
The Swiss climate strategy for agriculture at a glance

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Reducing greenhouse gas emissions and adapting to climate change are among the most important environmental, social and economic challenges today, as they will be in the future. This applies to all sectors of our society on a global level, a national level and even a regional level. In this respect, agriculture and food production have a major role to play. They have the potential to make a contribution towards mitigating climate change, namely by reducing greenhouse gas emissions, by increasing and preserving soil carbon pools and by producing renewable energy. In order to continue to be able to ensure food supplies and provide social, economic and ecosystem services, agriculture and food production must also adapt to climate change. Steps and measures must be taken in good time if full use is to be made of the opportunities that arise.

The Swiss climate strategy for agriculture should be a guiding light for agriculture and food production in Switzerland in their efforts to reduce greenhouse gas emissions and adapt to changing conditions. The strategy sets out common guidelines and long-term targets and identifies priorities and possible areas where action can be taken.

THE DUAL ROLE OF AGRICULTURE

Agriculture and food production contribute to climate change and are at the same time affected by it. On the one hand, they have a direct influence on trends in concentrations of greenhouse gases in the atmosphere through the fact that they release greenhouse gases and store carbon. On the other hand, climate change influences the conditions under which agriculture operates.

According to the national greenhouse gas inventory, the agriculture sector emitted 5.6 million tonnes of CO₂ equivalent in 2009, which is a good 10 percent of total emissions in Switzerland. Unlike most sectors of the economy, the proportion of fossil CO₂ emissions from agriculture is low. In contrast, with regard to methane and nitrous oxide, agriculture is the main emitter, being responsible for 80 percent and 75 percent of total emissions, respectively. Between 1990 and 2009, emissions from the agriculture sector decreased by a good 8 percent.

At a general level, climate change in Switzerland is resulting in a shift of suitable areas for agricultural production, and involves both positive aspects (e.g. a longer vegetation period) and negative aspects (e.g. increasing problems regarding pests owing to the milder winters). The increase in extreme weather events is a major problem since they reduce the reliability of harvests. For example, the combination of high temperatures and low rainfall during

the heatwave of 2003 led to a marked drop in crop yields. Even in a small country such as Switzerland the effects of climate change are not homogenously distributed: there are regional differences and it can depend on the individual farm's starting point if the changes are positive or negative.

TARGET

By anticipating its adaptation to climate change it should be possible for the Swiss agriculture sector to improve production and public services over the long term. As far as the reduction of greenhouse gases is concerned, the target comprises two parts: first, emissions by the agriculture sector are to be reduced by at least one-third by 2050, and second, with regard to food (production and consumption) an overall reduction of two-thirds should be achieved. These are ambitious targets but ones that are realistic over the long term. They include the aspect of food security and are based on the commitment of the international community to prevent an increase in global temperatures of more than 2 °C. In this way, agriculture and food production will make a contribution to ensuring a sustainable society.

PRIORITIES IN ADAPTATION AND MITIGATION

With regard to adaptation to climate change, the resilience of Swiss agriculture is to be improved as a preventive measure in order to cushion the negative effects of extreme weather events. As far as reducing emissions is concerned, the aim is to consistently take advantage of the potential for improving efficiency and to reduce the use of non-renewable energy and products.

There are numerous synergies between adaptation and mitigation that should be used to the full. Consideration of the suitability of a location and optimizing the spatial organization of farming activities can lead to greater efficiency in the use of resources as well as helping to maintain today's level of production. Increased soil protection can be advantageous through the link between humus content, soil structure and water infiltration and holding capacity with regard to climate protection (carbon storage) as well as adaptation to climate change (reducing erosion, improving water balance). High productivity along with good health among livestock are key aspects with regard to emissions per production unit in cattle farming.

There are many areas where action can be taken, ranging from livestock and plant breeding to integrated crop protection, water-saving irrigation systems, foresight and early warning systems, and low-emission livestock housing. The challenge is to choose those that allow for mitigation and adaptation to climate change with optimum cost efficiency. As long as there is a lack of data in this respect or as long as data cannot be drawn up for the more distant future, priority must be given to those options that involve multipurpose or low-cost measures that are practical and effective.

STAKEHOLDERS

Depending on their location and the conditions under which they operate, Swiss farms are affected by climate change in different ways. The possibility of reducing greenhouse gas

emissions also varies from one farm to another. In view of the slow rate of change and the complex interrelationships, it is extremely difficult for farmers to take the right decisions early on.

Farmers need support from other bodies: research and extension services, private players throughout the food production chain or directly related to agriculture (breeders, manufacturers of agricultural machinery, the chemical industry, insurance companies, food processing firms, wholesale distributors, etc.), as well as politics and administration. Finally, in their choice of the food they buy, consumers have a decisive influence on production.

AREAS TO CONSOLIDATE

In order for the Swiss climate strategy for agriculture to be successful it is necessary to draw up a solid scientific basis, to create an appropriate legal framework and to empower the stakeholders concerned.

Scientific basis: Lack of knowledge will be remedied and climate-friendly measures and ways of adapting will be drawn up. Their effect will be estimated individually and in combination and the set of priority measures required to achieve the targets will subsequently be decided. A comprehensive inventory of emissions and observations of the relevant effects of climate change are essential prerequisites. Useful tools in research and extension for climate change adaptation are: development of indicators for adaptation (impact and response), predictions (water supply and demand, pests), modelling the present and future climate suitability of different crops on maps, etc.

Legal framework: Future agricultural policy should include creating conditions that encourage efficient adaptation and effective reductions. Measures that involve a longer preliminary process should be introduced in good time and, in particular, in the case of decisions with long-term effects that involve high investment, it should be possible to choose climate-friendly and reliable alternatives. Contributions from other areas are also required: for example, high emission reductions on a global scale, mainly in the transport and housing sector, as well as an improved protection for agricultural land are essential if the targets are to be achieved. Further work in relation to climate change adaptation includes: evaluation of the existing policy (are there any regulations that hinder adaptation and which specifications could foster adaptation?) and development of new policy instruments (for example, payments for a climate-smart production system). Cross-sectoral issues such as water-use regulation (integrated water basin management) and monitoring of pests and diseases have to be treated within the framework of national adaptation strategy and action plans.

Participatory process: Creating awareness on the issue and spreading information are also essential, as is the creation of possibilities for networking and exchanging ideas.

Practice: This involves the concrete implementation of new approaches: the stakeholders instigate joint projects and develop innovative technology and concepts.

If all stakeholders in the agricultural and food production sectors accept their responsibility it will be possible to achieve the ambitious targets set out in the Swiss climate strategy for agriculture.