

Joining Forces in Europe: Agriculture, Food Security and Climate Change (FACCE JPI)

MTT Agrifood Research Finland

- Our research promotes consumer well-being, the competitiveness of agriculture and the food industry, the sustainable use of natural resources, the quality of the production and living environment, and the vitality of the countryside
- Our slogan: Vitality through Science
- Pirjo Peltonen-Sainio, a member of JPI FACCE/SAB



What is Joint Programming in Research

Key Challenges

Operational
Challenges

planning
European
major
themselves

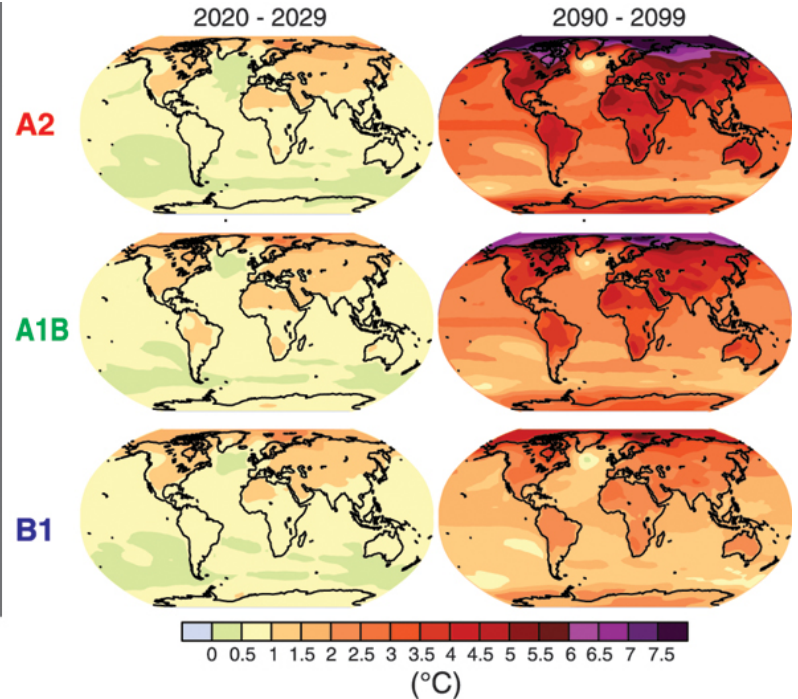
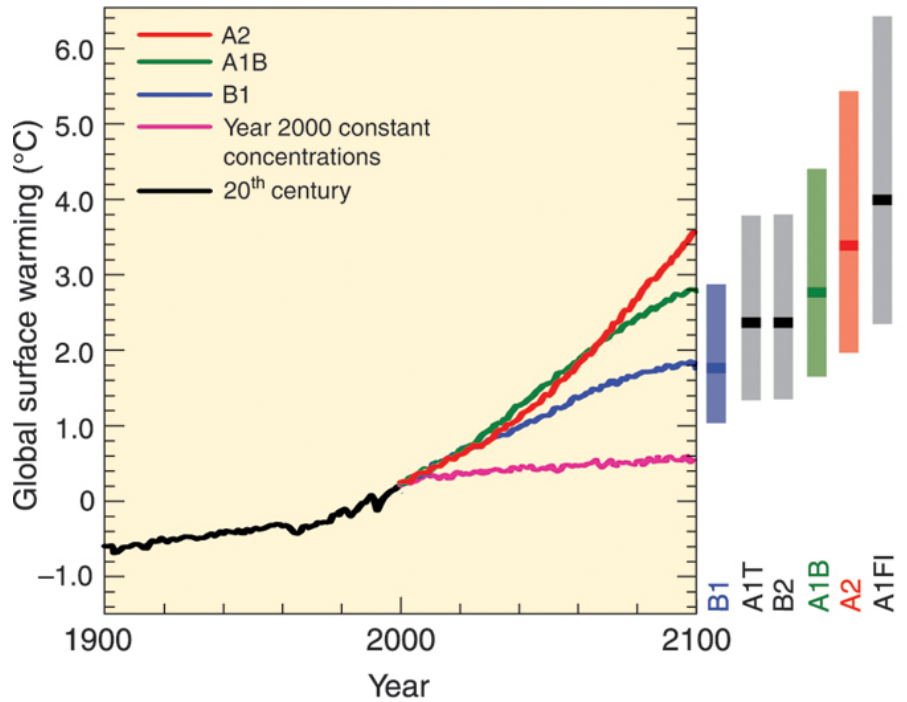


Joint Programming Initiative: Agriculture, Food Security and Climate Change



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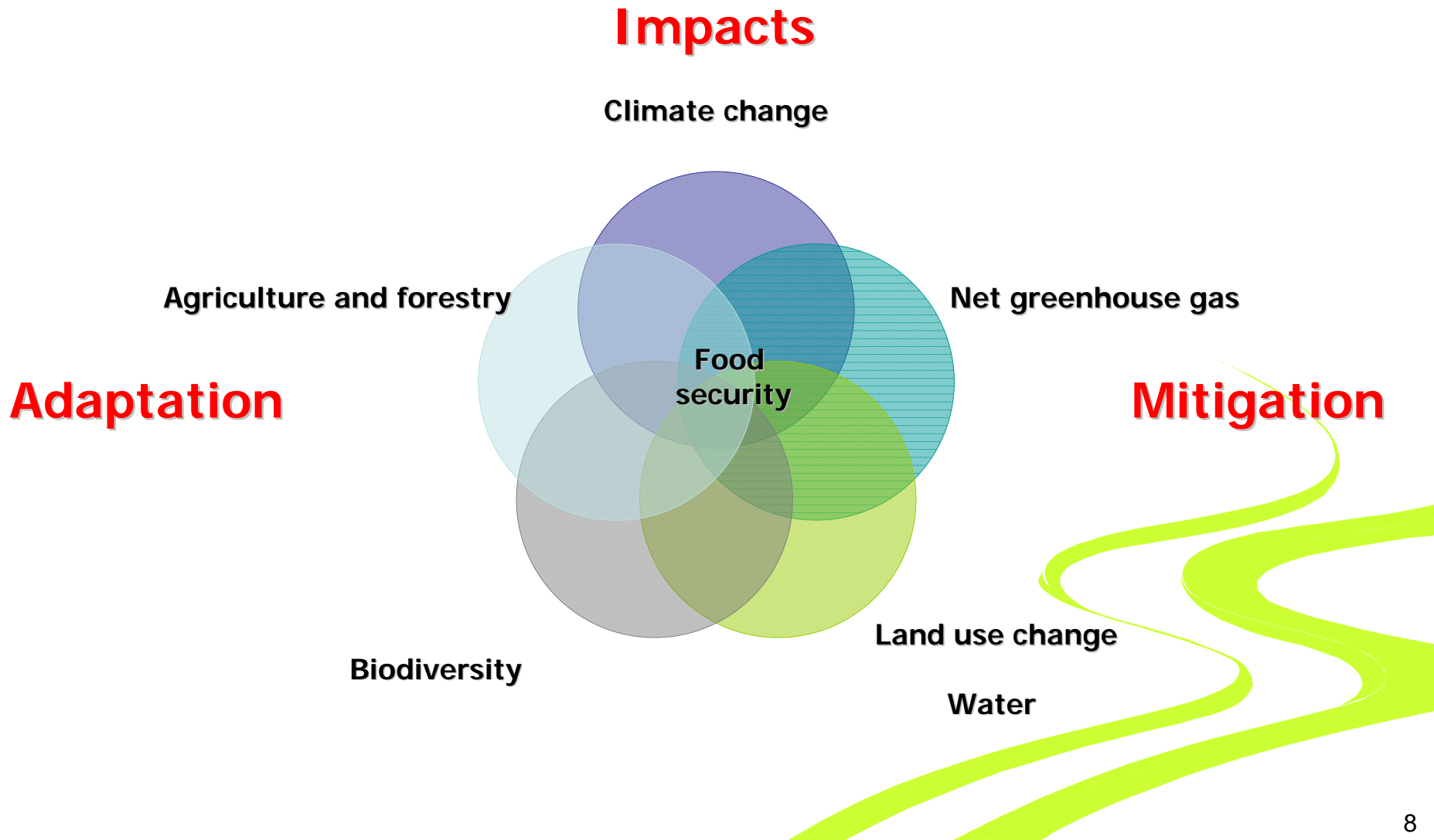
Climate Warming: IPCC



Puzzle of Interacting Changes



FACCE JPI: Theme issues around agriculture and climate change



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Solutions at
System and Policy
Level



Adaptation and Mitigation Options

- Lots of commonalities but also differences in impacts, adaptation requirements and mitigation options/realities across Europe



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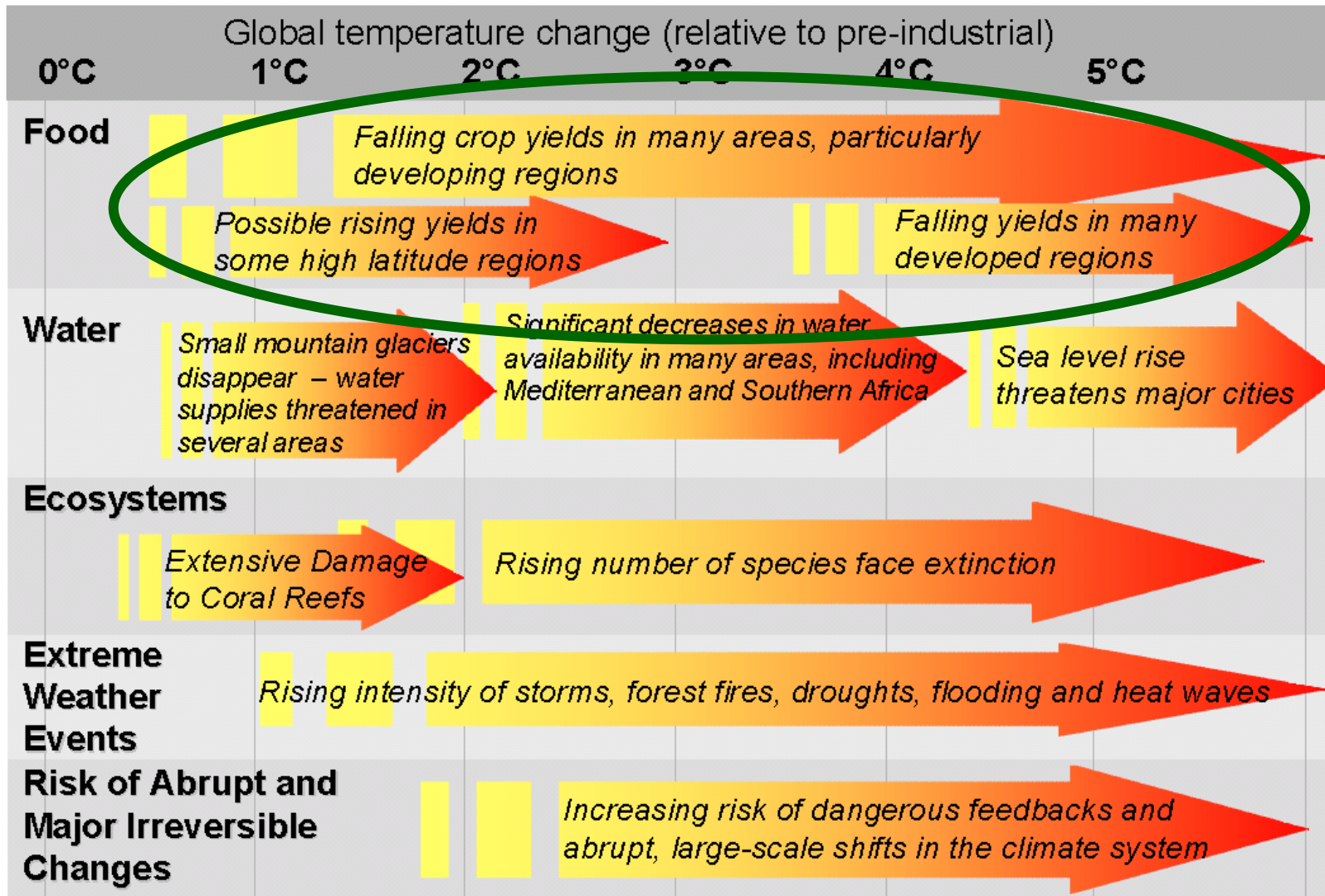
Adaptation and Mitigation Options

- Lots of **commonalities** but also **differences** in **impacts**, **adaptation requirements** and mitigation options/realities across Europe



Need for an integrated approach

Projected Impacts of Climate Change



60° north

NATURAL RESOURCES MAGAZINE
FROM FINLAND 2_2009

Likely impacts of climate change on farming in Finland and adaptation needs:

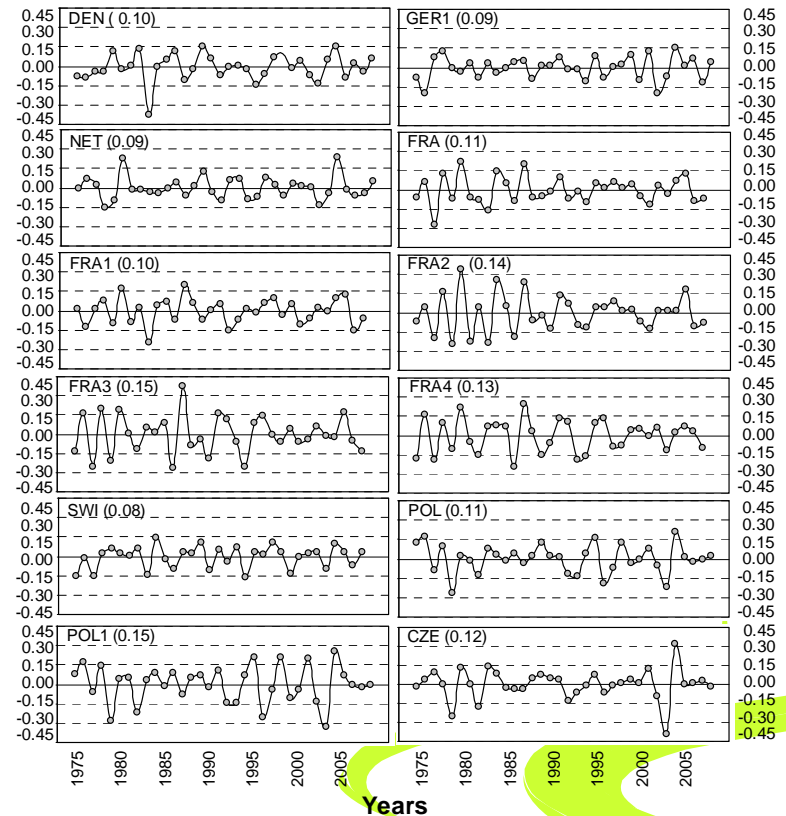
- **Longer growing seasons, especially in spring**
- **Higher biomass productivity and crop yields**
- **More problematic droughts; need for crop watering systems**
- **Need to switch to new crop varieties within 15-25 years**
- **Increased need to combat plant pests, including new pests**
- **Risks associated with monocultures more common; though also opportunities to diversify farming**



Joint European Exercise



- Any coincidence of yield variations with weather variables for major field crops: commonalities across Europe (14 countries, 25 regions)?
- Coincidence of variation in yield and weather variables was especially systematic for potato
- Elevated temperatures had harmful effects on yield of grain and seed crops
- So did high precipitation during grain-filling in grain and seed crops and at flowering in oilseed rape
- COST 734 CLIVARGI collaboration



Peltonen-Sainio, P., Jauhiainen, L., Trnka, M., Olesen, J.E., Calanca, P.L., Eckersten, H., Eitzinger, J., Gobin, A., Kersebaum, C., Kozyra, J., Kumar, S., Marta, A.D., Micale, F., Schaap, B., Seguin, B., Skjelvåg, A.O. & Orlandini, S. 2010. Coincidence of variation in yield and climate in Europe. *Agriculture, Ecosystems and Environment*, in press.

Objectives: JPI FACCE

- Integrate adaptation, mitigation and food security in agriculture, forestry and land use sector
- Identify, promote and achieve co-benefits in terms of reducing emissions and increasing resilience of farming, forestry and biodiversity to climate change

Joint Programming: How?

A three stage process:

- 1. Development of a Common Vision** with long term objectives
How cooperation and coordination of research at EU level can address the combined challenges of food security against the continuous threat represented by various scenarios of climate change, global population growth and food / non-food demand
- 2. Translate it into a Strategic Research Agenda (SRA)**
Establishing medium to long-term research needs and objectives in the area of food security through adaptation to and mitigation of climate change in agriculture
- 3. SRA implementation**
identifying and exchanging information; joint foresight and technology assessment; joint research activities/modalities; infrastructure; EU/global aspects; public-private partnerships; needs of consumers and industry

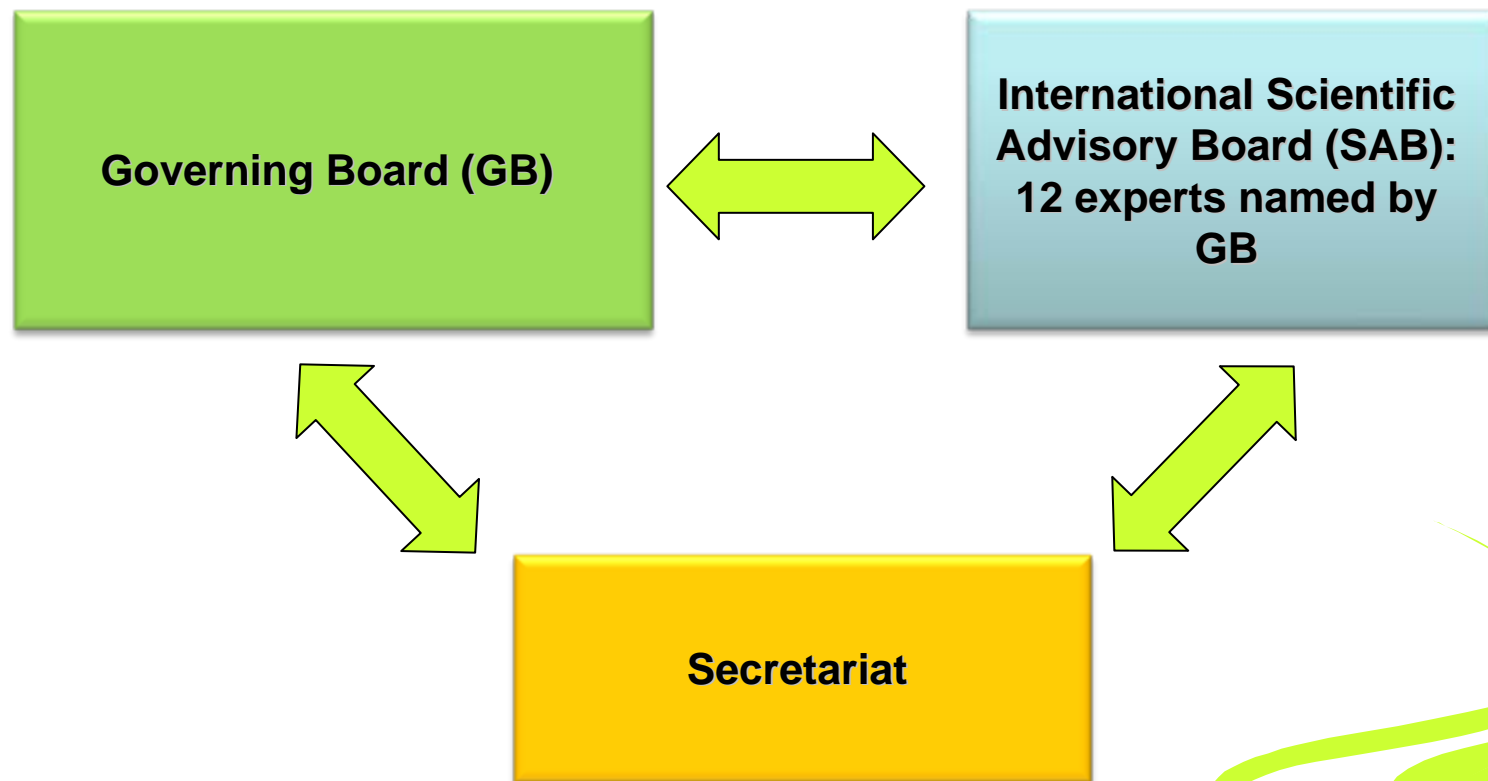
State of Play

20 Participants in this JPI

- Austria
- Czech Republic
- Cyprus
- Denmark
- Estonia
- Finland
- France
- Germany
- Hungary
- Ireland
- Israel
- Italy
- The Netherlands
- Norway
- Romania
- Slovakia
- Spain
- Sweden
- Turkey
- UK



Interim Management of the JPI

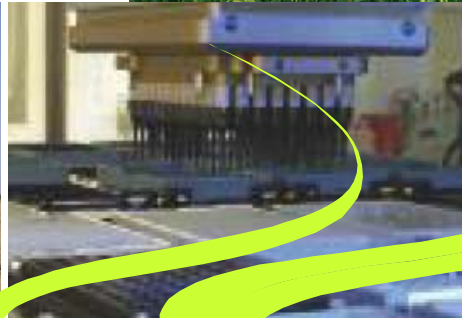
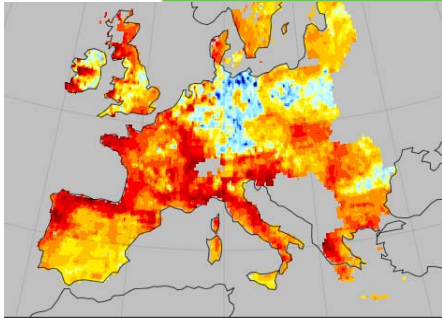
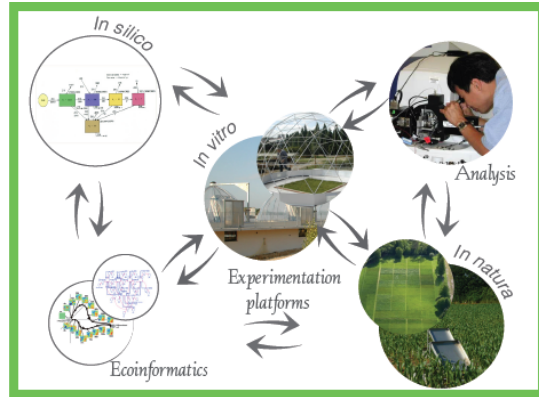


Possibility to add working groups, implementation groups

Scientific Advisory Board

- Kenneth Cassman (US)
- Elias Fereres (ES)
- Stephen P. Long (US)
- Frits Mohren (NL)
- Bernd Müller-Röber (DE)
- Pirjo Peltonen-Sainio (FI)
- John R. Porter (DK)
- Johan Rockström (SE)
- Thomas Rosswall (CGIAR)
- Jean-François Soussana (FR)
- Henning Steinfeld (FAO)
- Joachim von Braun (DE)

The members of the SAB shall serve in their individual capacity as independent experts



Thank you!

For further information, contact SecretariatJPI@paris.inra.fr

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