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PreSto GMO ERA-Net

Coordination and Support Action
PreSto GMO ERA-Net:
Preparatory steps towards a GMO research ERA-Net

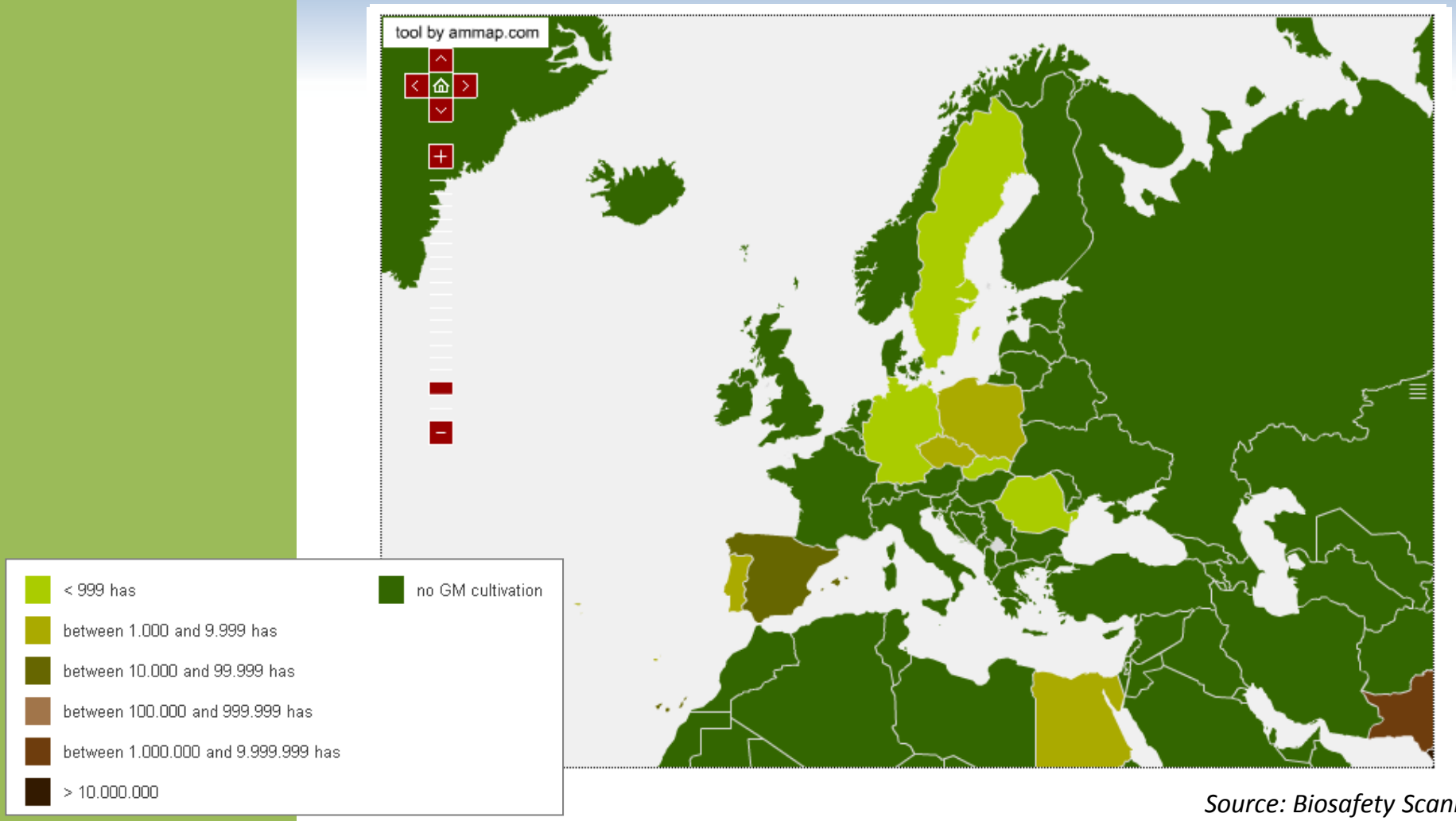
SEVENTH FRAMEWORK PROGRAMME

4th AIEAA Conference
"Innovation, productivity and growth: towards sustainable agri-food production"
11-12 June, 2015
Ancona, Italy

KNOWLEDGE GAPS AND RESEARCH NEEDS IN THE EVALUATION OF THE EFFECTS OF GMOS

Davide Menozzi*, Kaloyan Kostov, Giovanni Sogari, Salvatore Arpaia, Daniela Moyankova and Cristina Mora
University of Parma, Department of Food Science

GMO CULTIVATION WORLDWIDE



Source: Biosafety Scanner

Overview

Map research activities

Research gaps and needs

- This paper aims to:
  - map the existing research activities on the effects of GMOs in Europe
  - identify knowledge gaps and future research needs on the effects of GMOs
- Three domains of investigation:
  - **human and animal health**
  - **environment**
  - **socio-economics**

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Method: Map research activities

Map research activities

- Mapping of existing research activities:
  - SCAR-Collaborative Working Group "GMO Risk Research" until 2010, updated with newly collected data (national focal points)
  - BiosafeRes: a worldwide database of past and current research projects in GMO biosafety
  - European Commission's compendium summarizing the results of 50 GMO research projects, co-funded by the EC and conducted in the period 2001-2010

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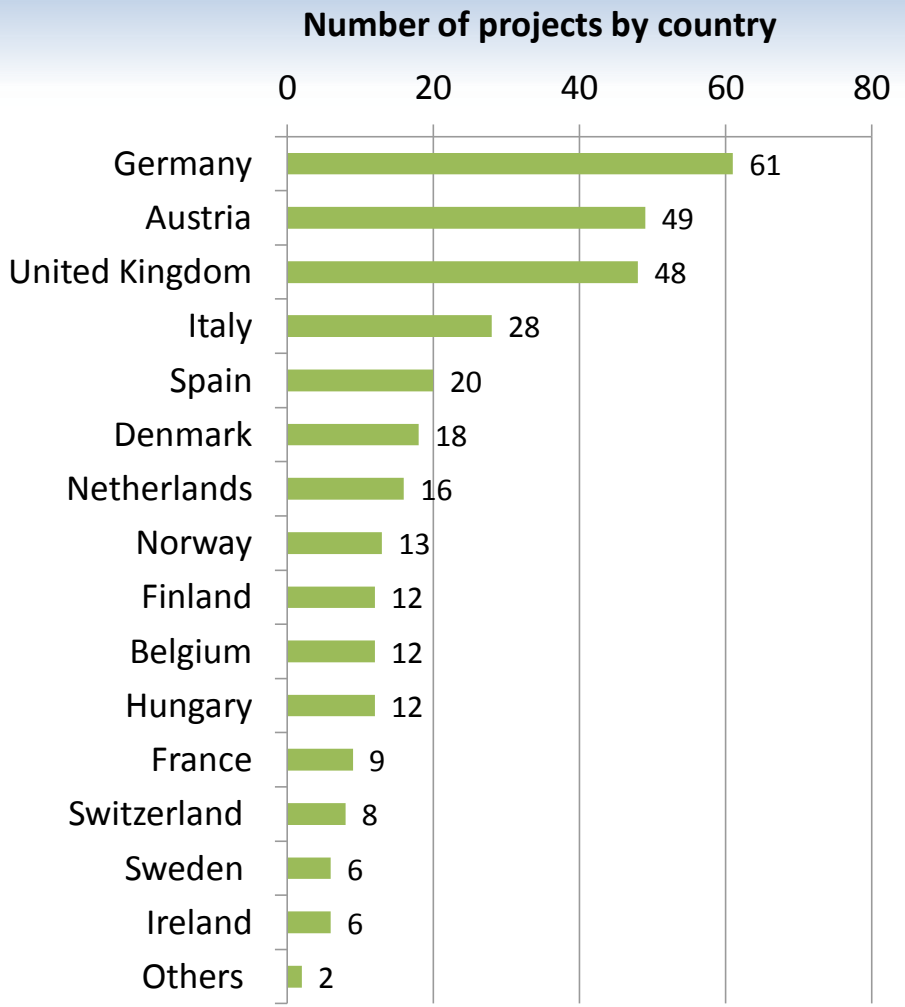
Results: Map research activities

Map research activities

- We collected information about 320 research projects from 17 European countries



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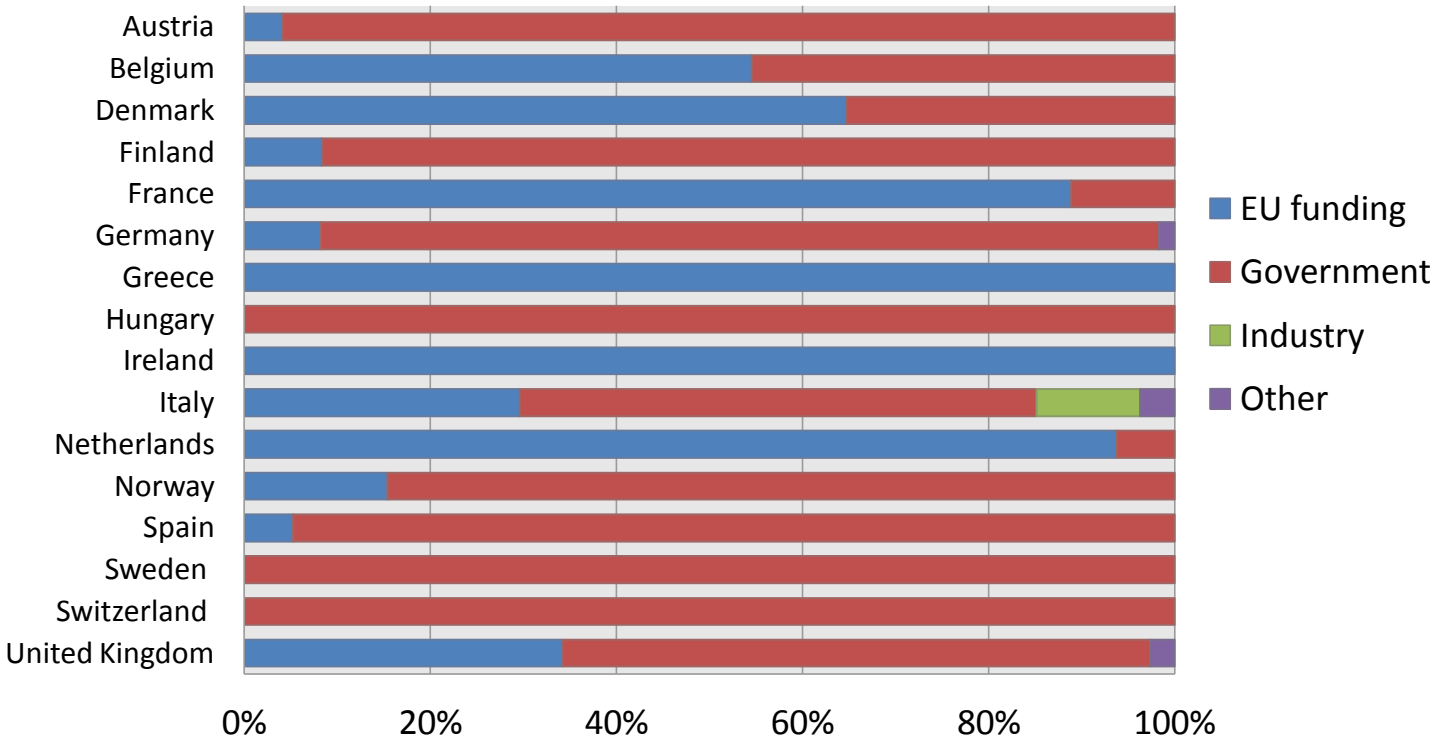
Results: Map research activities

Map research activities

- Most of the projects (85%) were led by research or academy organizations such as universities, institutes or research centers with EU/national funds



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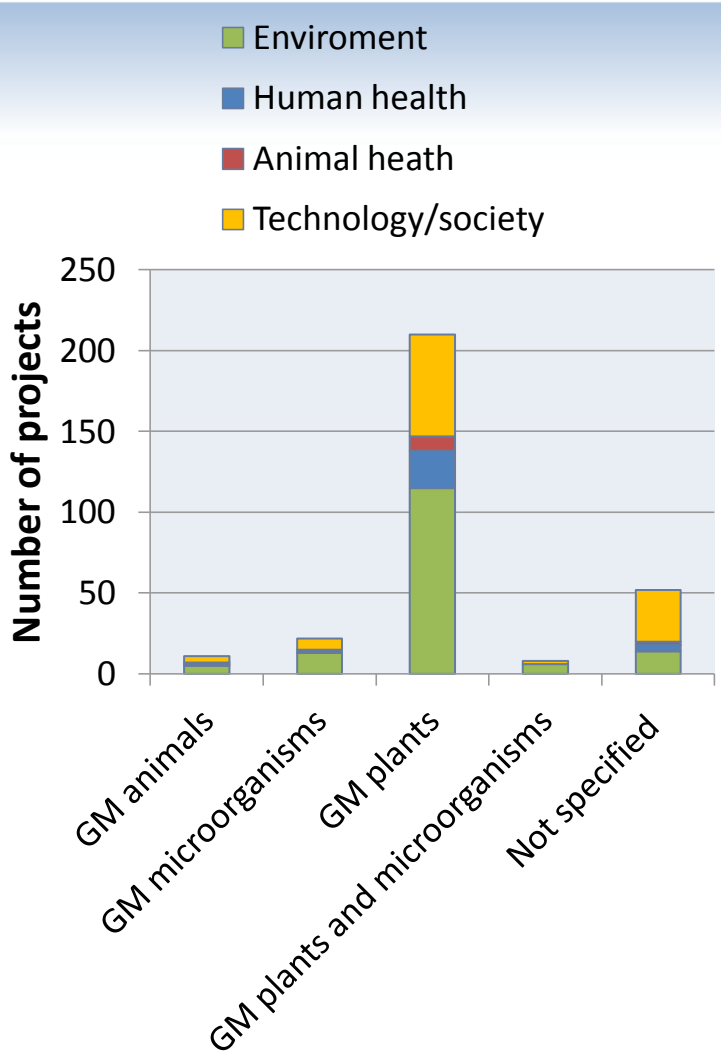
Results: Map research activities

Map research activities

- The most studied GMOs were **plants** with 219 projects funded across Europe
- The dominant subject was the interaction of GMO with the **environment** in 52% of the projects
- 33% of the projects were dealing with the **developments of new methods**, tools for detection and analyses of food and feed, **methods for risk assessments**, new technique, etc.
- The effect of GMO on **human and animal health** is a topic of interest in 10% and 4% of the projects respectively



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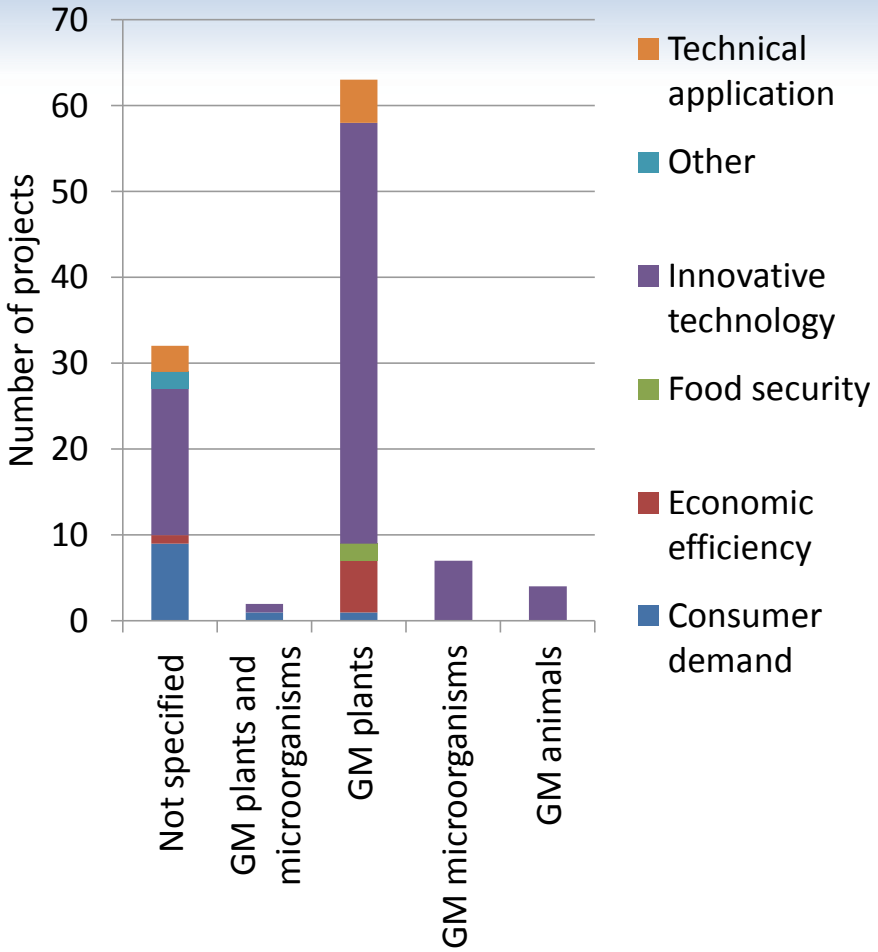
Results: Map research activities

Map research activities



- Technology and society category:
  - development of new methods for GMO detection and other innovative technologies were predominantly studied in 72% of projects dealing with this subject

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Method: Research gaps and needs

Research gaps and needs

- Identify knowledge gaps and future research needs:
  - Workshop held in Milan on November 2014, with relevant experts and stakeholders

Morning session: Presentations dedicated to share and discuss preliminary project results with the participants

Afternoon session: Interaction among the experts aiming at defining a list of research needs and requirements for sharing research capacities

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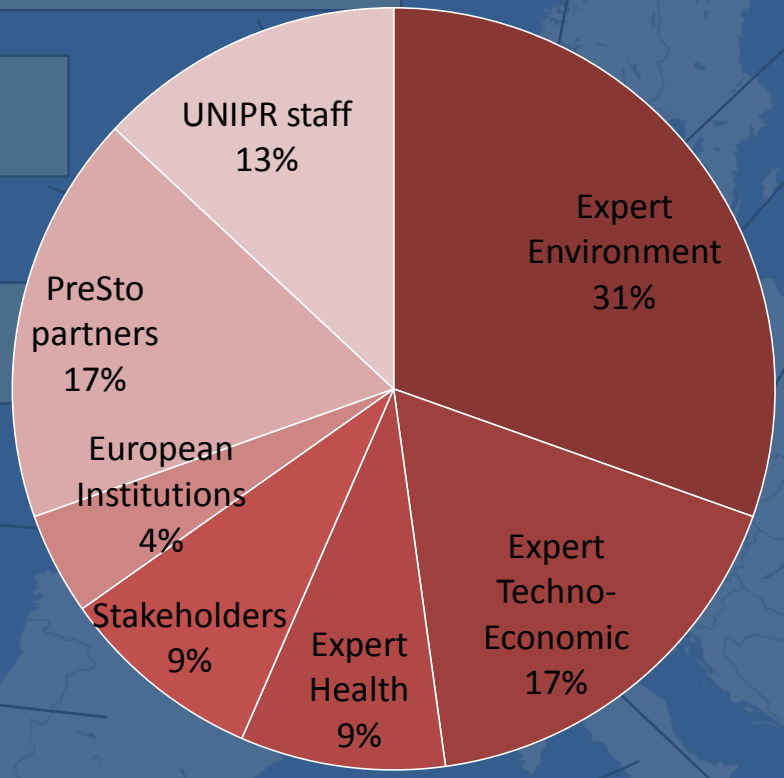
Workshop participants



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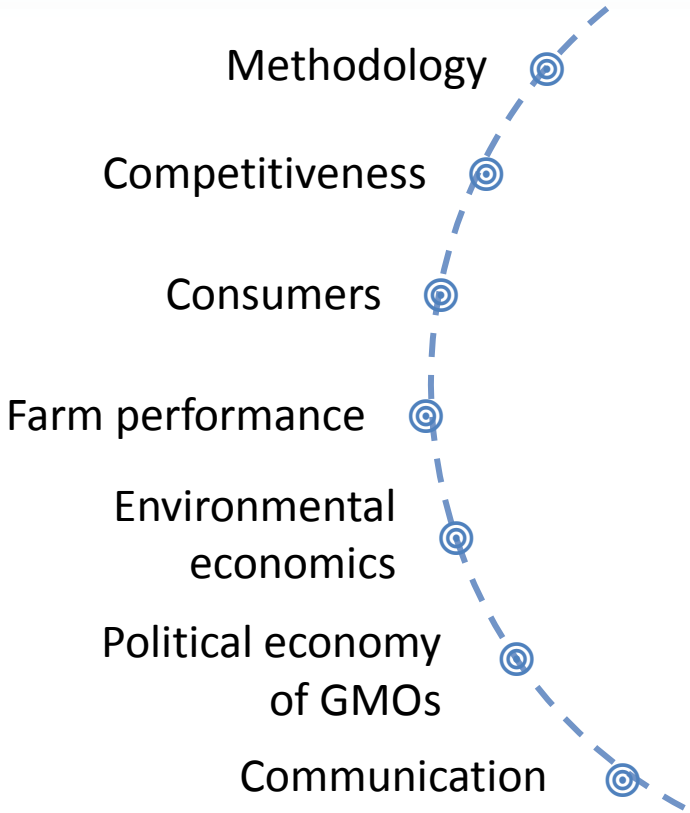
Results: Research gaps and needs

Research gaps and needs

Socio-economic research needs



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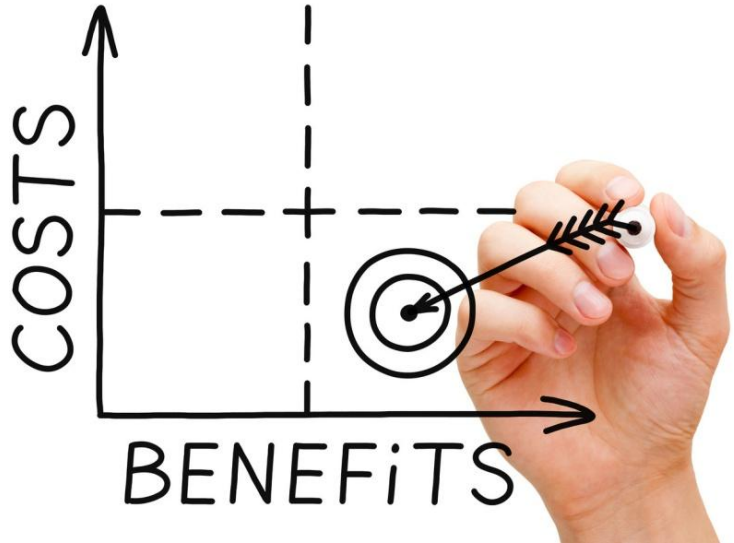
Results: Research gaps and needs

Research gaps and needs

Socio-economic research needs

- **Methodology**
- Competitiveness
- Consumers
- Farm performance
- Environmental economics
- Political economy of GMOs
- Systematic reviews and meta-analyses and Communication

to develop a methodological framework for assessing the socio-economic effects of GMOs → to inform policy development



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Results: Research gaps and needs

Research gaps and needs

Socio-economic research needs

- Methodology
- **Competitiveness**
- Consumers
- Farm performance
- Environmental economics
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to assess the effects of the EU regulation on GMOs on EU competitiveness and on innovative research

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Results: Research gaps and needs

Research gaps and needs

Socio-economic research needs

- Methodology
- Competitiveness
- **Consumers**
- Farm performance
- Environmental economics
- Political economy of GMOs
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to investigate consumers' attitude towards the use of new techniques in food production (e.g., new breeding techniques)

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Results: Research gaps and needs

Research gaps and needs

Socio-economic research needs

- Methodology
- Competitiveness
- Consumers
- **Farm performance**
- Environmental economics
- Political economy of GMOs
- Systematic reviews and meta-analyses and Communication

to study the economic implications of improved yield efficiency, and the effects on farm management planning (e.g., crop rotation)

to study the economic performance of HT crops and the stability of new GM crops yields (e.g. draught resistant) on a mid/long-term basis

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Results: Research gaps and needs

Research gaps and needs

Socio-economic research needs

- Methodology
- Competitiveness
- Consumers
- Farm performance
- **Environmental economics**
- Political economy of GMOs
- Systematic reviews and meta-analyses and Communication

to explore on the economic evaluation of the effects (positive and negative) of GMOs on the environment

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Results: Research gaps and needs

Research gaps and needs

Socio-economic research needs

- Methodology
- Competitiveness
- Consumers
- Farm performance
- Environmental economics
- **Political economy of GMOs**
- Systematic reviews and meta-analyses and Communication

understand and analyze the economic welfare of different groups in society (e.g. consumer welfare) in front of different policy settings

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Results: Research gaps and needs

Research gaps and needs

Socio-economic research needs

- Methodology
- Competitiveness
- Consumers
- Farm performance
- Environmental economics
- Political economy of GMOs

Systematic reviews and meta-analyses and Communication

to develop systematic reviews and meta-analyses to consolidate existing knowledge

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Results: Research gaps and needs

Research gaps and needs

Socio-economic research needs

- Methodology
- Competitiveness
- Consumers
- Farm performance
- Environmental economics
- Political economy of GMOs
- **Systematic reviews and meta-analyses and Communication**

to improve the communication of available evidence

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Results: Share research capacities

Research gaps and needs

- Requirements for sharing research capacities:
  - need to **develop protocols and guidelines** for conducting socio-economic impact assessments, that would ensure basic compatibility of results, without sacrificing the flexibility of approaches in the process
  - need to **share field trials**, and to develop more field studies for assessing yields, costs, and other economic aspects of the use of GMOs
  - need to **develop multidisciplinary tasks** capable of taking qualitative research into account (e.g. economic/socio-psychology, behavioural economics, etc.)
  - share researchers' capacities, e.g. via training and **staff exchange programs**, thus developing ways to facilitate future collaboration among researchers from different countries (e.g., PhD programmes, etc.)

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Conclusion

Map research activities

Research gaps and needs

- We have taken into account the views of a diversity of stakeholders (e.g. industry, farmers organisations, civil society organizations, NGOs, EU and national authorities, funding organisations, academia)
  - to enhance the alignment of research programmes at EU level (avoid duplications of work)
  - to encourage participation of different communities (scientists from all over Europe)
  - to enhance collaboration between actors (to leverage complementarities)
  - to increase the accountability of research trajectories and outcomes (create an internationally recognizable critical mass)

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Thank you
Any questions?

Davide Menozzi

University of Parma – Department of Food Science

davide.menozzi@unipr.it

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