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

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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
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
RESULTS:

MAP RESEARCH ACTIVITIES

We collected information about 320 research projects from 17 European countries.
RESULTS: 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.
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.
RESULTS: 
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.
**METHOD:**

**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
RESULTS: RESEARCH GAPS AND NEEDS

Socio-economic research needs

- Methodology
- Competitiveness
- Consumers
- Farm performance
- Environmental economics
- Political economy of GMOs
- Communication
RESULTS: RESEARCH GAPS AND NEEDS

Socio-economic research needs

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

to develop a methodological framework for assessing the socio-economic effects of GMOs → to inform policy development
RESULTS: 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 assess the effects of the EU regulation on GMOs on EU competitiveness and on innovative research
RESULTS:
RESEARCH GAPS AND NEEDS

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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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- 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
RESULTS: RESEARCH GAPS AND NEEDS

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to explore on the economic evaluation of the effects (positive and negative) of GMOs on the environment
RESULTS: RESEARCH GAPS AND NEEDS

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

RESEARCH GAPS AND NEEDS

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Research gaps and needs

to improve the communication of available evidence
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.)
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)
THANK YOU
ANY QUESTIONS?

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