysis of our observations has led us to consider that the higher interest that students have in home country development is based on two issues. Firstly, the fact that students are still intensely entrenched in their home country for their social and emotional well-being, and their belief that the education and skills gained abroad can have a direct socioeconomic impact on Moldova. Secondly, the students who plan to physically return to Moldova in the future see their return as an important tool for development. In fact, students' return plans to accomplish their migration project back in their home country arose as a significant motivation for the higher interest in home country development and their positive feelings about their potential contribution. Nonetheless, when students move from imagined plans to real action, they may face more constraints than Moldovans from the other two groups. Even if students are very concerned about Moldova's development, this motivation may not necessarily be translated into real actions because they may not have the support of a social and intellectual network or the financial capital, whereas the motivation of scientists and researchers and professionals can be backed by their resources and allow them to realise their intentions to give something back, and therefore they may have greater possibilities to impact development than students do.

With regard to scientists and researchers in particular, if they have attained a stable position, their international scientific exposure and networks offer them sufficient social capital (Bourdieu 1986) in the form of contacts, social and professional relationships as well as scientific and institutional links and their transnational cooperation actions act as bridges of science and research between scientists based in Moldova and those in the host country, and fostering knowledge-sharing may open collaboration opportunities, scientific exchanges and allow access to international scientific networks that can benefit Moldova, mainly by reinforcing local capacities and providing access to better infrastructure and equipment. Moldovan scientists believe that the home country can absorb direct benefits from their activities, and therefore they address issues of crucial significance for the development of Moldova in their research. One respondent said: "I believe Moldovan scientists have a great deal to contribute in the form of collaboration projects". However, Moldovan scientists believe that implementing cooperation and knowledge transfer activities with Moldova is not an easy task, and this is mainly because of political instability, a lack of funding, scarce acknowledgment of the importance of skilled Moldovans abroad, deficient infrastructure in Moldova to accommodate projects and a lack of time to undertake transnational cooperation. One respondent referred to this last point saying: "The lack of time is an important obstacle because in the host country, hard work is necessary in order to gain a place in its society". Another Moldovan said: "I think only the scientific knowledge can be applied in Moldova but not the technical skills because Moldovan companies do not have the adequate equipment".

When respondents were asked about the transnational cooperation initiatives they have implemented, one aspect that stood out was that knowledge sharing and technology transfer projects, scientific and academic exchange projects and research project in cooperation with Moldovan partners are the most common type of initiatives that respondents have carried out so far. If we look at the responses in terms of profile, we see that students have implemented projects related to knowledge sharing and academic exchange, scientists have carried out research projects in collaboration with Moldovan scientists, and professionals have implemented initiatives related to knowledge sharing, technology transfer as well as investment and business links. We can observe a motivation to create collaboration opportunities and contribute to Moldova's progress across the three groups although there is a higher incidence of cooperation projects among scientists and researchers than among students and professionals. Table 1 shows examples of transnational cooperation activities by skilled Moldovans and the main obstacles faced during their implementation.

Table 1: Transnational cooperation activities of skilled Moldovans abroad and the obstacles
encountered

Type of project	Description	Obstacles
Knowledge transfer	 Advancing knowledge of Moldova's challenges through the PhD topics chosen Publishing scientific work in Moldova Participating in seminars and/or international conferences in Moldova 	Lack of funding; deficient infrastructure and equipment; lack of recognition of diasporas; scientific community lacks interest to collaborate with the diaspora.
Academic exchange	 Involvement in teaching activities and lectures Temporary visits to academic institutions Participating in the creation of academic programmes and syllabus design 	Lack of time; lack of funding.
Joint research	 Involvement of Moldovan partners in international research projects Helping Moldovan scientists to submit proposals for international research grants Joint publications in collaboration with Moldovan scientists 	Lack of funding; political instability; lack of recognition of diasporas; scientific community lacks interest to collaborate with the diaspora.
Investment & business	Promotion of foreign investments and business projects (2011-2012)	Lack of trust in Moldovan institutions; political instability.

Source: Field survey (2011-2012)

Perceptions of opportunities and return plans

Our study considers return migration as an important tool for development and it sheds light on the future return plans of Moldovan migrants. Taking into account that accessible opportunities and perceptions of the country environment influence migration projects, an analysis of the opinions that Moldovans have of living conditions in their home country can provide insights of their potential to return. Studies have shown that return plans are a response to a positive assessment of the economic and professional prospects that the home country has to offer, as well as a reaction to family ties (Wickramasekara 2003; Cassarino 2004). The return intentions of skilled Moldovans and their actual return may increase if they feel more assured that Moldova can provide them with an enabling environment for employment with concrete career prospects and a stable and trustworthy living environment. Furthermore, return migration in itself does not mean a positive effect on development if access to productive employment and the possibility of validating the accumulated skills gained abroad in the local social context are lacking. Several empirical studies have provided evidence of the obstacles that limit the transfer of migrants' skills and knowledge upon return, suggesting that socioeconomic structures and institutional issues in the home country determine the transmission of migrant's accumulated skills and knowledge (Gmelch 1980; King 1986; Cassarino 2004; Tejada et al. forthcoming). Other studies show the need for a suitable infrastructure and appropriate socioeconomic and political conditions in the home countries (Gow and Iredale 2003; Saxenian 2006). One respondent referred to this point saying: "It is the lack of possibilities to apply the scientific potential what makes people leave, and return can only be beneficial if migrants can apply their knowledge and skills back in the Moldovan context". Another mentioned: "Improving processes in Moldovan companies will help in transferring new managerial skills and organizational methods".

Students are more likely to declare return plans and 47% of them say they have plans to return to Moldova some time in the future, and they are followed by scientists and researchers (35%) and finally by professionals (28%). Notwithstanding the fact that their return intentions are linked to their views of the opportunities available in Moldova, the most important reason to plan a return is based on their interest to contribute to the socioeconomic development of the home country, with the will to be with their family and acquaintances, and a desire to bring their children up in Moldova as the second and third most important reasons respectively. When asked about their future plans for a restricted time span of five years, 59 per cent of respondents said they intend to stay in their current host country, while 16 per cent say they will move to a third country with 10 per cent planning to return to Moldova. A significant share of 15 per cent of the sample does not

know their plans yet and they are certainly open to any opportunities that may arise, either in Moldova or in another country (Fig. 7).

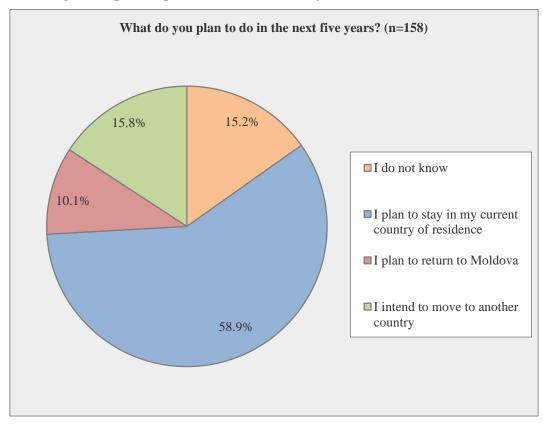


Fig. 7: Reported plans for the next five years

When we examine the future plans of skilled Moldovans in greater depth, we see interesting differences in terms of the profile of the respondents. The highest share among respondents planning to return to Moldova is for scientists and researchers (14%), followed by students (12%) and professionals (6%). A majority of scientists and researchers (72%) and professionals (60%) intend to stay in their present host country while only 40 per cent of students plan to do so. We also see that students have a clearly higher level of uncertainty about their short-term future plans in terms of geographical location (30%) than scientists and researchers (12%) and professionals (11%), and therefore they appear to be more open to opportunities. This might be a consequence of the students' younger age, a lack of family responsibilities, and shorter stays and a less stable situation compared to Moldovans in the other two groups. One respondent referred to this point saying: *"It may happen that once Moldovan professionals abroad get a more stable situation, they may want to contribute more to Moldova from abroad without looking to return"*.

Source: Field survey (2011-2012)

The fact that Moldovan students abroad have not made up their minds about their future plans in terms of geographical location makes us believe that they follow a strategy where their migratory plans are kept flexible and their decisions are left intentionally open as they wait to respond to the best career choice and the new opportunities they are offered. When asked about their priority plans after the completion of their academic degree, 46 per cent of students said they plan to search for paid employment, while 32 per cent plan to pursue further education; 11 per cent of the remainder plan to set up their own company and 11 per cent are undecided.

In overall terms, skilled Moldovans abroad have more negative than positive perceptions of the home country environment, particularly with regard to the socioeconomic situation, job and career opportunities, scientific advancement opportunities and the political situation (Fig. 8).

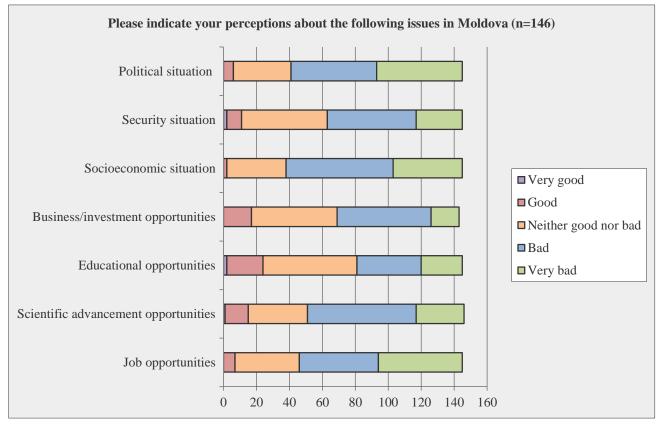


Figure 8: Assessment of the environment and situation in Moldova

Source: Field survey (2011-2012)

Interesting differences arose when examining more deeply skilled Moldovans' assessment of the environment in the home country. While we can see that students have fewer negative feelings about job opportunities, scientific advancement and business opportunities offered by Moldova than scientists and researchers and professionals, the discussion of our observations make us think that their feelings may be based on an emotional construct that is strongly grounded on their high interest in home country development as well as their propensity to return, and not necessarily

formed on the basis of a factual evaluation of the opportunities available in Moldova. This is also shown by the fact that 17 per cent of students intend to achieve their priority plan in Moldova. Moldovans who do not have plans to return to their home country are sceptical about Moldova being able to provide a trustworthy environment with concrete professional career prospects and a good quality of life. They think political and socioeconomic instability will not change in the near future and they feel a brighter future awaits them in their current host country or elsewhere, but certainly not in Moldova. The most important reason for not planning to return is their belief that their host country offers better career and employment prospects and their second most important reason is their preference for the lifestyle abroad. This shows that it is difficult to pull Moldovan scientists and professionals with employment experience abroad back to Moldova and away from higher salaries, better work settings, meritocratic principles and other welfare provisions they have in the destination countries. One Moldovan said: "Once you get accustomed to the new society it is difficult to return. At the moment I don't plan to return, maybe in the distant future when the situation in Moldova is better and the society has changed its mentality".

In overall terms, skilled Moldovans abroad are keen to participate in Moldova's socioeconomic advancement, but they are discouraged by the resistance of the local community towards acknowledging the value of the resources of skilled Moldovans abroad and by the attitude of the government, which they feel is not sufficiently attentive in terms of engaging them in development efforts. One respondent put it this way: *"It would be good if the government encouraged the participation of Moldovans in the policy-making process, and recognized the role of the diaspora in the development of the country"*. Skilled Moldovans feel that there is a lack of awareness among society of the potential contributions from the diaspora in the form of knowledge and skills transfer. This perception is in line with a recent empirical study carried out by the IOM (2009), which shows that one out of every two Moldovan citizens thinks of migrants' contributions in terms of financial remittances for their families. One Moldovan mentioned: *"I think the society in Moldova should manifest a greater interest in diaspora proposals and recommendations, not only for its financial resources"*.

As part of the enabling environment, suitable policies are considered crucial for promoting transnational cooperation projects from the diaspora as well as for enabling initiatives that respond to institutional incentive programmes. Half of the respondents were unaware of the institutional programmes that the government has recently put in place to engage Moldovans abroad. There is a high level of reluctance to participate in them among those respondents who knew about such programmes, and this is based on their lack of interest in supporting governmental initiatives and a general feeling of distrust. While the programmes implemented by the government are seen as valuable, they lack acknowledgment and participation from the diaspora. Moldovans see the lack of

resources as an important impediment to bringing ongoing initiatives forward. One respondent said: "Collaboration with the diaspora needs to be institutionalized. There is a need for a better organization of the existing knowledge transfer and financial rewards for short professional visits to Moldova".

Respondents are concerned about the emigration of the most qualified persons and the consequences for Moldova, and they think that the authorities need to pay more attention to this issue and make sufficient efforts to revert this trend. One respondent said: "*I think that the possible benefits of skilled migration are less important than the losses. The depletion of human capital led to a shortage of good professors for the education of the new generation*".

Conclusions

This evidence-based analysis discusses the scientific diaspora option within the links between migration and development to address skilled migration from the Republic of Moldova. It outlines the parameters of the Moldovan scientific diaspora consisting of students, scientists and skilled professionals abroad, and captures the main determinants of their transnational cooperation and their potential return to the home country. The evidence shows that while Moldovan skilled migration is associated with choice, professional career and educational opportunities, it is fundamentally determined by economic factors, limited employment opportunities and career prospects, low income levels and a deficient quality of life. Although higher living standards and employment prospects abroad may act as significant pull factors, the home-country context is the main catalyst behind the decisions of skilled Moldovans to emigrate.

Skilled Moldovans become appreciated human resources in destination countries and they see their experience abroad in positive light because of the chance it offers to advance and grow at a personal and a professional level. They keep in contact with Moldova and are interested in contributing to its development, based on the belief that they can create benefits through their activities abroad and as a result of the skills and knowledge they have accumulated. They imagine themselves contributing through the implementation of activities related to transfers of knowledge and skills, academic exchanges, joint research and investment links. We see that physical return is a specific development tool imagined by skilled Moldovans, and some of them link their development aspirations to their return plans. While some skilled Moldovans have already been engaged in transnational cooperation projects, these are mostly on a sporadic and individual basis and grounded on personal interest rather than collective organization. Yet, there are initial signs of informal networks and associative initiatives evolving towards more structured communitarian-based actions, which are considered

crucial for enhancing the scale and effect of transnational cooperation. However, they feel there is not enough recognition of their capacities and resources among the community left behind and that local resistance to change and a lack of institutional support for their engagement are important obstacles.

The discussion indicates that the mobilization of skilled migrants' resources as well as their mobility plans hinge on the environment they are exposed to, and on the opportunities offered in both the host and the home countries. Although emigration of skilled Moldovans may continue, return intentions - of students, mostly - are apparent, but they have negative perceptions about the socioeconomic situation and job opportunities in Moldova. Available opportunities, incentives and enabling environments are decisive influences on the deliberate hesitation of migrants about their future plans, and the return intentions of Moldovans might increase if there was a belief that Moldova could provide an enabling socioeconomic environment with adequate career prospects. However, if economic and political conditions in Moldova remain unclear, they may decide to settle abroad permanently.

There are some specific policy recommendations deriving from this study. 1) Support for organized collective action by Moldovans abroad needs to be ensured and complemented with institutional policies to engage diasporas. 2) Schemes promoting return should focus on young Moldovans, especially those who have left their country to pursue higher education and who have shorter stays abroad. 3) Policies should ensure appropriate conditions for a satisfactory reintegration of returnees into the labour market in concrete sectors that are useful for the local context. 4) A two-fold strategy needs to be accommodated to ensure the effective use of the knowledge and skills of migrants that are transferred from both returnees and from those who remain abroad, and to generate benefits within the local socioeconomic context. 5) Considerable improvements to the local structural situation are necessary and these include: the creation of conditions to provide good employment opportunities and career prospects; a formal commitment to sustained support for science, research and education; ensuring matches between higher education programmes and labour market needs.

Finally, when analysing the impact that skilled migration from the Republic of Moldova has on the socioeconomic and scientific development capacities of the country, it is crucial to promote further studies that will advance research on some of the main issues that influence its dynamic. These may include: 1) Studies examining further the issue of the lack of national identity hindering diaspora mobilisation, and if and how this element could be replaced by other attachment factors. 2) Studies of skilled Moldovans in concrete destination countries on a comparative basis, examining the influence of policies and institutional settings on transnational cooperation and return intentions. 3) A regional perspective-led comparative study of skilled migration from Moldova with other Eastern European countries, observing similarities and differences regarding migration characteristics, dimensions and

policy options. 4) Studies of the mobility, main destination countries and academic profiles of Moldovan students, and issues that influence their migration projects and future plans. 5) Research into return migration by skilled Moldovans, the different types of institutions to which they return (academic, private, public), in order to gain a better understanding of the issues influencing their decisions, working conditions and living situations, and the effects of their international exposure on the local context.

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