Introduction to Climate Action

As participants of the Academic Citizens' Assembly, we aim to find solutions to rapidly decarbonize the Swiss society, improving wellbeing and making it more resilient and inclusive at the same time.

This document summarizes the most important knowledge you'll need for the assembly. **Please plan around 120 min to read and understand**.

In your deliberation, please keep in mind:

1. The climate crisis is urgent, existential, man-made, and there is a strong case to do everything to limit warming[1] to 1.5°C. If unfamiliar, read IPCC SR15 summary for policymakers, and for a detailed recent assessment of the physical science and climate impacts, read IPCC AR6 WG1 and WG2. So far, the climate is 1.1°C above pre-industrial time, with wide variations: 0.9°C ocean, 1.6°C land. In Switzerland, the warming has already reached 2°C. The 1.5°C goal refers to the global average. For an excellent 1-hour update, watch Sonia Seneviratne's March 2022 video.

2. Beyond climate only, the 9 Planetary Boundaries define a "safe operating space" for humanity[2], ensuring stability of the Earth system and ultimately our survival. Read the summary, page 736.

3. Conceptually, the solution is simple: stop burning fossil fuels and stop degrading natural habitats (in Switzerland this mostly means wetlands and soils). In practice, this is difficult due to the way society is organized, the focus on growth, and prevailing mindset. All three will need to change.

4. The much needed societal transitions leading to deep decarbonization will only work if broadly accepted, which require any changes to be inclusive and improve wellbeing[3]. How we think of wellbeing is key:

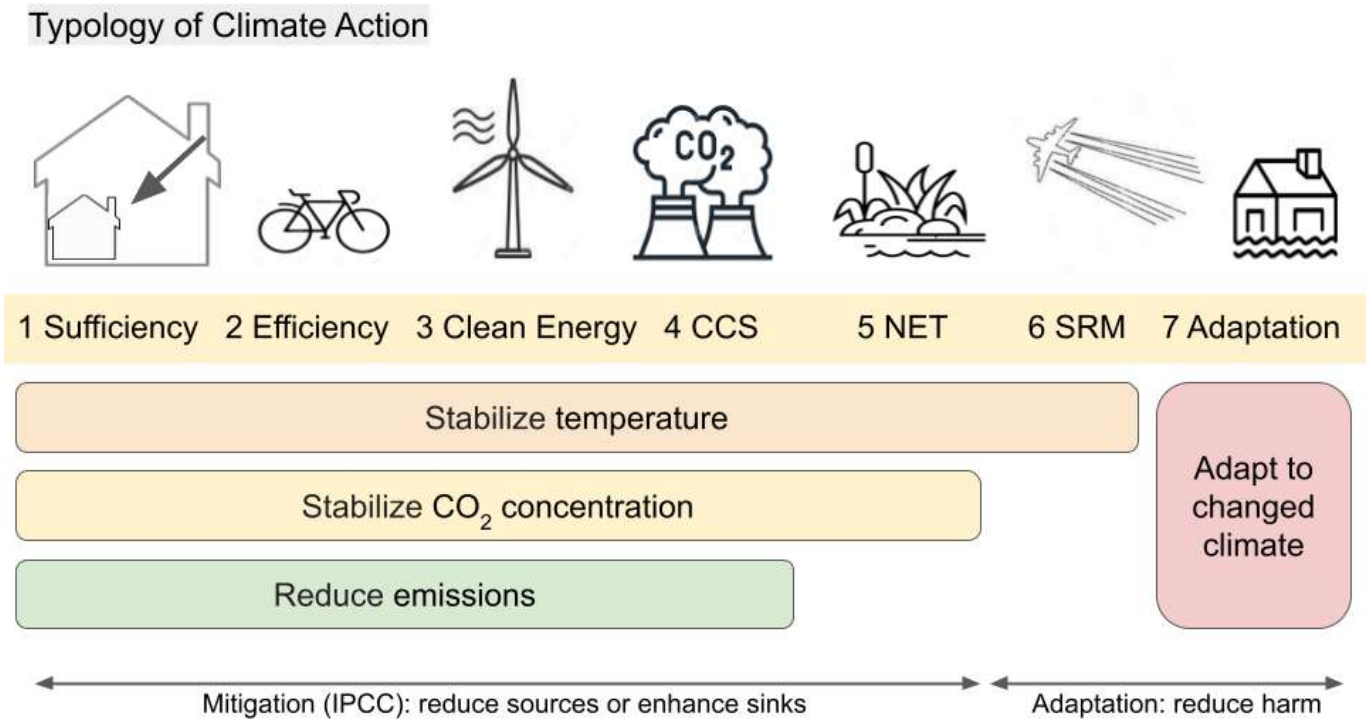
    - Welbeing is based on needs satisfaction for all, not consumption.
    - Human needs are universal, finite, and classifiable: Subsistence, Protection, Affection, Understanding, Participation, Idleness, Creation, Identity, Freedom. If unfamiliar, read Human Scale Development, chapter 2, or start with this short video.
    - There is a big distinction between needs (universal), satisfiers (culturally specific), and desires (shaped by culture and marketing). Needs must be met to prevent suffering, but we have the choice of satisfiers. Good satisfiers are "synergistic", satisfying several needs at once.
    - Everyone loves freedom and liberty, but individual and collective liberties must be balanced. Today's over-focus on individual liberties makes this difficult.
    - To decarbonize rapidly and deeply, less consumption of energy and materials is needed, not a different (green) growth.
    - The solution is not some new product, technology, or method - it's a different mindset and goal of society, such as universal wellbeing within the planetary boundaries

5. Fossil fuel pollution is directly killing 10m people each year[4], mainly through PM2.5 inhalation. Additionally, indoor burning of dirty cooking fuels kills 4m p.a.[5]. All this is before climate effects.

6. The imbalance of power has created many hard-to-break arrangements, "lock-ins", obstructing the needed transition[6]. Example "The political economy of car dependence", chapter 7, including table 3

7. The free market cannot simultaneously reach the two goals of a good energy system: universal access (needs low price) and consumption limited to available clean energy (needs high price). To reach these essential goals, additional non-market governance is needed, such as allocating individual quotas for free or low-priced energy.

8. There are broadly seven types of climate action[7]:



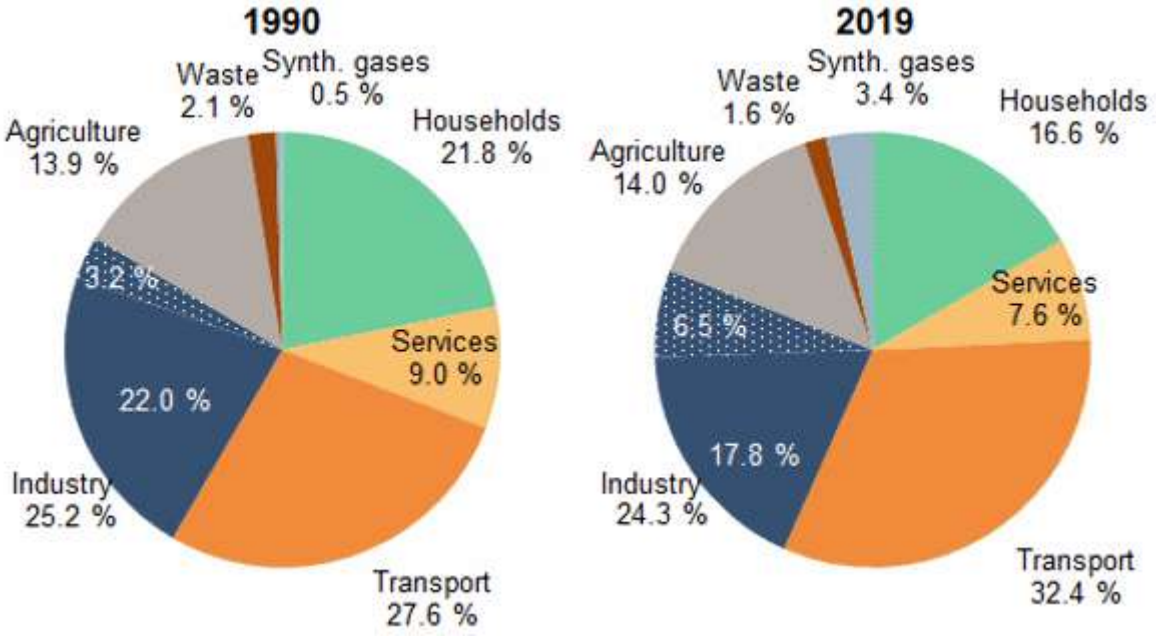
   - Sufficiency has the highest potential, and is fastest to implement
   - Efficiency and clean energy are essential, but need time to deploy, even for existing technologies. Any technology still in development will likely come too late to have any material impact in 2050.
   - CCS (carbon capture and storage) and NET (negative emissions) are expensive, limited to around 10% of current emissions, and often have bad side-effects. If properly focused and governed for biodiversity and societal co-benefits, and entirely paid for by polluters, CCS+NET can accelerate the transition to net zero[8]. If interested, read the 2-page summary.
   - Therefore we must focus on reducing emissions by 90% using sufficiency, efficiency and clean energy.

9. Swiss territorial emissions were around 46 Mt CO_2e in 2019, and will likely reach this level again in 2022 (2020 and 2021 were slightly lower due to covid-19). The Swiss NDC (commitment under the Paris Agreement) is -50% relative to 1990, i.e. 54 Mt CO_2e / 2 = 27 Mt CO_2e. If Switzerland aligns with the EU, which is likely (and unfortunate that Switzerland is following, rather than leading Europe), the reduction would be 55%, reaching emissions of 24 Mt CO_2e in 2030. This means that we need to reduce territorial emissions by 22 Mt CO_2e in 8 years, or 2.75 Mt each year (6% p.a.).

10. Sufficiency, efficiency and clean energy will have the biggest impact in high-emissions areas, in particular:
   - Transport, i.e. cars and trucks, 32%
   - Household heating with oil and gas, 17%
   - Consumption of "stuff" including most of industry incl. waste incineration and transport, 24%
   - Agriculture, of which meat and especially cows represent the biggest part, 14%

- This Academic Citizens' Assembly focuses on territorial emissions only (i.e. those emitted on Swiss territory), and does not count the significant emissions embodied in imports. These are essential, but require international cooperation, and will be covered in a future assembly.

- Swiss territorial emissions, all greenhouse gases, source FOEN 2021:



11. There are no magic "recipes" for optimal climate action, which must be effective (reach its goal), fair (efforts are shared, no undue hardship is created), efficient (low resource solutions are preferred) and acceptable (for the citizens who need to make it happen). This is the main reason why citizens' assemblies are very effective in developing climate action proposals, as they bring multiple perspectives by design, and ensure fairness and acceptance. Good preparation and learning ensures the other two goals (effectiveness and efficiency) are also met. The Academic Citizens' Assembly aims to create a universal assembly, involving millions of people working in groups, coordinating action with technology.

12. Still, we'd like to suggest several ideas, as a basis for deliberation in groups:

    - Mobility is not a need, but a satisfier, usually for participation. Most mobility is needed because things are in the wrong place, see §6, "car lock-in" above. Current mobility in Switzerland is >50 km per person per day. Think of a better spatial organization, including services and activities where people live, not just different cars.

    - Housing surface has been growing for decades, reaching 46 m^2 per person; it is still growing. This creates problems with energy use, CO_2 emissions, costs, lower social interaction, less common spaces, more private spaces, lower density, more transport, and higher costs / less affordable housing. A sustainable "corridor" between 14 m^2 min and 20 m^2 max private floor space per person is proposed[9]. Think of redefining private, shared and public spaces inside and outside buildings, as well as shared activities, services, objects, spaces, and functions.

    - Tim Jackson writes[10] of the "symbolic language of material goods" where non-material needs like affection link to material satisfiers, like giving presents. This is culturally shaped, driven by profit maximization, not resulting wellbeing. Think of narratives to change this.

    - Swiss energy use is over 6000 W per person continuous, mostly fossil, mostly wasted on mobility or buying stuff we don't need, heating spaces we don't use. The Decent Living Standards framework allows us to estimate the energy needed to satisfy all material needs, and it is around 500 W continuous, about a tenth of current use[11,12].

Recommendations for your deliberation

Think about what a **low carbon society** would look like, as a basis for your group work. Imagine completely different arrangements, not just a bit more of what we are doing already (like PV, bicycle lanes, organic food):

- Provide a decent living to all, regardless of the ability to pay
- Stop emitting CO_2 and generating air, water, and soil pollution
- Reduce the total impact of society and stay within Planetary Boundaries
- Reduce the aggregate energy consumption to what available clean sources can deliver
- Build resilience of ecosystems (healthy soils, wetlands, forests etc.) and human society (health, education, trust, good institutions, adapted infrastructure)

Also, let's not forget what an **low carbon society does not need**:

- Cheap energy, cheap food, cheap travel, cheap consumer products, all leading to high consumption. Replace the obsolete goal of "purchasing power" (i.e. buying lots of cheap stuff no-one needs, that makes no-one truly satisfied) with wellbeing for all, based on meeting human needs, which are mostly non-material and linked to relationships.
- GDP growth - in fact the excessive use of energy and materials is creating the biodiversity, climate and inequality problems we have. Reversing growth will not automatically solve the problems, but they cannot be solved if growth continues.
- Concentration of power and profits: this has led to most of the current problems.

General recommendations:

- Decarbonizing society is linked to everything else, so please ensure your proposals do not create unsolvable problems of poverty, education, health, or other topics.
- There are many good reasons to question capitalism (and associated consumerism, economic growth, commoditization of human and natural resources, accumulation of capital), but this is not the objective of the 2022 ACA. However, energy and food markets, regulation, and governance are perfectly within the scope of our work.
- Focus on actions and policy recommendations that can be implemented in Switzerland, without requiring immediate coordinated worldwide action.

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