Schweizerische Eidgenossenschaft
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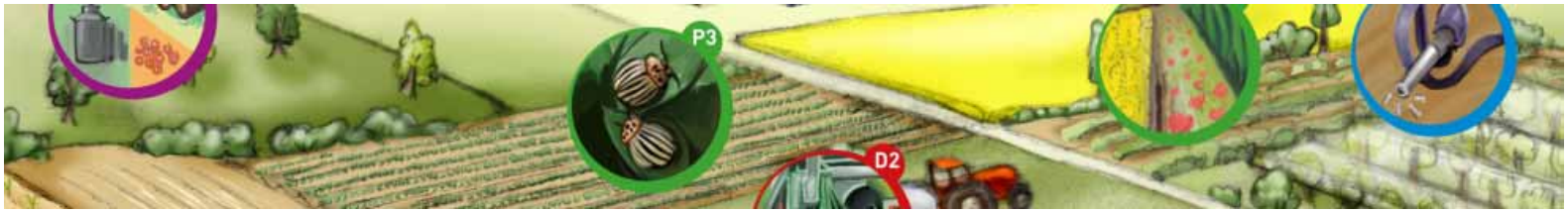
Federal Department of Economic Affairs FDEA
Federal Office for Agriculture FOAG

Swiss Climate Strategy for Agriculture

April 24th 2012

Reference: 2012-04-17/179

Content



I. Climate change and agriculture

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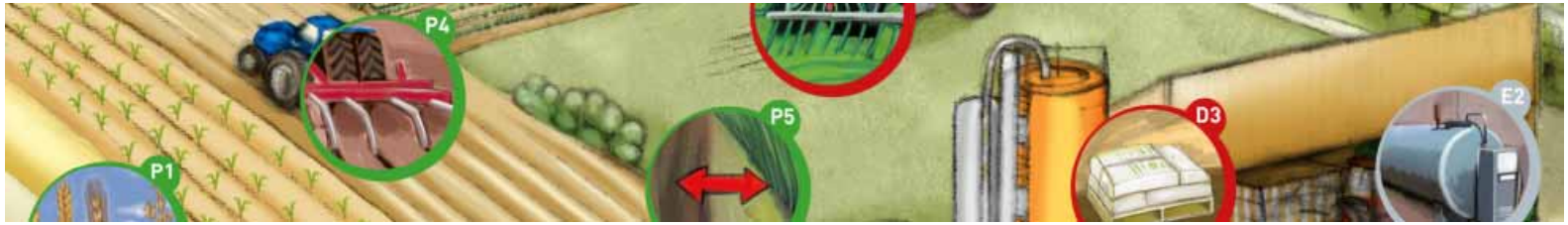
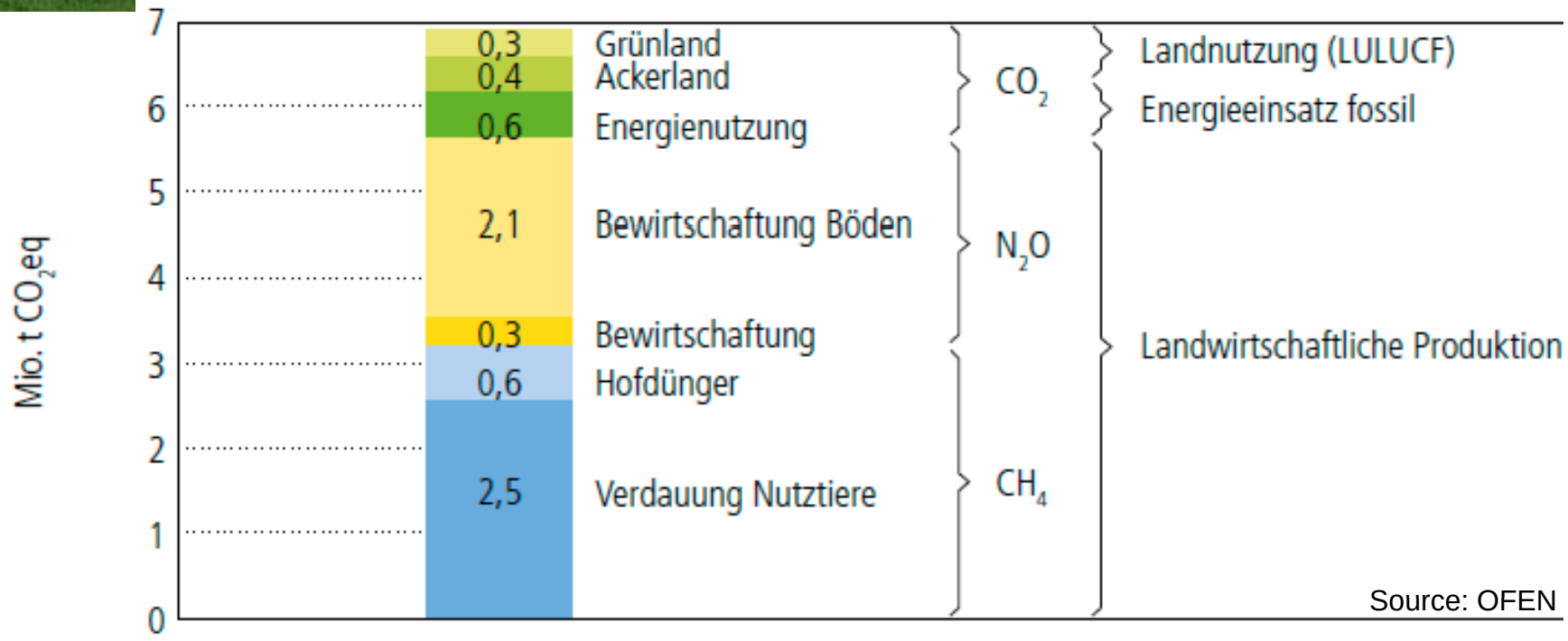
IV. Outlook



Agriculture is responsible for climate change

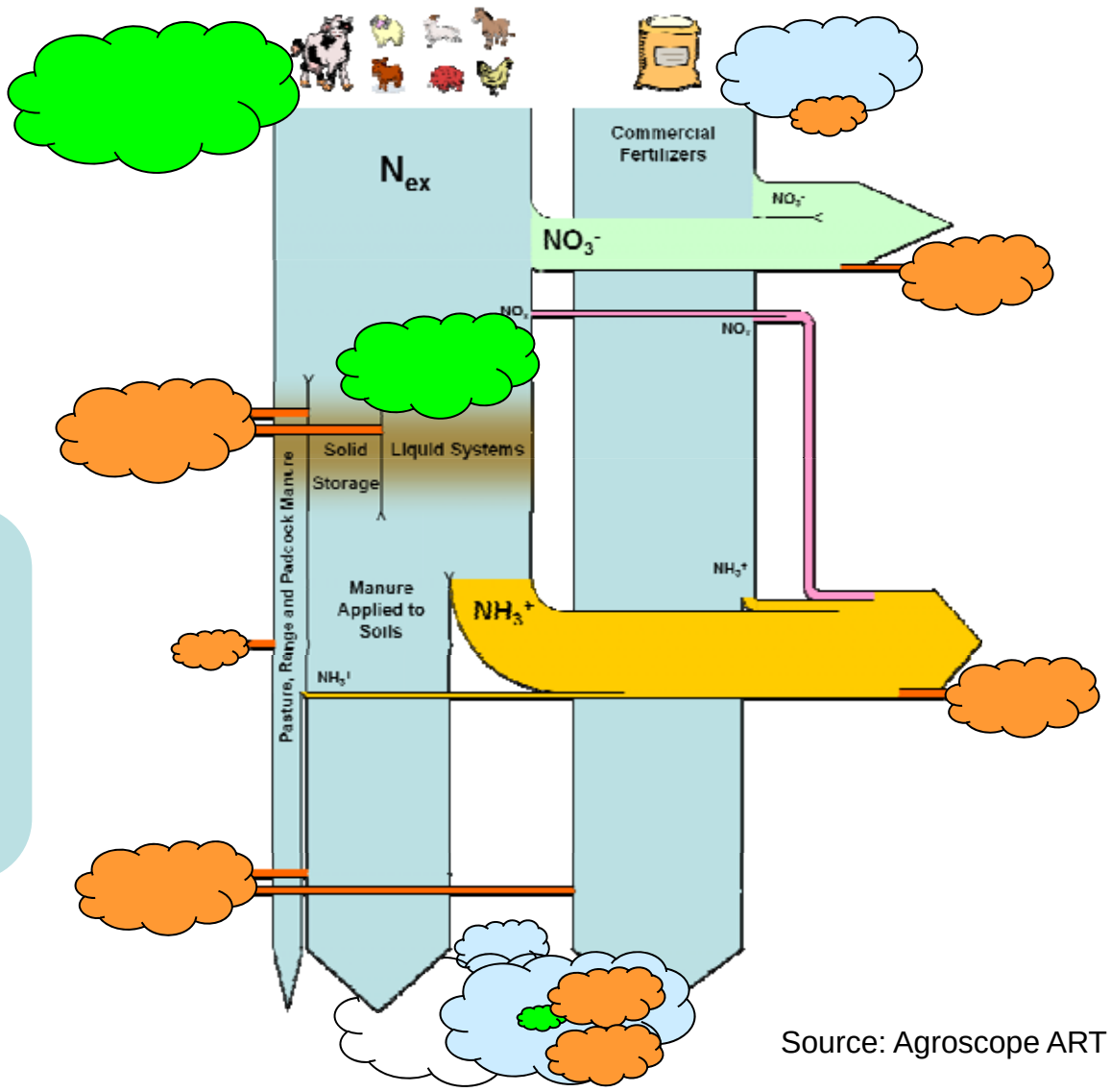
- 10% of total greenhouse gas emissions of Switzerland
- main emitter of methane and nitrous oxide

Greenhouse gas emissions of agriculture according to national inventory (without so called grey emissions)



Complex interactions

an argument for supporting production systems or production system components rather than single measures



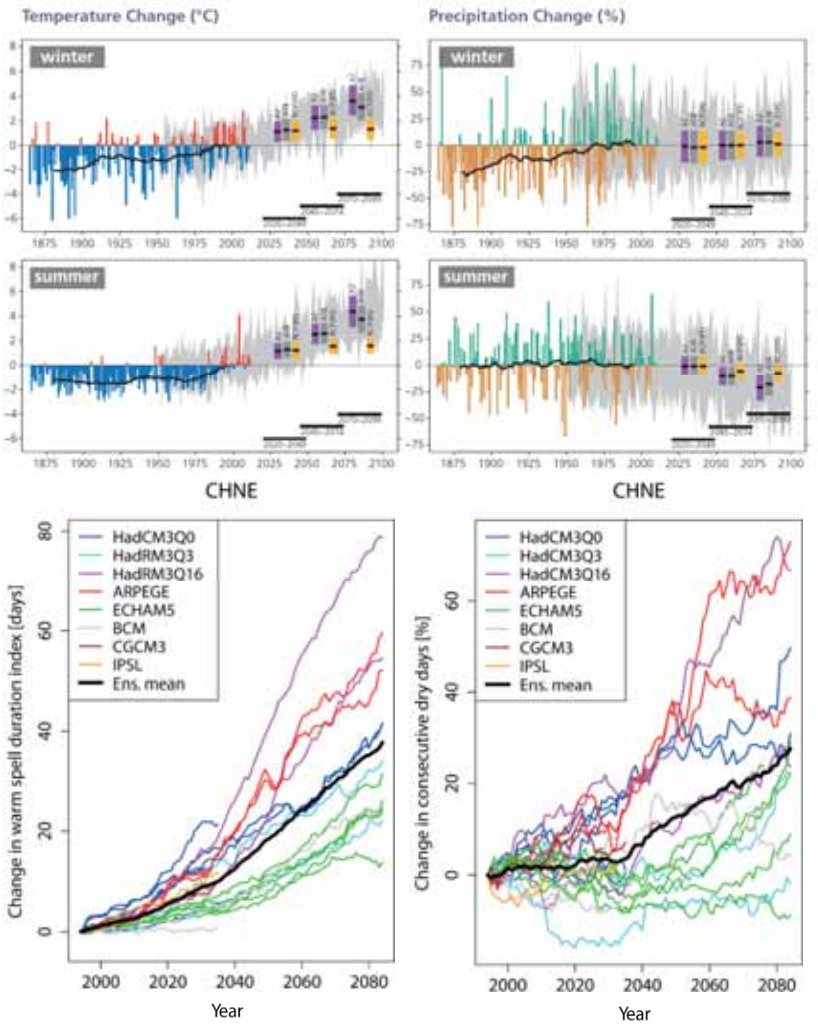
Source: Agroscope ART

Agriculture is affected by climate change

Climate change

Trend
temperature, precipitation, …

Extreme events
heat days, dry periods, …



Adaptation

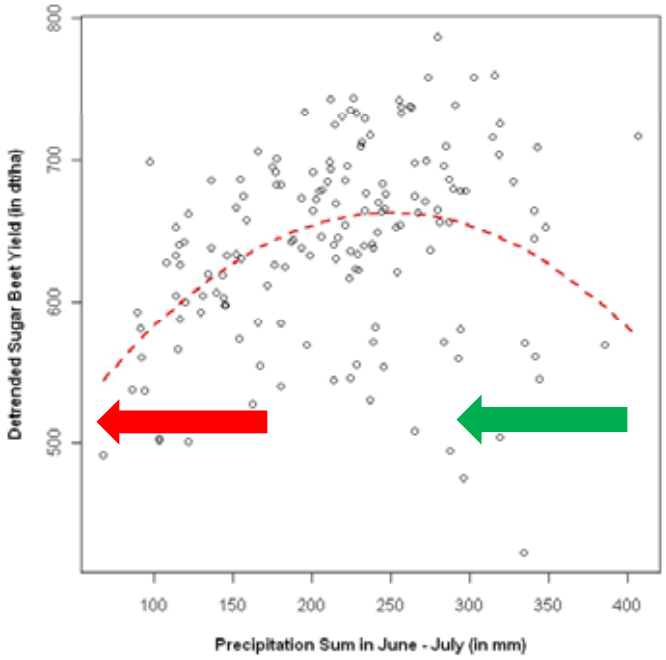
Source: http://www.c2sm.ethz.ch

Crop yields

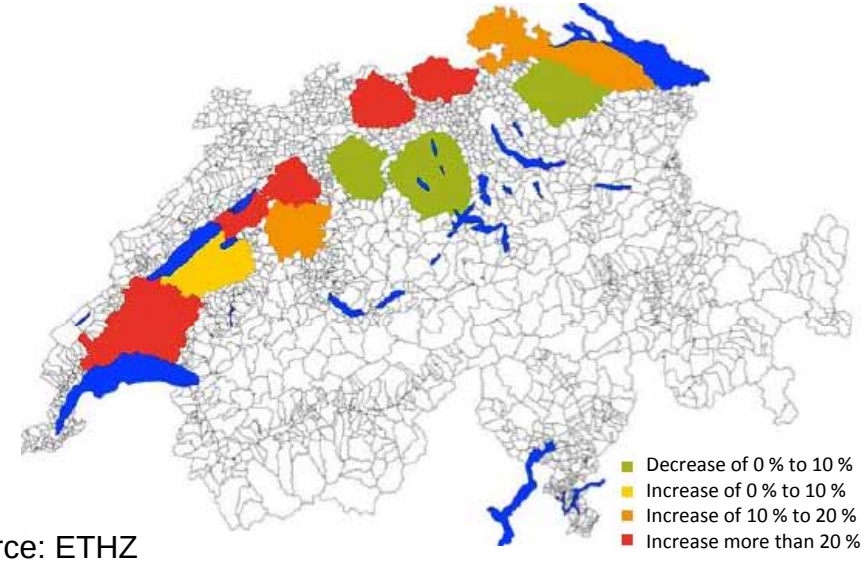
I.

it depends on the starting point whether you win or lose; regional differences

Interaction between yield of sugar beet and precipitation in June/July

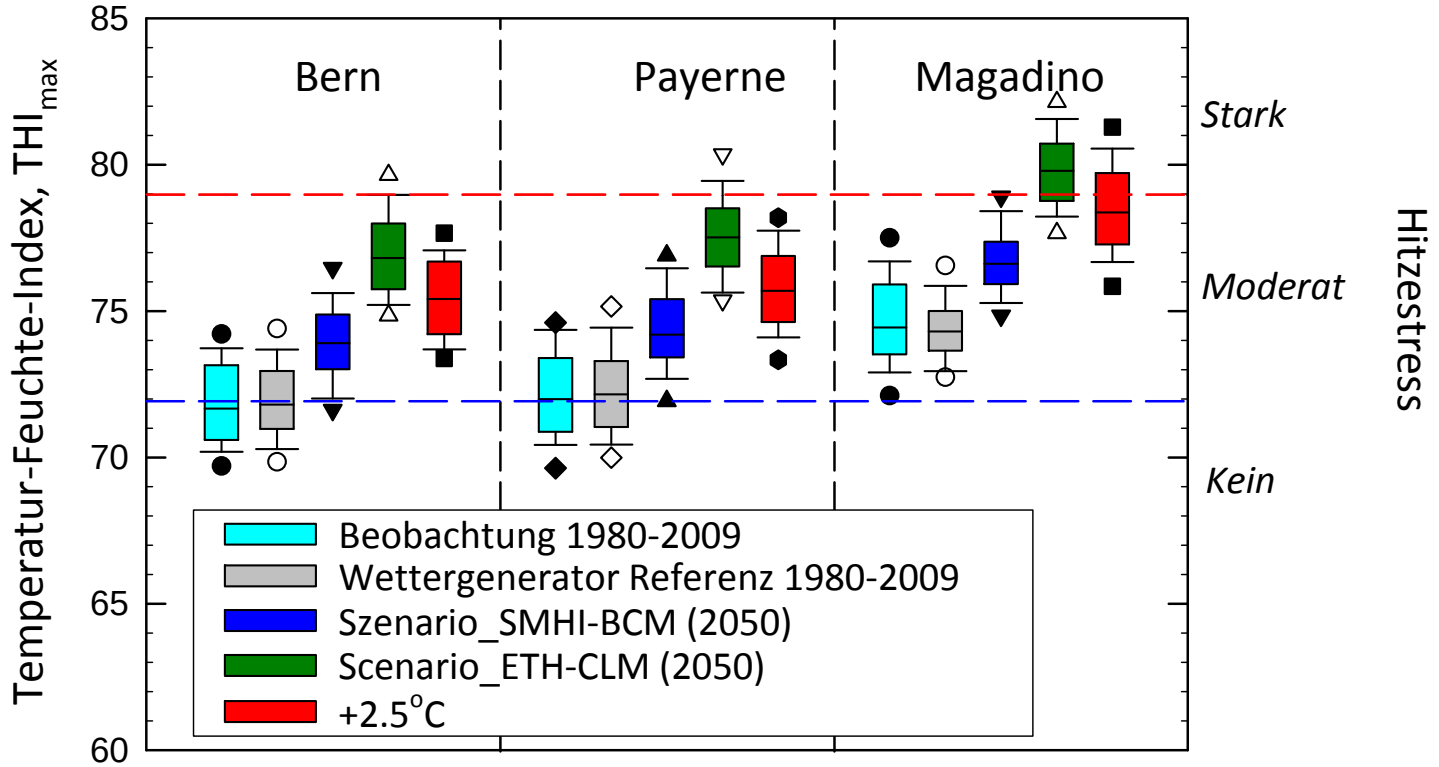


Predicted change in yield variability of wheat for the year 2050



Source: ETHZ

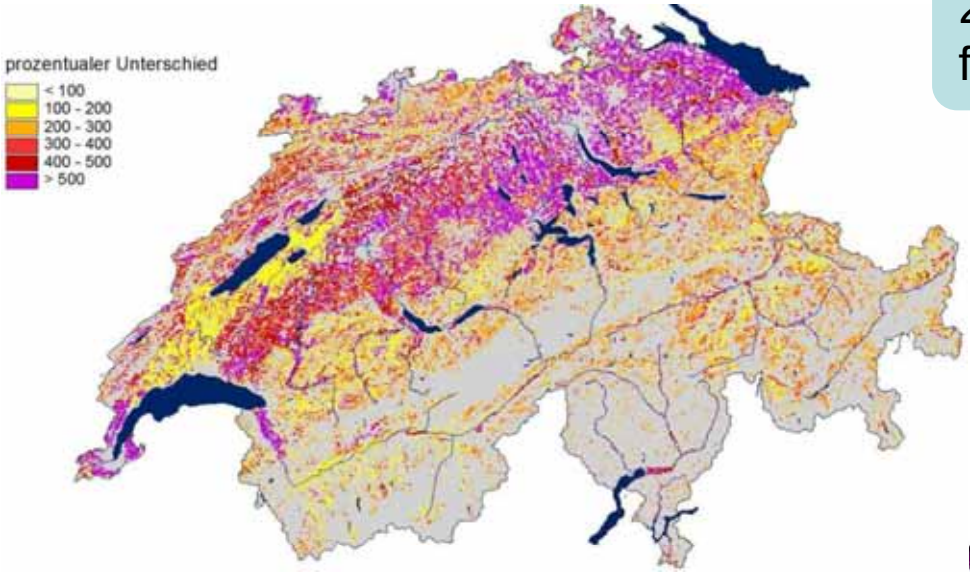
Animal production – heat stress



Source: Agroscope ART

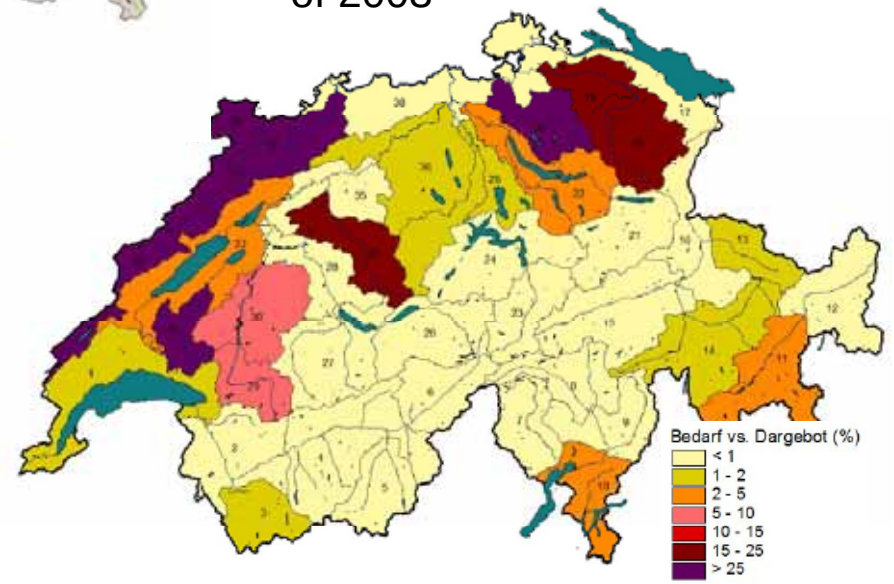
Water and irrigation

2003 as an example of future conditions



Irrigation demand for the year 2003 in % of the average1980-2006

Regional distribution of irrigation demand vs. water availability (runoff) in summer of 2003



Source: Agroscope ART

Elaboration process

➢ Purpose: Overview and compass

Overview interactions climate – agriculture, mitigation and adaptation together, link to production and environment (resource use), focus on agriculture but integration of up- and downstream industries including consumption;
Recognize challenges and opportunities of climate change in an early stage, definition of principles, goals and priorities

➢ Participative approach

Exchange via plenary sessions, surveys, feedback-loops: broad participation of representatives from government, research, farmer union, NGO

Elements of the strategy

I.

Principles

(1) Holistic thinking

use synergies, set system boarders widely

(2) Adjustment of policies

develop agricultural policy, influence conditions in other policies

(3) Motivation and participation

Engagement of all actors is important: support innovation and collaboration

(4) Improvement of knowledge

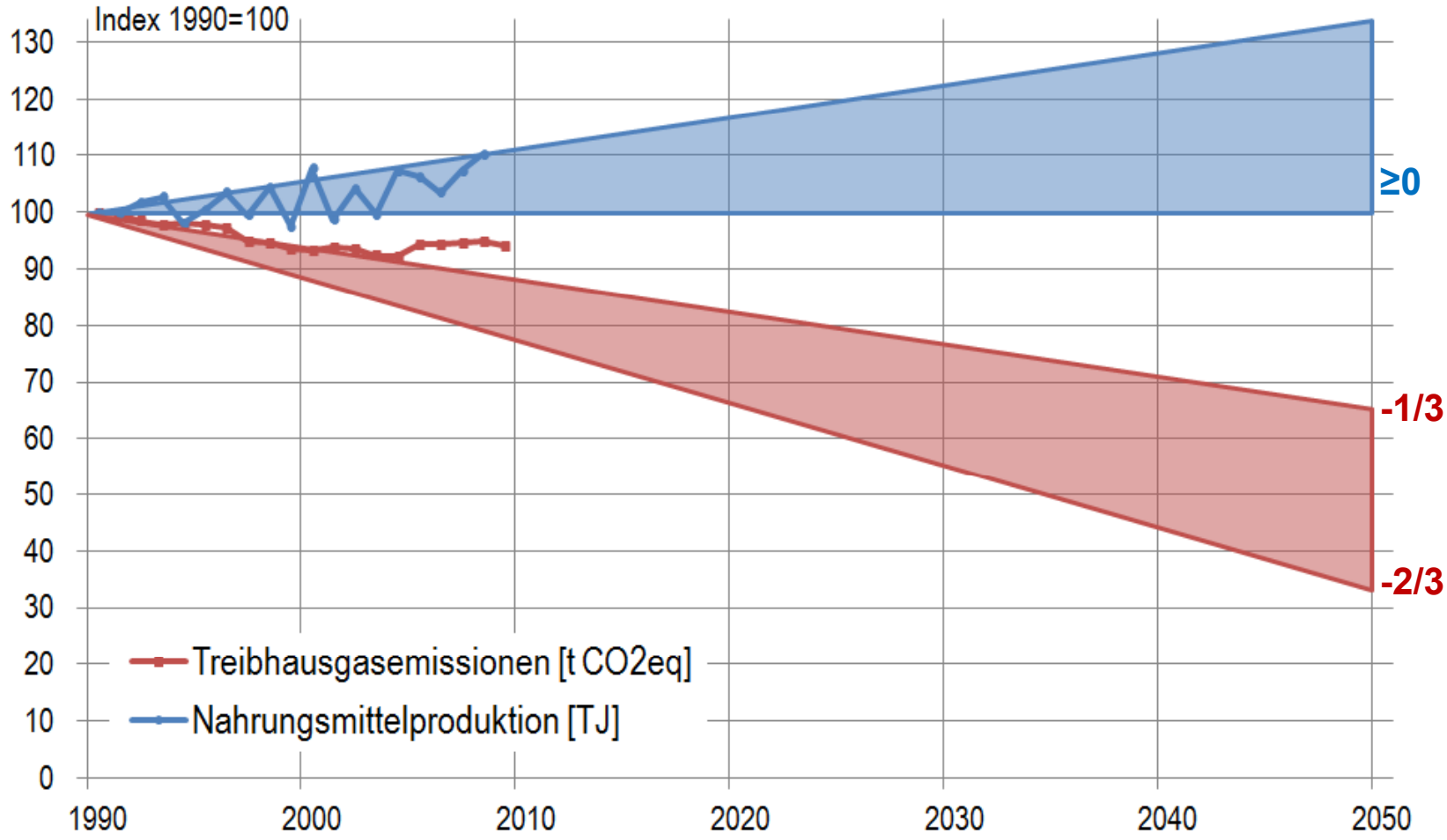
close scientific gaps: improve understanding and analyse effects of measures

(5) Monitoring

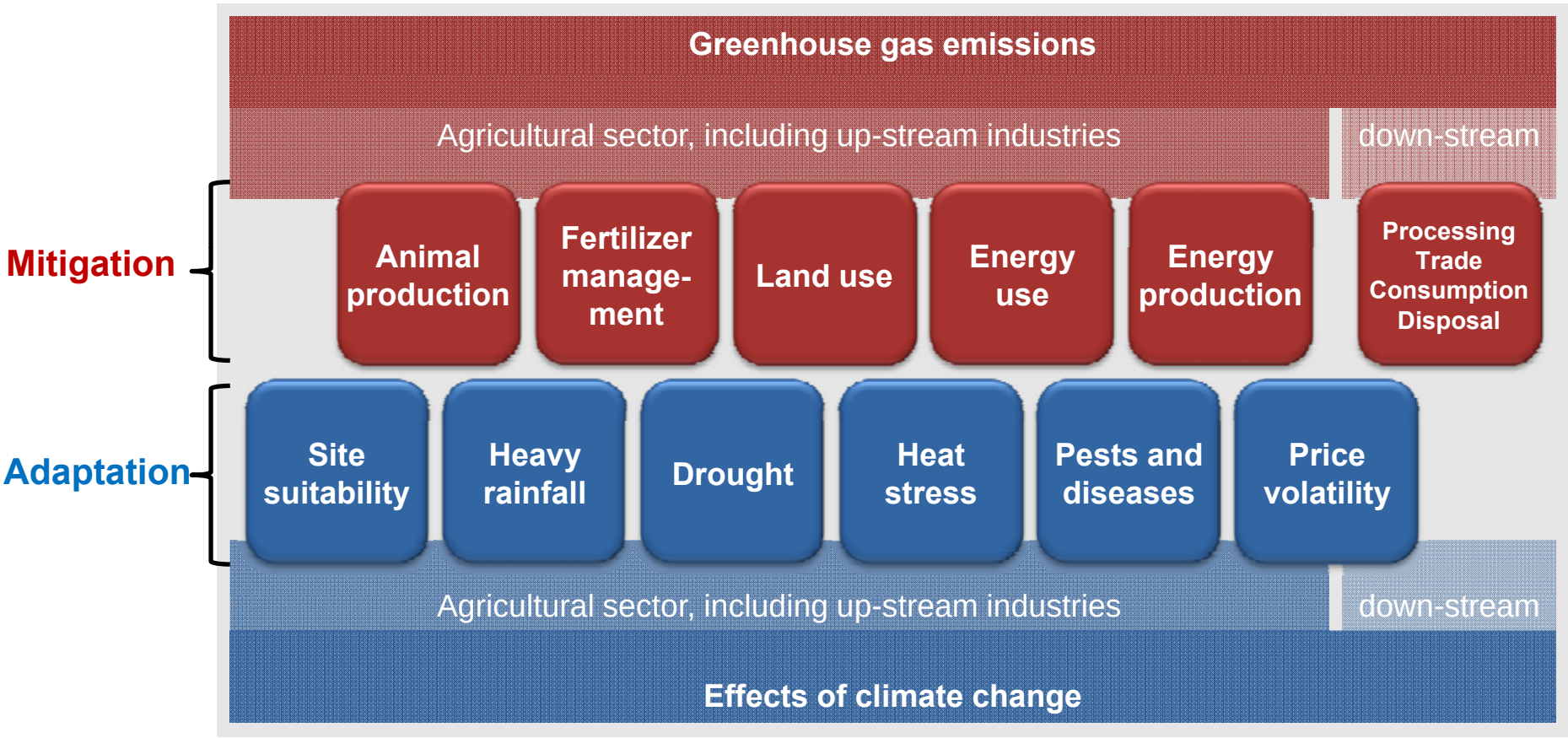
look forward, observate changes, measure progress

II.

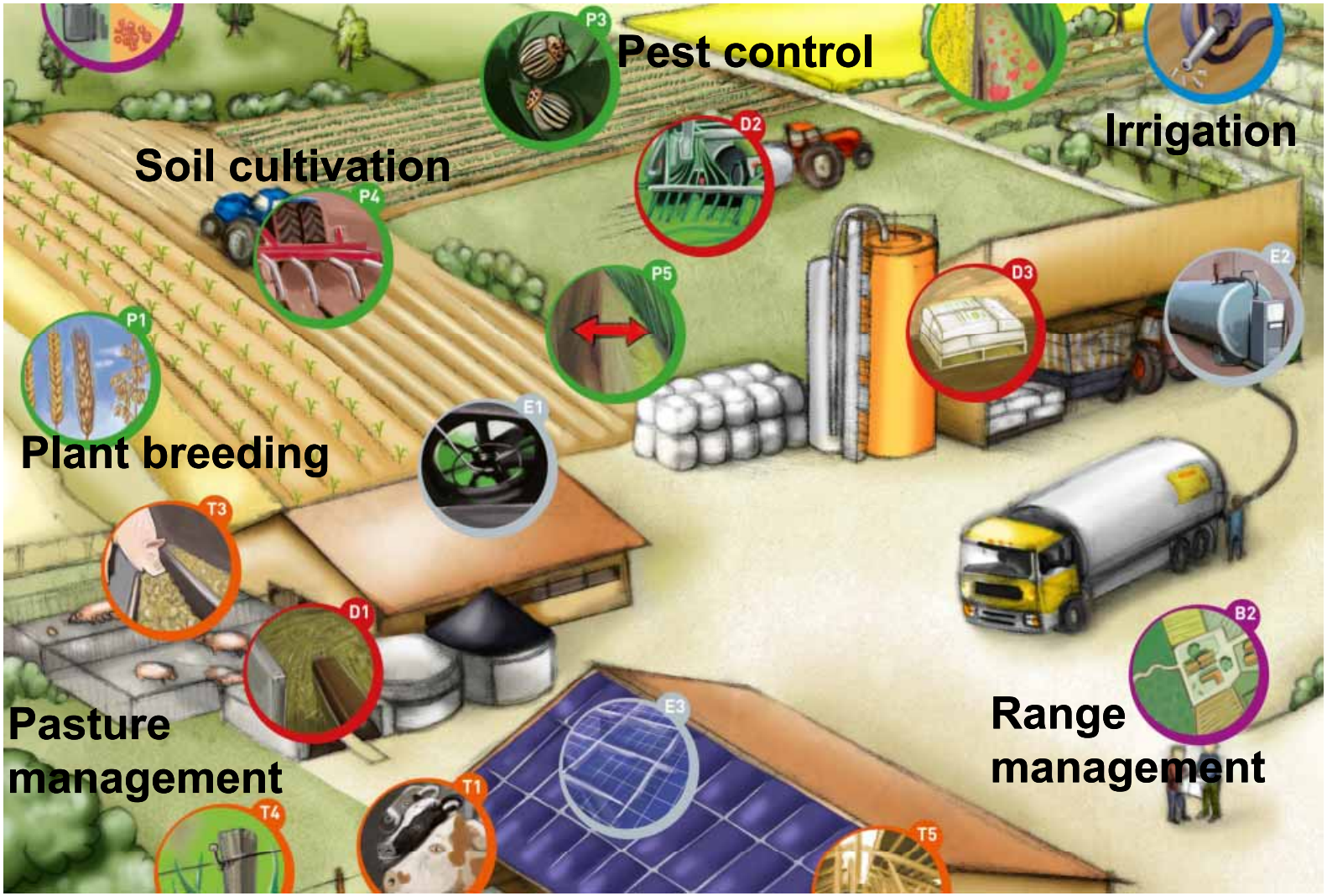
Long-term goal – horizon 2050



Priorities


Greenhouse gas emissions
Agricultural sector, including up-stream industries
down-stream
Mitigation
Animal production
Fertilizer manage-ment
Land use
Energy use
Energy production
Processing
Trade
Consumption
Disposal
Adaptation
Site suitability
Heavy rainfall
Drought
Heat stress
Pests and diseases
Price volatility
Agricultural sector, including up-stream industries
down-stream
Effects of climate change

Fields of action – examples



… in relation to water use

Plant breeding
Varieties with high drought resistance or water use efficiency

Management of water ressources
Balance of interests, coordination and regulation of withdrawals

Cultivation systems
Sowing dates, distance between rows, humus formation

Water storage
Infrastructures, multiple use

Irrigation
Water-efficient technologies, water tariffs

Soil cultivation
Reduced tillage

Forcasting
Early recognition of critical water availability

Spatial organisation
Optimisation according to local climate suitability

Increasing resilience

it is questionable whether «more of the same technical fittings» are the right approach

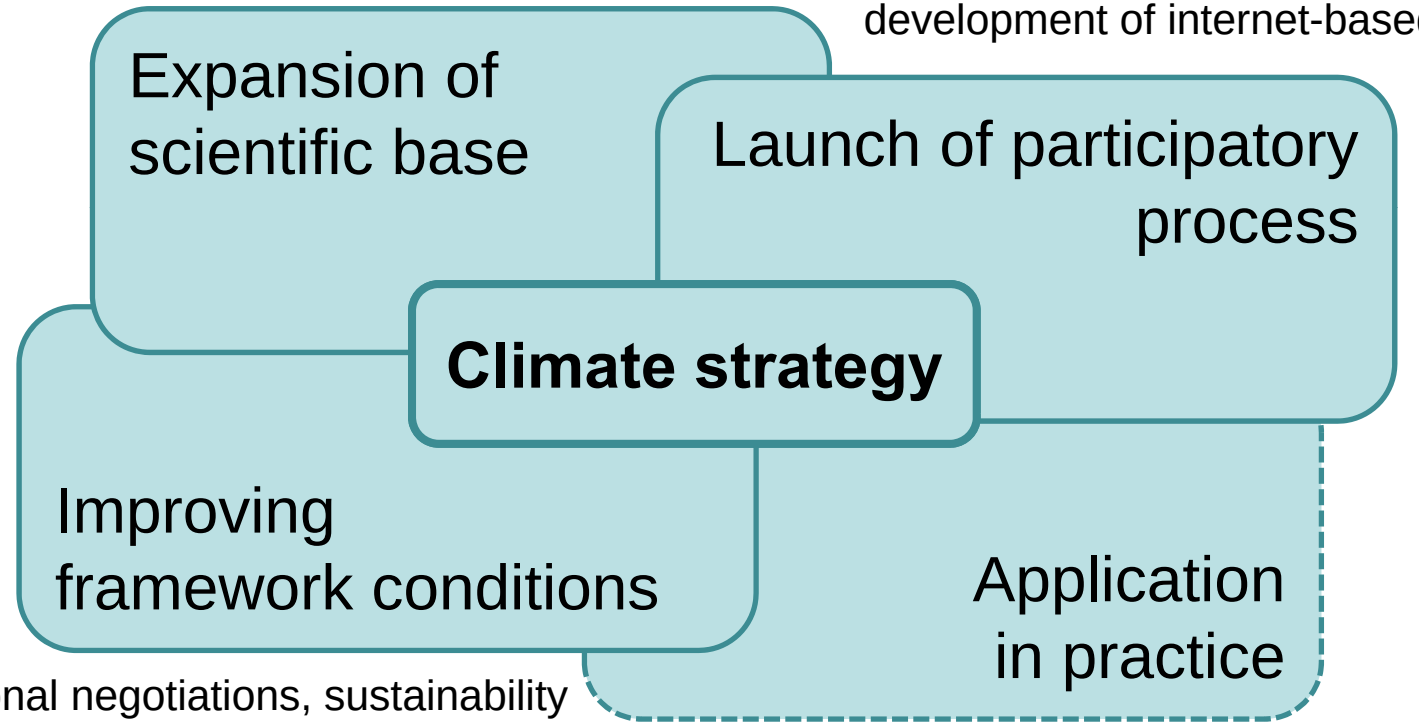
Impact	Responses
Dry periods	→ Irrigation → Soil management
Pests	→ Pesticide application → Integrated pest management
Weather conditions	→ Concentration of production in stables → Pasture management

Next steps

IV.

research projects, preparation of research programme

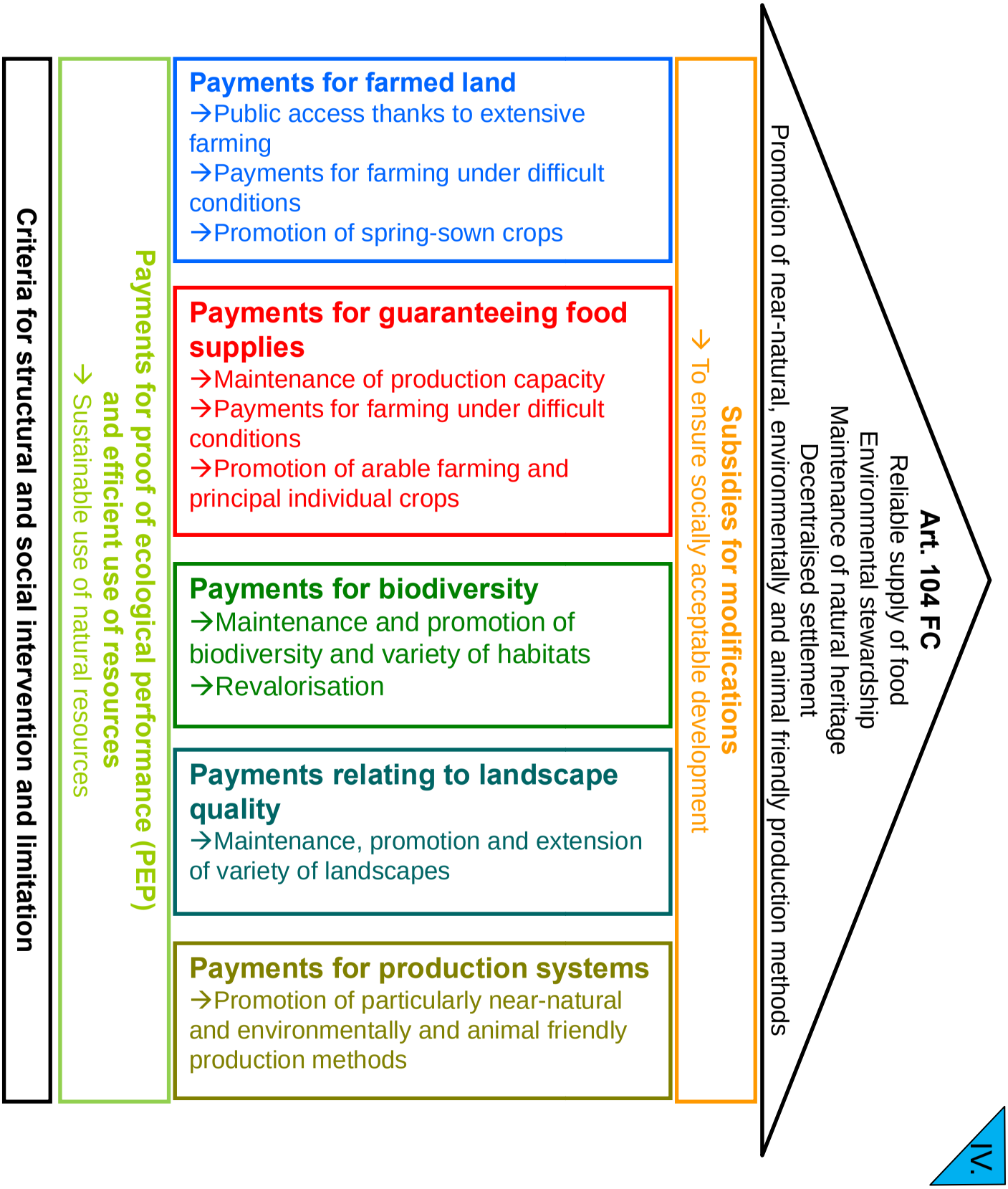
Kick-off event in autumn 2011, development of internet-based platform



international negotiations, sustainability standards, internalisation of external costs, agricultural policy

promotion of broader use of existing instruments, testing of new measures

New system of direct payments proposed for period 2014-2017



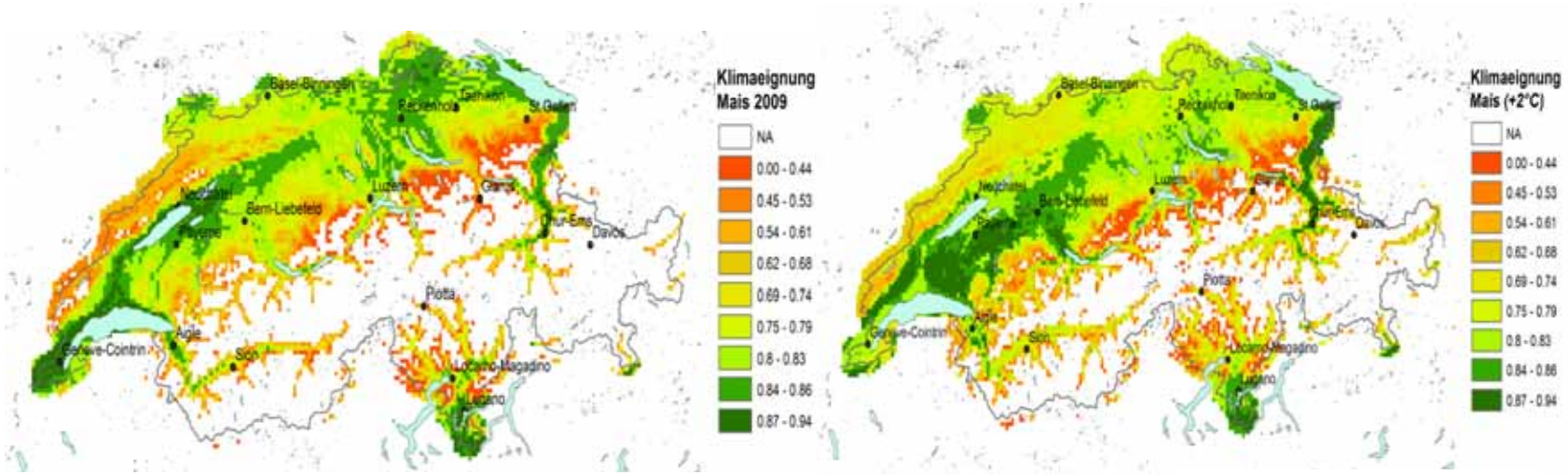
IV.

Agricultural policy: further work

- *Evaluation: are there any regulations that hinder adaptation and which specifications could foster adaptation?*
- *Payments for productions systems: elaboration of a climate-smart production system*
- *Cross-sectoral issues like water use regulation (integrated water basin management) and monitoring of pests and diseases: to treat within framework of national adaptation strategy and action plan*

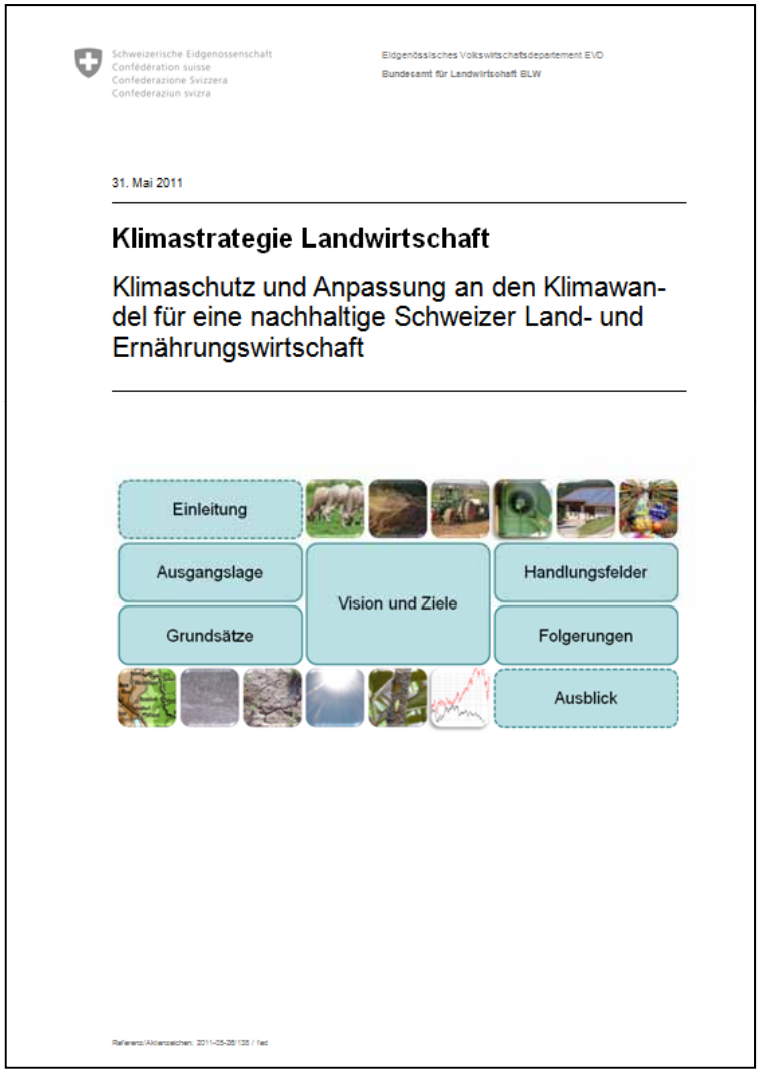
Tools (Research and extension)

- ✓ *Development of indicators for adaptation (impact and response)*
- ✓ *Predictions (water supply and demand, pests)*
- ✓ *Modelling the climate suitability of different crops*



Source: Agroscope ART

Weblink and contact



www.blw.admin.ch

> Themen

> Nachhaltigkeit

> Ökologie

> Klima

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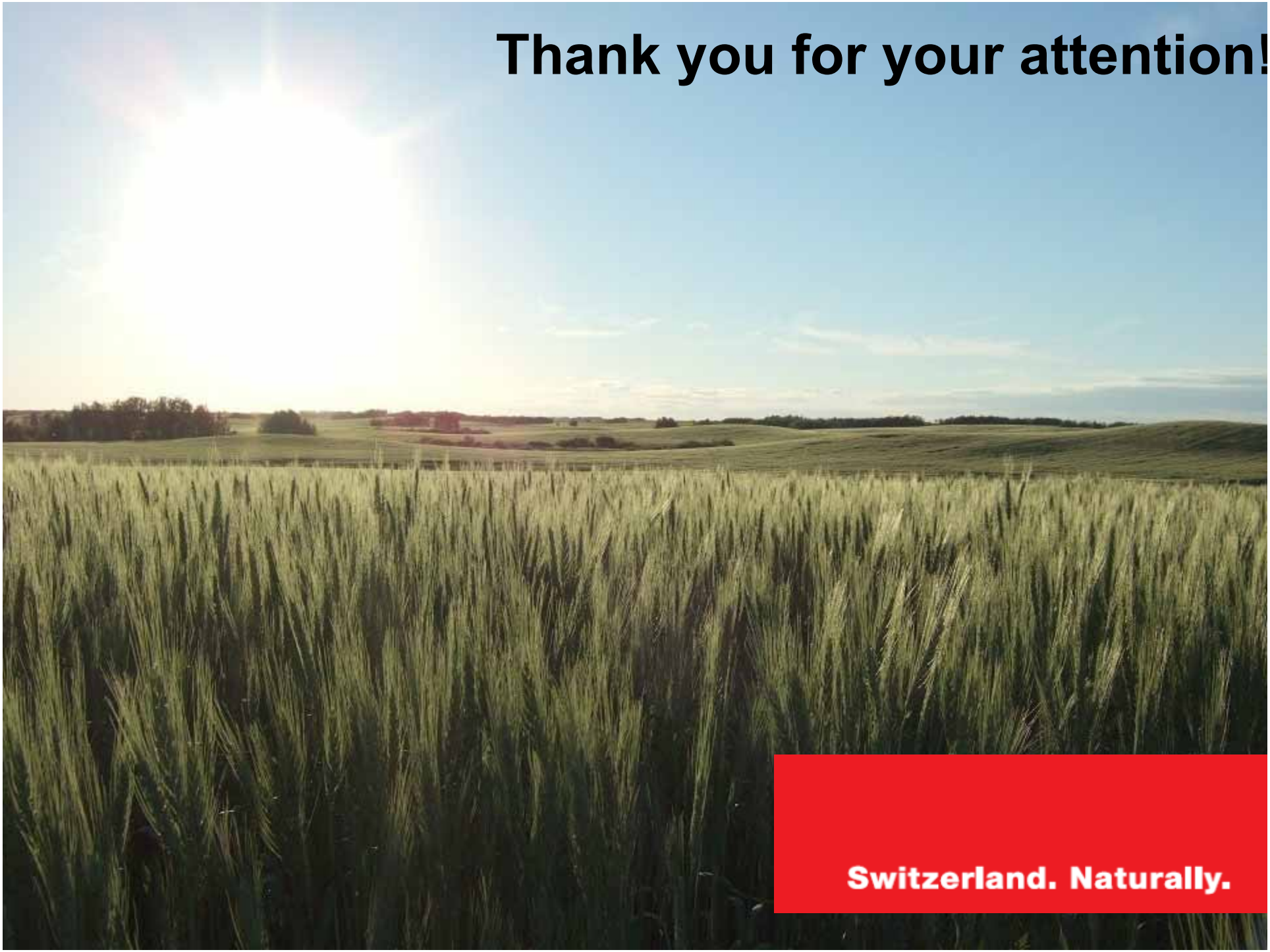
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