



# Mainstreaming at state level: integrating climate change adaptation into Swiss sectoral strategies

Thomas Probst, Federal Office for the Environment

Mainstreaming CC, E & DRR - How to walk the talk? September 12, 2017, University of Fribourg



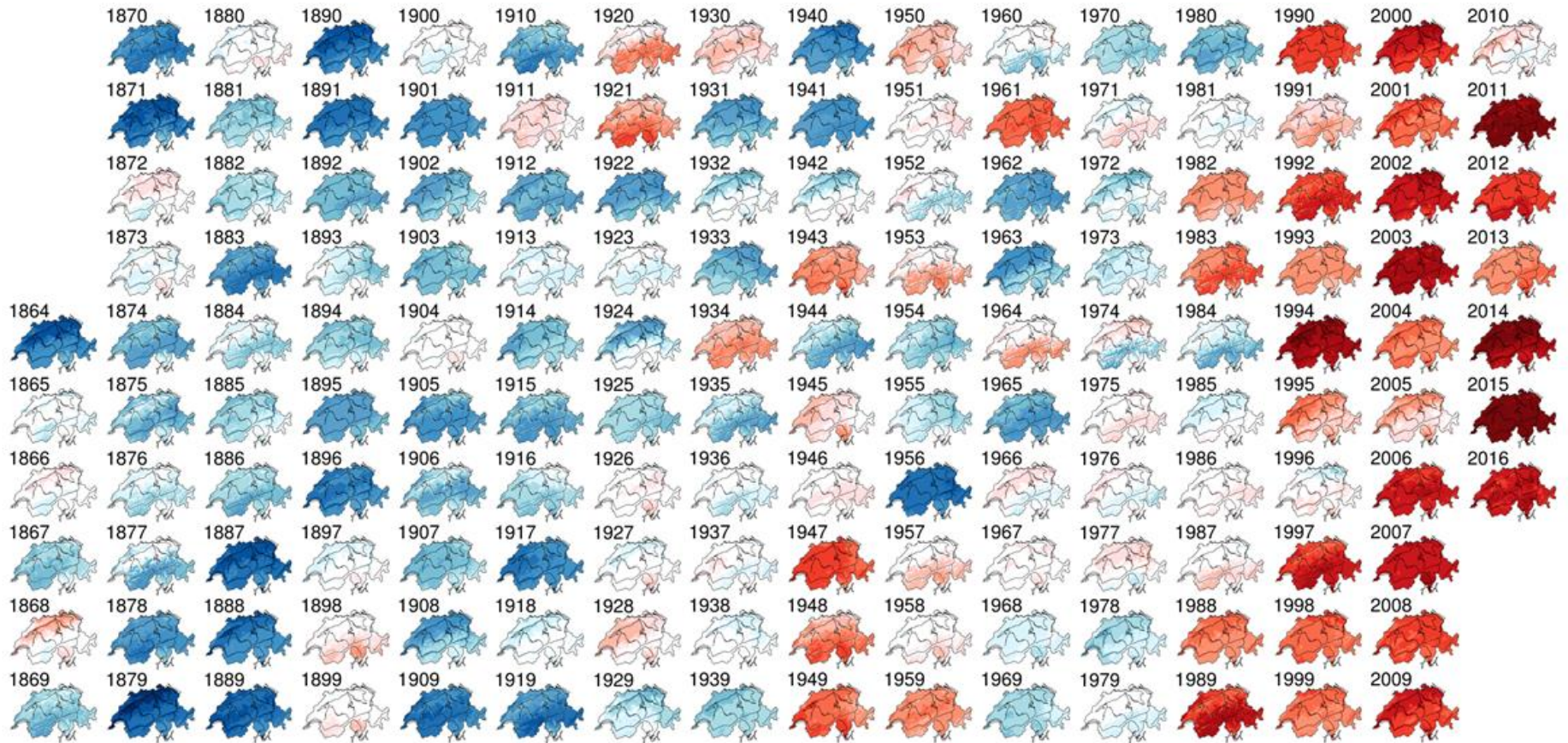
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1. Climate change and impacts in Switzerland
2. Swiss climate change adaptation strategy
3. Mainstreaming examples



# Climate change in Switzerland

## Mean temperature 1864-2016



Source: MeteoSchweiz



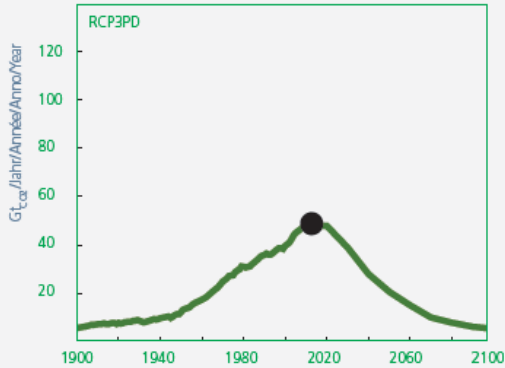
Deviation from average temperature 1961-1990 [°C]

Temperature increase of 1.9°C in last 50 years



# Climate scenarios: temperature

Tief  
Bas  
Basso  
Low



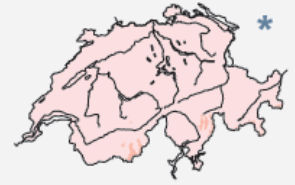
Winter



2035

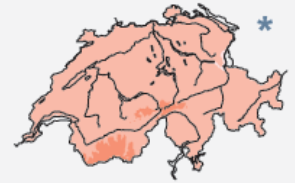
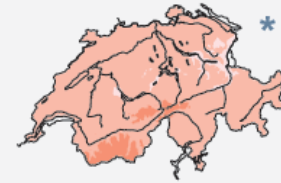


2060

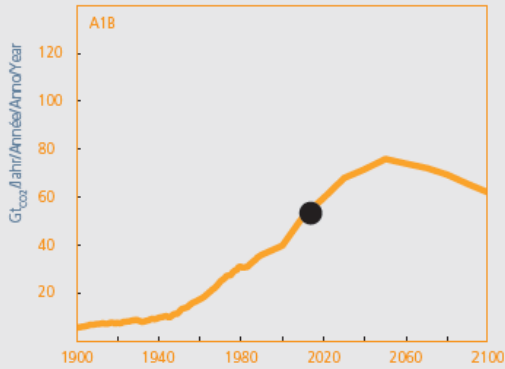


2085

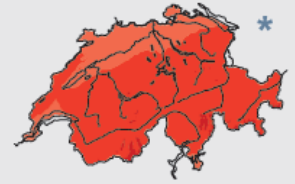
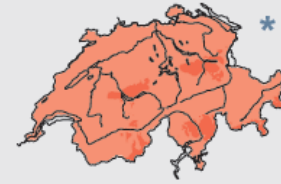
Summer



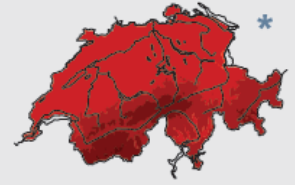
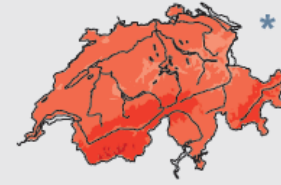
Mittel  
Moyen  
Medio  
Medium



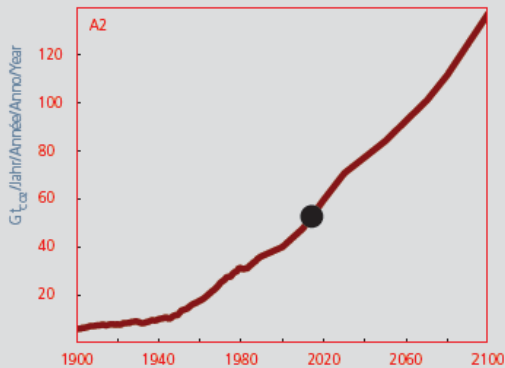
Winter



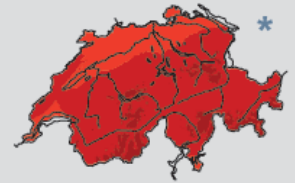
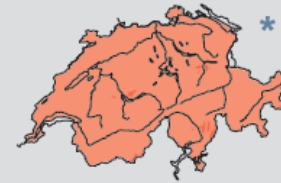
Summer



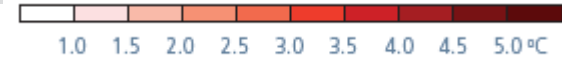
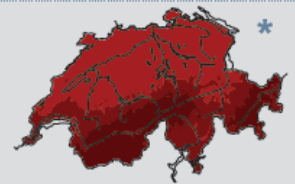
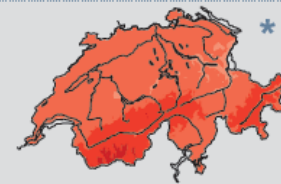
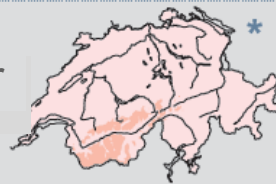
Hoch  
Haut  
Alto  
High



Winter



Summer





More heat waves

Less snow at low altitude





# Melting glaciers

Trift glacier (Canton Berne)



Source: BAFU 2014



# Slope instabilities

Bondo 2017 (Canton Grisons)







# Climate change adaptation: legal basis

## CO<sub>2</sub> Act (2013)

### Art. 8 Coordination of adaptation measures

- 1 The Federation **coordinates measures** to prevent and cope with damages to people and assets caused by increased greenhouse gas concentrations in the atmosphere.
- 2 It ensures that **basic information** needed for adaptation is **made available**.



# Interministerial Committee on Climate

Federal Office for

- Environment
- Energy
- Spatial Development
- Agriculture
- Public Health
- Animal Health
- Economy
- Civil Protection
- Meteorology
- Finance
- Transport
- Development





# National Adaptation Strategy



## Adaptation to climate change in Switzerland

Goals, challenges and fields of action

First part of the Federal Council's strategy  
Adopted on 2 March 2012



## Anpassung an den Klimawandel in der Schweiz

Aktionsplan 2014–2019

Zweiter Teil der Strategie des Bundesrates  
vom 9. April 2014



**Part 1 (2012)**  
Goals, challenges, fields of action

**Part 2 (2014)**  
Action plan 2014-2019



# National Adaptation Strategy



## 63 adaptation measures

**sectoral**

Water management	11 measures
Natural hazards prevention	7 measures
Agriculture	6 clusters
Forestry	4 measures
Energy	8 measures
Tourism	2 measures
Biodiversity management	7 measures
Health	4 measures
Spatial development	5 measures

**cross-sectoral**

Knowledge base	5 measures
Coordination	4 measures



# Mainstreaming climate change adaptation

Integration of climate change adaptation into ...

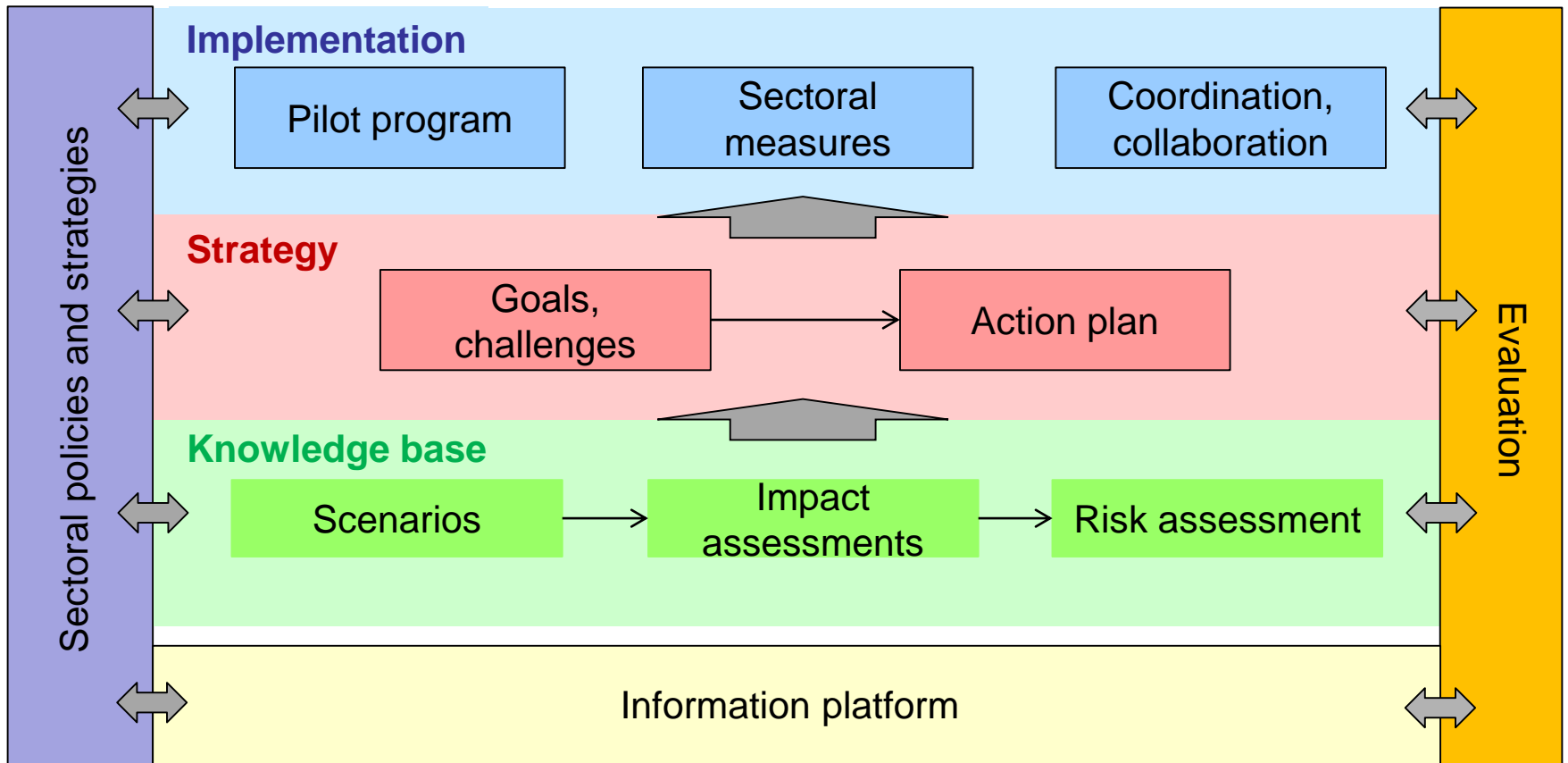
- related government policies in several sectors (IPCC AR 4 WG II, 2007)
- sustainable development planning (Rayner & Berkhout 2012)

As well as ...

- setting up institutional or organisational structures,
- or designing and implementing projects
- in a way that they 'automatically' take adaptation into account (CARE 2009)



# National adaptation portfolio





# Example: climate strategy agriculture

## Federal Office for Agriculture

Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Eidgenössisches Volkswirtschaftsdepartement EVD  
Bundesamt für Landwirtschaft BLW

31. Mai 2011

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### Klimastrategie Landwirtschaft

Klimaschutz und Anpassung an den Klimawandel für eine nachhaltige Schweizer Land- und Ernährungswirtschaft

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Einleitung		
Ausgangslage	Vision und Ziele	Handlungsfelder
Grundsätze		Folgerungen
	Ausblick	

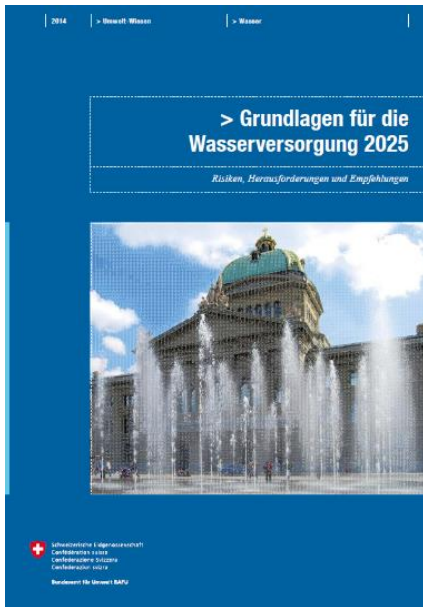
### Main objective:

Agriculture adapts to climate change in an anticipatory way, thus increasing agricultural production as well as services of public interest

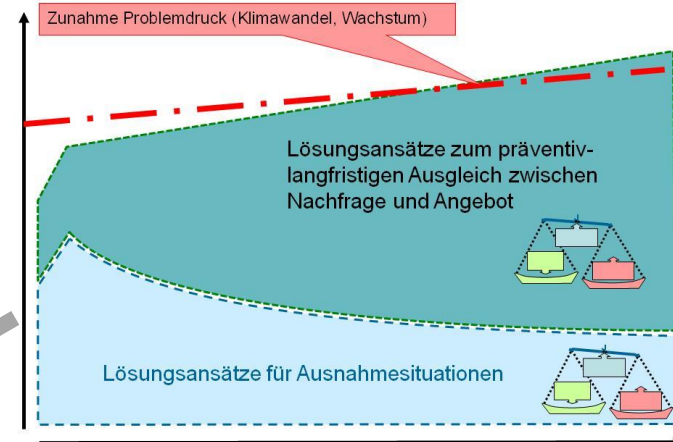
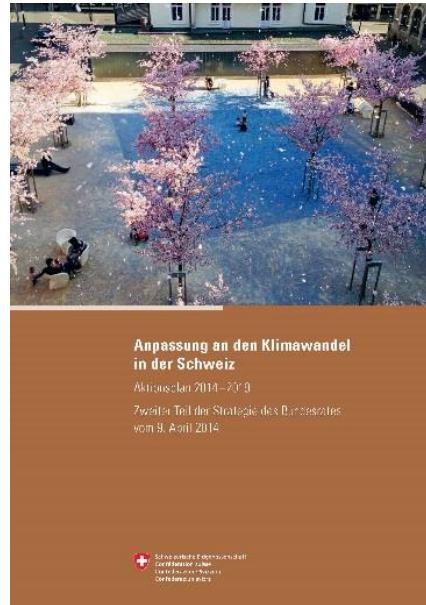
Elaboration coordinated with NAS process



# Example: water resource management



Report on water supply 2025



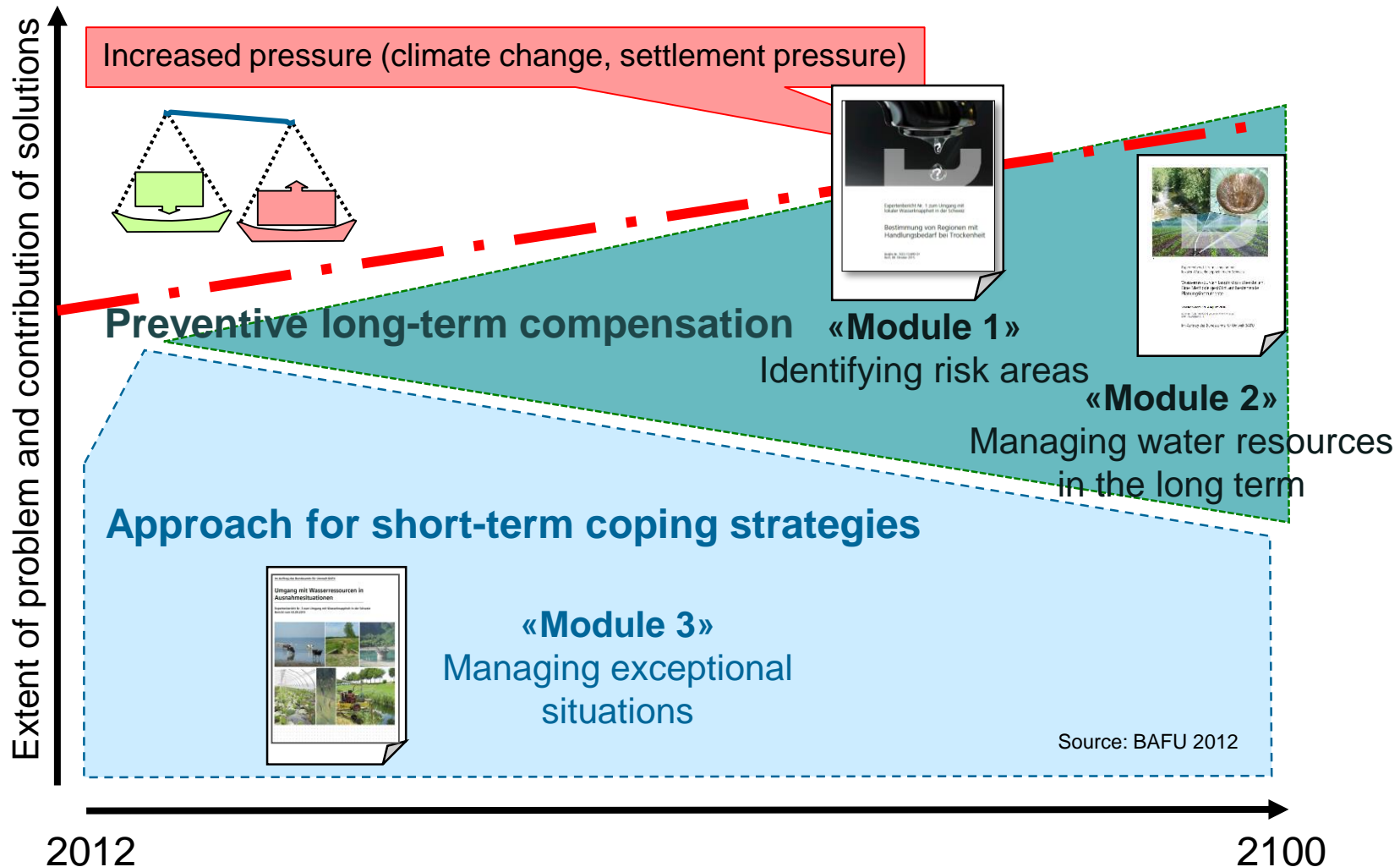
Federal Council's decision concerning postulate on managing local water shortages





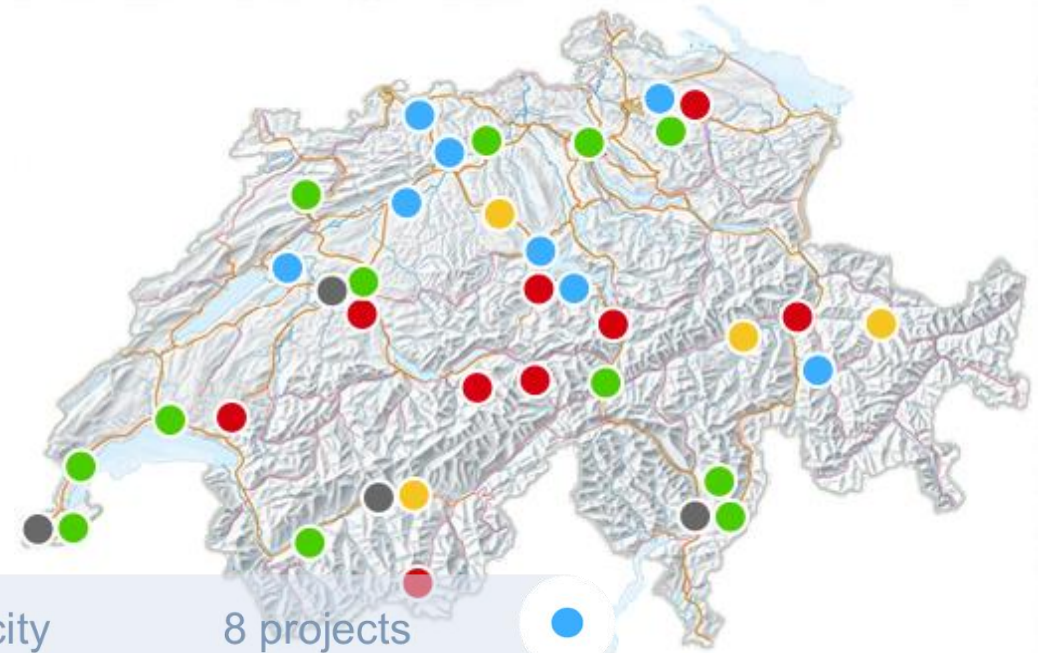


# Example: water resource management strategy





# Example: adaptation pilot programme



Management of local water scarcity

8 projects



Management of natural hazards

6 projects



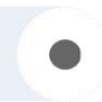
Ecosystem and land use changes

10 projects



Resilient urban development

3 projects



Knowledge transfer and governance

4 projects







# Pilot projects

## Rock glacier monitoring





## Pilot projects

Testing measures to control invasive species





# Pilot projects

## Toolbox for participatory adaptation processes





## Pilot projects

Climate proof urban planning, green and blue infrastructure





## Pilot projects

Climate proof urban planning, green and blue infrastructure







# Mainstreaming climate change adaptation

## Success factors

- Interdisciplinary approach
- Coordination in formal and informal ways
- Participation, cooperation, co-creation
- Intense exchange, face-to-face contact

## Barriers

- Uncertainties of scenarios and impact studies
- Long time horizons
- Unclear cost-benefit of adaptation measures
- Lacking willingness to act of key actors



# Mainstreaming climate change adaptation

... **needs governance** (GoApply project 2017):

Climate change adaptation governance is about the horizontal interplay of sectors and the vertical interplay of policy levels.

It requires

- mandatory and voluntary cooperation
- between actors,
- across sectors
- and across policy levels
- and is regionally specific and context-sensitive.

An aerial photograph of a courtyard in Bern, Switzerland, during cherry blossom season. The courtyard is paved and surrounded by several cherry blossom trees in full bloom, with pink petals falling all around. In the background, a long, dark building with a flat roof is visible. Several people are scattered throughout the courtyard: some are sitting on white, modern-style chairs, while others are walking or standing. The overall atmosphere is peaceful and scenic.

## Adaptation Pilot Programme: Final Conference 17 October 2017, Berne

### Adaptation to climate change

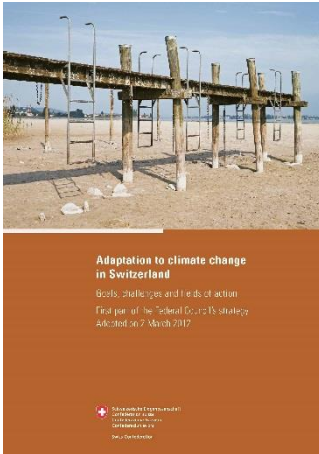
- ▶ Seize opportunities
- ▶ Minimise risks
- ▶ Increase adaptive capacity

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# National Adaptation Strategy

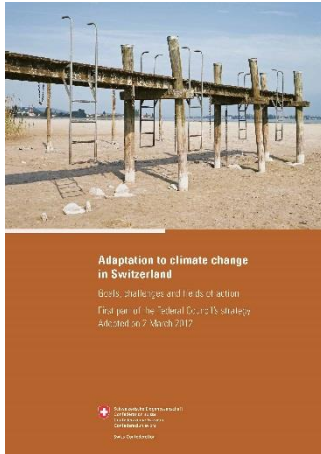


## Objectives

1. Seize the **opportunities** arising from climate change
2. Minimize the climate change **risks**
3. Improve the **adaptive capacity** of society, economy and environment



# National Adaptation Strategy



## Cross-sectoral challenges

1. Greater heat stress
2. Increasing levels of summer drought
3. Greater risk of flooding
4. Decreasing slope stability and more frequent mass movements
5. Rising snowline
6. Impaired water, soil and air quality
7. Change in habitats, species composition and landscapes
8. Spread of harmful organisms, diseases and invasive species



# Example: guideline for climate-proof urban planning



Saarbrücken



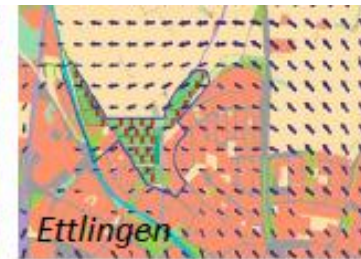
Sion



Marseille



Zürich



Ettlingen



Karlsruhe



Kopenhagen



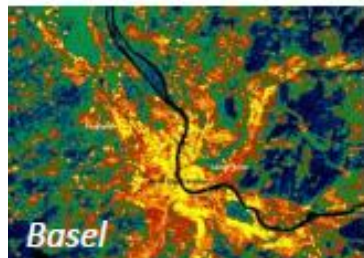
Solothurn



Lyon



Mannheim



Basel



Graz



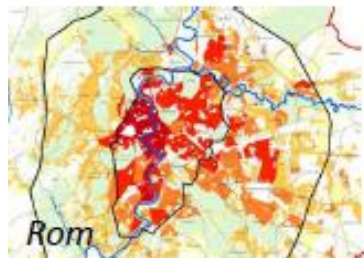
Genf



Montreal



Wien



Rom



Hamburg



Berlin



Bern



Köln