

The European Innovation Partnership (EIP): networks as drivers for innovation in agriculture

The EIP is a new European instrument driving research policy and the CAP and is designed to support partnerships between key players in development, agricultural education, farmers, researchers and businesses. In doing so it reflects recent changes in thinking at international institutions, which see agricultural innovation less as a product of research and knowledge transfer and more as the result of interactions between players in more or less formal networks. What could be the EIP contribution to the French innovation system, which is characterised by solid public institutions? This analysis identifies the opportunities it offers, both at a local level and by bringing various innovative networks together on a European scale. The EIP also presents several challenges, however, and will prompt key players to review their roles and strategies.

The new European strategy called “Europe 2020” brings with it more substantial institutional mechanisms than the “Lisbon Strategy” did, including the introduction of “European Innovation Partnerships” (EIP) in various economic sectors. EIPs are designed to drive synergies between various key players to support the emergence of innovations, with the idea of “revolutionising the way public and private sectors work together”¹.

Whilst EIPs were not originally designed to apply to agriculture, the sector was finally included. The European Commission naturally turned to the work of the SCAR², which had been studying the links between agricultural research and innovation in Europe since 2010. The EIP has been heavily influenced by the thinking and recommendations that have come out of this work, based on the theoretical approach to agricultural innovation systems (AIS) in vogue in several countries.

How has this new European instrument been adapted to respond to the specific characteristics and challenges of the agricultural sector? Can it be implemented in a way that reflects an already complex institutional landscape in this sector, with marked variations between countries?

What added value can this “new synergy between players” bring to the economic and ecological performance of French agriculture?

This paper first describes the “Agricultural Productivity and Sustainability” EIP instrument as proposed by the European Commission and then attempts to decipher the theoretical foundations that underpin it. Finally, it sets out a brief analysis of the opportunities and issues involved in its implementation in France.

1 - An EIP for agriculture: principles and governance

There are various accepted views of innovation in agriculture (see box): it is seen today not only as a growth and productivity driver but also as a lever for responding to environmental challenges and accelerating the transition towards both economic and ecological performance³.

This EIP has been set two objectives for 2020: to reverse the recent trend towards declining productivity gains and to ensure satisfactory soil functionality. The Commission has identified several levers to help achieve these, namely better coordination between public innovation measures and initiatives; strengthening the links between

scientific knowledge and key players on the ground; and encouraging sharing of good practices at a European level. The EIP therefore acts as a functional interface between agriculture, businesses and science at a regional, national and European level.

The EIP uses both the CAP and research policy and is designed to ensure greater consistency between them. As far as research policy is concerned, the new framework programme for the period 2014-2020, called *Horizon 2020*, is designed to involve more key players in research programmes and assigns greater importance to the dissemination of their results. Resources are therefore being allocated to funding dissemination activities, themed networks for pooling experiences and structures to help drive innovation. As far as the

1. European Commission communication “Europe 2020 Flagship Initiative. Innovation Union”, 2010.

2. The SCAR (*Standing Committee on Agricultural Research*) coordinates agricultural research efforts between countries.

3. Guillou M. *et al.*, 2013, *Le projet agro-écologique : vers des agricultures doublement performantes pour concilier compétitivité et respect de l'environnement*.

What is innovation in agriculture?

Innovation is a broad concept, whose definition changes with further advances in understanding of the mechanisms underlying it. According to the *Oslo Manual*, which is used as a reference document by the OECD and Eurostat, innovation is the implementation of a new or substantially improved product (good or service) or process (of production), a new method of marketing or a new organisational method in a business's practices, workplace organisation or external relations. In agriculture, this includes examples as varied as the development of sheep's milk ice cream, the implementation of a farm based experiment on the use of practices such as mixed cropping, or the setting up of an online sales platform.

CAP is concerned, several EAFRD measures are being strengthened to finance the emergence, facilitation and actions of "Operational Groups" (OGs), which are to be the linchpins of the EIP. OGs will have to involve a diverse range of stakeholders supporting the same innovative project, ranging from farmers to SMEs, advisers, researchers, NGOs and so on. The CAP, in particular, will support the development of new products or practices and the implementation of "pilot projects" designed to adapt existing innovations to a particular context. Another of the EIP's roles is to help create a network of OGs at a European level, based on a themed approach. Finally, a Brussels based team (the EIP Network Facility) is responsible for running the network.

Behind the apparent complexity of the scheme is the idea that boosting innovation lies primarily in the interactions between different stakeholders at different levels.

2 - Innovation through networking: the theoretical foundation of the EIP

A "new" approach in international institutions

Whilst the importance of social interactions in the innovation process has long been recognised, national agricultural policies have, in the past, relied heavily on agricultural research and knowledge transfer to develop the sector. This approach was

based on the idea that research was the main driver of innovation and that it was therefore the role of the public authorities to fund such research and then help to disseminate the innovations produced as a result. This "linear" model led to some significant successes (including modernisation and the green revolution) but also had its limitations (such as specialisation and dependence on inputs), which have gradually cast doubt on it.

Over the last few years, international institutions have therefore begun to promote a more systematic approach to innovation. The World Bank's publication in 2006 of a report entitled *Enhancing Agricultural Innovation: How to Go Beyond the Strengthening of Research Systems*⁴ prompted numerous initiatives in developing countries, like the multi-stakeholder innovation platforms in Africa⁵.

Although criticisms of the linear model relate mainly to countries in the South, the same change in thinking is also underway in the European institutions. In 2009, the SCAR produced a highly critical assessment, stating that "publicly funded AKIS (Agricultural Knowledge and Innovation Systems) appear to be locked into old paradigms based on linear approaches and conventional assumptions". In a report published in 2012, it urges the development of an approach based on agricultural innovation systems and stronger partnerships between research, knowledge transfer and farmers⁶.

Agricultural innovation systems: a diversity of stakeholders, diffuse knowledge and the strength of networks

The traditional linear model can be seen in the notion of the AKS (Agricultural Knowledge System), a group of researchers, advisers and teachers whose actions are focused on the formal production of knowledge and then transferring it to the agricultural sector. Increasing awareness of the role other stakeholders could have in innovation processes gradually saw it evolve into the concept of the Agricultural Knowledge and Information System (AKIS). The AKIS is a system that combines people and institutions to support mutual learning. This includes teachers, researchers, advisers and farmers, with the latter at the heart of the "knowledge triangle"⁷. More recently, the same acronym – AKIS – has been used to refer to Agricultural Knowledge and *Innovation Systems*, which represents a shift towards the notion of an Agricultural Innovation System (AIS).

The innovation systems approach is based on three main ideas:

a. A larger number of stakeholders: agricultural research, advisory and education institutions are no longer the only stakeholders considered. The approach emphasizes the role of the private sector, as the role of farmers themselves and even of NGOs and consumers.

b. Knowledge no longer comes solely from science: innovation is now less the fruit of new knowledge and more the result of mobilising and adapting existing knowledge in different forms. It comes more from an interactive, bottom-up, social process than from the dissemination of scientific results. As a consequence, the places where knowledge is produced become increasingly diffuse and less and less centralised. The knowledge that farmers have of the specific characteristics of their agricultural ecosystems – the so-called local or traditional knowledge emphasised in the agroecological approach – has pride of place here. Research is no longer the sole source of innovation but a contributing factor and is also used to verify the relevance of innovative ideas or overcome obstacles.

c. Networks as key drivers: the main levers of innovation lie in the various networks and partnerships between stakeholders; these exist at varying levels of formality and act as forums for sharing knowledge and experience, leading to "cross-fertilisation". Various examples of innovation have developed within knowledge-transfer networks of this kind (agroforestry, direct sales, etc.). These can involve AKS institutions (such as researchers and advisers) but often develop initially alongside them⁸.

Towards new public policy instruments

The innovation systems approach has led to the emergence of a combination of instruments in various countries, including clusters, public-private partnerships,

4. World Bank, 2006, *Enhancing Agricultural Innovation: How to Go Beyond the Strengthening of Research Systems*.

5. Juma C., 2011, *The New Harvest: Agricultural innovation in Africa*, Oxford University Press.

6. EU SCAR, 2012, "Agricultural knowledge and innovation systems in transition: a reflection paper", Brussels.

7. World Bank, 2012, *Agricultural Innovation Systems. An investment sourcebook*.

8. See the European project SOLINSA, which has produced an inventory of the various initiatives: <http://www.solinsa.net>

learning networks, etc. One of the most popular tools at the moment is the establishment of multi-stakeholder platforms or networks⁹. These are formal networks involving various stakeholders (farmers, businesses, institutes, etc.), which discuss current innovations.

Another trend is the emergence of innovation agencies and ‘brokers’¹⁰. Brokers play the role of intermediaries, middlemen and even independent mediators. They help to connect demand for innovation (from farmers) to supply (from research, advice and other networks) through various actions, including disseminating research results, conducting foresight exercises with different stakeholders, etc.

It is important to emphasise that in reality, these instruments have mainly been trialled in countries that had privatised their agricultural advice services. This is the case in the Netherlands, where the introduction of innovation brokers followed on from the realisation that privatisation had weakened the links between farmers, advice services, applied research and the administrative authorities¹¹. As the French institutional framework is far removed from those, it is not easy, on the face of it, to estimate the effectiveness of such tools. Yet, it appears that the EIP is inspired by foreign experiments of this kind and more broadly, by the concept of innovation systems.

3 - What added value does an agricultural EIP offer in France?

A robust agricultural knowledge system

France has a robust agricultural knowledge system (AKS), which contributed significantly to the modernisation of agriculture in the second half of the 20th century. It is distinguished by technical and higher education specifically designed for agriculture, a powerful, publicly funded agricultural research system, and applied research and advice organisations led by agricultural organisations with a presence on the ground. This is all managed at a national level by central government¹².

A number of weaknesses have, however, been identified for several years, including organisational isolation, limited efforts to focus research on innovation and how results will be applied in practice (given the academic emphasis on publication) and limited coherence between the various public initiatives supporting innovation, in particular between specifically agricultural and more broad-based schemes.

Recent initiatives to encourage cooperation

These observations have prompted the public authorities to introduce various instruments aimed at developing partnerships between those involved in research, development and training, including Scientific Interest Groups (GIS), Mixed Technology Units (UMT), competitiveness clusters, skills clusters, rural excellence clusters and Mixed Technology Networks (RMT).

Weaknesses persist, however, in spite of these significant changes. Evaluations of schemes such as the RMTs or the rural network underline, in particular, the fact that the national networks are not linked closely enough to nonetheless similar initiatives in neighbouring European countries. In addition, these schemes remain focussed on inter-institutional cooperation in France and leave little room for local initiatives¹³. Finally, the funding allocated to this type of measure in France in relation to the CAP is relatively modest, compared with countries that have focused strongly on innovation in their current programming. It is possibly at this level, in supporting local pioneering initiatives, that the added value of the EIP may lie.

The EIP could be effective in supporting pioneers...

More or less formal knowledge exchange networks have always been drivers of innovation in the agricultural environment in France. In the wine-growing sector, for example, professional networks prompt innovation and drive economic performance¹⁴. Similarly, some innovative agronomic practices (such as intensive pastureland systems, species combinations, etc.) have emerged in pioneering farmers’ networks alongside the institutions. The case of short food supply chains is also interesting: the first collective sales outlets were set up by innovative farmers who created networks to share their experiences¹⁵.

Numerous innovations stall at their initial stage, however, because of a lack of experimental resources or a lack of capacity for reproducing a local experiment or finding a way of generating economic value. Accompanying such pioneers and supporting them in the preliminary stages, particularly by helping them to organise themselves into networks and contacting private or public-sector players can be an effective lever. The range of tools offered by the EIP aligns well with this type of support.

...but not all innovations are equal

Support for bottom-up innovations, in particular when “farmer-researchers” deve-

lop agricultural practices in a local context, still poses the question of evaluating the performance of these innovations (especially in environmental terms) and their reproducibility in other conditions. In essence, all the advantages of deriving value from the knowledge produced by farmers themselves in their specific context, rather than relying on standard “formulas”, stems from the system’s ability to extract knowledge that can be applied generally based on a particular experience, which requires the use of a scientific-style approach.

In addition, the nature of innovation is generally linked to the interests of the stakeholders who support it. Within a network, a farmer may want to find ways of improving their economic performance only, a researcher may be looking for a topic that ties closely to their research and a supplies business may want to promote an agricultural technique that offers them new outlets. This combination of interests may result in dismissing technical options that would nonetheless have been more effective, particularly from an environmental point of view¹⁶. As a result, not all innovations contribute to the public interest in the same way. The public authorities will always be responsible, in new and different ways, not only for supporting the emergence of innovations but also for ensuring that they contribute to the general interest.

9. Nederlof S. *et al.*, 2011, *Putting Heads Together. Agricultural innovation platforms in practice*, KIT, Amsterdam.

10. Klerck L., Leeuwis C., 2008, “Matching Demand and Supply in the Dutch Agricultural Knowledge Infrastructure: experiences with innovation intermediaries”, *Food Policy*, 33, pp. 260-276.

11. Labarthe P., 2009, “Extension services and multi-functional agriculture. Lessons learnt from the French and Dutch contexts and approaches”, *Journal of environmental management*, 90(2), pp 193-202.

12. Bergeret P., 2012, “Responses of the French Agricultural Knowledge System to new agricultural challenges”, in *Improving agricultural knowledge and innovation systems*, OECD conference proceedings.

13. Interim evaluation of the French Rural Development Programme, 2012.

14. Touzard J.-M., 2011, “Les réseaux professionnels, facteurs clés pour l’innovation dans le secteur viticole”, *Revue Française d’Oenologie*, no. 249, pp. 25-28.

15. Dockès A.-C. *et al.*, 2007, “Innovations systems and processes in the field of agricultural marketing: A cross-national analysis between France, Switzerland, Italy and the Netherlands”, In-sight project, Working paper 3.

16. Goulet F., 2013, “Mettre en récits et partager l’expérience. Éléments pour l’étude des savoirs dans les collectifs professionnels”, *Revue d’anthropologie des connaissances*, vol 7, pp 501-524.

Implementing the EIP: challenges

By introducing the innovation systems approach in operational terms, implementing the EIP in France overturns traditional governance and raises a number of questions:

a. Which stakeholders in the French landscape are in a position to fulfil the role of “innovation brokers”? The notion of ‘broker’ contributes to a market-based regulation of the production of knowledge and innovation, whose limitations we have seen¹⁷. It does, however, offer the advantage of emphasising the importance of the function of the intermediary and catalyst, as it is not sufficient simply to bring stakeholders together to create innovation. The success of the EIP undoubtedly lies in its capacity to drive the emergence of a new category of stakeholders who can not only serve as an interface between farmers and research and development organisations, but also with less “natural” partners, such as businesses or various non-agricultural stakeholders at a regional level. Its success will therefore also rely on reorienting the roles and strategies of existing stakeholders.

b. How can innovation be identified and evaluated? Providing public support for innovation implies selecting the new ideas that one wants to promote. One might, for example, think that the EIP is more legitimate in terms of supporting innovations in production systems rather than “product” innovations. But the issue here is to avoid the legitimate and relevant desire to identify innovations upstream resulting in defining a selection method, with eligibility criteria, which in the end actually removes the scheme’s ability to drive real innovations.

c. How can the effects of selection be limited? If the most familiar stakeholders in institutional schemes, who are already used to working in networks, prove to be the only ones who have the capacity to invest time in the invitation to tender procedure, there is not only a risk of this leading to further inequalities¹⁸ but also a risk of the scheme ignoring some innovative stakeholders.

d. How can scientific knowledge be disseminated? Whether we are looking at research results or innovations based on local experiences, new information technologies present an opportunity for both sharing and disseminating knowledge¹⁹. In some countries there are also institutions whose role is to produce summaries of knowledge that can be usefully applied in practice²⁰.

e. What changes in research management are needed to ensure results are more likely to translate into innovations? In addition to disseminating scientific knowledge, the implementation of the EIP must necessarily examine the direction of research and research policies. The shift from “mode 1” to “mode 2”²¹, i.e. a paradigm in which scientific discovery is based on the independence of researchers, their disciplines and institutions to one where the production of knowledge is more socially anchored, more interdisciplinary and more geared to practical application, means rethinking how researchers are incentivised and evaluated. In a context of decentralisation of rural development policy in France, these challenges must be raised as a priority in each of the regions. Whilst on the face of it, however, the regional level seems appropriate for developing innovation ecosystems, it will be important to ensure that administrative boundaries do not create barriers to the creation of networks between key players. It will also be important to enable these stakeholders to benefit from the resources deployed through the EIP to share and capitalise on experiences at a national and in particular, a European level.

In proposing to reduce the gap between research and the beneficiaries of its results, prompt the emergence of “innovation brokers” and support multi-stakeholder partnerships, the agricultural EIP is an attempt to apply the concept of “agricultural innovation systems” on a European scale. More than simply a new agricultural innovation

policy, it is a link that could improve the coherence of existing schemes at both a European and national level.

For the French system, which has historically been built around strong institutional players, an instrument of this kind may overturn traditional forms of governance, continuing the changes already being implemented at a national level with the introduction of tools such as RMTs or competitiveness clusters. Whilst it should not cast doubt on the benefits of public policies and institutions in this area, the EIP may lead traditional stakeholders to review their role in the system (farmer-researcher, researcher-transferor, adviser-broker, etc.) and support the emergence of networks that include new stakeholders.

Implementing a scheme that has been designed on a European scale presents numerous challenges in France. It could also, however, represent an opportunity to dynamise agricultural innovation at a local level and support the capitalisation of innovations on a European scale, serving both the economic and ecological performance of the sector. The desire to gear the implementation of the EIP in France to the agroecology project supported by the Minister, in conjunction with economic and environmental interest groups (GIEE) implemented by the law on the future of agriculture, should be seen from this perspective.

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17. Labarthe P., 2009, *op cit*.

18. Labarthe P., Laurent C., 2009, Transformations of agricultural extension services in the EU: towards a lack of adequate knowledge for small-scale farms. Paper presented at the 111 EAAE-IAAE seminar “Small farms: decline or persistence, University of Kent 26-27 June 2009.

19. In Spain, for example, the “Chil” platform is a model for the use of web 2.0 <http://chil.org/all-about-chil>.

20. A health-related example can be found in the United Kingdom: Laurent C., Berriet-Sollicec M., Labarthe P., Trouvé A., 2012, “Evidence-based policy: de la médecine aux politiques agricoles ? Les enjeux d’une approche méconnue en France”, *Notes et études socio-économiques* no. 36, pp 97-101.

21. Gibbons M., Limoges C., Nowotny H., Schwartzman S., Scott P., Trow M., 1994, The New Production of Knowledge. *The Dynamics of Science and Research in Contemporary Societies*. London: Sage.

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