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Foreword

Innovation is at the heart of the Europe 2020 strategy, which aims to promote smart, sustainable and inclusive growth. Its importance is also recognised by agricultural and rural development policy-makers, and the ongoing reform of the Common Agricultural Policy (CAP) sees innovation as a key driver of sustainable agriculture and rural development. In the period beyond 2013, the second pillar of the CAP will be more focused on competitiveness and innovation, climate change and the environment. In addition to the proposed allocation of €89.9 billion for rural development¹, an allocation of €4.5 billion will be made under the Horizon 2020 research and innovation framework for research on food security, the bio-economy and sustainable agriculture.

As this issue of the EU Rural Review highlights, innovation in agriculture and rural development extends to areas such as food chain organisation and risk management, preserving and enhancing ecosystems, promoting social inclusion, poverty reduction and economic development in rural areas. European farmers today are also faced with the dual challenge of having not only to produce more, but also to do so in a sustainable manner. Key challenges and opportunities associated with sustainable production and rural development include the protection of biodiversity, ensuring economic viability, the use of biomass and the production of bio-energy, addressing climate change, resource management, and food security.

¹ EUR 89.9 billion is the proposed allocation of the European Commission for rural development. It has to be noted that according to the European Council's conclusions on the Multiannual Financial Framework of 8 February 2013 (EUCO 37/13) "[t]he overall amount of support for rural development will be EUR 84 936 million. The annual breakdown will be fixed by the European Parliament and the Council".

Innovation can be understood in many ways. It can involve new and improved products, processes or services, or their adaptation to new geographical or environmental contexts. However, it is only when a new idea becomes mainstream that it is termed an innovation. Therefore, innovation is not just a purely technological process or the simple dissemination of research results. It is also influenced by social processes.

Innovation must yield tangible results. There is also a wide consensus that interaction among farmers, researchers and rural entrepreneurs is needed to drive successful innovation: an interactive innovation model, based on the voluntary participation of actors in a group project is expected to be the guiding principle of innovation in the future.

Barriers to successful innovation include lack of time, certain administrative procedures, poor linkage between the scientific community and the agri-food sector, and between research and practical application. Rural economic operators need encouragement, training and support in order to become actively involved.

Efforts have been made to provide more support to farmers and other rural development stakeholders. The recently launched European Innovation Partnership (EIP) on Agricultural Productivity and Sustainability aims to establish a working interface between agriculture, the bio-economy, science and other sectors at EU, national and regional level.

Some relevant knowledge regarding partnership creation and strengthening innovation in rural areas already exists. For instance, current rural development policies have several instruments to support innovation, and work carried out under the LEADER axis also contributes to this process. It is important that the lessons learnt are used to strengthen innovation capacity, going forward.

In general, innovation is moving away from the top-down use of science and technology to produce technical efficiency, towards social innovation, which is characterised by the desire to produce sustainable benefits through new forms of collaborative action. Evaluation frameworks and methods must keep pace with these trends, suggesting that more focus needs to be placed on outcomes rather than outputs, through the active involvement of stakeholders who are creating, fostering, driving and benefiting from innovation.

This issue of the EU Rural Review provides a snapshot of the innovation journey so far, and a glimpse into the future challenges. The aim is to deliver insight into rural development innovation and to help further advance the integration of knowledge exchange and innovation into future rural development policy.



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The policy context: innovation & rural development policy

The importance of innovation in agriculture and rural development has been recognised by the European Union over successive reforms of the Common Agricultural Policy (CAP), but there is widespread agreement that agricultural knowledge and innovation systems need to be reinvigorated. The innovation priority in rural development programmes (RDPs) for 2014-2020 will be to ensure that ground-breaking new ideas do not go unnoticed and that knowledge-exchange is used as a tool in overcoming emerging challenges.

When addressing innovation, the diversity of rural areas must be taken into account. Local characteristics, the categories of potential beneficiaries and the range of actors involved will all influence cross-cutting objectives such as innovation, environmental protection, and climate change mitigation and adaptation.

Agriculture in Europe is also facing challenging times. Farmers must somehow achieve the dual objectives of producing high quality food (i.e. ensuring food security and

environmental sustainability) and in ever greater quantities. This would be hard enough in a world with predictable growing seasons, but climate change is interfering with natural seasonal cycles, resulting in ever greater uncertainty and complexity.

The challenge ahead is starkly illustrated by the expectation that to feed the world, 60% more food will be needed by 2050. Fundamental resources such as water, soil and phosphorus are under pressure or have been degraded, meaning that the productivity increases of the past are

unlikely to be repeated, even though most (85%) of the increased food demand up to 2050 will have to be met by improved crop yields, rather than through the conversion of more land to agricultural use².

Successive reforms of the CAP have recognised the importance of innovation, but agricultural knowledge and innovation systems need to be updated.

² Source: World Agriculture Towards 2030/2050: The 2012 revision (summary), FAO, http://www.fao.org/fileadmin/user_upload/esag/docs/AT2050_revision_summary.pdf



Professor Erik Mathijs, Head of the Bioeconomics Division at Belgium's Catholic University in Leuven, says that, "there is an innovation gap between research and practice, in terms of researchers inventing things that are not picked up sufficiently, and researchers often not dealing with issues that matter to farmers. The idea of policy is to bring together research policy and rural development policy to bridge that gap."

A major step in this direction has been the establishment of a European Innovation Partnership (EIP) on Agricultural Sustainability and Productivity, which was proposed by the Commission in a February 2012 communication (COM (2012) 79). The EIP will provide a broad umbrella to establish closer links between European Union agricultural and rural development policy, and research and innovation policy – in particular the Horizon 2020 initiative (see box). The aim will be to take a, "facilitator approach," says Mr Mathijs, who is a member of the EIP Steering Board. The EIP will seek to coordinate existing resources – rural development and research funds – and through a strategic implementation plan, will "put in place an innovation brokerage that will bring those worlds together."

From the bottom up

But while the EIP connects the agriculture and research policy areas, instruments are also needed to better link researchers and farmers. Rural development policy will play an important role in this. One of the six priorities proposed for RDPs in 2014-2020 is, "fostering knowledge transfer and innovation in agriculture, forestry and rural areas."

The rural development cooperation measure in 2014-2020 will also "finance the getting together of small groups of farmers, advisors, agribusiness and researchers to test out new approaches in practice," says Martin Scheele, Head of the Unit responsible for the Environment, Genetic Resources, and European Innovation Partnership in the European Commission's Directorate-General for Agriculture and Rural Development.

He adds that, "the basis for these operational groups will be a project plan, which has to be sent to the rural development authority. As long as the themes and projects are in line with the orientations of the EIP, the rural development authority may leave the choice of concrete themes open to the respective operational

group (grassroots innovation), to be administered through calls for [innovation-related project] proposals, and/or it may choose to predefine the innovation themes, focusing on specific issues that are relevant to a region."

Projects could tackle innovation in regional rural economic development, in boosting productivity, or in addressing environmental problems – or a combination of themes. For example, "if you look at areas with permanent grasslands or peat-land, often the economic situation is not that brilliant," says Mr Scheele. "There is potential to develop projects in these areas that respect the needs of the environment and the climate not to turn grassland into arable land, but at the same time, look for ways to provide farmers with economic opportunities."

Cooperation projects should be able to make use of existing rural development mechanisms, such as knowledge transfer, advisory services and investment aid. These have, "in principle, a strong potential to foster innovation," Mr. Scheele notes. "The operational groups established under the cooperation measure can be directly linked with project funding – a group could have investment

aid for a certain project, or use the means available under the knowledge transfer instrument to spread some insights that they gain.”

In addition, cooperation is likely to be crucial in terms of the adoption by farmers of the results of innovative actions. Mr Mathijs points out that unless farmers work together, they may not have the absorptive capacity to invest in innovation. “Small farmers need more collective structures to guide them,” he says, “and farmers’ organisations could play a major role. Even large farmers can benefit from collective approaches because ‘large’ [in agriculture] is still small relative to other sectors.”

Broad-based approach

The European Commission is keen not to be prescriptive about innovation in rural development. Mr Scheele says that “it is the Member State or Managing Authority’s responsibility to make something out of it, to target it and to establish the right selection criteria and the subjects they want to cover.”

There are broad aims, of course. “The very basis,” says Mr Scheele, “is to bring together economic gains, productivity gains and improved environmental performance. Whatever is funded and implemented has to comply with this orientation.”

“But you cannot plan innovation from the top. You have to allow people to address their specific issues in their particular regional, climatic and structural context. Nevertheless, we want to have some measurement at the aggregate level. The two headline indicators for progress are reversing soil degradation in Europe, and reversing the decline in productivity growth in agriculture.”

Petri Rinne, President of the European LEADER Association for Rural Development - ELARD, says that for European farmers, the focus of innovation should be, “more about

quality and adding value to crops than simple production quantity.” Discussions on innovation should also consider how the bio-economy can be developed in rural areas – in other words, the broader management of renewable biological resources, such as bioenergy, as the basis for economic growth.

“These new, promising and value adding opportunities should be the focus of more research, in a practical way, which could lead to development in rural areas that is socially, economically and environmentally

sustainable,” Mr Rinne says. He adds that because innovation in rural development has been somewhat neglected, “there is now considerable potential when a suitable innovation system/environment is created.”

However, he advises against trying to involve the whole farming community at once, but instead to start working with the ‘creative pioneers’, and that by showing good results, others will then follow.



Good examples

A lot of the groundwork has been done in terms of promoting a better exchange of knowledge about rural development and innovation. The Standing Committee on Agricultural Research, which works to coordinate agricultural research activities in the European Research Area, and which connects scientists in 37 countries, published in March 2013 a reflection paper on, 'Agricultural Knowledge and Innovation Systems in Transition'. This is a review of the connections between innovation systems and agriculture and provides a theoretical underpinning to future collaborative action.



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In addition, the forging of better links between innovation and rural development "is already happening at the Member State level," Mr Mathijs says. He gives the example of an innovation support centre (*Innovatiesteunpunt*) in the Belgian region of Flanders, which was set up by the Flemish Farmers' Union to play an 'innovation brokerage' role.

One initiative successfully promoted by the centre aims to help reach the Flemish goal of halving ammonia emissions from new pig sheds, as a contribution to EU air quality objectives, as contained in the National Emissions Ceiling Directive (2001/81/EC) (see detailed case study in the article, 'The role of the EIP in innovation, on page 7).

A new horizon

The framework for European Union rural development support for the 2014-2020 period is not being developed in isolation. The EU is also going through the process of establishing a series of other policy frameworks that will be underpinned by the EU's 2014-2020 budget, and which will contribute to the EU's overarching goal for 2020: that Europe should be on a smart, sustainable and inclusive growth path.

Speaking at a European Network for Rural Development seminar on successful programming, in 6 December 2012, Jerzy Plewa, Director General of the Commission's Directorate-General for Agriculture and Rural Development, said that all EU policies should contribute to the 2020 goal, and that measures would be better coordinated, especially at the programming stage.

To this end, the European Agricultural Fund for Rural Development, alongside the Cohesion and Structural Funds, and the European Maritime and Fisheries Fund, will support 11 objectives expressed as a Common Strategic Framework (CSF). These objectives further break down what needs to be done to achieve the 2020 goal. The CSF objectives are: promoting innovation; improving ICT; boosting small and medium-sized enterprises; shifting to a low-carbon economy; adapting to climate change; environmental protection and resource efficiency; sustainable transport; employment and labour mobility; social inclusion; education; and improving institutions.

Rural development is part of the broad strategic framework and RDPs will have to show that they contribute to these strategic priorities. "There is full consistency between rural development priorities and the thematic objectives of the CSF," said Mr Plewa.

He added that, "an important new element to be taken into account [in rural development programming] is 'complementarity' with research and innovation policy, as embodied in Horizon 2020." Horizon 2020 is the EU's research and innovation framework for the period 2014-2020 and will replace the Seventh Framework Programme for Research and Development.

Horizon 2020 will support research and innovation with a budget of €80 billion for the period 2014-2020. It includes a number of themes and sub-themes that are highly relevant to rural development, in particular the €4.5 billion allocated to food security, sustainable agriculture, marine and maritime research, and the bio-economy.

The aim of this theme, according to the Horizon 2020 proposal, will be, "to secure sufficient supplies of safe and high quality food and other bio-based products, by developing productive and resource-efficient primary production systems, fostering related ecosystem services, alongside competitive and low carbon supply chains." It is expected that the Horizon 2020 legislation will be adopted during 2013.

Further information: http://ec.europa.eu/research/horizon2020/index_en.cfm

The role of the European Innovation Partnership (EIP) in innovation

The European Innovation Partnership (EIP) on Agricultural Sustainability and Productivity is already demonstrating the benefits of better collaboration between rural development policy stakeholders and the research sector. Further outcomes are expected to improve the roll-out of more demand-driven rural research.

The European Commission launched the EIP on Agricultural Sustainability and Productivity in February 2012, with the goal of providing a working interface between agriculture, the bio-economy, science and other relevant sectors at EU, national and regional level. The EIP is a direct response to the challenge of meeting the rising global demand for food, feed, fibre, biomass and biomaterial, within the context of slowing productivity growth. As the European Commission Communication on the EIP³ notes, “the key challenge for agriculture in future is not only to produce more, but also to do this in a sustainable manner.”

As well as enhancing the effectiveness of innovation-related actions supported by rural development policy, the EIP aims to catalyse research and innovation with the twin goals of promoting productivity and efficiency, as well as sustainability (the headline target for the former is to reverse the recent trend of diminishing

productivity gains by 2020, and for the latter, to secure soil functionality at a satisfactory level by the same date).

Implementing the agricultural EIP

The EIP aims to foster the sharing of innovation-relevant knowledge and to facilitate interaction between research and farming practice. It is built on an interactive innovation model and two EU policies are central to its implementation: the post-2013 Common Agricultural Policy (CAP),

in particular the rural development policy, and the EU research and innovation Policy (‘Horizon2020’). The European Commission proposal for the new rural development policy provides an option for co-funding the innovative actions of so-called operational groups (consisting of farmers, foresters, researchers, advisers, NGOs, agri-businesses, rural development authorities and other key actors). According to the proposed rural development regulation for 2014-2020, the establishment and operation of these groups can be supported under the co-operation



3 http://ec.europa.eu/agriculture/eip/pdf/com2012-79_en.pdf

measure (Article 36). Operational groups will also be eligible for support under other measures, such as knowledge transfer and information actions, investment in physical assets, advisory services, and farm and business development.

EU research and innovation policy will provide the knowledge base for innovative actions on the ground through support for applied research projects, cross-border initiatives such as thematic networks, multi-actor

approaches, pilot or demonstration projects, innovation brokers and innovation centres. The EIP can help connect operational groups established in the framework of rural development policy with Horizon 2020 research consortia working on relevant topics. Also, mixed practice experimentation groups or pilots in Horizon 2020 projects may provide innovative project ideas to operational groups. In order to be eligible for support under Horizon 2020,

projects have to involve partners from at least three Member States.

This two-pronged approach is designed to give the agricultural EIP a strong and coherent foundation based on complementary policies (actions under Rural Development Programmes normally take place within certain territories, whilst research initiatives generally co-fund innovative actions at the cross-regional, cross-border or EU-level).

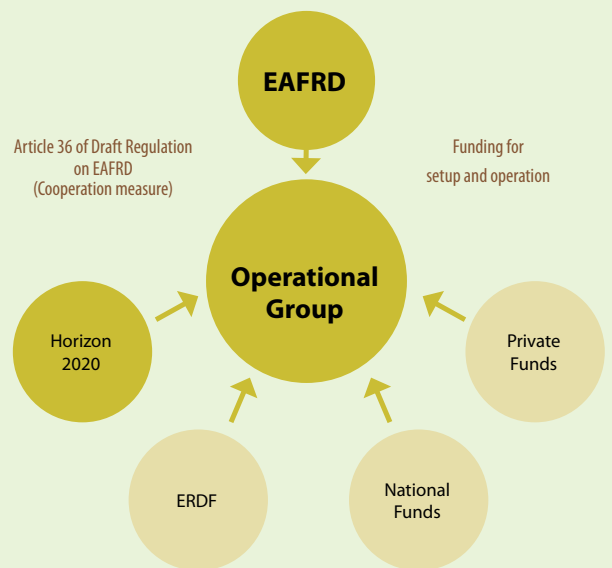
The role of operational groups

Projects to test and apply innovative practices, technologies, processes and products will be carried out by operational groups. It is envisaged that these groups will be created from the bottom-up, by interested actors who wish to work together – farmers, scientists, farm advisers, enterprises and others. Significantly, there are no obligations from the European Commission in terms of the composition, functioning or themes covered by the groups.

Setting-up



Funding and operation





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The EIP network

The catalytic effect of the EIP in fostering innovation will be underpinned by an EIP network, which will work as a mediator, enhancing communication between science and practice, and fostering cooperation. The EIP network will facilitate the effective flow of information beyond the local and regional level and help actors to use effectively the opportunities provided by EU policies. It will have a help desk function and encourage the establishment of operational groups, supporting their work through partnering, focus groups, seminars and workshops, and the establishment of databases (on relevant research results and good

practice examples). Through collecting and communicating information on practical needs, it will also help to guide the research agenda.

Encouraging the establishment of operational groups will be one of the objectives of a new EU-funded EIP network facility – the EIP Service Point – when it is set up. Designed to foster cooperation and enhance communication between science and good practice, the Service Point will also support the groups' work through seminars, databases and help-desk functions. Other goals include: fostering cooperation and enhancing communication between science and practice by facilitating the effective flow of information

beyond local and regional levels; screening relevant research results; sharing good practice; and informing interested actors, including programming authorities, about funding possibilities and opportunities for innovative action.

The EIP Service Point will animate the EIP network, one of two specialist networks (the other being the European Evaluation Network for Rural Development) that sit alongside the generalist European Network for Rural Development – ENRD under rural development policy for 2014-2020.

Role and relevance of the EIP:

- Relevant to all those involved in the RDP lifecycle, including EAFRD authorities, RDP beneficiaries, evaluators and other policy observers;
- Crucial to boosting the competitiveness of European agriculture and unlocking the full economic and social potential of our rural areas;
- Designed to speed the transfer of innovative research results from science to practice;
- To be implemented by operational groups of interested actors, co-funded by CAP, linked to applied research projects, cross-border initiatives like thematic networks, multi-actor



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- approaches, pilot or demonstration projects, innovation brokers and innovation centres financed through Horizon2020;
- Supported by the EIP Service Point - a specialist network for innovation at EU level, which sits alongside the ENRD and European Evaluation Network, as well as complementing national networks.



Conference on EIP priorities and delivery mechanisms

To help the agricultural EIP achieve its goals, the European Commission held a conference on European Innovation Partnership Priorities and Delivery Mechanisms in Brussels on the 19 November 2012. The aim of the conference was to tap into the collective knowledge of stakeholders and research communities on issues related to innovation in agriculture and forestry. More than 250 people took part, including representatives of sectors likely to participate in the planned EIP operational groups, representatives of rural development authorities, the European Network for Rural Development (ENRD), the Farm Advisory System, the Standing Committee on Agricultural Research (SCAR), and also participants from the European Commission.

In line with the approach fostered by the new EIP, the Brussels conference followed a bottom-up interactive format, with plenty of brainstorming and opportunities to allow stakeholders to voice their views on the direction agricultural innovation should take and how best to deliver it. Participants were asked to discuss the priorities of the EIP using a participative set-up, which gave everyone the opportunity to share ideas, subsequently communicated to the plenary session. Three key questions addressed during this session were:

- What areas should be given priority in the EIP?
- What can we do as innovation actors to accelerate innovation?
- What support is needed from the EU/EIP?

This consensus-driven approach highlighted five priority areas that were then discussed in more detail in smaller conference workshops, namely: productivity, resource efficiency, social innovation, the bio-economy, and the supply chain.

EU/EIP support was seen by participants as being about more than just access to funding; it is also necessary to clarify opportunities, rules and linkages within and between rural development policy, Horizon2020, and other funds and initiatives. Up-scaling innovation by supporting demonstration farms and pilot projects was identified as a priority by one group during the workshop sessions. The value of face-to-face meetings, onsite exchange visits and cross-border focus groups was also highlighted.

The outcomes of the conference fed into the first meeting of the EIP Steering Board (made up of Member States and stakeholders) in Brussels in February 2013, and will be used to identify priority areas and issues for the first batch of focus groups to be launched within the EIP network later this year. Governance of the EIP will be light and will rely on existing structures, mechanisms and delivery methods.

Linear and interactive approaches to innovation

Linear innovation stands for a science and research driven approach, where new ideas resulting from research are brought into practice through one-way (linear) knowledge transfer. In an interactive 'system', building

blocks for innovation are expected to come from science, but also from practice and intermediaries. While both approaches are equally valid, innovation generated through an interactive approach tends to deliver more focused solutions, which are easier to implement. Actors involved in projects become co-owners of the

solution, which makes them more inclined to put the innovation into practice. A number of case studies, of which the following two are particularly pertinent, illustrate the value of different approaches and their combination.



Case study: The Baltic Deal, Poland

A successful approach can be seen in the work of the Baltic Deal project in Poland, which has multiplied the impact of 48 demonstration farms to reach more than 3 100 advisers and some 1.6 million farmers in the country. The 48 demonstration farms (part of a wider Baltic regional network of 118 such sites) are designed to showcase best agricultural practices in areas such as buffer zones, reduced tillage, catch crops, good soil structure, drainage and plant cover.

Dissemination of the good practice lessons from the demonstration farms was coordinated by a central agricultural advisory centre (Brwinów Branch in Radom) and multiplied through a series of

workshops for farmers and advisers in the 16 regions of Poland – covering such issues as the impact of agriculture on water pollution; advice on nutrient balance calculation; and the value of rational fertilisation, as well as by the 16 regional agricultural advisory centres via a range of measures, including individual farm visits, small group consultations, attendance at agricultural shows and conferences, a phone helpline, a website and articles in the mass media. To date, more than 2 000 farmers and 350 advisers (plus teachers, politicians and local government representatives) have taken part in training sessions and over 600 farmers have received individual advice that will enable them to develop innovative agricultural practices.



Case study: Innovation brokers in Flanders, Belgium

The Flemish innovation support centre for agriculture ('Innovatie Steunpunt'), an innovation broker, supported a farmer with a novel idea for reducing ammonia emissions from manure (thereby playing a useful role in the implementation of the National Emissions Ceiling Directive on ammonia). Ammonia emissions can be reduced by installing scrubbers and filters, but this is costly. Flemish farmer, Fons Gios, almost by accident, discovered a more straightforward technique for reducing emissions. He found that when he treated pig slurry in a shallow pit with bacteria used to reduce populations of flies, the slurry retained more nitrogen and phosphorus, and emitted less ammonia. Identifying an opportunity, he turned to the innovation support centre for help.

In a summary of the project, the centre said that, "we started our brokerage process by correctly formulating the research question together with the farmer. Ammonia measurements needed to be done and therefore we looked for adequate research partners, who could perform the ammonia measurements... Since ammonia measurements are very expensive, we also needed financial support." This was duly obtained, and the technique has now been tested.

Ilse Geyskens of the innovation support centre says that, "there is a lot of interest from other pig farmers" in the project's outcomes. The Farmers' Union can promote the innovation to about 17 000 farmers, generating potentially substantial ammonia reductions. In a statement, Mr Gios praised the innovation support centre. "Without their help in finding the adequate partners, the ammonia measurements would never have been performed. Because of the need for innovation in pig and poultry farming, this would have been particularly regrettable," he said.

The discovery is an example of both an innovation that addresses environmental goals while reducing costs for farmers – in this case, because ammonia scrubbers and filters don't need to be installed – and of bottom-up cooperation in action. With a focus on innovation, rural development policy from 2014-2020 will hope to support many more such initiatives.



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ENRD support for innovation

The ENRD Contact Point has recently updated the Knowledge Transfer & Innovation (KT&I) section of its **Research and Innovation Gateway** to provide links to other projects that aim to promote or facilitate innovation in rural areas, as well as relevant public and private initiatives, networks, committees, information portals and research papers. An example of the type of useful information available is a recently published reflection paper from the Standing Committee on Agricultural Research - SCAR, reporting on experiences from different countries and regions with regards to Agricultural Knowledge and Innovation Systems (AKIS).

The reflection paper – **AKIS in Transition**⁴ – noted that different parts of these systems, “such as education, extension and research,” face different challenges and are

governed by different, and potentially conflicting, incentives. For instance, education may be only weakly connected to research, extension and business, whilst applied research is often judged on its scientific output, rather than its practical relevance.

It also highlighted the importance of “agenda setting” by farmers and the food sector and concluded that, “networking and cooperation between research and extension (farm advisory) or farmers groups is crucial (to a successful AKIS) and to be promoted.” It also highlighted the need to distinguish between research that is “science-driven” and that which is “innovation-driven.”

Most importantly, the paper stressed the fact that linking Horizon 2020 and the CAP (the role of the agricultural EIP) “should guarantee the collaboration between science-driven and innovation-driven research.”

Recognising that innovation “is first of all the responsibility of businesses,” paper also emphasises that, “it is a government responsibility too.”

In June 2012, the ENRD Coordination Committee launched a Knowledge Transfer and Innovation (KT&I) Focus Group (FG) to analyse how, in practice, RDPs support knowledge transfer and innovation under the current policy framework (see article on ENRD Focus Group on KT&I on page 30). The FG will provide recommendations to Member States about how to promote KT&I in the next programming period. The FG is also investigating how the agricultural EIP can effectively promote KT&I through the RDPs and what the role of National Rural Networks and advisory services could be, for example, in facilitating the emergence of EIP operational groups.





Innovation policy for rural development: from the bottom-up

Innovation challenges have become more complex and solutions need to be jointly developed by relevant stakeholders. In this process of knowledge ‘co-generation’, the differing incentives of actors, and the institutional barriers between them, need to be understood and addressed. In order to better understand the diverse perceptions of this new innovation paradigm, representatives of the research community, policy-makers, farmers and rural communities must share their views about what defines innovation in this new context, the processes and barriers related to it, and the roles of their own organisation and the EIP network.

The research community

Krijn Poppe (co-chair of the CWG AKIS⁵, LEI Wageningen University)

Krijn Poppe stresses that innovation is not just a technological, but also a social process, and as such, it has a disruptive aspect in terms of changing the current position of different stakeholders. In a dynamic context of complex environmental, social and economic challenges, no one actor knows what the best solutions will be in 5-10 years. Consequently, involving all of the relevant actors in the innovation process is essential.

The challenge in such a process is not technical, but is more about how the innovation will fit into business and society. For historical reasons, a lack



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of trust among small farmers with regard to cooperation and knowledge sharing can represent a specific challenge to the innovation process. It can hamper the social processes needed for cooperation. Such ‘win-lose’ situations can be attributed to the fear that sharing market information may result in a loss of market for the one who shares it. To turn such scenarios into ‘win-win’ ones, actors

need to be empowered to innovate in the frame of a common learning process. According to Mr Poppe, the EIP network facility should “focus more on the people and the process, and less on the documents,” to facilitate the shift “from a fighting mode to a collaborative mode.”

5 Collaborative Working Group on Agricultural Knowledge and Innovation Systems of the SCAR Committee

Heidrun Moschitz (SOLINSA⁶ Project Coordinator, FIBL)

Heidrun Moschitz defines innovation in terms of a process and the context in which that process takes place. In some respects, innovation can be mostly about knowledge sharing, as “new knowledge in one sphere may be conventional in another.” She also describes the shift from the product-driven paradigm - for which top-down innovation was developed - to the interactive innovation model, which is better adapted to current and complex challenges relating to sustainability and climate change. In this new context, knowledge exchange really becomes knowledge sharing, as innovation

is “...co-produced and it is a sharing process between various sources of knowledge.”

A particular challenge in such a process could be to teach farmers how to be active partners, because in the framework of top-down innovation farmers have too often been merely the “receivers of knowledge,” who needed to “wait for it to arrive.” A number of shifts are needed: farmers need to learn to be active partners, researchers also need to learn to be facilitators, advisors need to learn to act as innovation brokers, and the scope of innovation should include

environmental as well as economic goals. To support these shifts, the SOLINSA project is developing policy recommendations to help improve AKIS⁷, to promote the evaluation of project proposals for knowledge sharing, and a training course for innovation brokers.

“Researchers often see themselves as the only producers of knowledge, but we have to change our perspective and think about ourselves as co-producers of knowledge.”

Heidrun Moschitz

Janet Dwyer (Professor of Rural Policy at the University of Gloucestershire, CAPRI-RD⁸ Project)

According to Professor Dwyer, the new climate and sustainability challenges make the interpretation of innovation as purely a technological process obsolete. In her opinion, “we need to go further and faster, so innovation cannot be limited to technology, but should also be extended into the realm of policy-making, implementation, learning systems, processes and knowledge exchange.”

She “locates” innovation in three realms: first, it is with the farmers, especially the younger generation or new entrants, who operate as rural entrepreneurs; second, it is in networks with stakeholders who are willing to take a risk; and third, with the policy-makers and administrations who must innovate to create truly enabling governance.

However, innovation has inherent risks and consequently, it needs support. A good example is the support provided by the National Trust (UK), which offers favourable land rents if the tenant farmer undertakes the obligation to manage it in a sustainable manner. The



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scheme provides “financial headroom that allows the farmer to experiment, to innovate.”

In addition to risk, other barriers to change can be: “not feeling the need to change,” and the lack of time. In Ms Dwyer’s experience, the dairy sector is one where farmers typically do not have the time to reflect on their operations. She also quotes other, institutional barriers, in particular within the government administrations of Member States (especially new Member States), where there can be a reluctance to innovate “due to the fear of audits and controls and also related to insufficient human resources”.

To deal with these barriers, the innovation process must be facilitated, and the EIP network facility can play a major role in this by “setting up a system by which you can find partners of common interest spanning scientific research and practice, connecting them, running workshops on specific themes, and creating a repository of good practice examples.”

Speaking of the potential role of her own institution, Ms Dwyer referred to areas such as: identifying opportunities for innovation, bringing active partners together, monitoring how the EIP works, and acting as an independent sounding board for policy-makers.

6 Support of Learning and Innovation Networks for Sustainable Agriculture

7 http://enrd.ec.europa.eu/themes/research-and-innovation-gateway-development/rd-research/information-library/en/information-library_en.cfm

8 Common Agricultural Policy Regionalised Impact Development Dimension

The policy-makers

Inge Van Oost (Policy Officer, responsible for innovation and research, European Commission, Directorate General for Agriculture and Rural Development)

Inge Van Oost defines innovation as “ideas put into practice with success.” Innovation is a process fuelled by co-generation and co-ownership in which different actors voluntarily participate from the start, and which result in targeted solutions and novel approaches. Only when a new, creative idea becomes more or less mainstream, and is frequently applied, can it be called an innovation. Describing the future role of innovation in agriculture and rural development in Europe, Ms Van Oost emphasises the need for “marrying sustainability and productivity” as key targets for any innovation initiative within the EIP.

In this context, the Commission has proposed measures that attract actors to work together in so-called operational groups, to be supported under the rural development policy and the research policy. Operational groups are not a vehicle for stakeholder representation, but for actors to engage voluntarily in concrete actions. The respective groups will

“Innovation only happens when an idea is really put into practice with success. Getting actors to work together will co-create novel approaches and targeted solutions that are put into practice more quickly.”

Inge van Oost

come together on their own initiative, to work around themes of common interest.

The challenge for the EU Member States will be to translate this policy into RDP measures that encourage innovators to work together in a multiplicity of EIP operational groups. Operational groups will be asked to present a plan of operation, to come forward with ideas, and to demonstrate how they can put it into place through their future actions. In order to bridge ‘language barriers’ between researchers and farmers, impartial intermediates or “innovation brokers”

could play a crucial role in identifying new ideas, and in connecting and getting actors to engage in operational groups. Of course, an important ingredient in getting actors to cooperate will be funding. But there are also other benefits: cooperation is about learning and achieving value added and the innovation broker may assist actors in that process.



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Karel van Bommel (Managing Authority, Netherlands, member of the ENRD FG KT&I)

For Karel van Bommel, innovation in agriculture is a process that essentially starts from the bottom - rooted in farmers’ need to adapt to new legislation or solve a problem - but it does not and should not stop there, because the resulting knowledge should be broadly available and applicable. However, at present, innovation in agriculture does not fulfil all of the above criteria due to a number of barriers and gaps in agricultural knowledge and innovation systems in Europe.



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Mr Van Bommel explains that “these barriers exist between research and practical application. There is also a risk for farmers who try innovative products. This is especially true for innovation in relation to sustainable agriculture”. Farmers face the uncertainty of not knowing whether customers are willing to pay higher prices for such innovative products and consequently they are less or not willing to invest in such innovations.

Another notable barrier is the gap between the short-term view of economic actors and the medium- or long-term view of researchers and academia.

An important aspect of innovation in the new paradigm should be openness. Mr Van Bommel explains that, “it is possible to limit the availability of innovation. The question is, should we spend public money on this type of innovation?”

EIP operational groups and EU funding for innovation can be an effective means of overcoming these barriers. In this context, the role of the managing authority is to publish call for proposals from operational groups and select the best proposals and check if the involvement of the agricultural actors is sufficient.

The practitioners

Riccardo Passero (co-chair of the ENRD FG on KT&I, Italian National Rural Network)

“The EIP is a revolution with regard to innovation,” say Riccardo Passero, when asked to define the new innovation paradigm. He emphasises that innovation should be an open and transparent process, leading to tangible results with practical benefits for farming and sustainability. Considered from a process perspective, innovation should be part of the daily practise of farming, and something that does not stop when a project is completed. The best guarantee of this continuity is by “including different actors in operational groups for the co-generation and effective application of new ideas.”

In an innovation process, the scale of the partnership is key, but the process can also be affected by other factors. Mr Passero highlights three of these: One is the lack of close links between the farming sector and the scientific community; the second is that farmers are often not able to create clusters of critical scale and compete against one another; and the third is that universities often operate “closed systems” of knowledge.

To deal with these issues, the EIP network should disseminate research findings and facilitate the contacts between universities, research centres and clusters of farmers during the formation of the operational groups,

while the NRNs and MAs could contribute to the success of Innovation Partnerships (IPs) by developing selection criteria that guarantee the proper composition, and openness of the IP to new players that would not traditionally be involved. Opening up the innovation process and elevating it to the inter-regional or international scene is another important aspect that policy-makers can help to strengthen, stimulating the development of “a virtuous competition among researchers answering to farmers’ needs and sustainability challenges; a competition of innovative ideas to lead to the bottom-up formation of operational groups able to stimulate creative thinking.”



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Sylvain Lhermitte (French Chamber of Agriculture, co-chair of ENRD FG KT&I)

“From our point of view, it is an activity that comes from the public. A lot of novelty is being introduced on French farms, but it becomes innovation when its application is spread in the farming community,” says Sylvain Lhermitte. He continues by stressing that for the real application of innovation, another element is essential: citizens’ willingness to pay as taxpayers or as customers. Innovation can also influence how farms operate, especially considering the new challenges that require solutions for the environment as well as the economy. The advantage of the EIP is the fact that it validates innovation by involving more people, by facilitating cooperation among partners, and by ensuring the continuous scientific validation of novelties by scientists and by on farms experimentation, all working within the same partnership.

However, involving different partners also brings certain challenges, related to overcoming barriers that arise due to a lack of confidence and mutual understanding. According to Mr Lhermitte, discussions at the beginning of the process to build trust and ensure mutual understanding are an essential and unavoidable first step in any partnership building process, predating even the actual definition of the innovation theme. Time and adequate human resources for facilitating this process need to be allowed for.



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Mr Lhermitte provides the following example to demonstrate the importance of allowing adequate time and to highlight the merits of a partnership-based process: “about 30 years ago, in the 1980s, a special breed of pig, the black pig of Bigorre, almost disappeared from France.

To maintain this special breed as a genetic stock, we involved a research institute and farmers in developing a programme, but we allowed farmers to organise themselves. We used the initiative to develop new processes on farms, a new supply chain and special products based on the meat of the black pig. The result is that it has now become a significant programme, involving dozens of farms, a multi-million Euro market, and thousands of black pigs.” He emphasises, however, that without cooperation, effective facilitation, and public

support this initiative would not have succeeded.

Based on the lessons learnt from the above and other cases, the Chambers of Agriculture in France organise training for advisors to enable them to act as innovation brokers, which combine technical expertise and the ability to support change. It has also extended its cooperation network to include Spanish cooperatives, Danish farmers, Wageningen University in the Netherlands, and other international stakeholders. In Mr Lhermitte’s opinion, the EIP should be able to support such cooperation and networking by facilitating knowledge sharing among EU Member States, highlighting specific research topics, and organising focus groups and training with a view to identifying research needs for Horizon 2020 funding.



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István Finta, PhD (MTA KRTK⁹, Mecsek-Völgység-Hegyhat Local Action Group, Hungary)

“Innovation is characterised by the simultaneous presence of two important elements in a process or product: novelty and knowledge, but the demand for innovation may be different on large farms – where it can be more about high-tech applications - and small farms – where the focus is on processes and organisational aspects as well,” explains István Finta. He refers to the example of a demand analysis of local beekeepers and honey producers in the LAG territory he works in. Interestingly, it turned out that the local beekeepers did not need new equipment or new technology, but a more effective marketing organisation for their product. He is convinced of the advantages of an innovation partnership, which could create new and competitive organisational cultures.

He believes that “innovation should really happen in the minds of the actors on the receiving end of knowledge, because if the willingness and faith to put it into practice is missing, it is not innovation.”

However, at present, small farms have only limited access to innovation, and at the same time there is a need for communities and platforms to facilitate better access to knowledge centres. It is not sufficient to have the knowledge at the top and the partnership at the bottom; there must be an intermediary who creates the space where innovation happens, as knowledge does not just trickle down from the top. Farmers’ reluctance to share information, or their lack of motivation are other barriers to innovation, and these

can only be tackled in a bottom-up, partnership-based approach, similar to LEADER. In István Finta’s opinion, innovation should have a broader scope, extending to the entirety of the rural economy and not limited only to agricultural production.

For the organisation of the operational groups, he believes that guidelines to ensure the inclusion of small farmers in the partnerships should be published at a European level. At the local level, LAGs could also play a role in helping to initiate partnership building, and to make sure that small farms are involved and that neither the human factor nor the cultural and social aspects of innovation are forgotten.



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Géza Gelencsér (Hungarian Rural Association, Koppányvölgye Local Action Group, Hungary)

Géza Gelencsér defines innovation as a continuous search for solutions, “rooted in everyday practice.” A process without limitations in terms of sectors, activity or type of institution, and a process validated by practice orientation. “I can also give you an example, and although it is not from the EU, it demonstrates what I mean by practice-oriented. In the USA, a certain part of the research budget is allocated based on the results of forums organised for farmers. These forums are for finding out about the farmers’ actual needs. The programme is coordinated by the Chamber of Agriculture.”

His view is that the EIP offers innovation actors the opportunity to bring local development and innovation closer together. With regard to the local development objectives of the Koppányvölgye LAG, innovation is helping in the development of integrated production systems and a sustainable land-use pattern. However, the current situation is far from ideal, in that support for innovation that is rooted in everyday practice is scarce or lacking.

Another barrier to innovation at present is the monopolisation of knowledge by researchers and academia. “Opening up the scientific research capacities and connecting them to local groups” is a task for both the local development practitioners and the EIP network facility, in addition to the other important role of innovation brokering. At the same time, the locals can help in facilitating the progression towards win-win situations, a process which more often than not necessitates changing the knowledge base, as well as changing the technologies and relationships between stakeholders.

Mr Gelencsér cites the example of his own LAG’s initiative aimed at developing an integrated and sustainable farming system. To stop severe soil erosion on hillsides, perennial crops like alfalfa need to be used, but there is no animal husbandry to use it. Therefore, it is planned to use innovative perennial crops (Sylphium,

Galega) that produce bigger yields of fresh biomass. This biomass is stored as silage to feed a biogas plant, or some of it is pressed to extract leaf protein for animal feed.

“The real validation of any research theme is whether it is practice oriented.”

Géza Gelencsér Hungarian Rural Association,
Koppányvölgye LAG, Hungary

In parallel with the development of the technology, they also work together with a number of partners to develop training for biomass-based renewable energy technology operators: “We are developing a training curriculum and materials for the application of the technology with the help of a ‘LEONARDO Innovation Transfer’ application, also involving the Berufsvörderungs Institute (BFI, Austria - sustainable energy production department) and ALTIC BV (nutrient management division). The full curriculum will be completed by December 2014.”



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Conclusions

The innovation actors' perspectives on the EIP show a remarkable convergence on a number of aspects, which can be summarised as follows:

- Innovation means different things in different contexts, and there is no unique definition for it. Innovation (especially in the rural development context) is seen as being more than

a purely technological process and the simple dissemination of research results. Innovation needs to yield tangible results and have practical relevance.

- Partnership-based, interactive innovation is more likely to provide answers to the complex challenges the EU faces in the next period;
- There is a need for open, transparent, inclusive innovation processes and networks. The role of impartial,

intermediate, innovation brokers is important in connecting and setting up of an EU wide EIP network of operational groups;

- Innovation involves risks and a number of barriers also stand in the way of successful innovation. This justifies the need for public funding and EU coordination to support innovation processes and partnerships (such as the EIP envisages).



Innovation and the EAFRD

The principles and practice of fostering innovation are deeply embedded in the European Agricultural Fund for Rural Development (EAFRD). This article reviews the measures that are and will be the main sources of support for innovation support from the EAFRD in the current (2007-2013) and the next (2014-2020) programming periods, and highlights projects that illustrate some of the innovative processes involved, the results/ outcomes that can be achieved and the relevant lessons learnt.

The EAFRD is built on a solid foundation of rural development programming, which for many years now has recognised the importance of promoting innovative products and processes as key drivers of sustainable, economic growth in rural areas.

The role of innovation in forward-looking farm investments, and in contributing to new ways of delivering environmental services and the creation of more and better jobs through business diversification, was further strengthened with the introduction of a more coherent and strategic basis for rural development in the 2007-2013 programming period. In accordance with the Community Strategic Guidelines for rural development¹⁰, Member States were encouraged to include actions from the full range of available RDP measures in order to foster innovation when

preparing their 2007-2013 rural development programmes (RDPs).

According to the findings¹¹ of the ENRD Focus Group on Knowledge Transfer and Innovation (see page 30), three measures emerge as the most relevant and widely used for promoting innovation in agricultural holdings under the 88 RDPs programmed:

- Modernisation of farm holdings (Measure 121)
- Cooperation for the development of new products, processes and technologies in the agriculture and food sector and in the forestry sector (Measure 124)
- Diversification into non-agricultural activities (Measure 311).



¹⁰ http://europa.eu/legislation_summaries/agriculture/general_framework/l60042_en.htm

¹¹ The outcomes of the work of the Focus Group can be found on the ENRD website's Research and Innovation Gateway:

http://enrd.ec.europa.eu/themes/research-and-innovation-gateway-development/kt-innovation/kt-focus-group/en/kt-focus-group_en.cfm

The role of innovation in building sustainable and resilient rural communities was reinforced further by the 2008 Common Agricultural Policy (CAP) Health Check¹² which highlighted innovation as a broad, cross-sectoral tool to address the 'new challenges' affecting rural Europe – notably, responding to climate change, increasing the production of renewable energy, adopting more sustainable water management practices, halting biodiversity loss, and restructuring the EU dairy industry.

Further creative rural solutions and innovative methods were also encouraged through the European Economic Recovery Package (EERP)¹³, which was also introduced in 2008 to tackle the impact of the global economic crisis. Amongst other things, the EERP introduced targeted support for improving broadband coverage in rural areas, and this is likely to have played an important role in promoting and facilitating various forms of rural innovation, including the creation and marketing of new products and services.

According to Hans-Olof Stålgren from the Swedish Rural Network, "we should remember that innovation is not only about 'big issues' and high-level impacts, nor is it limited to new inventions or modern technologies. Innovation can be found in many different forms, including working in new ways with new techniques to bring diverse stakeholders together for learning and exchange. In Sweden, for example, there are many examples of innovative rural development actions that are based on knowledge transfer and the simple adaptation of proven approaches from one locality or region to another, where the circumstances and context are different".

EAFRD measures for promoting innovation in 2007-2013

As rural businesses in the farm, forestry and food sectors feel increasing pressure from rising costs and intensifying competition, innovation and creativity are becoming more highly valued and sought after. During the

2007-2013 programming period, Axis 1 measures facilitated many dynamic and innovative developments with investment, information, training and advisory support for new products and services, new ways of working, and for accessing new markets, technologies and processes.

The biggest proportion of Axis 1 funding went to measure 121, with Member States allocating a total of €17.8 billion (second only to the amount allocated to agri-environment payments) to supporting the modernisation and competitiveness of agricultural holdings¹⁴. Although commonly viewed as a conventional investment measure, 121 has also proved to be an important tool for facilitating the uptake of innovative new technologies, processes and products, including those of relevance to the 'new challenges' for rural areas, such as the use of renewable energies (see Case Study from Poland), highlighted by the CAP Health Check.



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12 http://europa.eu/legislation_summaries/agriculture/general_framework/l67003_en.htm

13 http://ec.europa.eu/economy_finance/publications/publication13504_en.pdf

14 For the most recent overview of the state-of-play with 'Measure 121 – Modernisation of agricultural holding' see: http://enrd.ec.europa.eu/app_templates/enrd_assets/pdf/measure-information-sheets/C_Infosheet_121.pdf (last retrieved 10 March, 2013)



Case study: the use of solar energy for herb drying in Poland

Crop drying is one of the most energy intensive operations undertaken on farms, and in northern Europe especially, there are few commercially-viable alternatives to the use of oil, gas or coal. Solar drying is one possible alternative, but it is commonly dismissed or overlooked because of the inclement summer weather.

Dr Edmund Giejbowicz, from the Foundation of Assistance Programmes for Agriculture, and a Polish member of the ENRD Focus Group on Knowledge Transfer and Innovation explains, cites the example of “a farmer in the Lubraniec region, who got the idea from an international trade fair that he could build a solar collector to provide a complementary source of energy for the low temperature, low speed drying of his herbs. The technology is not new, but it has not yet been applied in Poland. After discussion with the agricultural advisory centre, he successfully applied for RDP funding under Measure 121 and he now has a fully operational system, with 100 solar collectors working to dry herbs and fruit from early June to mid-October on his 21 ha farm”.

Before installing the solar collectors, this farmer was burning around 100 tonnes of coal dust per annum (using two 240 kW boilers) to dry an average of 350 tonnes of fresh herbs. The purchase of coal



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dust is now reduced by around 40%, with obvious benefits for the long-term profitability of the business and the environment.

As Mr Giejbowicz says, “the availability of EU funding ensured that this technology was accessible to the farmer. He took a risk and has now proved that solar energy drying works in our climatic conditions. We have disseminated his experience through the rural network, but unfortunately it has so far not attracted much interest. However, we believe that projects supporting the use of renewable energy in agriculture must continue to be encouraged as they are cost effective and environmentally beneficial”.

An exciting and entirely new policy tool, introduced for the first time in the 2007-2013 programming period, is measure 124 (see Case Studies from Italy and Finland). Based on the assumption that innovation is a ‘co-evolutionary’ learning process, involving various cooperating actors (including researchers, advisers, farmers, processors and distributors) who all contribute to the generation and adoption of new ideas and approaches, this measure aimed to encourage and support cooperation during the development of new farm and forestry products, processes and technologies.

Measure 124 was programmed in 14 Member States, with a total budget of €586 million allocated for 2007-2013. By the end of 2011, only 15% (just over €87 million) of the measure’s allocated funds had been used, supporting nearly 5 800 cooperation initiatives - of which around 90% concerned the development of new techniques¹⁵. The relatively low and slow uptake of the overall budget allocated to Measure 124 is thought to be a reflection of the fact that it is a new measure, but there have been some notable ‘hotspots’ of activity.

By the end of 2010, for example, Finland had supported a total 4 950 cooperation initiatives under Measure 124, exceeding its national target for the whole programming period and representing by far the most initiatives established in any single Member State – a reflection of the long history of governmental support for rural innovation in Finland, as well as the active involvement of researchers, such as the Ruralia Institute (see Info Box), with rural businesses. Denmark had also exceeded its 2007–2013 target by the end of 2010, while Austria had supported 68% of the envisaged number of cooperation initiatives.

15 For the most recent overview of the state-of-play with ‘Measure 124 – Cooperation for development of new products, processes and technologies in the agriculture, food and forestry sector’ see: http://enrd.ec.europa.eu/app_templates/enrd_assets/pdf/measure-information-sheets/C_Infosheet_124.pdf (last retrieved 10 March, 2013)

The Ruralia Institute (University of Helsinki)

For many years it was assumed by academics and policy-makers that most technological, economic and social innovation tended to occur in urban areas, where key driving forces such as research and higher education were centred. One notable exception to this school of thought was Professor Sami Petri Kurki. With his team in the Ruralia Institute (University of Helsinki), Professor Kurki has been actively studying and promoting 'rural innovation' and 'rural innovation systems' for 25 years.

As Professor Kurki explains, "the mission of our institute is to improve the welfare of rural people and develop sources of livelihood in the rural areas through research, development, education and training. Many of our research and development interests are focused on rural entrepreneurship and, specifically, on the development of practical models to enhance innovation processes in rural SMEs. Finland has implemented a comprehensive rural development programme, with an emphasis on such innovation systems, since the beginning of the 1990s".

The Ruralia Institute employs around 70 people and is geographically divided between two sites, over 300 kilometres apart, in the rural heartland of southern Finland. "We are an independent, multidisciplinary research and educational institute" says Professor Kurki. "Our staff are connected with all aspects of rural entrepreneurship, policy, culture, communities and services. You can't maintain that type of connection from Helsinki".

The main research topics at the Ruralia Institute are rural policy, innovation systems and the interaction between towns and rural areas. Two specific fields of expertise within this general framework are organic food chains and cooperation / cooperative entrepreneurship – both of which, Professor Kurki stresses, "...are concerned with the well-being of wider society, as well as the economic development of rural areas".



© Ruralia Institute

Professor Kurki further explains that the Institute aims to build on its research activities to "...create and promote practical concepts that respond to the real challenges of rural development. Our researchers work in partnership with local businesses to create new operational models and innovations based on the combination of their scientific competence, practical knowledge and hands-on experience. These development projects combine research-based knowledge and rural development requirements with the aim of promoting rural entrepreneurship, fostering innovation and supporting regional development."

The Institute also offers two programmes of university-level education on 'Rural Studies' (multidisciplinary rural development) and

'Co-op Network Studies' (cooperative entrepreneurship). These programmes form part of a multidisciplinary teaching network, which operates between several Finnish universities and is co-ordinated by the Ruralia Institute.

Professor Kurki concludes that, "innovation is happening in most, if not all, of our rural regions in Finland. We are proud to help promote this innovation, guided by the shared values of our institute - a thirst for knowledge, a desire to find solutions, a joy of doing, a strong feeling of responsibility, and a commitment to reliable partnership".

Further information: http://www.helsinki.fi/ruralia/index_eng.htm

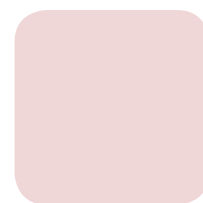
In the Netherlands around 70 projects are submitted every year for funding under Measure 124, of which about 30 are usually funded. The majority (77%) of approved applications focus on process innovation and most (63%) involve co-operation between two or more farmers. Around half of all applications are triggered

by information / guidance received from a farm adviser. The measure was evaluated during 2012 by LEI (the Dutch Agricultural Economics Research Institute), which found that, "around two-thirds of participants in the measure indicated that without financial support the innovation process would have stopped. Grant aid

helped them to overcome the lack of financial resources and greatly accelerated the cooperation process with partners, leading to higher quality outcomes. It is also clear that farmers see real benefits from working with each other, as 60% continued to cooperate after their initial project had finished."



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Case study: joint development of new potato varieties by growers in Italy

There are over 4 000 recorded varieties of cultivated potato in Europe. Some are familiar commercial varieties, whilst many others are specific to certain regions or even localities.

There are two potato-growing associations in Emilia-Romagna, which represent all potato producers in the region. In response to the demands of both local consumers and farmers, the associations decided to work together to launch a project under Measure 124, to breed a new range of high quality varieties that were well adapted to the local environmental conditions, farming traditions and the preferences of local customers, including processors.

The associations turned to the Centro Ricerche Produzioni Vegetali (CRPV) - the Plant Production Research Centre - for assistance. CRPV is a cooperative company, approved and regulated by the Emilia-Romagna government to promote and carry out research, field testing and extension services for crop production in the region. CRPV works in partnership with the farm and food industries to support innovation and research that responds to the need to improve food safety, add value to products, reduce negative environmental impacts and promote sustainable resource use.

In this case, Measure 124 funding was used to finance a breeding programme that involved the direct collaboration of 22 local growers

and two scientific institutions affiliated to the CPRV. The project succeeded in breeding three new potato varieties that are harder and more disease-resistant,

as well as having good cooking qualities. All three varieties are currently in the process of registration and once registered will be immediately available for commercial use.

According to Riccardo Passero from the Italian National Rural Network, and co-chair of the ENRD Focus on Knowledge Transfer & Innovation, "this project is an excellent example of the great potential of Measure 124 for creating innovative new linkages and synergies between producer associations, research institutions and farmers. One of the key lessons to be learnt is the importance of promoting the active role of as many players as possible in such cooperation projects, especially those who handle the relevant parts of the production chain. Greater integration with training, information, and advisory actions is also important for disseminating successful innovation."



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Case study: the 'Agro Living Lab' in Finland

Governmental support for user-driven innovation is a high priority in Finland. One specific approach used to promote this is the so-called 'Living Lab' concept, which aims to provide an environment for actively engaging businesses, organisations and citizens in the co-creation and testing of innovations (read more at: www.openlivinglabs.eu).

The 'Agro Living Lab' is one of 14 Living Labs in Finland. It brings together three partners: the Technology Centre and the University of Applied Sciences in Seinäjoki, as well as the Ruralia Institute at Helsinki University.

"The Agro Living Lab has a specific focus on engineering and the design of new machinery and smart technologies that are tailored both to the needs of machinery companies and farmers or foresters who are the end-users," says Sanna Kankaanpää, Project Manager at the Seinäjoki Technology Centre. "We have a network of end-users and we organise various fact-finding trips, discussion events and innovation workshops to facilitate active learning and exchange between them. Then, when interested machinery companies contact the Agro Living Lab, we negotiate a project with relevant end-users in the network. For example, a typical project might

involve the study of user needs or an assessment of the usability of some specific machine, or a combination of such activities."

Funding from RDP measures such as 124 (Cooperation for the development of new products, processes and technologies) and 312 (Support for business development) is important for the operation of the Agro Living Lab, especially for the financing of projects with the machinery manufacturers seeking cooperation with the end-users of their products. "Good dialogue with the paying agency on eligibility and the preparation of a funding application is essential," says Ms Kankaanpää, adding that, "you have to ask for all the details from the paying agency because you cannot be sure if some actions are eligible or not."

"Overall we are confident that the Agro Living Lab creates a win-win situation for all concerned," she concludes. "The machinery manufacturers develop more viable and marketable products and the farmers and foresters gain access to equipment that is better suited to their needs."

Further information (in Finnish) can be found here: <http://www.agrolivinglab.fi>



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In addition to the on-going dynamics of innovation in the food, farming and forestry sectors already noted, rural communities also rely on the same spirit of innovation and entrepreneurial creativity to help diversify the broader rural economy, to make rural areas / settlements more viable and attractive places to live and work. Measure 311 plays an important role in this respect, by supporting the diversification of farm businesses into non-agricultural activities¹⁶ (see

Case Studies from Sweden and the Netherlands).

Measure 311 was programmed in 17 Member States, with a total budget of €2.1 billion for the period 2007-2013, of which €635 million or 30% was spent by the end of 2011, supporting over 10 000 beneficiaries. Numerous categories of non-agricultural activities are eligible for support, including service, craft and trade activities. Axis 3 measures, including measure 311, were also highlighted by the CAP

Health Check as important tools for supporting local-scale renewable energy projects, as well as the diversification of farmers into bio-energy production.

Innovation is one of the seven original guiding principles of the LEADER approach and there has been a strong interaction between Axis 3 and LEADER (see Case Study from the Netherlands). See the article on LEADER's role in innovation on page 33.



Case study: new approach to weed control in Sweden

Initially, nobody believed in the idea; some people thought it was a joke, but the unique 'Combcut' weeding machine invented by Swedish engineer, Jonas Carlsson, is proving to be a great success, and it was funding from the Swedish RDP (measure 311) that helped to get the product onto the market.

The Combcut is a mechanical weeder that uses a completely new and patented method to exploit the physical differences between crops and weeds in order to kill weeds in cereal crops without the use of herbicides. According to Jonas Carlsson, "the machine uses a giant comb which allows thinner plants to pass through whilst cutting or crushing the thicker stems of troublesome weed plants like thistle and dock. This is a completely new technology that has great potential in organic farming, as well as in reducing, dramatically, chemical use in conventional crop production. Agriculture is one of our basic industries and we must make innovative use of technology to ensure it is more sustainable."

Developing the Combcut was challenging for Mr Carlsson, and he was close to giving up on several occasions, especially when others doubted his invention. It was also difficult to cope financially. "We were in a grey zone, with a product that had to be developed, and at the same time we had a lot of costs," he explains. "Neither venture capital companies or banks will get involved if the operation is not underpinned by a reliable source of capital. The funds provided by the RDP to support collaboration with business developers and other engineers were therefore essential."

Mr Carlsson has patented the Combcut weeder in the EU, Russia, the USA, Canada and Australia. "We have sold 70 machines so far and are moving into an ever-growing export market. The potential is enormous and the lesson I have learnt is simple – don't give up, believe in your ideas. Help and support is available, so use it!"

Further information: www.justcommonsense.eu



Case study: a farm spa and wellness centre in the Netherlands

Any form of farm diversification involves some degree of vision and courage, but diversifying from a well-established livestock enterprise to a spa and wellness centre is a particularly bold and innovative step. Nonetheless, this is the potential of measure 311 (Diversification in non-agricultural activities), which has helped to rejuvenate a long-standing family farm in the Netherlands and the enthusiasm of two generations of the family.

"We are a traditional farming family. The farm has been in family ownership since 1645 and was built up into its current form in 1893," explain Frans and Marinka Steggink. "However, our three daughters were not keen to continue dairying, and the farm buildings would have needed substantial upgrading for us to stay in business. So, while thinking about upgrading our equipment we also started to look at other options."

The family decided to substitute the dairy unit with beef rearing and to exploit the tranquil rural setting by developing a spa and wellness centre, with good quality farmhouse accommodation.

"We spotted the idea for a franchised spa operation in a local newspaper," says Frans Steggink. "We continue to own the farm, but the franchise is operated by an entrepreneur, who is piloting the farm spa idea. It was a new venture for all of us and it took two years of research and planning to figure out the details of the franchise partnership."

A business plan was developed with the help of consultancy services, and 20% funding was secured from the Rural Development Programme 2007-2013 for the Netherlands to help adapt the farm buildings and equip the wellness centre.

More than 100 customers have been using the spa per month. Many local products are used and this is also proving to be very appealing to clients.

"We learned that it is important to ask for help right from the start when taking a risk with a new business venture. In our case, we made good use of support from local government and the chamber of commerce. The municipality was proud to be hosting the first pilot spa project, so we linked its name, Nutter, to the project," says Mr Steggink.

Further information (in Dutch) can be found here: <http://www.boerderijspa.nl>



© Boerderij Spa Nutter

During the current programming period, the concept of innovation has not generally been associated with Axis 2 (and its predominantly area-based compensatory payments for sustainable land management) in the same way that it has been associated with the project-based aid available under the Axis 1 and 3, described elsewhere in this article. However, as Pille Koorberg from the Agricultural Research Centre in Estonia says, “whilst there is relatively

little scope for individual farmers to be innovative within the strictly defined management prescriptions of an agri-environment scheme, there have been some interesting and innovative approaches to implementation. This includes integrated delivery, as well as collective and community-led approaches. Here in the Baltic Sea region, we are very keen to foster more creative thinking amongst policy-makers, researchers and other stakeholders about such

approaches, in order to find common solutions to our common sustainable land management challenges.”

Axis 2 delivery mechanisms were recently reviewed in detail by the **ENRD Focus Group on Delivery of Environmental Services**¹⁷. More information can be found on the ENRD website (see also Case Study from Romania).



Case study: agri-environment support for common grazing and community development in Romania

There are large areas of common grazing land in many EU Member States, much of it dominated by traditional, low-input systems and high nature value (HNV) agriculture, which are threatened by their declining profitability and the continuing trend towards rural depopulation.

According to Razvan Popa, a local environmental consultant with Fundatia ADEPT, in Romania, “we face similar problems in Transylvania and risk losing much biodiversity if our common grazing land is abandoned. However, local farmers have found an innovative way to use agri-environment payments to keep animals grazing on the communal grasslands, whilst also supporting local business and community development.”

In 2010, a group of 20 farmers from the Seica Mare commune, in Sibiu County, formed the CALVA Grazing Association, in partnership with the local authority. The aim of the grazing association is to work cooperatively to make full and effective use of the agri-environment payments under Measure 214 in Romania to: i) protect the local landscape and natural heritage; and ii) develop the livelihoods of the association members and support community investment in buildings, equipment, training, events and other activities.

The CALVA association has a five-year rental contract on 940 ha of common grazing land, which is owned by the Seica Mare town hall. With this in place, the association successfully applied for agri-environment payments totalling around €200 000 per year. A proportion of the income received from these agri-environment



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payments is then committed to a local community development fund. Investments have already been made to support the processing of local farm products, to improve livestock breeding, as well as in vocational training for local people, and a number of cultural initiatives.

There is great potential for applying this approach in other regions and countries, but it does take time. As Razvan Popa says, “the CALVA association is a useful model for other grazing associations that are interested in forming partnerships with their local authorities to make use of common grazing land for economic, environmental and social purposes. However, during the first years of such an initiative it is difficult to meet the initial expectations of the farmers, and decision-making processes can be slow, as everything needs to be negotiated and discussed between the members.”

EAFRD measures for promoting innovation in 2014—2020

The role of innovation will be further strengthened during the 2014-2020 programming period, with a particular emphasis on aligning agriculture and rural development with the Europe 2020 strategy and the need for future economic growth to be smart (based on knowledge and innovation), sustainable (in line with the long-term needs of the planet) and inclusive (beneficial to all society). The European Commission's proposal on rural development policy post-2013 states that, "it will be increasingly essential to improve agricultural productivity through research, knowledge transfer and promoting cooperation and innovation," and "fostering knowledge transfer and innovation in agriculture, forestry and rural areas" is one of the six new cross-cutting priorities proposed for rural development policy and associated interventions.

In addition to the introduction of the European Innovation Partnership (EIP) on Agricultural Sustainability and Productivity (see page 7), the rural development measures that currently support innovation will also

be broadened and strengthened. In particular, and despite its relatively low levels of uptake to date, the scope of measure 124 will be significantly reinforced and extended to accommodate the diverse forms of cooperation activity (economic, environmental and social) that are appropriate and relevant to the different development conditions and rural structures of the Member States.

By strengthening the cooperation measure, the aim is to address the issue of poor coordination and fragmentation among actors in the agri-food sector, and also to improve innovation through the pooling of skills, competencies and networks. Support is proposed for three broad types of cooperation activity:

- Cooperation activity involving two or more actors, within i) the farm or forestry sector (horizontal cooperation), and/or ii) the agri-food and bio-energy sectors (vertical cooperation), and also including research and knowledge transfer institutions. Explicit provision is made for pilot projects, as well as for cooperation across regional and national borders, thereby extending and complementing the territorial-based approach of LEADER;

- Clusters or networks, which bring together a variety of actors to share needs and knowledge; and
- Operational groups for agricultural productivity and sustainability (see EIP article on page 7). These groups will be central to fostering innovation in a broad range of areas, and it is intended that they will bring together farmers, researchers, advisors, businesses and other actors to initiate and develop novel approaches in various areas of the agricultural sector. The cooperation measure will support both the setting-up of operational groups (bringing together a targeted partnership of actors around a concrete project plan) and the realisation of projects.

The proposed measures for supporting and enabling innovation in the next programming period are very exciting and have huge potential to increase knowledge exchange and the incubation and realisation of innovation in many sectors. Furthermore, it will soon be possible to discuss them in more detail, when the programming guidelines for innovation and implementation of the EIP are published.





The ENRD Focus Group on Knowledge Transfer and Innovation

The European Network for Rural Development (ENRD) is actively contributing to the promotion of innovation through the EU rural development policy. A Focus Group was set up by the ENRD Coordination Committee to look into forms of support provided by current Rural Development Programmes (RDPs) to knowledge transfer and innovation operations, and to provide recommendations for the design and implementation of the future generation of RDPs (2014-2020). The Focus Group will also be looking at aspects relevant to the implementation of the European Innovation Partnership (EIP) for Agricultural Productivity and Sustainability, and the establishment and functioning of operational groups.

The Focus Group (FG) comprises around 40 experts from across the EU. These experts have identified examples of innovative projects, analysed the elements that made them a success and, from the results, have generated a set of lessons that could be used by policy-makers in the design and implementation of the next generation of RDPs. The activities of

the Focus Group were carried out in two phases, from June to December 2012 ('phase one') and from January to June 2013 ('phase two')¹⁸.

During the first phase, the FG produced a background paper¹⁹ that provided an overview of recent developments in thinking about knowledge transfer and innovation processes in rural development. The

paper assesses the contribution of the current RDP measures, as well as the potential contribution of the proposed measures for 2014-2020, including the establishment of the agricultural EIP. It also provided the conceptual reference framework for the work of the FG, and during its development three issues became very clear:

Lessons learnt

The FG has drawn several relevant lessons from the cases analysed:

- ✓ Animating potential innovators: very often a possible innovation has been conceived but stakeholders lack the knowledge and support needed to proceed.
- ✓ Advisory services and innovation brokers play a key facilitation role in a process that can have a high level of complexity and involve multiple actors.
- ✓ Good communication and cooperation is fundamental for success.
- ✓ Assessing market needs is a precondition for innovation: understanding market trends helps to identify the domains for innovation.
- ✓ Combining different funds and different measures enables more complex and ambitious projects to be implemented.
- ✓ Building the right partnership is important to ensure that the motivation, skills, and knowledge of the subject are in place.
- ✓ A business model that can be adapted to local specificities, and incorporates the economic, social, and cultural characteristics of an area is required.
- ✓ Public authorities and regulations need to be sufficiently flexible to implement rural development policy that supports an evolving innovation process.
- ✓ Risk-taking and the possibility of failure are integral parts of the innovation process.
- ✓ A clear framework is important to define the measures and conditionality which can lead to innovation.

- a. The concept of innovation in rural development should not be limited to a single definition. Instead, as situations vary according to the situation, and specifically for policy recommendations, innovation is to be considered as a permanent process of adapting to specific contexts and evolving needs.
- b. The existing knowledge and innovation systems have tended to focus on agriculture. Environmental and social innovation, as well as new cooperation methods, for example, between public administrations, farmers and other stakeholders in the rural domain, are also highly relevant.
- c. Policy must promote a 'culture of innovation' that reaches beyond the actors in the Agricultural Knowledge and Innovation System (AKIS).

65 project examples were received from 17 Member States, providing a strong evidence base for further analysis and the formulation of initial policy recommendations for the EU and the national level. Furthermore, it confirmed that the EIP will play an important role in creating an 'innovation enabling climate' within the RDPs for 2014-2020. Crucially the FG concluded that:

1. There is an expressed need in Member States for guidance on how to support bottom-up innovation processes and emerging

innovation networks. Lessons from practical experience can inform both Member State and EU level action.

2. Current rural development policy already has experience with several instruments that support innovation, such as measure 124 (Cooperation for development of new products, processes and technologies in the agriculture and food sector and in the forestry sector), Local Action Groups, and National Rural Networks.

During the first phase of its work, the FG designed a questionnaire to collect and assess current RDP experiences in support of KT&I. More than



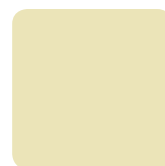
Initial policy recommendations

Based on the lessons learnt, the FG has drawn a number of initial policy recommendations for six relevant intervention areas:

- i. Simplify rural development regulations: minimise the administrative burden related to all innovative projects.
- ii. Connect RDP-networks, innovation networks and EIP-networks within the EIP: invest in good communication on, and coordination within, the EIP, at the EU and Member State level.
- iii. Enable a climate of innovation: consider complex innovation processes; allow for risk and failure; follow a 'step-wise' approach in planning and in funding; learn from the experience and share the knowledge acquired.
- iv. Promote wide stakeholder involvement: start informing relevant actors now about the objectives and opportunities of the EIP operational groups for 2014-2020, with the support of the National Rural Networks.
- v. Strengthen the already existing Agricultural Knowledge and

Innovation System (AKIS): ensure the actors in AKIS are aware of the potential of the EIP operational groups.

- vi. Support relevant networks in the formation stage: challenge community-led local development (CLLD) groups or LAGs in the next programming period to initiate and support innovation at micro-regional and transnational levels, and to make use of the EIP.





LEADER's role in innovation

Innovation has remained a fundamental principle of the LEADER methodology since its inception, enabling a culture of creativity to be developed in LAG areas across the Member States. Starting as a pilot approach in selected European regions, which empowered local partnerships to design and deliver a strategy to develop their area, it has now been mainstreamed as a cross-cutting tool for the local delivery of rural development policy. The 2014-2020 programming period will see LEADER evolve once more, to deliver Community-Led Local Development (CLLD) utilising a multi-fund approach, and so to become a tool to enable communities to support more complex projects with the expectation this will enable higher levels of innovation.

Innovation as a priority was introduced in rural development policy by the LEADER Community Initiative. The pilot concept of LEADER, as defined by the Commission's Notice on Leader+²⁰ underlines the multiple aspects of innovation, which is defined as:

- the emergence of new products and services that incorporate the distinctiveness of the local area, new methods permitting the combination of the area's human,

natural and/or financial resources, resulting in a better use of indigenous potential;

- the combination of and links between economic sectors that are traditionally separate, original forms of organisation and involvement of the local population in the decision-making process and in implementing the project.

Above all, innovation is an important dimension of the local development

strategy. The LEADER+ ex-post evaluation 2010 report²¹ recognises that the pilot nature of the strategies fostered innovation, particularly by reconfiguring and enabling local actors to embark on new activities, by combining existing activities in new ways, and by linking local competences to external sources of knowledge and technology. LEADER acts as a mind-opener, but opening minds does not only mean looking beyond geographical borders; it also means

20 Official Journal C 139 of 18. 5.2000 Commission Notice to the Member States of 14 April 2000 laying down guidelines for the Community initiative for rural development (Leader+) (2000/C 139/05)
21 http://ec.europa.eu/agriculture/eval/reports/leaderplus-expost/index_en.htm

perceiving 'otherness' in one's own area in new ways,

Previously, innovation was seen primarily as a linear process of research and learning. Now, however, a new systemic approach to innovation has been recognised, which focuses on the importance of social mechanisms. This kind of innovation is made possible through joint learning, the sharing of information, and the exchange of knowledge, thereby becoming a joint, social, and continuous process in which the combination of different sources and types of knowledge creates something new and innovative²².

Representing a territorial, participatory and endogenous approach to rural development, LEADER embodies this systemic approach to innovation, enabling local communities in rural areas to utilise their knowledge and learning to develop local resources. This process builds the capacity of local communities and supports the creation of local, regional, national and international knowledge exchange networks²³ - the essential ingredients required to encourage and enable innovation.

Building social capital and encouraging networking are seen as the foundation of an innovative LEADER methodology, due to the belief that a strong and effective community is socially cohesive and has high levels of social and cultural capital²⁴. This bottom-up approach, incorporating capacity building and networking, helps to foster social capital and cohesion in rural areas, which in turn encourages the development of innovative approaches, creating an environment in which innovators are more likely to flourish²⁵.



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This new type of 'social' innovation has been thriving within the LEADER approach, enabling local partnerships to develop the elements required to support new, innovative processes, products and services that are encouraged and supported by local people. LEADER's ability to capture and utilise local knowledge in robust, bottom-up social networks has been the key to its success in enabling innovation.

Innovation in a local context

LAGs are encouraged to design and implement innovative local development strategies. In doing so, LAGs have to elaborate their own definition of innovation, which is interpreted as something 'novel' in a specific local context. Innovation can be the implementation of ideas and solutions known elsewhere but new in a given area (in terms of approach, method, product, project, market etc.). This implies that there may be differing definitions of innovation depending on the LAG.²⁶ The bottom-up LEADER approach gives

priority to the grassroots-level, where ingenious solutions are continually developed that help to improve livelihoods and promote sustainability. Rooting innovation in local problems, resources, capabilities and socioeconomic conditions makes it meaningful to communities, which maintain control over the processes and outcomes. Grassroots innovation requires adaptable, locally inclusive policies.

LEADER explores "niche" spaces, where small scale innovation is allowed to flourish. LEADER also has a role to play in supporting inclusive innovation, whereby results of innovation are spread equally among the local community, including those on the margins of economic growth.

LEADER, cooperation and knowledge transfer

LEADER also encourages inter-regional and cross-border cooperation and joint action between rural areas. By mid-April 2013, at least 913 inter-territorial projects (data from 16 Member States) and 330

22 Oreszczyn, S., Lane A.B. & Carr, S. (2010). The role of networks of practice and webs of influencers on farmers' engagement with and learning about agricultural innovations. *Journal of Rural Studies*, 26: 404-417

23 Convery, I., Soane, I., Dutson, T. and Shaw, H. (2010), Mainstreaming LEADER Delivery of the RDR in Cumbria: An Interpretative Phenomenological Analysis. *Sociologia Ruralis*, 50: 370-391.

24 Dargan, L., Shucksmith, M. (2008) Leader and Innovation. *Sociologia Ruralis*, Vol 48, Number 3

25 EU SCAR (2012), Agricultural knowledge and innovation systems in transition – a reflection paper, Brussels.

26 Extended Report – ENRD LEADER Sub-committee Focus group on Preserving the Innovative Character of LEADER

transnational projects had been approved.

Cooperation activities provide different kinds of inspiration for LAGs. Cooperating with LAGs from other countries provides access to alternative ideas for rural development and generally, the kinds of projects that are undertaken would not or could not have been implemented without cooperation.²⁷

In many cases, this sharing of knowledge, information and new perspectives through cooperative activities has led to quite radical innovations. Sharing the implementation of a new innovation with partners can also be seen as an opportunity to mitigate the perceived risk at local level, providing the confidence to win support.

Cooperation across several Local Action Group (LAG) areas, particularly when this also involves establishing partnerships, becomes more important as an innovation evolves. Most innovations will start locally, on a small scale. Some then move on to become part of a joint cooperative action, shared across areas. This sharing helps to develop the innovation further, consolidating and expanding

the activity, process or product it has developed.

The introduction of new partners brought about through cooperation can also increase the availability of skills, knowledge and competencies, further enabling the development and success of innovation. Cooperation and joint actions enable needs to be identified and solutions to be found that are more effective.

The mainstreaming of LEADER and future opportunities

The mainstreaming of LEADER in the 2007–2013 programming period has enabled an increase in the coverage of LAGs implementing the LEADER approach, with the number of groups more than doubling. This has increased the focus of rural policy on recognising the importance of place, the bottom-up approach and innovation in rural areas. Throughout the lifetime of LEADER, innovation has been witnessed in a range of rural development activities. Whereas other policy measures have tended to focus on innovation within the agri-business sector, LEADER's

approach has supported innovation across all aspects of sustainable rural development.

Greater participation in the LEADER methodology has led to more innovation and a significant increase in the level of cooperation between LAGs, inter-regionally and on a transnational basis. Importantly, it has also enabled new LAGs to benefit from process and project knowledge and information developed by existing LAGs.

Equally, it has also supported ongoing innovation in communities that have been delivering LEADER in their area during several programme periods. There are many examples of previously supported projects being developed further, exploring new innovations after their initial funding period or, as with the Hungarian example of entrepreneurship training in schools, where the infrastructure, expertise or markets developed during previous projects inspired or enabled further innovation. The more experienced a LAG and the community it represents become, the more confident they are to manage risk and encourage innovation.





Case study: LEADER and innovation in the agri-business sector - entrepreneurship education for rural schools in Hungary

© Koppányvölgye LAG



The Transdanubian region is an agricultural area, typified by small settlements, a low number of small and medium-sized enterprises, few local products, and rural poverty, resulting in extensive emigration. The

region does, however, have a very rich folklore and a thriving yet underutilised natural heritage. To encourage younger people to remain in or to return to the area, an innovative entrepreneurship education model was developed.

A new 'entrepreneurial skills and local identity' course was introduced in schools for pupils in the 10-14 year age group. Fully integrated into the official curricula, these lessons and practical workshops consist of either one or two modules each semester.

Each module focuses on one local product, for example fruit jam, sausage, pickles, beeswax candles or soap, and includes a minimum of two preparatory lessons integrated into traditional subjects,

such as local history, biology or chemistry, where the pupils learn about the cultural background, technology, processes, materials and other aspects related to the selected product. This is followed by practical workshops, lasting between 4-6 hours, where pupils make the product themselves. Finally, evaluation lessons, which are integrated into traditional subjects such as maths or art, take place where pupils calculate the costs, prices, turnover, etc. and prepare designs for the product.

This course also uses local community produce, workshops financed by LEADER, and an experimental Dairy School, which includes a stable with two traditional cows and a small milk processing unit also supported by LEADER.

Géza Gelencsér, Chairman of the Vox Vallis Development Association and the Koppányvölgye LAG said, "the infrastructure provided by LEADER gave us the opportunity to develop this innovative education programme in our schools. It gave the children the chance to have real hands-on experience of working with local products, while making sure they also understood the finances and marketing skills needed to make a business successful. It is vital that LEADER is able to provide flexibility at a local level, at both the application and delivery stages. With this support and flexibility we can encourage people in our community to try new things, and to develop new products and new processes."

Mainstreaming has, however, brought its own challenges. The increased administrative burden and the indicators of success used at Member State level have, in some cases, hindered the LAGs' willingness to support riskier, more innovative projects. Innovators have also struggled with the application process and the perceived inflexibility of the fund to accommodate changes to the project once it has been approved.

The lessons learned about the impact of mainstreaming on LEADER's ability to act as a catalyst for innovation can be transferred into the next programming period. It is hoped that this will ensure the local flexibility required to adapt to the needs of local innovators and the projects they instigate.

The reach of the LEADER approach is set to increase dramatically in the 2014-2020 period. Through the CLLD model, LAGs will be able to use a combination of different funds and

different measures to implement their Local Development Strategies (LDS). This extension of LEADER activity has the potential to enable rural areas to develop the social capital and common identity that underpin innovation, and pursue innovative solutions to local challenges through a far broader range of measures. This in turn enables the development of more complex and more innovative projects that can make use of the different funding 'strands' that will become available.



European Innovation Partnership, operational groups and LEADER

The draft guidelines on programming for innovation and the implementation of the EIP for Agricultural Productivity and Sustainability suggest that operational groups and LEADER LAGs can both capture ideas from interested actors and foster the setting-up of projects. However, LAGs act on the basis of a comprehensive LDS for a given rural area. LAGs will approve several projects to implement this strategy. In contrast, an EIP operational

group builds itself around a concrete innovation project, targeted towards finding the solution to a specific issue, while not necessarily being bound to a specific territory or an upfront fixed strategy. Project implementation may also take less than seven years. In theory, a LAG could initiate an operational group if its action corresponds to an objective of the LDS.

Access to a number of complementary funds also provides LAGs with a far greater opportunity to utilise LEADER as a means of developing spatial innovation through more generic measures. The geographically targeted nature of the LAGs enables the development of locally appropriate innovation, which adds value to the delivery of other policy interventions. Where many policies tend to provide broad and

shallow intervention, the LEADER approach can be used in a range of contexts to encourage and support innovation that enables these policies to be more effectively tailored to a specific context. This approach has been used with success in the Burren LIFE project in Ireland, where support through LEADER has enabled locally targeted farm management practices to support landscape wide environmental conservation measures.

The next programming period has the potential to increase the flexibility and targeting of the LEADER approach, enabling LAGs to increase the use of LEADER as an innovation tool, building the capacity and social cohesion required to foster innovators and providing the financial resources to encourage innovation in a range of project contexts.



Case study: LEADER and innovation in the nature conservation sector — The Burren LIFE project in Ireland

Much of the Burren region has been designated as a Special Area of Conservation (SAC) under the EU Habitats Directive. However, the extensive farming methods traditionally practiced in the area are no longer financially viable and so this unique landscape has been under threat. The existing agri-environment schemes were generic and therefore did not necessarily create geographical clusters of recipients in a way that ensured the delivery of public goods or encouraged the use of innovative solutions.

The Burren LIFE Project was developed to enhance the efficacy of existing agri-environment schemes by taking a locally targeted, participatory approach to land management, and building the capacity of farmers to deliver this new system themselves. By addressing these local challenges the project could also deliver environmental public goods that were unique to the landscape of the Burren, whilst utilising the LEADER approach to build the skills base of farmers and support them in developing innovative products and services appropriate to the market.

The project developed an applied and participatory research process to identify innovative farming process and practices that were sympathetic to the environment and could respond to market and social challenges. This involved working closely with farmers and drawing on their traditional knowledge and skills. These innovations were then used to formulate farm-specific management plans, which entailed adjusting traditional farming practices to incorporate sympathetic modern elements. These plans were successfully trialled on twenty different farms in the Burren.

Burren LIFE created a paradigm-shift, whereby farmers became active custodians of their own environment. This innovative role required farmers to acquire a range of new skills, such as in the removal of invasive species, the restoration of walls, and the protection of water supplies, in order to deliver their farm specific management

plans. Funding was secured through LEADER to develop and share knowledge and expertise through targeted training courses, which enabled farmers and other rural dwellers to acquire these skills for application on their own farm, or other farms in the region. This innovative approach enabled nature conservation to be delivered by the farming community themselves and so to become sustainable.

The use of LEADER to support the focus of the project on a localised geographic area, together with the participatory, bottom-up approach to knowledge exchange, which involved farmers directly, was critical to the project's success. This highlights how existing measures under the RDP, in this case the agri-environment measure, were augmented by more spatially targeted initiatives such as LEADER, which have greater potential to deliver localised environmental public goods. This includes opportunities for adding value through market-oriented innovation.

BurrenLIFE manager, Dr. Brendan Dunford, summarised: "we always viewed farmers as a great resource rather than a threat. With this perspective in mind, we listened carefully to farmers, adopted a very hands-on, practical approach to problem solving, minimised paperwork, offered a fair system of payment and, most importantly, allowed farmers the freedom and flexibility to fully realise their potential as keepers of their place."



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Evaluating rural development innovation

Innovation is an important cross-cutting theme in rural development but its inherently risky nature means that it sits uneasily with policy and programme evaluation. By embracing social aspects under the innovation umbrella, and by following four routes to success, the identification, analysis and transfer of innovation processes through rural development evaluation can be made more effective.

The quest for innovation lies at the heart of European rural development policy. It is a central theme of the EAFRD and wider European development policies, including the Cohesion policy programmes for 2007-13. Not only is innovation the cornerstone of increased competitiveness, it also represents a cross-cutting theme for a number of socio-economic activities in rural areas, where SMEs dominate and communities strive for endogenous development.

But whilst the rural situation legitimises public intervention to encourage innovation, its effective evaluation represents a problem. Not only is innovation difficult to

evaluate but the very process of evaluation can actually deter innovation due to its risky and unpredictable nature. Striving for quantum leaps rather than incremental gains through the exploitation of novelty²⁸ implies a higher failure rate, at least according to many traditional performance measures, which can discourage further innovative projects being commissioned.

So what can be done to address this? How can evaluation at project, programme and policy levels not only seek to assess innovation more effectively, but also allow it to become a tool for identifying, analysing and transferring innovation processes in rural development?

Embracing social innovation in rural development

Innovation is most often thought of in economic terms, and in particular the application of science and technology to produce technical efficiency that comes from the top down. However, in recent years there has been a growing interest in social innovation, which occurs from the bottom-up, and not through the medium of technology, but rather at the level of social practice²⁹.

28 European Commission (1995) Green Paper on Innovation.

29 Howaldt, J., Schwarz, M., 2010. Social innovation: concepts, research fields and international trends.



Social innovation aims to deliver sustainable, social benefits through new forms of collaborative action, seeking to change attitudes, behaviours and perceptions to bring about improvements to personal well-being and increase levels of participation. It also seeks to empower citizens by increasing their socio-political capability, and access to resources. At a grassroots level, social innovation is becoming increasingly recognised due to the networks of activities and organisations generating novel bottom-up solutions and ideas, based around developing innovative niche based approaches and building resilience at the community level³⁰. In short, social innovation is central to rural development policy and the EAFRD, and should therefore be more

fully embraced under the innovation umbrella.

Accepting that social, as well as technical aspects, provide a more rounded view of rural development innovation, there remains a conundrum. How can evaluation enhance innovation rather than, at best, failing to capture it, and at worst, actually deterring it through a focus on performance measurement and an over-emphasis on management and delivery?

Evaluating technical and social innovation — four routes to success

The answer lies in the approach taken to evaluation at project, programme

and policy levels, to which there are four suggested routes to success:

- 1) evaluation needs to be more focused on outcomes;
- 2) greater stakeholder involvement is needed in the evaluation process;
- 3) earlier integration of innovation into evaluation frameworks is crucial;
- 4) evaluation needs to be able to look forward as well as backwards.

In many ways the first route to success underpins the other three. The emphasis in evaluation needs to shift decisively towards focusing on outcomes, rather than seeking to measure innovation performance simply through the medium of outputs. For example, assessing the numbers of people who have received specialist business training may fail to capture the real outcomes of that training. This may include increased confidence and self-esteem or stronger personal networks, which have ramifications for both business development and quality of life. It may also omit changes in the way that businesses now seek to engage with the community and its supply chain. It is these more profound outcomes that should become the primary benchmark for the success of innovation, not just standard metrics that can result in either rewarding mediocrity or judging failure prematurely.



It is better to focus on outcomes – outputs are too clinical. Evaluating outcomes gives you things ‘in the round’. You are then able to understand the context and why things are happening.

In reality this rarely happens, partly because innovation outcomes are difficult to identify – they are often wide-reaching and can often have profound impacts beyond the original remit of a project or programme – but also because outcomes are more difficult to measure. However, focusing on outcomes means that the most important impacts are captured and measured, not just those things are easy to measure.

But if innovation outcomes are more difficult to identify and measure, how can this be achieved? The answer lies in the next two routes to success. Stakeholders - those who are creating, fostering, driving and benefiting from innovation - need to be meaningfully involved in the evaluation process. Stakeholder involvement should be considered as a journey, an iterative approach that feeds learning and findings back into the evaluation process as it evolves. This will not only help to ensure that the appropriate outcomes are captured, but that the process of learning from innovation can be transferred between stakeholders as a project or programme is rolled-out.

But equally important is the need for stakeholders to be engaged early enough in the process so that potential innovation outcomes can be identified, understood and tracked from day one. This should go hand-in-hand with a move towards earlier integration of innovation into evaluation frameworks. The need for early stakeholder engagement and the mapping of potential innovation outcomes should become a central feature of RDP evaluation frameworks. At a project level, beneficiaries should be made aware of the range of potential outcomes right at the start, and recognise that further outcomes may be derived through a chain of events.

The final route reinforces this need but also acknowledges a particular challenge of innovation evaluation – with longer lead-in times for innovation (both social and technical), evaluation approaches also need to be able to look ahead in addition to simply evaluating what has happened. There are two main elements to this. Firstly, undertaking a forecasting exercise at the start of a project or programme not only provides a roadmap for evaluating innovation outcomes as they unfold, but also helps project and programme managers to plan more effectively so that such outcomes can be achieved. The evaluation process then becomes synonymous with the process of innovation as it evolves.

Secondly, enabling both a *forecast* and *evaluative* assessment of innovation outcomes at any point in the project or programme lifecycle helps

to ensure that both progress and potential can be measured. In turn, this will mean that ‘failures’ are given more time to become success stories. After all, innovation is all about taking risks and learning from mistakes, and that takes time.

SROI – A framework for evaluating rural development innovation

This all sounds good in theory but in practice, what evaluation vehicles are most suited to following the four routes to success? One answer is the Social Return on Investment (SROI) framework. Indeed, recognising its strengths, the UK’s Department of Environment, Food and Rural Affairs (Defra) recently commissioned an evaluation of Axis 1 and 3 of the English RDP using SROI, with an emphasis on identifying, measuring and valuing programme outcomes for all relevant stakeholders.

With its roots in social accounting and cost-benefit analysis, SROI is a framework for measuring and accounting for the broader concept of value, and it deliberately aims to

It’s the things that don’t work that give you the real insight. It’s all about continuous improvement, you’ve got to look back to look forward. Seeing things in the wider context and learning from mistakes is crucial.





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measure change in ways that are relevant to the people or organisations that experience or contribute to it. SROI is necessarily focused on outcomes, seeking tailored indicators to measure change in these outcomes, and applying financial proxies to monetise the change in a discounted cost-benefit framework. In turn, this allows for a return on investment to be measured.

SROI is also stakeholder driven. All those affected by, and who affect, change, play an important role in helping to evaluate project or programme impacts. They also help to shape a project or programme 'theory' that provides a detailed understanding of all potential outcomes and how they inter-relate over varying timeframes. This process can be considered as a form of innovation in itself because of its participatory

nature, and the fact that it helps to stimulate new ideas means that programme designers may become aware of innovation outcomes that were not previously considered.

But SROI goes beyond simply describing and mapping outcomes. The derived ratio of benefit to investment is contextualised by supportive qualitative data to provide life, interest and colour beyond the numbers. And SROI can be undertaken on a forecast or evaluative basis, so that the potential for innovation outcomes that have yet to fully bear fruit, can be captured and valued within the framework. In addition, and central to the core principles of EAFRD, SROI provides a 'triple bottom line' assessment, capturing and valuing social, economic and environmental outcomes within one consistent and comprehensive framework.

Participating in the SROI analysis throughout the process ensures that stakeholder views remain at the heart of what a project, programme or policy is trying to achieve. It also highlights where relationships and networks require strengthening, how shortcomings can be addressed and how problems can be resolved. In short, the evaluation process itself then acts as a vehicle to foster and transfer good practice in innovation as it evolves³¹. This process also recognises that success often comes from failure, capturing the very spirit of what innovation is all about.

Key insights

- ✓ The key challenge for agriculture in the future is not only to produce more, but also to do this in a sustainable manner.
- ✓ In the next programming period, the **European Innovation Partnership (EIP)** will help to establish closer links between agricultural and rural development policy and research and innovation policy, in particular the Horizon 2020 initiative.
- ✓ There is, currently, an innovation gap between research and practice. The EIP will put in place an **innovation brokerage** that will bring rural development and research together.
- ✓ The EIP is built on an **interactive innovation model**, where building blocks from innovation are expected to come from science, practice and intermediaries.
- ✓ Fostering **knowledge transfer and innovation** in agriculture, forestry and rural areas is one of the six priorities proposed for rural development programmes (RDPs) in the period 2014-2020.
- ✓ The rural development **cooperation measure** in the 2014-2020 period will finance **operational groups**, bringing together farmers, advisors, agri-business and researchers to test out new approaches.
- ✓ An **EIP network** will work as a mediator, enhancing communication between science and practice and fostering cooperation. This will help to break down key barriers to innovation such as: a lack of time, the short-term view of economic actors, the lack of confidence and mutual trust, and the fear in government administrations of audit and controls.
- ✓ The **basis** for a better exchange of knowledge about rural development and innovation **has been established** during the 2007-2013 programming period, supported by measure 121 (modernisation of farm holdings), measure 124 (cooperation for the development of new products, processes and technologies in the agriculture and food sector and in the forestry sector), measure 311 (diversification into non-agricultural activities) and the LEADER axis.
- ✓ To capture **social innovation**, evaluation needs to be more focused on outcomes (rather than outputs); greater stakeholder involvement is needed in the evaluation process; earlier integration of innovation into evaluation frameworks is crucial; and evaluation needs to be able to look forward as well as backwards.

Innovation is not limited to new inventions or modern technologies. It includes working in new ways and with new techniques.

Innovation should be an open and transparent process, leading to tangible results with a practical edge for farming and sustainability.

Only when a new creative idea becomes mainstream and is frequently applied, can it be called an innovation.

Toolbox

European Innovation Partnership (EIP): The EIP on Agricultural Productivity and Sustainability aims to provide a working interface between agriculture, the bio-economy, science and other stakeholders at EU, national and regional level: http://ec.europa.eu/agriculture/eip/index_en.htm

Communication from the Commission to the European Parliament and the Council on the European Innovation Partnership/Agricultural Productivity and Sustainability (Brussels, 29.2.2012) COM(2012) 79 final: http://ec.europa.eu/agriculture/eip/pdf/com2012-79_en.pdf

“The European Innovation Partnership (EIP) on Agricultural Productivity and Sustainability, Moving Innovation in Agriculture Ahead!”, presentation by Inge Van Oost (DG AGRI), EUFRAS workshop, Wrocław, 26 February 2013: http://www.google.be/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CD0QFjAA&url=http%3A%2F%2Fwww.ialb.org%2Fphocadownload%2FInternationale_Vernetzung%2FEIP_EUFRAS_conference_26_Feb_2013_Inge_Van_Oost.ppt&ei=IHpRUa7tC4nAO4OFgegM&usq=AFQjCNF729R3N3K6dnXrexil-MqwNXcmg&bvm=bv.44158598,d.ZWU&cad=rja

Horizon 2020 (the Framework Programme for Research and Innovation): Horizon 2020 is the financial instrument implementing the Innovation Union, a Europe 2020 flagship initiative aimed at securing Europe’s global competitiveness. Running from 2014 to 2020, and with an €80 billion budget, the EU’s new programme for research and innovation is part of the drive to create new growth and jobs in Europe: http://ec.europa.eu/research/horizon2020/index_en.cfm

ENRD Research and Innovation Gateway: With this gateway, the ENRD is seeking to develop more active links with rural development community members who are engaged in research and innovation – be they innovators, researchers, funders or end-users of research. It provides information on subjects ranging from EU bodies focusing on research and innovation projects, to relevant studies, publications and audiovisual content: http://enrd.ec.europa.eu/themes/research-and-innovation-gateway-development/en/research-and-innovation-gateway-development_en.cfm

ENRD Coordination Committee Focus Group on Knowledge Transfer & Innovation: Launched in June 2012 by the ENRD Coordination Committee, the Focus Group (FG) is analysing how, in practice, rural development programmes (RDPs) support knowledge transfer & innovation under the current policy framework: http://enrd.ec.europa.eu/themes/research-and-innovation-gateway-development/kt-innovation/kt-focus-group/en/kt-focus-group_en.cfm

Standing Committee on Agricultural Research (SCAR): The European Union’s Standing Committee on Agricultural Research (SCAR) is mandated by the Council to play a major role in the coordination of agricultural research efforts across the European Research Area (currently 37 countries). This mandate extends to areas such as advisory services, education, training and innovation: http://ec.europa.eu/research/agriculture/scar/index_en.html

“Agricultural knowledge and innovation systems in transition (A reflection paper)”, European Commission, DG Research and Innovation, 2012: The European Union’s Standing Committee on Agricultural Research (SCAR) established a collaborative working group comprising civil servants from the Commission and the Member States to reflect on agricultural knowledge and innovation systems. Innovation is an important challenge for European agriculture, but little is known about the performance of agricultural knowledge and innovation systems (AKIS). This report gathers experiences from different countries and regions: http://ec.europa.eu/research/bioeconomy/pdf/ki3211999enc_002.pdf

Ruralia Institute (Finland): The Ruralia Institute is an independent, multidisciplinary institute at the University of Helsinki. The mission of the institute is to improve the welfare of rural people and develop sources of livelihood in the rural areas through research, development, education and training: http://www.helsinki.fi/ruralia/index_eng.htm

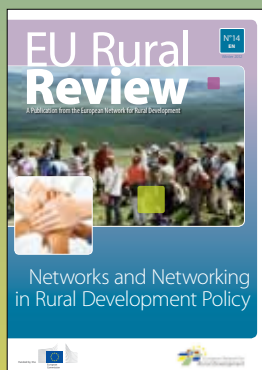
SOLINSA Project: The SOLINSA project aims to identify barriers to the development of Learning and Innovation Networks for sustainable agriculture (LINSAs). The project explores how policy instruments, financial arrangements, research, education and advisory services could support LINSAs in cost-efficient and effective ways. SOLINSA is funded by the EU’s Seventh Framework Programme for Research and Innovation: <http://www.solinsa.org/>

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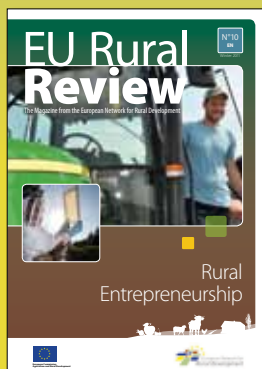
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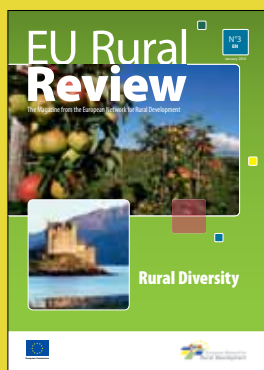
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The screenshot shows the ENRD website interface. At the top, there is a navigation bar with links for Home, Policy in Action, Country, Theme, LEADER, Networks & Networking, Publications & Media, Events & Meetings, and Info. The main content area includes a header for 'The European Network for Rural Development (ENRD)' with a description of its role in connecting rural development stakeholders. Below this is a prominent banner for the 'LEADER Event 2013: Building bridges for the future' held from 17-18 April 2013. A large map of Europe is featured, allowing users to click on country flags to connect with rural Europe. The sidebar on the right contains a search bar, a 'Key Tools' section with icons for ENRD, RDP Database, Gallery, Communication Strategy, Knowledge Gateway, Events, Stakeholders, and Subscribe, and an 'ENRD News' section with several news items dated from March to April 2013.

The European Network for Rural Development
<http://enrd.ec.europa.eu>



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