

CLIMATE AND AGRICULTURE

Position paper

The climate crisis is the largest global challenge at present and farming is an important factor. **Around a quarter of global emissions of greenhouse gases (GHG) are attributable to agriculture and associated changes in land use.**¹ Deforestation, the draining of moorland, the transformation of grassland into arable land, the use of chemical fertilisers and machinery, as well as intensive animal farming, are all making a significant contribution to climate change. If the global food system, including processing, storage, transporting food and food waste, is also taken into account, the contribution from agriculture rises to around 40%. Emissions from agriculture that are damaging to the climate even doubled between 1961 and 2016 due to the intensification of the sector.²

At the same time, however, agriculture in all its forms is also strongly affected by the consequences of climate change: A changing water regime with new, unpredictable precipitation patterns, extreme events such as cyclones, heavy rainfall and droughts, as well as an increase in pests, diseases and weeds.³ **This makes it more difficult to plan agricultural activities, causes water resources to diminish dramatically in many places and leads to conflicts around water use, as well as large harvest losses.**⁴ Nowadays, there are already 500 million people living in areas affected by desertification and who are consequently experiencing shortages of water and food.² In the long term, therefore, we expect agriculture to be abandoned or production relocated to other regions.

The impact of the climate crisis on poverty and hunger is eminent and threatens food sovereignty. Smallholder farming families and rural communities in developing countries are most affected. This is because they often live in particularly exposed areas and lack access to the infrastructure and services that are essential for adapting to climate change.³ In addition, people in developing countries are heavily dependent on natural resources; agriculture is crucial to their livelihoods. Women and girls are particularly affected by the consequences of climate change. They are discriminated against compared to men in terms of accessing information, education, funds and new technologies, as well as in terms of their involvement in political and social life. For example, women are 14 times more likely to die from the consequences of climate disasters than men.⁵

As the cause of more than a third of all GHG emissions, the agriculture and food sector must be brought further under scrutiny in the climate debate and alternatives to the currently widespread industrial model must be sought as a matter of urgency. **Farming based on agroecological principles can play an important part in finding a solution to the climate crisis.**

What SWISSAID is calling for

Agroecologically managed systems emit less GHG emissions and, at the same time, capture carbon from the atmosphere in humus-rich soils – a twofold gain in terms of climate impact.⁶ Therefore, SWISSAID is committed to the systematic promotion of agroecology and is calling for the following:

- The net zero emissions balance⁷, without compensation abroad, must also take the agricultural sector into account. In addition to domestic emissions, the 'grey emissions' generated by imports and indirect emissions caused by companies abroad must also be factored in:
Production: The use of synthetic nitrogen fertilisers must be drastically reduced, the use of concentrate feeding must be avoided in livestock farming (Feed no Food), the soil must be treated with care and, thus, ecological farming must be promoted.
Consumption: Measures must be taken to comprehensively reduce the consumption of animal products and to promote ecological, seasonal and regional food. Food that is transported by air should be labelled accordingly.

- Greater consideration must be given to the potential of agriculture to absorb CO₂ in the soil through the build-up of humus.
- Switzerland should promote agroecology and organic farming at national and international level.
- Switzerland should promote implementation of the UN Sustainability Agenda (SDG) in particular for Goal #13 'Climate action', at national and international level.
- SWISSAID calls for climate justice: Switzerland should honour the pledges that it made in Paris and raise around 1 billion Swiss francs annually for climate protection and adaptation measures in developing countries from additional and new sources.

The arguments

Low-emission agricultural practices

Agroecological practices cause lower GHG emissions, as less nitrogen is fertilised, which means that less nitrous oxide is released.⁸ Nitrous oxide is 300 times more harmful to the climate than carbon dioxide. In addition, agroecological production systems do not involve intensive livestock farming, which reduces emissions of methane from ruminants and ammonia from farmyard manure. Animals are also predominantly kept without industrially produced concentrated feed, which is responsible for high GHG emissions due to deforestation and intensive farming.

Improved energy efficiency

There is great potential for boosting energy efficiency in the agricultural sector and for using renewable energies, for example by using solar-powered machinery and equipment. Agroecological farming is an example of this as it depends little on external inputs, instead using mainly renewable resources that are available locally and involving very little machinery. It also minimises the use of chemical fertiliser, which is produced with high energy input.

Eating seasonal and regional produce transported over short distances

The food industry, which shapes our current food system, is extremely harmful to the climate due to energy-intensive processing, storage and transport. For example, the food group Nestlé alone emits half the amount of GHGs as that emitted by the whole of Switzerland.⁹ The climate crisis demands that we switch our consumption to a mainly plant-based diet, with organic, seasonal and regional foods that are transported over short distances.

Carbon is stored in humus-rich soils

Every year, plants extract 30% of the CO₂ present in the atmosphere through photosynthesis.¹⁰ Carbon is stored in the soil in the form of humus through decomposition of plant material and farmyard manure. Agroecological, soil-conserving practices such as mulching, composting, growing perennial crops and planting trees prevent the release of carbon that is stored in the soil, contribute to the enrichment of humus, and also increase the water infiltration and retention capacity of soils. In addition to woodland, pasture land also acts as a good carbon store.

Agroecology as a key to adaptation

Adapting to the changing conditions resulting from climate change is essential, and this goes for agriculture too. Diversifying production, using a wide variety of farmers' seeds, preserving soil fertility, careful water management, establishing agroforestry systems, as well as protecting forests and wetlands can help to mitigate the worst effects, regenerate degraded land and preserve livelihoods. However, there may also be a need to diversify the sources of income for people who make a living from farming.

Diverse systems boost resilience

Diverse agroecological systems are more resilient to changing climatic conditions, extreme weather events, pests or diseases. Genetic diversity is also indispensable for adapting to climate change and must not be diminished by the spread of genetically modified seeds. Resilient farming practices are crucial for generating stable yields and maintaining food security. Developing countries have less capacity to respond quickly to climate change at high technical and financial cost; so resilient and stable systems matter all the more.

Supporting women as a strategy to combat the climate crisis

In many countries, women and girls are responsible for supplying the household with energy and water. It is also mostly down to them to cultivate the fields and to be responsible for feeding the family. This means that women in particular are badly affected by the consequences of climate change. In order to find solutions for tackling the climate crisis, it is therefore very important to involve women directly and to give them a say at all levels of the climate debate, as well as to work for their rights to land, water and education.⁵

1 Bellarby et al. 2007 and IPCC 2019 (<https://www.ipcc.ch/report/srcc/>).

2 IPCC 2019. Climate Change and Land. https://www.ipcc.ch/site/assets/uploads/2019/08/Edited-SPM_Approved_Microsite_FINAL.pdf

3 IPCC 2014. https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf

4 Influence of extreme weather disasters on global crop production. Ramankutty et al. *Nature* 2016.

5 UNFPA 2009. https://www.srhr-ask-us.org/wp-content/uploads/2017/06/climateconnections_1_overview.pdf

6 FiBL 2015. 100 arguments for organic farming. <https://shop.fibl.org/chde/mwdownloads/download/link/id/371/>

7 The Paris Agreement, signed by Switzerland, commits states to limiting global warming to well below two degrees. The IPCC report of 2018 showed that net emissions must be lowered to zero as quickly as possible.

8 <https://www.sciencedirect.com/science/article/pii/S0048969713010255>

9 <https://www.swissaid.ch/de/nestle-stoesst-fast-halb-soviel-klimagase-aus-wie-die-gesamte-schweiz>

10 <https://www.4p1000.org/>