European Network for Rural Development

ENRD Coordination Committee

Focus Group

Knowledge Transfer & Innovation

Annex II

Background Paper

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EXECUTIVE SUMMARY

The background paper summarises initial work by the ENRD Coordination Committee's Focus Group (FG) on Knowledge Transfer and Innovation (KT&I). The FG is tasked with identifying factors that can influence the success of support provided by rural development policy to foster KT&I. The relevance of Agricultural Knowledge and Innovation Systems (AKIS) therefore feature prominently throughout the paper.

Innovation and Knowledge Transfer are acknowledged as important tools for helping Member States to tackle the economic crisis and several types of innovation processes are reviewed. Differences between 'linear', 'systematic' and 'interactive' innovation models point to the benefits that arise from support systems that balance demand-led approaches with inputs from appropriate levels of technical knowhow.

Policy interventions at various stages of the innovation lifecycle are seen as favourable. This includes fostering interactive exchanges and the right type of open attitude by all the actors involved in the innovation process to encourage the emergence of new ideas from bottom-up sources. Involvement of multiple actors and stakeholders support during these early life cycle phases process is an area where rural development policy can assist, such as through promoting knowledge exchange activities, and engendering trust.

Multiple interaction activities between the actors and stakeholders, innovation brokering connecting possible partners around an innovative action as well as networking are also considered particularly important to nurture and enable new ideas to fulfil their potential. Support is noted as useful to help take innovative ideas in the initial test stage and beyond, so as to ensure that the concepts are capable of being fully fit-for-purpose once they start to be used in practice. Involvement of support during the 'scaling up' process is an area where rural development policy can assist, such as by helping to overcome bottlenecks - like offsetting inherent risk.

Another important determinant for successful innovation relates to appreciation of the different factors that drive different types of innovation (e.g. academic innovation may seek peer citations, whereas farmers may be aiming to increased business productivity, and environmentalists may have goals linked to replication of new approaches). Mutual understanding the perspectives of stakeholders will aid the design of optimal innovation approaches, in view of discovering the appropriate incentives.

Improving the coordination and consistency between AKIS support sources can further strengthen prospects for effective rural innovation processes. Similarly, moves to introduce more dedicated monitoring and evaluation systems can be useful for learning lessons and demonstrating the added value that is possible from funding for AKIS.

Innovation support structures are reviewed by the paper, which places emphasis on the beneficial opportunities that can arise from focusing on 'innovation brokering' as part of the innovation support toolkit. Innovation brokers should provide information about potential collaborators and actively look up such possible partners; brokering a transaction between two or more parties; acting as a mediator, or go-between bodies or organisations that are already collaborating; and helping find advice, funding, and support for the innovation outcomes of such collaborations. To perform well, it is fundamental that the innovation broker has a completely independent position *vis-à-vis* the stakeholders of the innovation.

The background paper then turns its attention to reviewing the current (and proposed future) state-of-play regarding KT&I support sources in rural development policy. Findings point to an uneven and sometimes slow uptake of available opportunities in the 2007-2013 period. Nevertheless a general positive trend exists that can be built on in the 2014-2020 period. This is expected to be assisted by proposals for innovation to become a cross-cutting priority for rural development policy, so as to strengthen contributions to the EU 2020 strategy for smart, sustainable and inclusive growth.

Launch of the European Innovation Partnership for Agricultural Productivity & Sustainability is predicted to boost the involvement of actors and stakeholders, and the background paper draws attention to the scope of Operational Groups to act as vehicles of change. Operational Groups are viewed as being valuable mechanisms for bridging the current gap between research and agricultural practice. They should be able to bring together farmers, researchers, advisors, businesses and other actors to work together in innovative actions in all parts of the agricultural sector. Operational groups builds themselves around a concrete innovation project targeted towards finding a solution for a specific issue or developing a new opportunity. They bring together a mixture of actors from possibly very different territories and in principle only exist for the execution of the project activities. Such result oriented "hands-on" groups will maximise interaction for co-creation and cross-fertilisation.

A conclusions section in the background paper presents a set of key questions and issues for the Focus Group to consider. Commentary here indicates that:

- Innovation support in the context of rural development policy may have to be different from innovation support in other sectors.
- Rural development policy should facilitate more complex innovation processes by engaging many more actors and stakeholders.
- A crucial moment for innovation is at the very beginning of processes which might eventually lead to an innovation. Supporting this emerging phase should be specifically targeted and networks or innovation brokers could have a key contribution at this stage.
- Risk should be recognised as inherent to the innovation process and rural development support to innovation could be designed for handling failure.
- The importance of actor and stakeholder participation in early stages of both design and during implementation of innovation projects is crucial. Rural development policy could seek and provide solutions for encouraging all actors and stakeholders to contribute in the right time at the right place.
- The market may not pay for innovations which address wider societal demands (e.g. animal welfare) and are not oriented towards profitability. In such cases rural development policy could reward the producer for the added value produced, e.g. via rural development support for non-productive investments.
- Initiating and disseminating innovations in the Member States is very important. The EIP network at EU level will connect with possible national EIP networks, other innovation networks or National Rural Networks, and will have a key role in this process.
- LAGs and CLLD groups can also play an important role in stimulating knowledge exchange and building social capital, from which innovation actions may grow.
- Improved monitoring and evaluation should help to clarify the added value outcomes that can be attributed to innovation processes.

Lastly, the background paper findings suggest that the successful assessment of current practices in innovation dynamics should pay attention to a number of pertinent questions, namely:

- The driver of the innovation (*why – which contextual elements provided the need for a new idea/approach?*).
- The incentive for innovation (what/who provided the input to work on the new idea, approach?).
- The object (*what*: *product, process, system*).
- Actors and stakeholders (*who - including the main beneficiaries*).
- The stage of the innovation process (*how far*: *still needing special support, or self-supporting*).

- How will/did the idea become an innovation*? (Which factors are making / made the new idea become more mainstream? And how barriers and challenges have been overcome?).*
- The role of networks (*including scaling-up*).
- Success criteria (*how - including 'permanent learning' and 'social capital' for innovation*).
- Monitoring and evaluation (what are the *results and effects; costs and benefits*).
- Policy lessons that help EIP Operational Groups at a quick start (including enabling and constraining factors in policy delivery) (*what and how to improve*).

LIST OF ACRONYMS

AKIS	Agricultural Knowledge and Innovation System
AKS	Agricultural Knowledge System
CAP	Common Agricultural Policy
CLLD	Community-Led Local Development
CWG	Collaborative Working Group
EAFRD	European Agricultural Fund for Rural Development
ELARD	European Leader Association for Rural Development
ENRD	European Network for Rural Development
Agricultural EIP	European Innovation Partnership for Agricultural Productivity & Sustainability
EC	European Commission
EU	European Union
FAS	Farm Advisory System
FG	Focus Group
GAEC	Good Agricultural and Environmental Conditions
ICT	Information and Communication Technologies
KT&I	Knowledge Transfer & Innovation
LAG	Local Action Group
LEADER	Liaison Entre Actions de Développement de l'Économie Rurale
NGOs	Non-Governmental Organisations
MS	Member State
NRNs	National Rural Networks
OECD	Organization for Economic Co-operation and Development
OP	Operational Programmes
RD	Rural Development
R&D	Research and Development
RDPs	Rural Development Programmes
SCAR	Standing Committee on Agricultural Research
SMR	Statutory Management Requirements
PO	Producers Organisations
TNC	Transnational Co-operation

1. INTRODUCTION

This background paper provides information to support the work of the ENRD Coordination Committee's Focus Group on Knowledge Transfer and Innovation (KT&I). By taking stock of and assessing the evidence collected, such as examples of European Agricultural Fund for Rural Development (EAFRD) support for KT&I operations, this paper attempts to distil lessons that can be relevant for the current and future programming period.

The purpose of the Focus Group (FG) is to consider how KT&I can be better promoted through the EAFRD in order to provide recommendations for the design and implementation of the next generation of Rural Development Programmes (RDPs) for the period 2014-2020. The FG is investigating how current rural development policy measures contribute to innovation in practice, as well as identifying delivery bottlenecks and areas for further improvement. The FG will also engage within the network of the new European Innovation Partnership for Agricultural Productivity and Sustainability (agricultural EIP).

In order to analyse the evidence collected, the FG requires a consist approach to terminology. Therefore it is necessary to have a common understanding of what is meant by 'innovation' and 'knowledge transfer'. For example, the term innovation can be used to describe research-driven developments (referred to as 'linear innovation'). Innovation can also relate to 'bottom-up innovation' that emerges from development ideas that are progressed by people and organisations who are not researchers by profession, such as farmers, and rural advisory services. Therefore after briefly describing the context for innovation in agriculture and rural development, section 2 of this paper outlines the innovation concepts that are of most relevance for the FG.

In section 3, elements of current rural development policy (2007-2013) are reviewed in terms of their ability to foster KT&I. In section 4, the opportunities (and possible pitfalls) regarding KT&I within the European Commission's (EC) proposal for a future rural development policy (2014-2020) are identified. Section 5 concludes the report by offering some final reflections for the FG work and beyond.

2. THE CONCEPT OF INNOVATION

Innovation is a high priority for the European Union's (EU) Member States. EU policy approaches, including the proposed rural development policy for 2014-2020, and the research programme Horizon 2020, stress the importance and relevance of enhancing innovation as a necessary tool for growth and prosperity. A number of European Innovation Partnerships (EIPs) have been established to help Member States strengthen their innovation capacities.

The ultimate aims of the policy approach are to help countries to tackle the current economic crisis, and to maintain the EU's position as a global leader in its business markets.

Terms such as 'product innovation', 'process innovation' and 'marketing innovation' have been quite widely used in the past to describe different types of innovative activity. In that context an innovation was regarded as a new technical device, principle or management practice that could be "adopted" by individual farmers.

Since the 90s a shift in thinking has taken place about the nature and process of innovation which has moved from product and process innovation to interactive and system innovation.

Even though Knowledge Transfer in itself is not inherently innovative, it is always an integral part of innovation processes. The classic approach to knowledge "transfer" is top-down whereas knowledge "exchange" works in all directions using all available information from the different actors involved. Participation and interaction in projects between different actors such as researchers, farmers, advisors, businesses, etc. incentivises cross-fertilisation between the actors and inclusion of also non-scientific, possibly

tacit, knowledge. The result of this process will be the co-creation of new knowledge. The paper therefore focuses on innovation in the first place and includes relevant reflections about Knowledge Transfer.

The paper also notes the vital roles that cooperation and information exchange/networking plays for both for stimulating innovation and knowledge transfer. Specific attention is paid to the change in roles of the actors in the Agricultural Knowledge and Innovation Systems (AKIS)[1] involved in the innovation process and the distribution of relevant information about it.

2.1 The linear model and the systemic model

Theories around innovation usually distinguish two models: the linear and the systemic model[2]. In the linear model, innovation is seen as a scientific and linear process driven by experts, by technology, and sometimes driven by demand from practice. Innovations here are developed by researchers or scientists with the aim that the results will be applied and replicated in practical situations.

In the agricultural context, such linear innovation is intended to promote a flow of knowledge from the scientific experts to the end users (e.g. farmers, foresters, agri-food businesses, and other rural enterprises). However, experience has shown that obstacles can arise that limit the knowledge flow. For example, scientists may use vocabulary that can sometimes be difficult to understand by laypersons.

Language barriers can be overcome by using intermediaries like 'extension workers' who can help 'translate' technical concepts into practical explanations that are easier to understand and relate to for the intended end users.

Nevertheless, the success of linear innovation is still very much dependent on the scientific research being designed to produce tangible results that are relevant for the end users needs. Moreover, innovation needs emerge beyond scientific issues.

Another weakness of linear approaches to fostering KT&I is the failure to appreciate that the end users themselves can be the originators of successful innovations.

Comparing the linear model with the systemic model highlights the fact that the systemic model of innovation is more complex. The basic differences between the two models are summarised in Table 1.

Table 1: Changes in academic thinking about innovation regarding different aspects (Leeuwis & Aarts, 2011)

Aspect of innovation	Linear model of innovation (dominant 1950-1980)	Later modes of thinking (dominant from 1990 onwards)
Origin	science and research	building blocks come from science, practice and intermediaries
Nature	new technical device	new successful combination of technological devices, modes of thinking and social organisation
Social conditions for application	are 'outside' the innovation	are an integral component of the innovation
Key processes	R&D, adoption	interactive design, co-evolution, learning

[1] AKIS is a 'concept to describe a system of innovation, with emphasis on the organisations involved, the links and interactions between them, the institutional infrastructure with its incentives and the budget mechanisms' (SCAR, 2012) (see also section 2.3).

[2] Kniwkel, Brunori, Rand and Proost "Towards a better conceptual framework for innovation process in agriculture and rural development: from linear models to systemic approaches" (8th European IFSA Sympoisum, 6-10 July 2008, Clermont-Ferrand, France).

Adoption	is an individual process	is a collective process within nested networks of interdependent stakeholders
Steering	change can be engineered, predicted and planned rationally	change is an unpredictable, messy and emergent process
Role of science	designing innovations	delivering inventions that may be turned into innovations; responding to questions that emerge in the innovation process
Diffusion	happens after the innovation is ready; focus is on spreading of a product	starts already during design, while scaling out often includes contextual re-design; focus is on spreading of a process

Key points to note about promoting systemic innovation approaches include that this type of innovation:

- Can emerge from *web-like interactions* between different stakeholders in the innovation process (Poppe, 2012).
- Is influenced by the institutional and social environment for innovation, such as the relationship between institutions and the legal and policy frameworks.
- Places value on different kinds and sources of knowledge (not just science). It considers the education system and the role of social capital and tacit knowledge in generating, using and diffusing innovation (OECD 1996; Smith 2000). The systemic model therefore involves many more stakeholders.

Building on this latter factor, a new development in systemic innovation thinking has led to the recent[3] introduction of a '*interactive innovation model*'. The agricultural EIP has adopted this interactive multi-actor model of knowledge exchange to promote end-user-focused solutions. The application of this models refers to the forming of partnerships using bottom-up approaches under the EIP and linking end users, advisors, researchers, businesses, and other actors in Operational Groups to produce concrete innovative results. Operational groups build themselves around a concrete innovation project targeted towards finding a solution for a specific issue or developing a new opportunity. They bring together a mixture of actors from possibly very different territories and in principle only exist for the execution of the project activities. Such result oriented "hands-on" groups will maximise interaction for co-creation and cross-fertilisation. To help setting up a multiplicity of operational groups formed around concrete projects, innovation brokerage may be helpful

Other related theories have also developed around the concept of Knowledge Transfer, for example focusing on the effectiveness of communication. Key ingredients for successful communication in this respect relate to:

- The quality of the information being transferred;
- The quality of the communication process; and
- The capacity of the target audience to understand and apply the knowledge being transferred.

2.2 No definition but a description of innovation

Hence, from a rural development policy perspective, it may not be necessary (nor helpful) to insist on exact definitions of what is innovation and what is not. After all rural development policy works by enabling an appropriate climate for innovators. Thus it should aim to facilitate innovative technologies and innovative ways to solve problems and to grasp new opportunities.

Instead of focusing on a detailed definition, this paper therefore finds it more appropriate to **focus on**

[3] For example a the Second meeting of the SCAR Collaborative Working Group on AKIS, Rome, 22-23 November 2012.

innovation dynamics, or innovation as a process. The following section attempts to illustrate this approach using the different stages of successful[4] innovation processes. The text then provides some reflections about the changing roles of actors in the innovation process and about the knowledge transfer that is inherent in sharing and spreading the innovations.

Innovation as a process: from novelty to niche to regime - if it is successful -

The more effective that agricultural and rural development policy is in enabling an innovation-friendly climate, the more impact the policy will have, i.e. a more efficient delivery of policy goals at lower public cost. This goal can be assisted by increasing policy makers' understanding about which type of specific support is most effective at each stage of a KT&I life cycle.

A successful innovation process always begins with a novel idea ('novelty'). The novelty may be an *invention* – which always is new- or an *innovation* that is not new but has not yet been applied in the context where it is perceived as innovation. The creation of such novelties can be enabled by a positive policy climate.

In more complex situations new networks will emerge around a novelty, as various stakeholders become involved. The strengthening of such *emerging networks* is crucial for a successful innovation policy. And last but not least it is the wider use of the innovation that also shares the benefit and makes the cost of public investment more acceptable. So a wide sharing of this knowledge and experience is important. Policy can support this process to enable optimal use of public support.

Within the systemic model, the notions of 'novelty', 'niche' and 'regime' underpin the understanding of the innovation dynamics. According to the theory, four levels in the structure of such networks can be identified (Geels, 2004; see figure 1)[5]. This paper emphasises the first three stages as these are most relevant for policy advice.

I. Novelties

A novelty breaks the routine. As already stated above it may be an *invention* –always new- or an *innovation* - not 'new' but not yet applied in the context. It is a new solution for a given problem or a different way of doing things. It may also be a way of doings things better or doing better things or organising in a different way around a new challenge. It may result from a lone inventor's moment of inspiration, but more often it requires new cooperation methods among a group of actors and stakeholders. This is the core focus of the interactive innovation model to which the EIP is adhering: connecting actors to enhance exchange of knowledge and cross-fertilisation in view of incentivising concrete new ideas. This will generate new insights and mould existing, possibly tacit knowledge, into focused solutions. Innovation brokering can help connecting actors with this objective[6].

Developing a novelty may be constrained by internal or technical aspects but often it is limited by external constraints, such as laws, actors and norms. So it is necessary that networks emerge to tackle the constraints and/or to market the novelty. This is where policy enters the game.

II. Niches

A niche can be defined as the space where novelties take place. Niches are characterised by norms, rules, routines of production, distribution and consumption that are looser and subject to rapid evolution. Niches are also the context in which networks between actors are established and where learning and societal

[4] Success is indicated by innovations with practical results that can be readily applied by the intended end users.
[5] This terminology is also adopted by recent work of the SCAR (2012).
[6] Laurens Klerkx – Communication and Innovation Studies - OECD AKS conference 15-17 June 2011

embedding processes are activated.

III. Settling into 'Regimes'

Regimes represent the stage when a new way of working (called a different paradigm) is turned into practice and incorporated into concrete socio-technical networks[7], structured and coordinated by rules. In the period of transition leading towards such a regime change, many contradictions can emerge, as well as strong resistance to the innovation.

IV. Scaling up into 'Landscapes'

Landscapes can change as an effect of supra-national policies or the scaling up of radical changes *beyond the reach of national policies*: global climate change, north-south divides, international trade or banking regulations, etc. This fourth stage is not discussed further in this paper.

The distinction between niche and regime is important for agricultural and rural development policy. The crucial difference is in terms of **stability**. As Geels and Schot describe it: *"For regimes, the rules are stable and well-articulated; for niche-innovations, they are unstable and 'in the making'"* (Geels and Schot, 2007, p.7). The level of support required from rural development policy is related to this stability or – in other words – "*to the level of internal strength of the innovation phase"*. Often the niche phase is only emerging and still much more vulnerable than the regime phase which already is more established. All the way up to regime, a novelty and a niche might deserve active policy support for scaling-up, especially when innovation is tackling various dimensions of sustainable development: economic, environmental and even social strength.

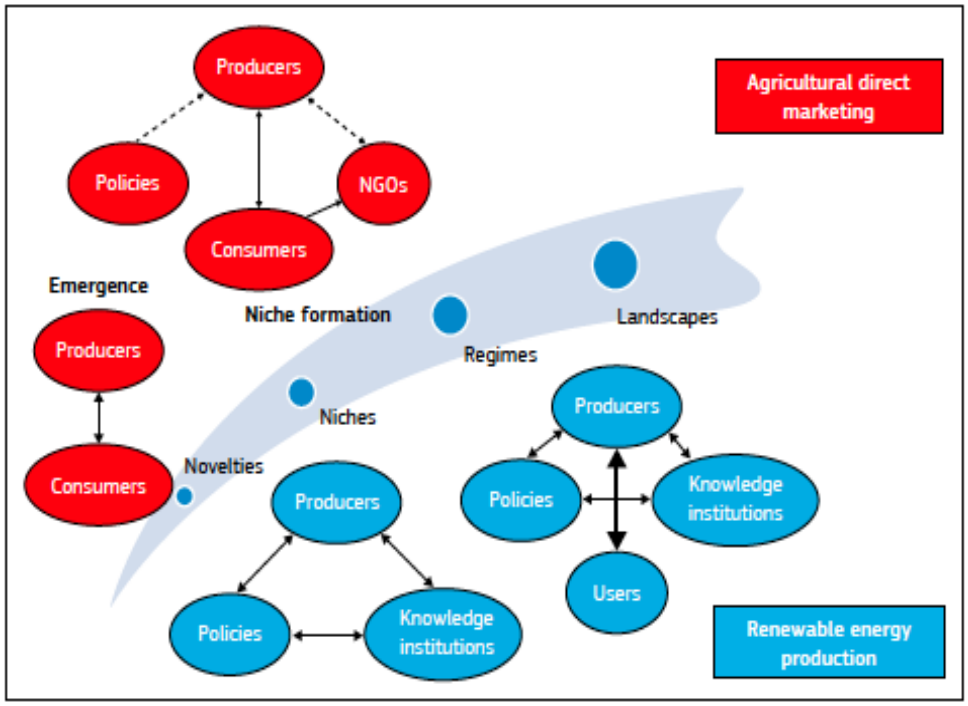
Emerging innovation networks: important tool and target for policy support

Dockès et al. (2009) attach slightly different words to such stages. They distinguish between the *emergence* and *enlargement* of innovations. In the emergence phase, in most cases at novelty level, the role of initiators is crucial. For an innovator, their initiative, knowledge, learning and networking are key components of innovation. The innovator may be strong enough individually to make their innovation work. But what if novelties have to aggregate to eventually create a niche? Such growth can either: (1) lead to a 'failure'; (2) remain at the niche-level or; (3) evolve into established 'regime' systems. This innovation process –if successful- can be regarded as an enlargement, a scaling-up of innovations. At this stage, a wider range of actors becomes important and active knowledge transfer can help build momentum. In scaling-up, the role of advice and training is crucial. The actors in AKIS (Agricultural Knowledge and Innovation System) have to realise that an innovation can emerge from the bottom-up, and that their role is then different: i.e. getting research involved to document, verify and eventually develop it further.

The aspect of scaling-up innovations is important and it is illustrated in Figure 1 below. It shows for two innovations how the scale of networks and the number and diversity of stakeholders increase as a novelty develops into a niche. When it is successful, its complexity increases even further. The first innovation relates to agricultural direct marketing and the second relates to renewable energy production. It should be noted that not always the diversity of stakeholders has to increase, in particular when working along the food chain or to better align agriculture with the environment.

[7] The term socio-technical refers to the interrelation between *social* and *technical* aspects of an organisation or the society at large.

Figure 1: The increase in actor diversity as innovations develop



Source: Dockès et al, 2011

Innovation processes bear a risk

At this point it is important to stress that innovation is a process that will not always give the desired result. In R&D budgets of large scale agribusiness companies a success score of 20% is acceptable. Also in agriculture production and rural development not all innovation processes will yield success, and even in that case the evaluation of the innovation process can yield important lessons for future innovations.

Currently it is the phase of scaling up where many innovations get stranded[8]. Particularly when it comes to sustainability objectives or services related to public goods, it cannot simply be assumed that the market will take up innovations, and too often innovations in these areas get no further than the first phase, because other businesses and banks judge it risky to invest in a prototype. Taking risks is inherent in business, but the difficulty when it comes to system changes is that most (family) farming businesses are too small to bear such risk. Environment, climate, biodiversity, water management and animal welfare are prime examples of areas where the market – the consumers- are not easily prepared to pay for these extra costs demanded by society. In such circumstances, the market does not adequately safeguard the public interest, and it gives rise to a public task. Society at large has bigger capacity to absorb such risks then individual farms can.

2.3 Roles of actors in the Agricultural Knowledge and Innovation Systems

The support of innovations as described above requires active involvement of many stakeholders in various roles. Traditionally AKIS has played this role. Such complex 'systems' gradually developed from a simpler

[8] Internal reflection paper of the Dutch Ministry of Economic Affairs made available to the Focus Group: "Strengthening competitiveness, sustainability and innovation in the CAP" by K. van Bommel and R. Gravemeijer. November 2012 (not yet published).

Agricultural Knowledge System (AKS). The concept of AKS was introduced in the 1960s to co-ordinate knowledge transfer in order to accelerate agricultural modernisation. Later, the "I" was added, first to reflect the importance of emerging information technologies and information society, and most recently, "I" was redefined as innovation to emphasise the shift from linear to systemic innovation model.

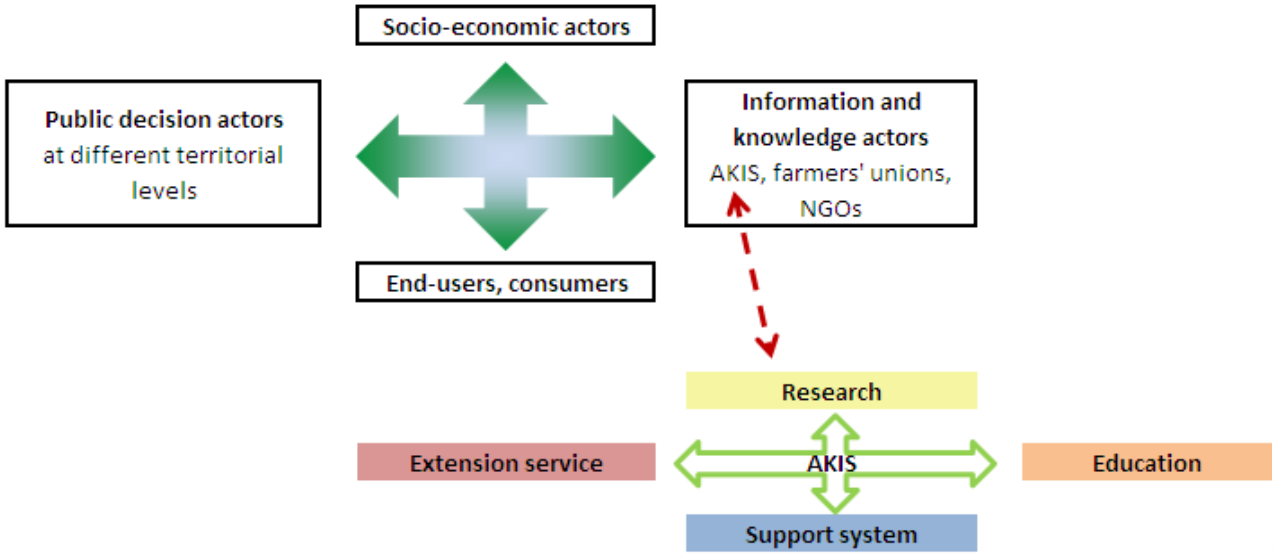
Until the 1990s a linear view was generally accepted by the AKIS actors: the farmer was the recipient of externally developed knowledge and technological packages that were disseminated by extension services. Since the 1990s, a more complex systemic model has emerged, in which innovation is conceived as a co-evolutionary learning process occurring in social networks having an array of actors (Dargan and Shucksmith 2009, Leeuwis and van den Ban 2004).

In the linear model AKIS usually integrates four actors in the innovation process (Figure 2): research and education institutions, extension service and support system. The latter includes organisations related to credit, inputs, producers' associations, etc. (Proost et al., 2009). Often farm advisory services follow the same model. Figure 2 illustrates both the classical AKIS actors in the linear model (in the lower corner on the right) and the more complex AKIS actors networking in a systemic model. In fact such a wider system is either built around the classical AKIS, or it is a complex network of consumer movements, environmental NGO's, landscape organisations etc. that 'simply' includes the old actors. Obviously new knowledge networks start playing a role as well, in addition to the classical farm knowledge.

A system model AKIS links many more actors and serves to support innovation, knowledge transfer and information exchange. In the systemic model, the AKIS actors are but one (ii) of the following four categories:

i. Socio-economic actors (farmers, agri-cooperatives, other up- and down-stream actors, associations, etc.);
ii. Information and knowledge system actors (i.e. classic AKIS actors like research institutions, extension services, schools, but also farmers' unions or NGOs);
iii. Public sector actors (public administration, hygiene and control institutions etc.);
iv. End-users/consumers.

Figure 2: Innovation actors in the systemic model expands the actors in the AKIS model



Source: own illustration based on Knickel, Tisenkopfs and Peter (2009)

Challenges for the AKIS actors

These empirical studies provide starting points to understand how the dynamics between knowledge and information actors can improve in supporting innovation. The In-SIGHT project funded by the EU Sixth Framework Program (FP6) (Proost et al., 2009) as well as the recent work of the SCAR collaborative working group (CWG) on AKIS (Poppe, 2012) summarise the following issues:

i. Usually, the actors are driven by *differ*ent incentives (researchers by publications, citations, and excellence; teachers by student numbers; extension services by turnover of sold product). Not much coordination has been achieved in spite of the perceived need for intensive communication between these actors.
ii. There is not always consistency in AKIS policies. There are policies for education and for research, sometimes by different ministries. And the interaction with innovation in the private sector (such as the food industry) is often weak and not clearly taken into account when designing policies.
iii. In some countries, where AKIS has been privatised, competition hampers cooperation between actors.
iv. Monitoring of AKIS is fragmented, in terms of input, information processing, or output.

These findings indicate that European AKIS does not always reflect the need for networking and knowledge transfer that would be required to optimally coordinate knowledge transfer in function of the desired innovation processes.

Actually, Proost et al. (2009) show that AKIS is rarely involved at the beginning of innovation (novelties) while it is often present in cases of scaling-up. Hence, the capacity of innovation initiators (including farmers among others) to create or use informal knowledge networks is essential. It brings social capital to the forefront of innovation processes, as it is the consolidating and animating element of networks.

Because system innovations demand large-scale transformations in the way societal functions are fulfilled, the need for 'system learning' is implied in which, "participants look at the interrelationships between the structures in which they operate and their own practices in a new light," (Loeber et al., 2007). For example in such complex networks, tough negotiations may take place. Lack of mutual trust can easily destroy such emerging networks. Therefore, building trust becomes an issue, next to building knowledge. This need for learning –to understand the optimal behaviour in such a complex system of interrelations- thus calls for a drastic shift in perspective in knowledge transfer actors, and for intermediation roles to connect AKIS actors.

Innovation Brokers

The role of *innovation brokers* adds a useful element to the standard roles in the AKIS-model in view of enhancing interactive innovation. An innovation broker according to the definition of Howells (2006) is an impartial person or organisation connecting actors: *"…an agent or broker in any aspect of the innovation process between two or more parties". Such intermediary activities include: helping to provide information about potential collaborators; brokering a transaction between two or more parties; acting as a mediator, or go-between bodies or organizations that are already collaborating; and helping find advice, funding and support for the innovation outcomes of such collaborations."* To perform well, it is fundamental that the innovation broker has a completely independent position *vis-à-vis* the actors and stakeholders involved in the interactive innovation process.

3. KT&I IN CURRENT RURAL DEVELOPMENT POLICY

This section provides an overview of how support to KT&I has been given shape in current rural development policy. For each relevant policy measure some considerations are drawn in the light of the preceding analysis and the innovation concepts highlighted so far. When appropriate, reference is made to information available on the ENRD website or other EU sources.

3.1 Overview of current rural development policy support for KT&I

Currently, the main support for KT&I lie in rural development programmes, namely (see Annex 1):

i. support to the competitiveness of the agricultural and forestry sectors (five measures from axis 1);
ii. support to the diversification into non-agricultural activities (measure 311);
iii. LEADER via its Local Action Groups (LAGs) and transnational cooperation (TNC) (axis 4);
iv. the European and national networks for rural development.

Although KT&I are mainly supported and promoted through rural development policy, the second pillar of the CAP (and the focus of this paper), it should be mentioned that some relevant instruments are also provided under the first pillar, namely: producers organisations, direct payments and the Farm Advisory System (see Box 1).

Box 1: KT&I support in the first pillar of CAP

Producer organisations

The CAP does not systematically give direct support to research projects. However, and as a side effect of some specific measures, support from Pillar I could turn into innovative products or processes even if innovation as such is not the focus. This is the case of the Operational Programmes in the fruit and vegetable sectors for producer organisations and the national support programmes in the wine sector. R&D often focuses on the range of products (e.g. new varieties, protection disease) and processes within the existing producer organisations (POs).

Direct payments

Article 68 of Council Regulation 73/2009 on direct payments allows Member States to provide support to farmers for specific purposes. Several countries use it for to support innovative practices at farm level (e.g. on precision farming).

The Farm Advisory System (FAS)

The FAS was included as a component of the CAP reform of 2003, in order to help farmers with cross-compliance requirements via the provision of technical advice. Both the establishment and the use of the farm advisory services are supported by rural development policy. The advisory activity under the FAS must cover at least the Statutory Management Requirements (SMR) and the Good Agricultural and Environmental Conditions (GAEC), but often goes beyond that in the MSs approach.

RDP support to Knowledge Transfer

The measures supporting vocational training and information actions (measure 111), the use of advisory services (measure 114) and the setting up management, relief and advisory services (measure 115) are the most relevant in relation to supporting knowledge transfer in rural development.

In terms of results, measure 111 is implemented in all Member States, with the exception of Greece (where this measure has been assigned to another ministry and was co-financed by the European Central Bank), and

it has the largest outreach with almost 250 000 trained participants in the period 2007-2010, although it concerns a minority of producers. In financial terms, a total public expenditure (EAFRD and national contribution) of €1.7 billion has been programmed for the period 2007-2013. Up to 2011, €533 million had been used which accounts for 32% of the budget for the whole programming period.

Measure 114 on the use of advisory services is included in the RDPs of 21 Member States, covering 628 000 farmers with a total budget of €573 million for 2007-2013. Only 15% of the allocated funds were spent up to 2011. One explanation is that FAS was not fully recognised by farmers in the first years of its existence (SEC (2011) 1153 final/2), but it also likely that rather limited services of the FAS are behind the low uptake of the measure 114. During discussions in preparation of the FAS Commission Communication, it became clear that the obligation to cover the whole cross compliance package may have been hampering uptake of measure 114, since farmers' needs (and willingness to pay for advice) may be more limited than the full list of cross compliance issues.

Measure 115 supporting the setting up of management, relief and advisory services was planned only by seven Member States, with four Member States (Italy, Malta, Portugal and Spain) clearly focusing on the FAS. In the period 2007-2010, 303 projects concerning advisory services for agriculture or forestry were supported. The total public expenditure programmed for the measure amounts to €142 million of which 18% had been used up to 2011.

Generally, these kinds of measures in the current RDP are not strongly linked to innovation facilitators (or innovation brokers[9]). Most initiatives focus on farm-specific courses concerning management, ICT, etc. and they are almost exclusively directed to prepare actors regarding business development. In addition, these types of measures almost uniquely focus on transferring knowledge. In the context of rural development, the question might need to be posed as to whether other types of education should also be supported (e.g. on the history of the region, on environmental services and biodiversity, or on sociology of agriculture).

RDP support to Innovation

The measures supporting the modernisation of agricultural holdings (measure 121), the cooperation for the development of new products, processes and technologies (measure 124) and the diversification into non-agricultural activities (measure 311) are most relevant for innovation in rural development. The LEADER approach, including transnational cooperation (TNC) and National Rural Networks (NRN) - both at European and Member State level - are also considered as possible drivers for innovation. Innovation is one of the 7 original guiding principles of LEADER, and one of the criticisms of the current programme is that this has been lost (largely due to excessive levels of bureaucracy and a lack of understanding amongst communities about how innovation can be defined).

Measure 121 supporting the modernisation of agricultural holdings has been allocated €17.8 billion for the period 2007-2013 and in terms of size of its allocated budget it is the second most important measure – following the agri-environment payments measure. Up to 2011 almost 52% of the programmed total public expenditure for measure 121 had already been used accounting for €9.2 billion. In terms of outputs, more than 120 000 farmers had been supported in the period from 2007 to 2010, for which the data are currently available. Under this measure the farmer is mostly a recipient of externally developed codified knowledge and technological packages, hence reflecting the linear model of knowledge transfer.

Measure 124 promoting cooperation for the development of new products is programmed in 14 Member States with a total allocated budget for 2007-2013 of €586 million. From 2007 until 2011, only 15% - €87

[9] For a definition of innovation broker see section 2.2

million - of the measure's allocated funds had been used. In terms of achieved outputs, until 2010 the measure had supported 5 788 cooperation initiatives, of which 5 165 concerned the development of new techniques and 623 the development of new products. This slow uptake, with the clear exception of Austria which had used almost half of the budget allocated to the measure by 2011, stems partly from the fact that this is a new measure for the RDPs.

Measure 124 assumes innovation as a co-evolutionary learning process across various cooperating actors (farmers-processors-distributors). This is a potentially very useful measure for the adoption of innovation in agricultural and rural areas as it takes account of the collective dimension that will become more necessary to future innovative processes. The scope of this measure has been significantly changed and broadened in the next programming period, nevertheless clarifying the reasons behind the low level of uptake may be important in the context of setting-up and running of operational groups[10].

Measure 311 supporting diversification into non-agricultural activities has been included in the RDPs of 17 Member States and the total public expenditure programmed for the period 2007-2013 is equal to €2.2 billion of which €635 million or 30% had been spent by 2011. The measure also provided support to almost 10 000 beneficiaries during the 2007-2010 period. Among the different categories of non-agricultural activities that can be supported are service activities (e.g. bed and breakfast, education and social activities on the farm), craft activities (e.g. pottery, production of local products) and trade activities (e.g. creation of store attached to the farm where self-made products are sold directly to the customer). This measure can also be seen as stimulating agricultural innovation, particularly as it contributes to launch projects, which by absorbing released on-farm resources, support and complement desired changes in the agricultural production.

In the current programming period, LEADER experienced expansion in terms of the number of Local Action Groups (LAGs), which more than doubled compared to LEADER+ (2000-2006). In some Member States, the inclusion of LEADER in the RDP has led to reduced flexibility for LAG implementation, perhaps due to a too strong interference of Member State bureaucracy that hindered the bottom-up approach and would have reduced the innovative capacity of the projects (SEC(2011) 1153 final/2).

The original purpose of the LEADER community initiative was to develop innovative ideas for model rural development that could be replicated in other areas. It is also a search for new or alternative solutions to organising rural societies (Larsson (2002) cited in Dargan, Shucksmith (2008)). The emphasis on innovation is less strong in the current rural development regulation (EC1698/2005). The term innovation is rather weakly defined, enabling on one hand Member States to choose an approach to innovation most proper to the local/national context, and on the other hand, resulting in large variations of interpretation of innovation concepts among Member States and regions (ENRD, 2010).

A strong component of LEADER is the support of Transnational Cooperation (TNC). The report on transnational cooperation in LEADER II (LEADER Observatory, 2001) identified at least four types of cooperation relevant to innovation:

i. Exchange of experience providing new perspectives, ideas and confidence.
ii. Joint training and visits to enhance the qualification of people involved in innovation.
iii. Knowledge transfer concerning new expertise, the use of technology or working methods.
iv. Networking - transnational cooperation not only expands local networks, but it can encourage deeper cooperation and networking.

[10] As defined by the EC's proposal for rural development after 2013, operational groups consist in actors as farmers, researchers, advisors and businesses involved in the agriculture and food sector who will form part of the EIP for agricultural productivity and sustainability (see more in section 5).

Several *obstacles* (LEADER Observatory, 2001) hinder transnational cooperation (and these obstacles continue to hinder rural development policy today): language barriers, cultural misunderstanding (especially in the initial phase), distance, unequal knowledge and skills and financial and managerial differences. In order to bring potential partners together both the ENRD and the European Leader Association for Rural Development (ELARD) provide a transnational cooperation tool on their websites which provides information about new projects and issues calls for participants for joint projects. These networks at the EU level, together with those set up in the Member States provide a platform for exchanging information and experience; stimulate joint analysis; and encourage cooperation between actors.

The existing policy measures here examined provide a range of tools that definitely can support innovation and help to address future policy challenges. While measure 124 provides an example of a focused support instrument, the design and implementation at Member State level do not sufficiently challenge and engage the traditional AKIS actors to invest in innovation and evolve their own roles from a linear to a systemic model. Also, little evidence is available regarding the relevance of LEADER LAG's and rural networks - at the EU and national level - for innovation or to the extent that they have structural relations with AKIS partners. In this perspective the extensive discussion on measurement of the performance of innovation systems –and possible indicators- is very relevant. Also the work of the European Evaluation Network, supporting the RD Programme, may suggest practical ways to monitor and evaluate innovation processes.

4. KT&I IN FUTURE POLICY SCENARIO

This chapter looks into the future European policy scenario highlighting the relevance of KT&I with respect to the EU2020 strategy, rural development policy 2014-2020 and the European Innovation Partnership for Agricultural Productivity & Sustainability (agricultural EIP).

4.1 KT&I and the EU2020 strategy

The European Commission (EU) in its document *Europe 2020* outlined a vision for smart, sustainable and inclusive growth. More specifically:

- *Smart growth* means developing an economy based on knowledge and innovation.
- *Sustainable growth* focuses on promoting a more resource efficient, greener and more competitive economy.
- *Inclusive growth* includes fostering a high-employment economy delivering social and territorial cohesion.

To achieve this vision, five measurable targets in relation to employment, research and innovation, climate change and energy, education and combating poverty, were identified and are to be achieved by 2020. The EC proposed seven flagship initiatives to promote progress on the five target areas. One of these flagship initiatives is the 'Innovation Union'. It contains over 30 actions points that aim at:

1. turning Europe into a world-class science performer;
2. removing obstacles to innovation – such as risky investments in prototypes, expensive patenting, market fragmentation, slow standard-setting and skills shortages – which currently prevent ideas getting quickly to market; and
3. revolutionising the way the public and private sectors work together, notably through Innovation Partnerships between European institutions, national and regional authorities and business.

4.2 KT&I and rural development policy after 2013

In order to support the Europe 2020 strategy, notably in terms of resource efficiency, the EC'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," (COM(2011) 627/3). *"Fostering knowledge transfer and innovation in agriculture, forestry and rural areas,"* has been set up as one of the priority areas; moreover, innovation is considered as a 'cross-cutting' objective important for all six Union priority areas for rural development. The rural development policy proposal broadens and strengthens the current rural development measures which aim at KT&I and introduces the agricultural EIP. An overview of the intended key measures of the innovation policy is presented in Annex 1.

In future RDPs the cooperation measure is to be significantly reinforced and extended to support many types of cooperation (economic, environmental and social) between a wide range of potential beneficiaries. The measure focuses on cooperation among actors within the sector (horizontal) as well as with the agri-food and bio-energy sectors (vertical), including research and knowledge transfer institutions (thus complementing the territorial-based approach in LEADER). It explicitly covers pilot projects as well as cooperation crossing regional and national borders. *Operational Groups* are central to fostering innovation in a broad range of areas. They should bring together farmers, researchers, advisors, businesses and other actors to initiate and develop novelties in the particular corner of the agricultural sector. The co-operation measure supports both setting up of operational groups (bringing together a targeted partnership of actors around a concrete project plan), and the realisation of projects itself. The cooperation measure also supports networks, which bring together a variety of actors and by sharing needs and knowledge may initiate actions of concrete operational groups.

The proposed measures for the next phase are promising in terms of supporting and enabling innovation, but they do not discuss yet in detail how obstacles to increased cooperation can be overcome in future. Hopefully this may be expected from the guidelines on programming for innovation that are currently being prepared and the implementation of the EIP enhancing increased knowledge exchange and connecting actors for innovative actions.

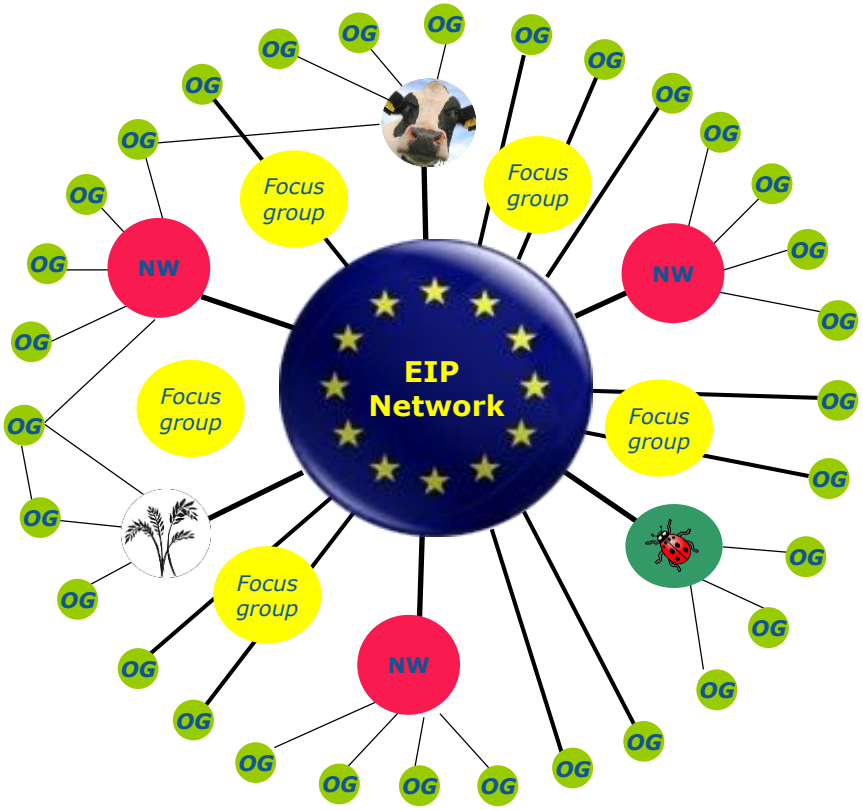
4.3 The European Innovation Partnership for Agricultural Productivity & Sustainability.

A European Innovation Partnership (EIP) network is being set up in order to link operational groups, advisory services, researchers and other relevant actors involved in targeting agriculture innovation - in terms of sharing knowledge and expertise, spreading information and disseminating novelties (Figure 3).

Clusters of activities and networks of stakeholders and 'inter-branch' organisations are particularly relevant to the sharing of expertise as well as the development of new and specialised expertise, services and products. Pilot projects are important tools for testing the applicability of technologies, techniques and practices in different contexts, and adapting them where necessary.

The main novelty in the EIP approach is that it will provide a bridge between rural development measures fostering innovation and EU research policy, namely the Horizon 2020 programme (see next paragraph and Figure 4). Thus the EIP network will also create a platform for the transnational flow of information and cooperation. The setting up and operations of the EIP network for Agriculture Productivity and Sustainability will be financed from the EAFRD budget. Operational Groups (OG) as well as thematic networks may function at various levels, within or across MS.

Figure 3: The EIP network interlinking Operational Groups and thematic/national networks



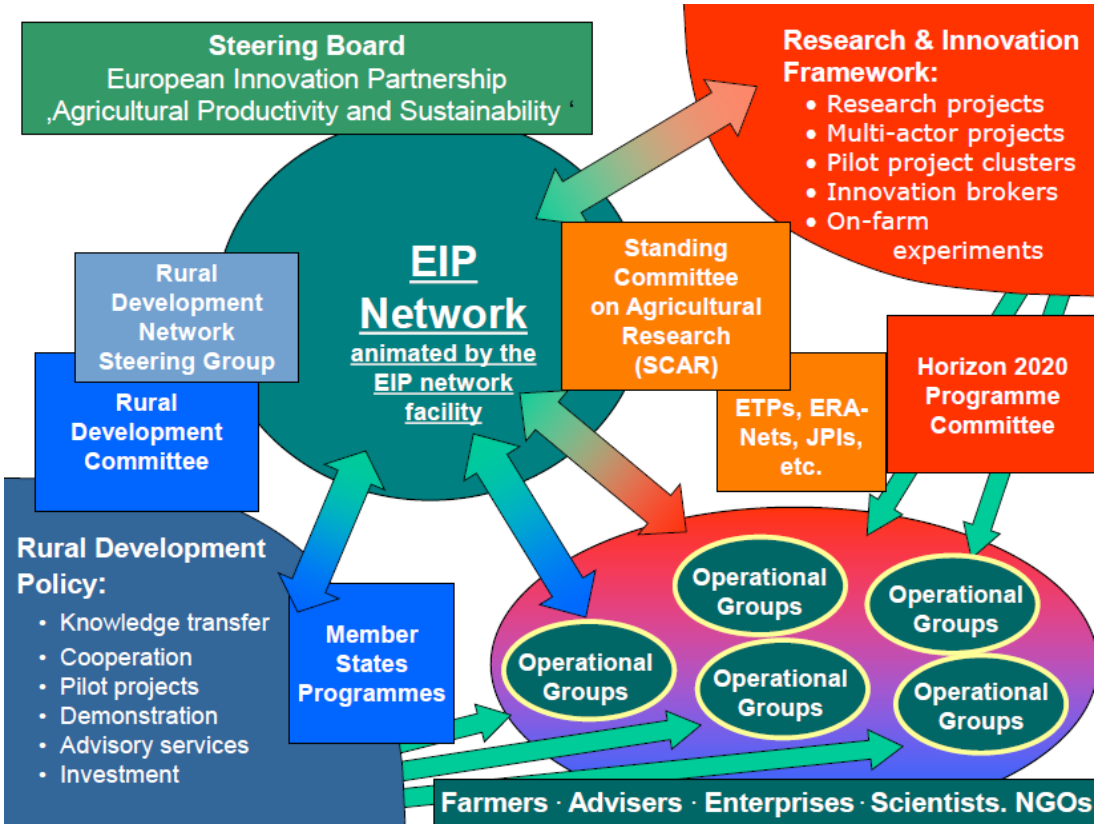
Source: European Commission, DG AGRI

Building-up a functional AKIS remains a target of the rural development policy. The support to modernisation and farm diversification are important measures providing funds for physical implementation of innovations / new technologies which are developed outside the farm in which process and organisational innovations will likely develop too. The diversification into non-agricultural activities will help to use on-farm resources (labour and capital) in a more efficient way.

Although not mentioned in figure 4, Community Led Local Development initiatives (under priority 6 of the rural development policy after 2013[11]) and the national networks will continue to play a key role, in particular for the territorial development of rural areas and the spreading of innovation beyond the agricultural and forestry sector. National networks may engage in animating EIP innovative actions.

[11] Promoting social inclusion, poverty reduction and economic development in rural areas.

Figure 4: EIP on Agricultural Productivity and Sustainability coordinating innovation actions of the new rural development policy with the European research programme Horizon 2020



Source: Presentation of the EIP Agriculture - European Commission, DG AGRI (24 May 2012)

It is envisaged that the EIP will be implemented through better connections between in particular two EU policies: the rural development policy and the EU Research and Innovation Policy, i.e. Horizon 2020 (COM (2011) 808). The EU Research and Innovation Policy will provide the knowledge base for innovative actions on the ground. Under the Policy priority "Societal Challenges" there will be three thematic areas relevant to agriculture and rural development: i) food security, sustainable agriculture, marine and maritime resources & the bio-economy; ii) secure, clean and efficient energy and; iii) climate action, resource efficiency and raw materials. Key actions of the Horizon 2020 programme relevant for innovations are:

a. Applied research projects

b. Cross-border and cluster initiatives

c. Multi-actor approaches

d. Pilot or demonstration projects

e. Support for innovation brokers and innovation centres

These actions will definitely contribute to the completeness of the innovation environment, providing support to essential actors and processes in the innovation system; namely AKIS and scaling-up. Linking both policies through operational groups will provide opportunities for interested actors who wish to develop, test and apply innovative approaches; the EIP will be the respective platform for it. From this point of view the EIP will support the implementation of both policies: the operational groups set up with the help of RD policy, if complemented by actors (e.g. scientists, innovators, etc.) from at least two additional MS, can also present a proposal for Horizon 2020 support.

Bridging the current gap between research and agricultural practice, the EIP will contribute to shortening the delay between the development of research knowledge and its adoption in practice; and vice versa, research will be better and more promptly informed on the needs of farmers and supply chains.

5. REFLECTION POINTS FOR POLICY RECOMMENDATIONS

Based on the review of the current and future policy context, this background paper now attempts to highlight key questions and considerations to be looked into by the Focus Group and beyond, with the objective of stimulating further discussion and contributing to the improvement of future policy and next generation RDPs:

- *Innovation in the context of rural development may have to be different from innovation from other sectors.* Innovation in a rural policy context is not the same as innovation – so to say - in the industry and it is only partly covered by innovation in a purely agricultural setting. It means more than R&D or patenting. Rural areas on the other hand are potentially significant 'sources' – or a 'nursery'- of innovation (e.g. renewable energy, climate adaptation, service provision for the public sector). Being the second pillar of the CAP, Rural development policy should enable a wider climate for rural innovations –of course including innovations in agricultural production and processing. One simple dimension of this broadening can already be found in producing more integrated and coherent farming plus forestry advice based on wider land-use considerations. Other examples are innovations in improving sustainability in agricultural production systems and/or enhancing public goods (eco-system services), or social challenges or new forms of public-private cooperation.
- The point above induces an important second issue. Rural innovation policy should allow for more complex processes with many more actors and stakeholders. Although this sounds complicating when simplification of policy delivery is required, policy is supported by recent innovation theory, suggesting a paradigm shift is taking place in innovation processes. The way innovation is stimulated in current policy basically follows a *linear model approach*, whereas the increasing complexity in future rural development policy is better served by the interactive innovation and *systemic model*. Interestingly this shift is not only desired from theory, it also is endorsed by SCAR (2012).
- It is most relevant to identify *emerging innovation* actions and explore the way they can be incentivised, stimulated and supported, e.g. via networking and/or brokering. So-called *Innovation Brokers* may offer very relevant services in promoting innovation processes. Furthermore the assessment of current experience of innovation processes allows for rapid learning for effective EIP operational groups.
- Rural development policy should accept the risk that the success of an innovation project cannot be guaranteed beforehand. This means that any rural policy enabling innovation will have to *handle a certain degree of failure*. How to handle this in monitoring and co-funding is a challenge in programming rural development policy, but it is an unavoidable necessity.
- Another aspect of risk is that *the market will not automatically pay for innovations in sustainability* as they may increase production costs. In case of societal demand for animal welfare or clean production, the market may not easily be paying for these additional services. In such cases rural development policy has to consider rewarding the producer for the added value he/she has created for society. Sustainability objectives will demand for public investment in innovations that enhance such sustainability, such as via the rural development measure for non-productive investments.
- Various studies (i.e. SCAR) underline the importance of actor and stakeholder participation in innovation projects, be it farmers, advisors, enterprises or local inhabitants or organisations at territorial level.

Involvement, both in early stages of programme design and in implementation of projects, is crucial for success of a RDP.

- Policy should also take into account that not all AKIS actors will automatically work towards keeping knowledge public and joining innovation and knowledge networks as foreseen by the EIP. To give one example, extension services in the livestock industry (veterinary service, feed producers) may rather favour a narrow sector approach on knowledge services than entering into an open complex horizontal knowledge exchange network. This might hamper co-evolutionary learning[12] and innovation and solutions need to be found to overcome this potential difficulty.
- The involvement of specialised EIP networks or specific efforts from thematic or National Rural Networks for initiating and disseminating innovations in the Member States is important, even when they are not many. Also thematic, regional, national or European networks may play a role in supporting innovation and knowledge exchange for innovation processes.
- LAGs and CLLD groups may also play an important role in creating trust that stimulates effective knowledge exchanges and builds social capital, from which innovation actions may grow. LEADER in its beginning was perceived as a 'nursery for innovations' in rural development and in rural policy. This role seems to have been lost over the years. Furthermore examples of innovations rarely are well documented.
- Furthermore it is relevant to pay attention to monitoring and evaluation of innovation processes and results. This calls for adequate indicators. The involvement of the European Evaluation Network in this respect would be desired.
- Public-private cooperation is an increasingly used model to support innovation. If both sides participate in funding, it is relevant to attribute both the costs and the benefits appropriately. This means measuring the added value of the innovation of the collaborative partners and to elaborate a fair cost and value distribution. Such distribution of costs and benefits also will make the role of the public and private sector apparent.
- When assessing the lessons from current practices in innovation dynamics and the support thereof it is relevant to pay attention at least to the following issues:
    - The driver of the innovation (*why – which contextual elements provided the need for a new idea/approach?*).
    - The incentive for innovation (what/who provided the input to work on the new idea, approach?).
    - The object (*what*: *product, process, system*).
    - Actors and stakeholders (*who - including the main beneficiaries*).
    - The stage of the innovation process (*how far*: *still needing special support, or self-supporting*).
    - How will/did the idea become an innovation*? (Which factors are making / made the new idea become more mainstream? And how barriers and challenges have been overcome?).*
    - The role of networks (*including scaling-up*).
    - Success criteria (*how - including 'permanent learning' and 'social capital' for innovation*).
    - Monitoring and evaluation (what are the *results and effects; costs and benefits*).
    - Policy lessons that help EIP Operational Groups at a quick start (including enabling and constraining factors in policy delivery) (*what and how to improve*).

[12] In this respect The SOLINSA (Support of Learning and Innovation Networks for Sustainable Agriculture) project funded by the Seventh Framework program could be an ideal starting point to further understanding.

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Annex 1: Key measures supporting KT&I within the current rural development policy framework

Axis 1 - Improving the competitiveness of the agricultural and forestry sectors

1. Measure 111 - Vocational training and information actions, including diffusion of scientific knowledge and innovative practises for persons engaged in the agricultural, food and forestry sectors (Article 20 (a) (i) of Reg. (EC) N° 1698/2005)
2. Measure 114 - Use of advisory services by farmers and forest holders (Article 20 (a) (iv) of Reg. (EC) N° 1698/2005)
3. Measure 115 - Setting up of farm management, farm relief and farm advisory services, as well as of forestry advisory services (Article 20 (a) (v) of Reg. (EC) N° 1698/2005)
4. Measure 121 - Modernisation of agricultural holdings (Article 20 (b) (i) of Reg. (EC) N° 1698/2005)
5. Measure 124 - Cooperation for development of new products, processes and technologies in the agriculture and food sector and in the forestry sector (Article 20 (b) (iv) of Reg. (EC) N° 1698/2005)

Axis 3 - Improving the quality of life in rural areas and encouraging diversification of the rural economy

6. Measure 311 - Diversification into non-agricultural activities (Article 52 (a) (i) of Reg. (EC) N° 1698/2005)

Axis 4 (LEADER) - Building local capacity for employment and diversification

7. Implementing local development strategies as referred to in Article 62(1)(a) with a view to achieving the objectives of one or more of the three other axes defined in sections 1, 2 and 3 (Article 63 (a) of Reg. (EC) N° 1698/2005)
8. Measure 421 - Implementing cooperation projects involving the objective selected under point (a) (Article 63 (b) of Reg. (EC) N° 1698/2005)

Annex 2: Key measures of the innovation policy within the new rural development policy framework

1. **Cooperation** Support under this measure shall promote forms of co-operation involving at least two entities and in particular:
   - i) Co-operation approaches among different actors in the Union agriculture and food chain, forestry sector and among other actors that contribute to achieving the objectives and priorities of rural development policy, including inter-branch organisations;
   - ii) The creation of clusters and networks;
   - iii) The establishment and operation of operational groups of the EIP for agricultural productivity and sustainability as referred to in Article 62.
2. **Knowledge transfer and Information Actions (Article 15)** Support under this measure shall cover:
   - i) Vocational training and skills acquisition actions, demonstration activities and information actions. Vocational training and skills acquisition actions may include training courses, workshops and coaching.
   - ii) Support may also cover short-term farm management exchange and farm visit.
3. **Advisory services, farm management and farm relief services (Article 16)** Support under this measure shall be granted in order to:
   - i) Help farmers, forest holders and SMEs in rural areas benefit from the use of advisory services for the improvement of the economic and environmental performance as well as the climate friendliness and resilience of their holding, enterprise and/or investment;
   - ii) Promote the setting up of farm management, farm relief and farm advisory services, as well as forestry advisory services, including the Farm Advisory System referred to in Articles 12 to 14 of Regulation (EU) No HR/2012;
   - iii) Promote the training of advisors.
4. **Investment in physical assets (Article 18)** Support under this measure shall cover tangible and/or intangible investments which:
   - i) improves the overall performance of the agricultural holding;
   - ii) concerns the processing, marketing and/or development of agricultural products covered by Annex I to the Treaty or cotton. The output of the production process may be a product not covered by that Annex;
   - iii) concern infrastructure related to the development and adaptation of agriculture, including access to farm and forest land, land consolidation and improvement, energy supply and, water management; or
   - iv) are non-productive investments linked to the achievement of agri- and forest environment commitments, biodiversity conservation status of species and habitat as well as enhancing the public amenity value of a Natura 2000 area or other high nature value area to be defined in the programme.

5. Farm and Business development (Article 20)

Support under this measure shall cover:

i) business start-up aid for, young farmers, non-agricultural activities in rural areas and the development of small farms;

ii) investments in non-agricultural activities;

6. LEADER (Articles 42 - 45) and ENRD (Article 52)

42 Local action groups

43 Preparatory support

44. Interterritorial and transnational co-operation activities

45. Running costs of the LAG and animation of the territory.

52. European Network for Rural Development

7. European Innovation Partnership (Title IV, Articles 61 - 63)

61. Aims

62. Operational groups

63. Tasks of operational groups.

Source: COM(2011) 627/3