Joint Programing in Research Agriculture, Food Security and Climate Change

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Scientific Advisory Board Chair

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Agriculture Food Security and Climate Change

What is Joint Programming in Research

Key Challenges :

- Science and Technology must **contribute** to solving major societal challenges
- **Benefits not optimised** due to compartmentalisation of public research funding in the EU
- **National research programmes** have their place… but are **not equipped** to tackle major European societal problems by themselves

What is Joint Programming in Research

Response to challenges :

- Commission Communication on Joint Programming in research adopted by Council Conclusions (2008)
- Member States engaging
  - Voluntary and on the basis of variable geometry
  - …based on a common vision on how to address major societal challenges
  - …in the definition, development and implementation of common strategic research agendas

FACCE-JPI

21 countries participating

Austria
Belgium
Czech Republic
Denmark
Estonia
Finland
France
Germany
Ireland
Israel
Italy
The Netherlands
Norway
Poland
Romania
Spain
Sweden
Switzerland
Turkey
UK
Cyprus

European Commission
SCAR (observers)

FACCEJPI Agriculture Food Security and Climate Change
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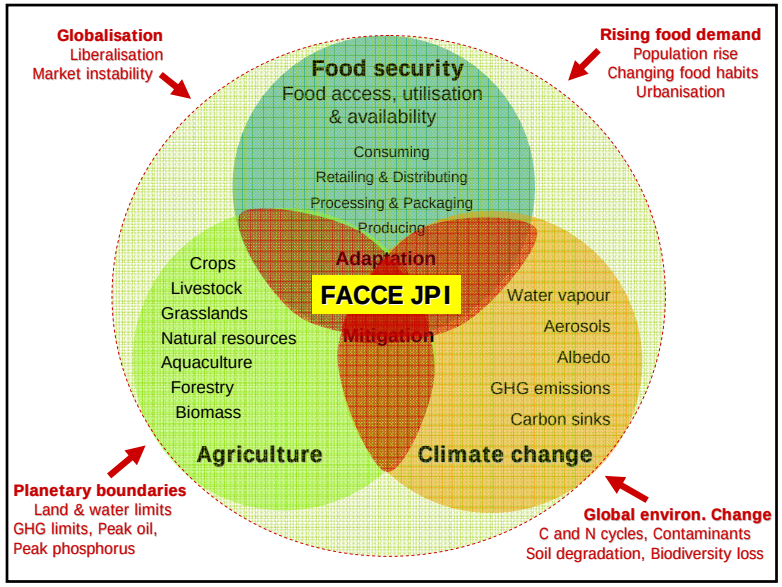
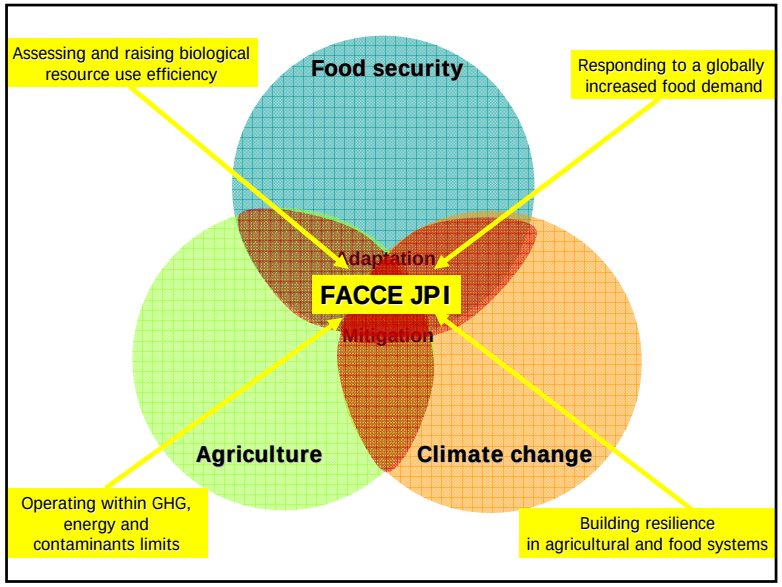
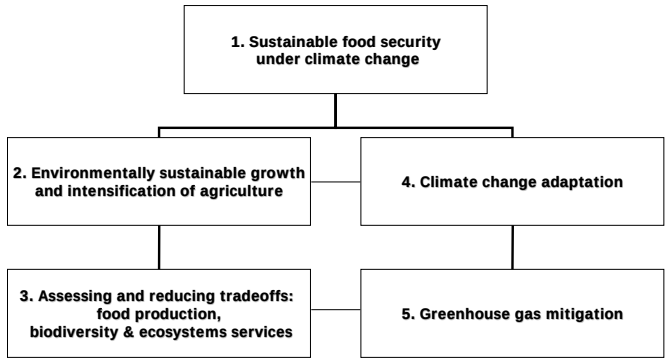
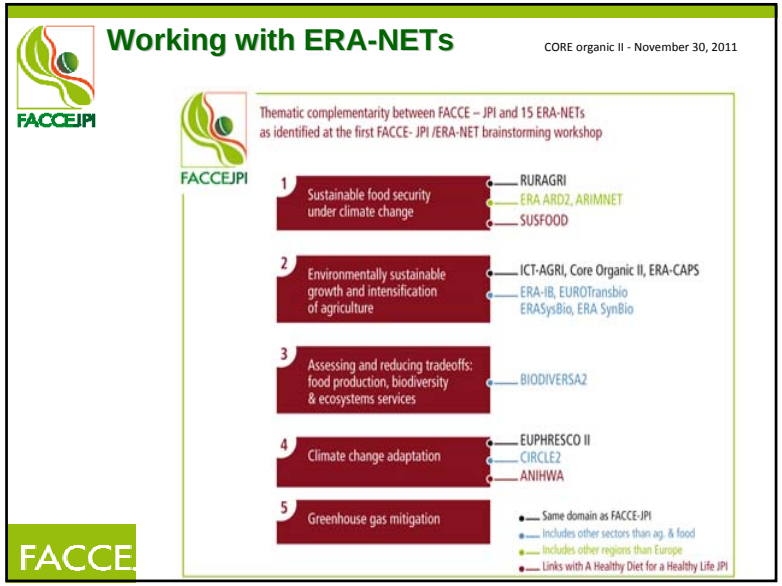
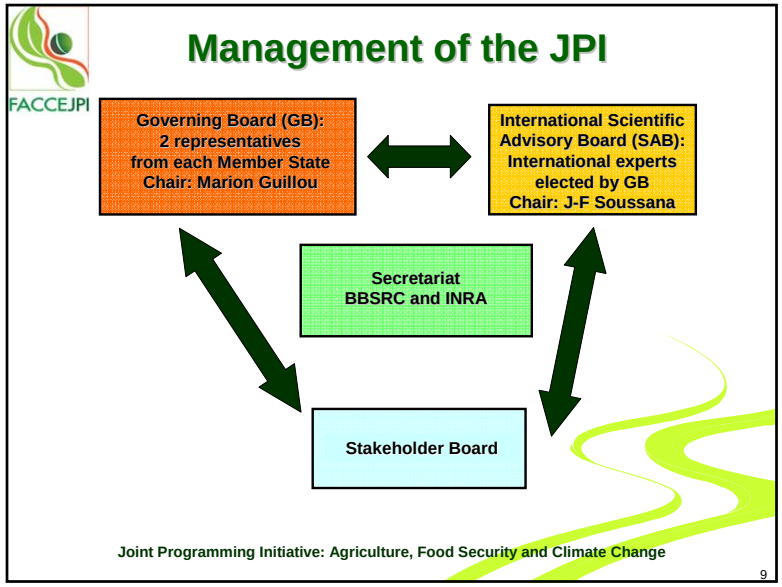


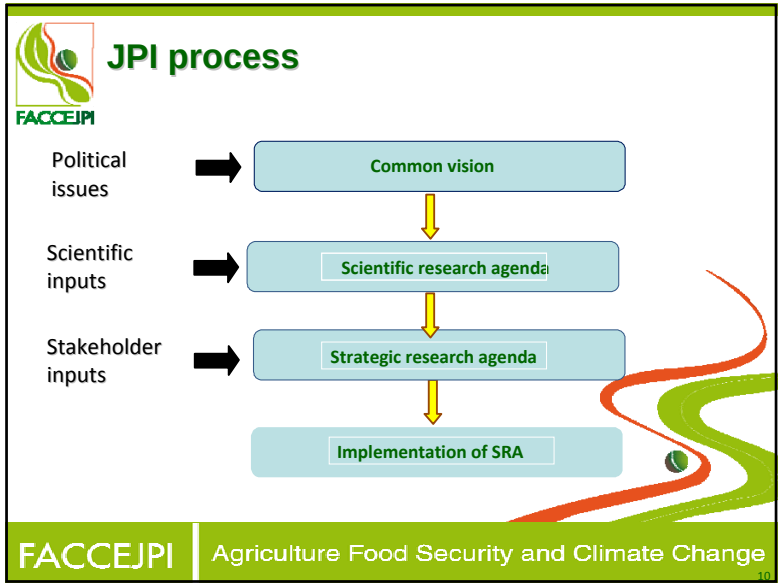


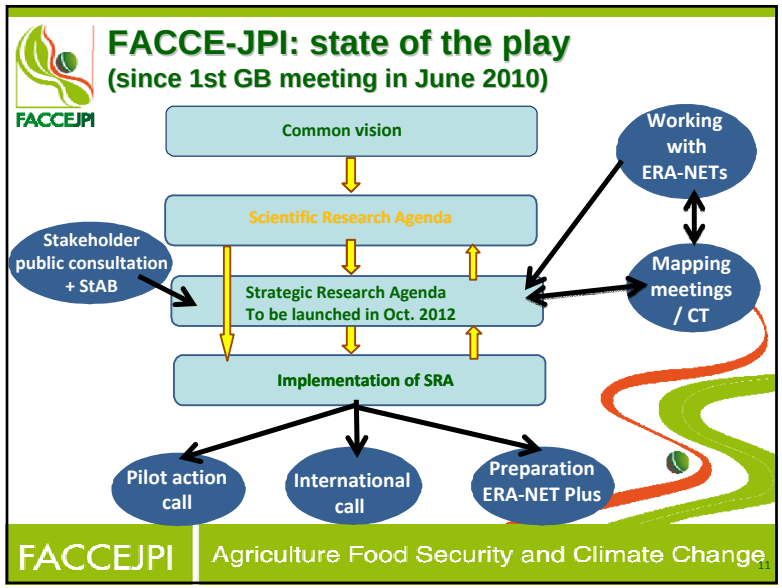
Core research themes











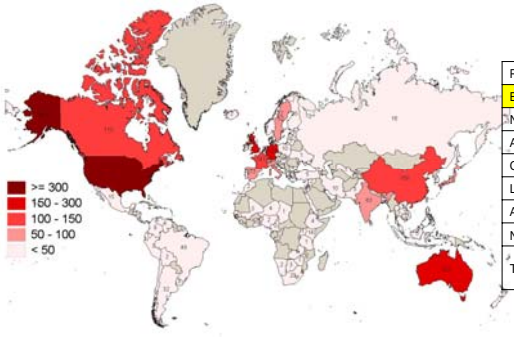
FACCE Knowledge Hub

- Provide ***critical mass*** …
- Make ***common research efforts*** …
- .. ***perform training and capacity building*** within the thematic area
- Facilitate ***data access and data sharing*** …
- Enhance ***communication and visibility*** ...
- Deliver ***knowledge for policy making*** ...

Proposed pilot action under CT1
Climate change risk assessment

- Detailed **climate change risk assessment** for European agriculture: how will climate variability and change affect regional farming systems in near and far future?
- What are the risks and the opportunities for European agriculture?
- In collaboration with the international project AgMIP, an ensemble of crop and livestock **models will be benchmarked, inter-compared and coupled to both climatic and economic models.**

European leadership



Regions	Nb. cit.	Fréq.
Europe	824	46,2%
N. America	691	38,8%
Asia	298	16,7%
Oceania	220	12,4%
Latin America	117	6,6%
Africa	76	4,3%
Near and mid East	31	1,7%
TOTAL	1782	

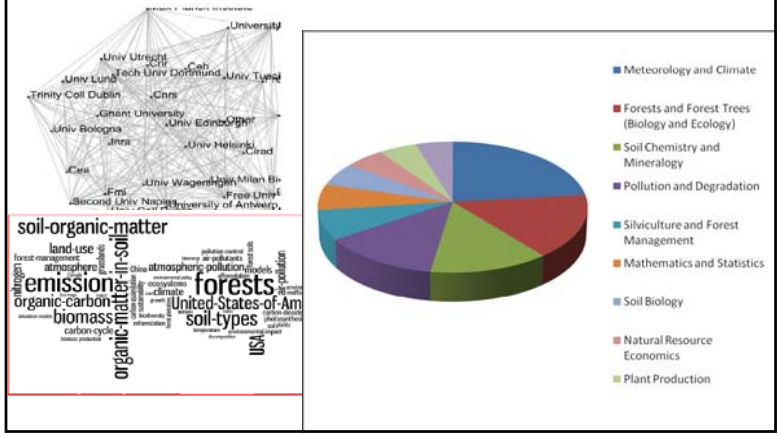
Climate change risk assessment
MACSUR - Knowledge Hub

- 15 M€ committed by 17 countries (ca. 8 M€ of new money)
- International evaluation
- Project funded in July 2012
- Kick-off meeting October 2012

Core theme 5: Mitigation of greenhouse gases

- Contribute to direct reductions of GHG emissions through carbon sequestration, fossil fuel energy substitution and mitigation of N_2O and CH_4 emissions by the agriculture and forestry sector, while reducing GHG emissions associated with indirect land use change;
- Develop monitoring and verification methodologies of field, animal and farm scale GHG budgets , including, or not, indirect land use and cradle to grave life cycle;
- Develop verifiable GHG mitigation and carbon sequestration measures in farming systems;
- Substitute fossil-fuel energy through increased use of biomass and other renewable energies in the agriculture sector.

Bibliometrics on GHG mitigation

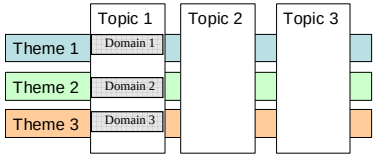


Multi-country call on mitigation

Theme 1: Improved methodologies for quantifying GHG emissions and removals in agricultural systems and in national inventories.

Theme 2: Study of mitigation options at the field, animal and manure management scales with quantification of their technical potential for a range of agricultural systems and regions.

Theme 3: Quantification of the costs and benefits and of the impacts for food production and for the environment of GHG mitigation options.



Topic 1: Greenhouse gas emissions in the agriculture sector arising from agricultural soils including crops and grasslands, domestic livestock and waste management systems.

Topic 2: Greenhouse gas removals, e.g. through carbon sequestration in agricultural soils.

Topic 3: Lifecycle of agricultural and food products GHG mitigation studies taking account other sectors such as industry, transport, energy and land use change add to the net greenhouse gas emissions.

Core theme 4: Adaptation to climate change

- Adaptation to climate change and increased climatic variability throughout the whole food chain, including market repercussions;
- Tailoring adapted regional production systems under climate change;
- Adapting seeds and breeds to new combinations of environment and management: e.g. abiotic stresses, elevated CO_2;
- Monitoring pests and diseases and developing climate informed crop and animal protection;
- Adaptive water management in agriculture, watershed management, flood management, irrigation technologies, water re-use;
- Adapting food processing and retailing, markets and institutions to increased climatic variability and climate change.

Climate smart agriculture: adaptation of agricultural systems in Europe - ERANET+

- Climate smart agriculture has been defined as agriculture that sustainably increases productivity and resilience (adaptation), reduces greenhouse gases (mitigation), and enhances food security and development (FAO, 2010).
- Production systems should become more resilient, i.e. more capable of performing well in the face of disruptive climatic events.
- Under more severe climate changes planned adaptation is needed.
- More productive and resilient systems may also lead to beneficial side effects in terms of carbon sequestration and reduction of greenhouse gas emissions per unit product and area.

Thank you!

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

Joint Programming Initiative: Agriculture, Food Security and Climate Change

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