Diffusion and transfer of knowledge in agriculture

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EURopean AGricultural Research Initiative (EURAGRI) is a not-for-profit organisation that acts as a forum for representatives from public research and innovation institutes, universities, funding bodies and ministries engaged in research and innovation in the agri-food sector and the broader bioeconomy. It encourages and stimulates debate on relevant research and innovation policy issues of strategic importance on EU, member state and organisational levels.

It provides members with a network where they can freely exchange views on the impact of policies and technological and societal developments on public research and innovation activities, trends and infrastructures within the field.

The annual EURAGRI conference, hosted in rotation by members in different countries, is the main event when representatives gather to exchange views and ideas. The programme reflects the specific situation of the host but always includes a European dimension and often goes beyond.

Additional workshops on pressing and specific issues that require in-depth discussion, as well as input from domains outside the agriculture and food sector, further broaden the knowledge base in which EURAGRI operates.

http://www.euragri.aau.dk/

Preface

Agriculture is at the basis of all human activities. European cities first emerged in the most productive areas. Today, most people no longer need to produce the food they consume; a very small number of farmers handle this task. We must develop the farming systems of the future while taking into account more sustainable land and resource uses. Research and innovation can help address these issues.

The main EU-level research funding instrument is the EU Framework Programme for Research and Innovation (Horizon 2020). The challenges facing the knowledge based bioeconomy have clearly been recognised and increased funding compared to the Seventh Framework Programme for Research and Technological Development (FP7) has been allocated to tackling this societal challenge. One precise objective is to better integrate the Common Agricultural Policy with European research policy. The Standing Committee on Agricultural Research (SCAR), with representatives from Member States' agricultural and research ministries, plays a vital role in this task. SCAR's fourth foresight report addresses the challenges agriculture of tomorrow will face and provides a long-term outlook on how to tackle complex challenges: expected climate change, biodiversity loss and emerging scarcities, mainly for land and water use.

In Luxembourg, research priorities also follow more sector-oriented government plans such as healthcare technologies, eco-technologies and logistics. These are part of a multi-specialisation strategy that seeks to diversify Luxembourg's economy and reduce its dependence on the financial sector.

One major concern to achieve critical mass and necessary cooperation between the main actors at

national level was the scattering of the institutions, laboratories and teams over several different sites. This has changed quite recently with the inauguration of the brand new Belval site, which brings together most public research activities in a single area. The former steel production site offers an interesting contrast, with the modern buildings of the so-called "knowledge triangle" – research, teaching and innovation – standing next to the vestiges of the old steel industry.

Marc Hansen,
Minister of Higher Education and Research of Luxembourg

Agriculture in the developed world has important economic, social and ecological dimensions. A wide range of national and regional policies have been developed to support these dimensions. Within the EU, it is widely recognised that supporting agriculture through a combination of market measures, supply side measures and direct payments contributes to both the economic and environmental sustainability of an industry that has a key position in the provision of public food and goods.

There is also recognition that European agriculture is forced to actively work in increasingly globalised markets. There is often a gap between the considerably high capital investment in agri-food research and knowledge accumulation and the adoption and uptake of this knowledge in innovation by European farmers to improve their competitiveness and the environmental sustainability of our food production chain.

Europe's agri-food industry has been radically reshaped by the combination of international policy changes and a wide range of growing public concerns such as food security, climate change, energy supply, environmental sustainability, animal health and welfare, ethically-sourced food and fair trade. As such, the development of resource efficiency and sustainable food production has become not just an ideal, but an imperative reality.

The ongoing reform of the Common Agricultural Policy (CAP2020) shifts economic support in European agriculture from a production-based systems approach to the provision of public goods. This requires improvements in technical production efficiency that takes into account the current economic situation on European farms, without ignoring the sustainable goals in food production. Increased global demand for food along with the interlinked roles of agricultural research and advisory support services should result in efficient stimulation for farmers. The adoption of new production methods and relevant technologies is the main tool to face not only the economic challenges in the agriculture industry but those facing the global population as well.

To address the complex challenges in developing resilient and sustainable food production systems, the EU has proposed creating a European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI) and expanding the role of the Farm Advisory System (FAS).

All EU Member States have identifiable agricultural knowledge and innovation systems (AKIS), knowledge exchange (KE) systems, knowledge transfer (KT) systems or agricultural advisory services. However, the different approaches do vary widely between Member States and, in some cases, between regions within Member States.

These variations are related to the size, scope, capability, objectives, delivery models and funding models of the relevant systems and organisational structures. However, all models attempt to encompass the task of translating and diffusing new issues from research to the agricultural sector, i.e., the agroindustry and European farming businesses.

While there is no single solution to this extremely complicated issue, we should work together to move forward and optimise the processes at all levels. Recognised, efficient approaches exist that

can be applied across the agricultural sector. All those working in this industry should consider such approaches and contribute their expertise in this area. Several generic lessons are universally true, including the need for:

- A clear purpose, client focus and client trust

- Innovation as a key component in knowledge transfer from research as well as recognition of the need to adapt the level of innovation to client capability the nature of their business

- Appreciation and respect of the key roles of social, economic and technological entrepreneurs

The diffusion of innovation and knowledge in agriculture is crucial to overcome obstacles preventing efficient implementation of innovative techniques and methods in the agricultural sector.

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