Global challenges for animal production, role of R&I

The European Commission perspective

Animal Task Force seminar meeting
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Outline

1. Challenges and opportunities for EU agriculture and animal production

2. A long term strategy for EU agricultural R&I
Preliminary statements

1. European agriculture is characterised by its diversity: landscape, production systems, farm size, livestock vs crop production, food cultures, standard of living...
   - No single challenge, no single solution

2. Animal agriculture/industry is part of a complex and dynamic production system, part of an economy, part of a territory, part of society: influences, challenges and opportunities depend on many drivers, global and local ones
   - Multifacted challenges

3. EU is a large exporter of food products, still most of the production is consumed in EU: living with two strands...

4. The presentation should not be seen as an exhaustive review of challenges/needs, nor be considered as the position of the European Commission
Challenges

Food Security

Climate

Environment

Society

Sustainable rural territories
Drivers of food security

- Population, diets and the food chain
- EU food supply and demand interaction
- Price and income prospects: more uncertain than before
- Macroeconomic and trade environment
- Climate, energy and natural resources
Global Food and Nutrition Security

- Still increasing world population,
- urbanization, growing middle classes; increase in demand for (affordable) food and high quality protein
  - FAO projected a need for 60-70% increase in agricultural production by 2050 compared to 2007
    - This means 1.1% average increase per year, against past 2.2% per year during 1961-2007
    - Three quarters of the expected 60% increase in agricultural production by 2050 would mostly take place in developing countries: agricultural productivity will need to be raised there, in a sustainable manner

- Food safety (animal health/welfare; new technologies)
- Malnutrition: over and under nutrition
- Food loss and waste
- Finite natural resources (land, water)
- climate change impacts
Climate/Environment

- GHG emissions from agriculture, in particular the livestock sector
  - Agriculture accounts for about 10% of EU GHG emissions, but it emits more than half of the non-CO2 gases. It will have to contribute to the reduction (but how far?)
- Water, soil, air pollution from livestock production (ammonia, nitrate, phosphorus, etc)
- Preserving biodiversity and ecosystems
- Waste management, reuse and recycling
- Energy efficiency, renewable energy

Reducing the environmental and carbon footprint of food (animal) products

Circular (bio)economy
Sustainable rural territories

- 12 million EU farms, 25 million people (5% of EU jobs)
- Livestock sector accounts for nearly half of EU agricultural activity and production value
- Many upstream and downstream connections in the rural economy, agriculture (and forestry) as the basis for the bioeconomy producing food, feed, fibre and biomass for other uses
- Preservation of cultural landscapes, basis for other economic activities, thriving rural communities
- Economic viability of farming and the livestock sector, fair share in value chains, price and market volatility, fragmentation
- Attractiveness of farming for new generations

Sustainable territorial development in the EU
Animal agriculture and society

Animal food provides quality proteins and other important nutrients, but
• (processed) meat products recently presented as carcinogenic!

(Ruminants) providing public goods (ecosystem services), but
• Grassland area declining in the EU, replaced by croplands used mostly for feed production (+ feed imports)

Livestock increasingly presented as a relatively inefficient way to produce edible proteins in the context of resource scarcity

EU Livestock farmers’ income at lower end of spectrum; aging population

Societal concerns over (intensive) livestock production:
• Animal health and food safety: More diseases; over/misuse of medicines (even if EU rules among toughest ones, e.g. AGPs)
• Animal welfare issues (even if EU standards are among highest ones)
• New biotechnologies used for food production purposes (e.g. cloning)

Public perception of animal agriculture
How do we make the transition to more sustainable food and livestock systems?
Role of Research and Innovation in meeting the challenges
Why a long-term research strategy?

• Challenges are long-term and research and innovation take time

• Need for continuous investment to cope with major challenges in the long-run (as opposed to more ad hoc research programming)

• Need for synergies with other research funders in and outside the EU
A long-term strategy will improve consistency, efficiency and impact

- Better articulation of research policy with CAP and other EU policies (climate, environment, energy, health, international development)
- Better articulation with activities of Member States
- Better use of various instruments: more impact
- Provide ground for continuity
- Enhance the role of Europe as a key global player in a field for which attention is increasing (UN, G20 etc.)
Hey I have ideas on what to do
Cross cutting issues

• Systems approach
• ICT as an enabling technology
• Enabling science and infrastructures
• Socio-economic research, support to policies
Creating value from land: sustainable primary production

Integrated ecological approaches from farm to landscape

Resource management

Healthier plants and livestock

Enhancing rural innovation

New openings for rural growth

Human and social capital
Efficient resource management

- Resource-use efficiency: reducing inputs and waste; recycling (e.g. feed and feeding; energy; water; breeding for efficiency; manure management)*
- ICT, predictive tools & precision technology (precision livestock farming)*
- Climate change: strategies for adaptation and resilience (e.g. breeding for robustness)*
- Mitigation strategies (e.g. improving GHG balance by feeding and breeding for lower emissions, manure management)*
- Genetic resources (e.g. conservation and use of biodiversity; genomic selection)*

*: examples of domains of interest for livestock
Improve plant and animal health

- **Healthier plants and livestock**
- **Production system approach**
  (production-breeding, management, nutrition-and its environment; animal welfare)*
- **One Health**
  (zoonoses, AMR, food safety) *
- **Disease prevention and control**
  (biosecurity, vaccinology, diagnostics, ATAs)*
- **Preparedness for emergencies**

* : examples of domains of interest for livestock
Better use of ecosystems

From concept to design of sustainable farming systems based on optimized ecosystem services
(e.g. benchmarking; multi-criteria assessment of farming; grasslands)*

Organic sector and other farming systems
(e.g. mixed farming incl. agroforestry)*

Collaboration with other parts of food/non food supply chain

*: examples of domains of interest for livestock
Foster rural growth

New openings for rural growth

- Strengthening the competitiveness of agro-food chains
- Development of new value chains on biomass and waste
- Enhancing the delivery of public goods and ecosystem services to the society
- Territorial interactions
- Information and Communication Technologies
Developing skills and innovation systems

- Developing human and social capital in rural areas
- Developing agricultural knowledge and innovation systems
- Instruments to implement the EIP-AGRI
HOW?
• Strategic programming / programme management

• Fostering synergies with Member States

• The international cooperation dimension

• Fostering the implementation of research and innovation (MAA, knowledge exchange)

• Developing synergies with the private sector
(Animal) agriculture
+ Food security
+ Environment protection (finite natural resources, biodiversity)
+ Climate protection
+ Health
+ Societal demands

= (im)possible equation?
(with the current developed world consumption pattern)

1) Food has never been so plentyfull
2) Food has never been so safe
3) Environment, climate, health have never been so much looked after
4) New technologies and biological understanding provide new avenues

Let's (re)search further solutions, innovations with a systemic, multidisciplinary, multiactor approach
Thank you

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