



ENRD Coordination Committee
Focus Group on
Knowledge Transfer & Innovation

Phase 1 Report

FINAL DRAFT

March 2013

TABLE OF CONTENTS

1. INTRODUCTION	5
2. EXECUTIVE SUMMARY.....	5
3. OBJECTIVES AND UPDATE ON PROGRESS.....	8
3.1 Purpose and objectives of the Focus Group	8
3.2 Update on progress	8
4. DEFINITIONS AND THE METHODOLOGY USED FOR INVESTIGATING THE SUPPORT TO KT&I THROUGH RURAL DEVELOPMENT PROGRAMMES.....	10
4.1 The Concept of Innovation and Knowledge Transfer in Rural Development Policy	10
4.2 A METHODOLOGICAL FRAMEWORK FOR THE ANALYSIS OF THE FG	12
5. CASE STUDIES ANALYSIS	13
5.1 Why – The needs and opportunities leading to innovation	15
5.2 Who – Initiators and actors involved in the innovation process	16
5.3 What – The types of innovation supported	18
5.4 Benefits from Knowledge Transfer	20
5.5 Role of existing networks / advisory services or NRNs.....	21
5.6 Results of the innovation	23
5.7 What worked well and “bottlenecks”	24
5.8 Lessons learnt.....	25
5.8.2 Lessons from failure.....	31
5.8.3 Reasons behind the success (or failure) of the innovation process	32
6. POSSIBLE INTERVENTION AREAS AND PRACTICAL RECOMMENDATIONS	33

SEPARATE ANNEXES:

ANNEX 1 - Collection of examples supporting Knowledge Transfer & Innovation

ANNEX 2 - Background Paper

LIST OF FIGURES

Figure 1: Number of examples provided per country	13
Figure 2: Initiators of the innovation process	17
Figure 3: Types of innovation supported	19

LIST OF TABLES

Table 1: Examples of different measures/funding sources presented in the inventory	14
Table 2: Main problems and opportunities behind innovation in the three areas of study	16
Table 3: Actors involved in the innovation process.....	18
Table 4: Factors to be taken into account when designing the innovation process.....	32

LIST OF BOXES

Box 1: The "Catalogo verde" network in the region Emilia Romagna, Italy.....	14
Box 2: The joint company of grain farmers improving their position in the market in Sweden.....	15
Box 3: The Sietinet initiative - Linking the research and the ornamental plant production sector in Flanders Belgium.....	17
Box 4: The renovation of a cheese processing unit in the Czech Republic.....	17
Box 5: The production of energy from wood in Ireland	19
Box 6: The instalment of anti-hail equipment in a blueberry orchard in Poland	20
Box 7: The project 'CASDAR Simplified Implantation Techniques' in France	20
Box 8: The project "DEMO FARM" for the development of Latvian-Estonian network demonstrating environmentally friendly farming practices.....	21
Box 9: The development of a new method for controlling pests in Spain	22
Box 10: The activities of the Grassland Centre in Lower-Saxony and Bremen, Germany	22
Box 11: The creation of a new type of voluntary work for supporting the elderly in Finland.....	26
Box 12: A new form of vocational training in renewable energy and resource management, Hungary..	26
Box 13: The evaluation of Measure 111 in the Netherlands	27
Box 14: Introducing a series of innovations in the dairy production sheep farms in Spain.....	27
Box 15: The project Redbio in France	28
Box 17: A new form of entrepreneurial education for rural schools in Hungary.....	29
Box 18: The joint development by growers of new potato varieties adapted to the local conditions in Emilia Romagna, Italy	29
Box 19: The production of native plants certified for ornamental and natural use in Lombardy region, Italy.....	30
Box 20: The creation of a system for travel arrangements between car drivers and potential passengers in Sweden	30
Box 21: The development of a platform for monitoring beehives remotely in Spain	31
Box 22: The production of bean-based chips from locally grown beans in Sweden	31

LIST OF ACRONYMS

AKIS	Agricultural Knowledge and Innovation Systems
CAP	Common Agricultural Policy
CLLD	Community-Led Local Development
DG AGRI	Directorate General for Agriculture and Rural Development
EAFRD	European Agricultural Fund for Rural Development
Agricultural EIP	European Innovation Partnership for Agricultural Productivity and Sustainability
ENRD	European Network for Rural Development
ERDF	European Regional Development Fund
ES	Environmental Services
ESF	European Social Fund
EU	European Union
FG	Focus Group
ICT	Information and Communication Technologies
ILVO	Institute for Agricultural and Fisheries Research, Belgium
INTERREG	Interregional co-operation programme
KÖN	Competence Centre for Organic Agriculture, DE
KT&I	Knowledge Transfer & Innovation
LAG	Local Action Group
LEADER	Liaison Entre Actions de Développement de l'Économie Rurale
MA	Managing Authority
M&E	Monitoring and Evaluation
MS	Member States
NGO	Non Governmental Organisation
NRN	National Rural Network
OECD	Organisation for Economic Cooperation and Development
OG	Operational Group
PPP	Public Private Partnership
RD	Rural Development
RDP	Rural Development Programme
SCAR	Standing Committee on Agricultural Research
SME	Small Medium Enterprise
TA	Technical Assistance
TNC	Transnational Cooperation

1. INTRODUCTION

This report presents the findings of the ENRD Focus Group (FG) on Knowledge Transfer and Innovation (KT&I), which has been operating since June 2012.

The ENRD Focus Groups, which are established under the Coordination Committee or the LEADER Sub-Committee of the ENRD, have the objective to look into current rural development practices in order to draw lessons for improving future generation RDPs (2014-2020). A number of FGs have been operating on a thematic basis with the support of the ENRD Contact Point. Bringing together interested stakeholders, including members of the Coordination Committee and the Leader Sub-Committee (Managing Authorities of the RDPs, National Rural Networks, European organisations) and a range of other actors at national and EU level (e.g. national agencies, research institutes, stakeholders associations, LEADER Local Action Groups) the FGs aim at promoting the exchange of experiences, taking into account the diversity of national and local contexts and contribute to the European dimension of the rural development policy.

The KT&I FG is composed of representatives from EU Member States' national administrations, National Rural Networks, as well as EU organisations and academics. It specifically looked into forms of support provided by current RDPs to knowledge transfer and innovation operations. The relevance of the theme is dictated by the focus of the rural development policy after 2013 on *fostering innovation and knowledge transfer* as horizontal priority for the future RDPs and the support that they will provide for the implementation of the *European Innovation Partnership for Agricultural Productivity and Sustainability*¹ (the 'agriculture EIP') and the establishment and operation of its Operational Groups.

The report introduces the objectives and work of the FG so far (section 3). It then provides some background concepts and definitions and sets the methodological basis for the work of the group (section 4). The following section presents the main findings of the analysis conducted on the evidence collected by the FG, summarises lessons learnt illustrated by relevant practical examples and identifies factors that underpinned the success of such practices (section 5). Finally, areas for future intervention and some practical recommendations are presented as elaborated by the FG on the basis of such findings (section 6).

2. EXECUTIVE SUMMARY

The Focus Group on KT&I has been looking at current experiences with supporting Knowledge Transfer and Innovation through the European Agricultural Fund for Rural Development (EAFRD) in order to draw relevant lessons and suggest possible future improvements.

The report presents the activities of the Focus Group undertaken from June to December 2012 ('phase one' of the FG work). A work plan of anticipated activities for the second phase of the FG will be developed separately on the basis of achievements to date.

Aside of the present report, the FG has produced a Background Paper, with the aim to get updated with recent developments in thinking about knowledge transfer and innovation processes in rural development. The paper forms part of this report (annex 2). It assesses the contribution of the current RDP measures to innovation and knowledge transfer, as well as the potential contribution of the

¹ http://ec.europa.eu/agriculture/eip/index_en.htm

proposed measures for 2014-2020 including the establishment of the agricultural European Innovation Partnership (EIP). The paper provided the conceptual reference and focus for the work of the FG; in its writing process three issues became very clear:

- 1) The concept of 'innovation' should not be caught in one single definition to be universally valid. Situations all over Europe do vary according to the context. Instead, and specifically for policy recommendations, innovation is to be considered as a permanent process of renewal and adaptation.
- 2) The existing knowledge and innovation systems have tended to focus on agriculture. However, it is very relevant also to include issues of environmental and social innovations as well as being innovative in new ways, such as cooperation between public administration, farmers and other stakeholders in the rural domain.
- 3) Policy is to enable a 'culture of innovation' wider than the work of actors in the so-called Agricultural Knowledge and Innovation System (AKIS) in the strict sense. Rural development policy can embrace rural innovation beyond the agricultural production and processing.

The FG designed a questionnaire to collect and assess current RDP experiences in support to KT&I. More than 60 examples have been received from 17 Member States as informative reference for further analysis. This has created a strong evidence base for initial policy recommendations for the EU and the national level.

The FG concluded that its analysis is well in line with the recent work of Standing Committee on Agricultural Research (SCAR). Furthermore it confirmed that the intended European Innovation Platform is most welcome to strengthen the creation of an 'innovation enabling climate' within RDP 2014-2020. Crucially the FG concluded that:

1. There is an expressed need in Member States for guidance on 'how to' to support bottom-up innovation processes and emerging innovation networks. Lessons from practical experience can inform MS and the EU level.
2. Current rural development Policy already has experience with several instruments to support innovation, like 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.

The FG has deducted several relevant lessons from the cases collected:

- a. *Animating the potential innovators.* Very often the stakeholders have already conceived a possible innovation but they lack knowledge and support in order to proceed.
- b. *Advisory services and 'innovation brokers' play a key role in the innovation process,* acting as facilitators in a process with a high level of complexity and multiple actors involved.
- c. *Good communication and cooperation and building trust between the various actors are fundamental for success* in this interactive process.
- d. *Assessing market needs is a precondition for innovation.* Understanding the market changes and trends is an important condition for identifying the domains for innovation.
- e. *Combining different funds and different measures* enables implementing more complex projects and making use of different options available.
- f. *Building the right partnership* is important by bringing together the right partners who have the motivation, skills, knowledge on the subject and are willing to invest into a successful partnership.

- g. *A local business model is required*, which will be adapted to the local specificities and incorporates the economic, social, and cultural characteristics of the area.
- h. *Ensuring the flexibility of authorities and regulations*, on how the rural development policy is implemented and supports the innovation process.
- i. *Managing risk and handling failure*, as risk taking and the possibility of failure are integral parts of the innovation process
- j. *A clear framework for innovation* is also important for defining the measures and conditionality which can lead to innovation.

Based on the lessons learned, the FG has drawn a number of initial policy recommendations for six relevant intervention areas identified. Here below the six intervention areas are indicated together with the most relevant recommendations:

1. Simplify rural development regulations: minimise the **administrative burden** related to all innovative projects.
2. Connect RDP-networks, innovation networks and EIP-networks: invest in good **communication on and coordination within the EIP** at the EU and MS level.
3. Enable a climate for innovations – also considering 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.
4. Promote wide stakeholder involvement: **start informing** relevant actors on the objectives and opportunities of the EIP Operational Groups for 2014-2020 already in 2013 with the support of **National Rural Networks**.
5. Strengthen the already existing Agricultural Knowledge and Innovation System (AKIS): ensure the actors in AKIS are informed on the potential of the **EIP Operational Groups**.
6. Support relevant networks in an emerging stage: **challenge the 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 make use of the EIP.

3. OBJECTIVES AND UPDATE ON PROGRESS

This part of the report presents the purpose and objectives of the Focus Group as well as the progress made on the tasks set out under the Focus Group's (FG) work plan. More specifically it refers to the activities of the Focus Group that have taken place from June to December 2012 (phase one of the work plan). A detailed work plan of the anticipated activities for the Phase 2 of the FG will be developed separately and subject to revision of the work carried out so far.

3.1 Purpose and objectives of the Focus Group

The purpose of this FG is to consider how best support to Knowledge Transfer and Innovation through the European Agricultural Fund for Rural Development (EAFRD) can be improved. In particular, the FG work focuses on what works well, what doesn't work well and on identifying the existing bottlenecks in supporting innovation through the current rural development policy (2007-2013). Lessons learnt from this work are intended to help to inform the design and implementation of Rural Development Programmes (RDPs) in the next programming period (2014–2020). The Focus Group work also aims to identify the links between future RDP's and the agricultural EIP by learning from what has been successful in the current programming period, and the implications of that for making future RDPs an effective vehicle for the implementation of the agricultural EIP. The scope of the group covers innovation and knowledge transfer as supported by the RDPs in agriculture, forestry as well as in rural areas more generally.

In performing its analysis, the FG has:

1. facilitated the **exchange of practices** used in Member States in supporting KT&I - through the EAFRD and other sources - and collected **examples of these experiences** to be used as informative reference or study material for dissemination;
2. taken into account the diversity of European rural areas and the national, regional and local contexts and needs, with the view **to contribute to the European Policy**.

3.2 Update on progress

An important task of the FG was to produce a Background Paper (a first draft of which was commented by the Focus Group in its meeting of November the 20th, 2012). The Background paper addresses the requirements of the FG for consistency of terminology in order to have common understanding of what is meant by 'innovation' and 'knowledge transfer' in the agricultural and rural development context. In this view the paper outlines the innovation concepts that are of most relevance for the Focus Group and it also provides an overview of the elements of the current rural development policy in terms of their ability to enable the intended innovation. The background paper also outlines the opportunities (and possible pitfalls) within the European Commission's (EC) proposal for rural development after 2013.

The Focus Group KT&I has analysed the collected examples and assessed how knowledge transfer and innovation can be more effectively supported through RDPs. This element of the FG's work aimed to answer a number of questions based on evidence, namely:

- What kinds of policy measures are needed and are most effective and efficient in supporting innovation and knowledge transfer?

- What sorts of approach have been used to support innovation and knowledge transfer within RDPs under the current programming period and what were the main elements of their success?
- What is the role of cooperation between the relevant actors, and the role of rural networks and advisory services and what is needed to ensure that these are successful?
- How can the agricultural EIP effectively support Knowledge Transfer & Innovation through rural development programmes?
- What lessons can be drawn from these examples for the development, design and implementation of RDPs for the next programming period (2014-2020)?

To inform this element of the work, the FG has undertaken a series of online discussions and face-to-face meetings in Brussels. A template was developed to collate examples of how innovation and knowledge transfer has been supported in different countries and to consider what worked well and what not so well. These examples have helped to create a strong evidence base from which recommendations for the forthcoming programming period (2014-2020) have been drawn. Examples were gathered in two rounds from July until October 2012. In total, during the first phase of the FG's activities more than 65 examples about RDP support to KT&I have been collected.

4. DEFINITIONS AND THE METHODOLOGY USED FOR INVESTIGATING THE SUPPORT TO KT&I THROUGH RURAL DEVELOPMENT PROGRAMMES

This section recalls in summary some key issues and concepts as introduced by the Background Paper (see annex 2) before introducing the framework for the analysis of the cases collected.

4.1 The Concept of Innovation and Knowledge Transfer in Rural Development Policy

The need for innovation has to be understood in its context. Over the last 20 years, the concept of Knowledge Transfer and Innovation (KT&I) has evolved as well.

The major policy suggestion of relevant institutions is clear. For example the OECD² and the Standing Committee on Agricultural Research³ (2012) conclude that Agricultural and Rural Development Policy - both at the EU level (i.e. both pillars of the CAP) and the Member State level - should create an enabling climate for more complex innovation dynamics.

Both abovementioned works describe a "new rural paradigm", and present relevant suggestions for future Rural Development Policy:

- The policy focus should be less on 'sector' and 'subsidy' and more on 'place' and 'investment'.
- A 'place-based' approach helps fostering local public-private partnerships and helps integrating new stakeholders and their resources into the development process. In other words a territorial-based approach requires more bottom-up as opposed to top-down initiatives.
- A culture of cross-sector, co-operation within central and local governments to achieve more coherent policy initiatives demands new ways of co-ordinating vertically across levels of government and a better use of local knowledge.

Key words on the innovation concept

Theories around innovation usually distinguish two models: the linear and the systemic model.

In the *linear model* innovation is seen as a scientific and technical linear process driven by experts. Innovations are developed by researchers or scientists and are –to be– taken up by practitioners. The knowledge should flow directly from its source in science down to the field of the farmer. The linear view is based on two assumptions: the first is that innovation would not emerge from farmers; the second is that the results of scientific research are indeed relevant for the actual needs of the farmers.

The *systemic model* of innovation is more complex. It focuses on web-like interactions between different stakeholders in the innovation process. This approach looks at the institutional and social environment for innovation, by examining the relationship between institutions and the legal and policy frameworks. It also considers the education system and the role of social capital and tacit knowledge in generating, using and diffusing innovation (see annex 2 for further reference).

² OECD, Reinventing Rural Policy Brief (2006) <http://www.oecd.org/governance/regionaldevelopment/37556607.pdf>

³ SCAR, Agricultural Knowledge and Innovation Systems in Transition – a reflection paper, 2012, http://ec.europa.eu/research/agriculture/scar/pdf/akis_web.pdf

From the cases presented in the survey of the FG, it became clear that both models have their function in the understanding of how innovation works. So in its analysis the FG has integrated elements that pertain to both models.

In the context of rural development policy the key concept linking to a systemic model of innovation is the *Agricultural Knowledge and Innovation Systems* (AKIS). AKIS is defined as a 'concept to describe a coherent system of innovation, with emphasis on the organisations involved, the mutual links and the many interactions between them, including the institutional infrastructure with its incentives and its budget mechanisms' (SCAR, 2012).

In literature the innovation process is often subdivided in specific stages following a logical order. One commonly used description divides the process in 4 stages. It starts with a novelty (an *invention* as a completely new thing or an *innovation* for a specific area). If this innovation is promising it attracts more stakeholders and develops into a 'niche'. As soon as it scales up and starts to be established (supported by rules and regulations or when it is included in the education system), the stage is called a 'regime'. The fourth stage of 'landscape' cannot be influenced by RD Policy, as it is determined by global processes (Geels, 2004).

Innovation as a dynamic process

From the rural development policy perspective, it is not very helpful to insist on exact definitions of what is innovation and what is not: after all rural development policy itself does not produce innovation directly. Instead, it enables a climate for innovators. A given policy should preferably describe the *desired innovation* based on the policy-specific challenges. Thus rural development policy should aim at facilitating innovative technologies and innovative ways to solve problems and to grasp new opportunities. Instead of focusing on a detailed definition, the FG found it more appropriate to focus on *innovation dynamics*, or on *innovation as a process*. As SCAR (2012) has formulated it: "Innovation starts with mobilising existing knowledge. Innovation is a social process, more bottom-up or interactive than top-down from science to implementation. Even pure technical innovations are socially embedded in a process with clients, advisors etc. Very often partners are needed to implement an innovation."

About AKIS and its actors

In the linear model AKIS usually integrates four actors in the innovation process: research and education institutions, extension service and support system. The latter includes organisations related to credit, inputs, producers' associations etc. Often farm advisory services follow the same model. In the systems model the actors in the AKIS also include networks of consumer movements, environmental NGO's, landscape organisations etc. Obviously new knowledge networks start playing a role as well, in addition to the classical farm knowledge.

The formal AKIS actors in the linear model are rarely involved at the beginning of innovation while they are often present in the process of scaling-up. Hence, in the initial stage of innovations, the informal knowledge, the personal capacities and networks of innovators (including farmers) to build liaisons are essential. It brings the need for 'social capital' to the forefront of innovation policy, as it is the animating and consolidating element of emerging networks. This is where interactive innovation processes start playing a role: connecting actors to exchange of knowledge and enhance cross-fertilisation, which will generate new insights and mould existing, possibly tacit knowledge, into focused solutions. In this stage the role of *innovation brokers* adds a useful element to the standard roles in the AKIS-model. Howells (2006) defines the innovation broker as "an organization or body that acts as 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."

4.2 A METHODOLOGICAL FRAMEWORK FOR THE ANALYSIS OF THE FG

A specific questionnaire was developed by the FG with the objective of collecting a number of examples about RDP support to KT&I operations across EU Members States and regions. From the very beginning of work of the FG it became clear that the contexts in the countries differ to a large extent and that both above mentioned models of innovation are relevant. So the questions had to be of a character general enough to fit both the huge variety in situations in the Member States and the differing views on the KT&I systems that are functioning. Also the questionnaire invited for suggestions for future RD policy and assess whether current experience in innovation support could already shed some light on the function and support of the intended EIP operational groups.

To cover all those aspects, the questionnaire included the following basic aspects:

- the driver of the innovation (why: e.g. knowledge needs, changing market demands...)
- the object (what: was it a product, a process, or a system innovation);
- actors and stakeholders (who: actors in AKIS and others, including the main beneficiaries);
- the stage of the innovation process (how far)
- was it supported by policy or not;
- the role of networks (including scaling-up);
- success criteria (how: what factors did help the innovation and what constrained the process);
- results and effects of the innovation (both benefits and constraints)
- policy lessons (why, what and how to improve: to advise RDP and EIP Operational Groups)

At different meetings of the FG (face-to-face or via video conference) held in order to discuss preparatory work or assess progresses, some points for consideration have emerged, that need specific attention. These issues, together with the results of the present analysis have been further discussed by the FG and elaborated in the final draft of the report:

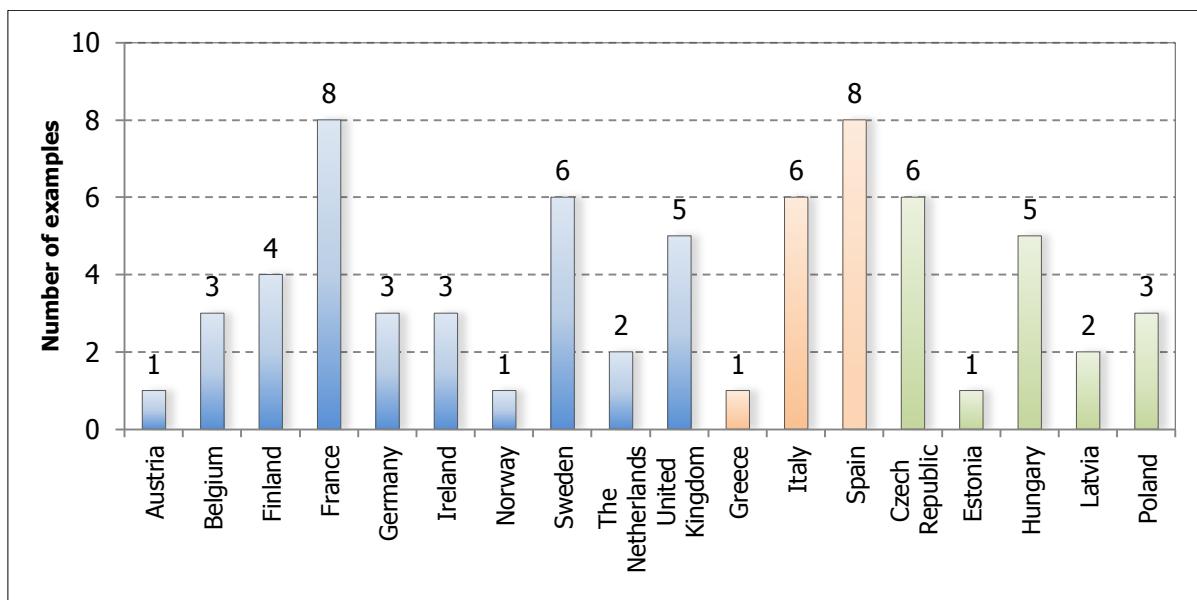
1. There is an expressed need in Member States for *guidance 'how to' to support bottom-up innovation processes and emerging innovation networks*. Lessons from practical experience 'how to' can inform MS and the EU level.
2. Current RD Policy already has some instruments to support innovation. Both through several measures like 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. So it would be important to assess how current instruments *have contributed to innovation*.
3. The FG is interested to know what the main innovation themes in the case studies are. Do the presented cases dominantly deal with: i) competitiveness issues of the agri-food chain; ii) environmental issues (renewable energy and protection of environment) or; iii) with services to rural society (including employment, catering in rural areas and energy if related to local community rather than agriculture).

5. CASE STUDIES ANALYSIS

This section summarises the different elements involved in the innovation process collected through the questionnaire: the drivers for innovation, who ignited the innovation process and who were the actors involved, the different RDP measures or funding sources used, the role of knowledge transfer, the contribution of networks and advisory services in facilitating the innovation process or their contribution in its dissemination and up scaling, as well as what were the final results. The section concludes by highlighting the mechanisms / steps which worked well or what were the "bottlenecks" that constraint the overall process. The information that will be presented in the following sections attempts to capture and organise the experiences of the different MS on supporting Knowledge Transfer and Innovation, based on examples provided by the FG and supplemented with information from other relevant literature.

Overall, 66 examples have been collected from 17 MS, on a voluntary basis. The number of examples received per MS, and their distribution is illustrated in Figure 1 below. Two examples cover multiple MS. The largest numbers of examples collected reflect experiences from France (8), Spain (8), the Czech Republic (6), Italy (6), Sweden (6), followed by Hungary (5) and United Kingdom (5). The geographical coverage of the examples also reflects the current composition of the FG. The majority of the examples (33) relate to northern and western and Scandinavian Member States – interestingly these countries according to the OECD⁴, appear to invest more in innovation as seen by their higher gross domestic expenditures on Research and Development (R&D). A significant number of examples (9) were provided for the Mediterranean area (in particular from Spain) as well as from RDPs in some of the central and eastern Member States (17 examples).

Figure 1: Number of examples provided per country



The examples provided focus primarily on those RDP measures that directly target innovation. As shown in Table 1, the largest number of examples were supported by measures related to the development of new products, processes and technologies (measure 124, 12 examples) and the

⁴ <http://www.oecd-ilibrary.org/sites/factbook-2011-en/08/01/01/index.html?contentType=&itemId=/content/chapter/factbook-2011-68-en&containerItemId=/content/serial/18147364&accessItemIds=&mimeType=text/h>

modernisation of agricultural holdings (measure 121, 5 examples). Other examples were supported by measures related to promoting the dissemination of information and knowledge transfer including vocational training and information (measure 111, 4 examples); to farm advisory services (measure 114, 4 examples); and to setting up of farm advisory services (measure 115, 3 examples).

A number of cases emphasized the **need for combining measures** in order to support the innovation process. Such combinations are of measures 111, 114 as shown by a case in Emilia Romagna (Italy) where a network has been established for the dissemination of knowledge and it distributes and sells training, information and consulting – see box 1.

Box 1: The “Catalogo verde” network in the region Emilia Romagna, Italy

‘CATALOGO VERDE’ represents a network promoted by the Emilia-Romagna Region in Italy in order to provide public access to training, information, and consulting services. The project is financed through the combination of measures 111 and 114, to which additional co-financing by private companies is added. The project reveals the importance of providing integrated knowledge tools in order to increase efficiency and effectiveness. The services are offered on the basis of contracts defined *a priori*, the cost of which can be reimbursed through a government grant that varies from 60% to 90%. Service suppliers are accredited training and advisory bodies of proven competence. The main beneficiaries are private farmers and companies, who can benefit from information and consulting services that are tailored to their real needs.

In what concerns financing by the different RDP Axes, apart from Axis 1 (29 examples) which had the largest number of cases, Axis 3 and Axis 4 LEADER are represented with 6 examples each while 2 examples were received covering Axis 2. The Technical Assistance budget and the National Rural Networks also played a significant role in supporting the innovation process as it can finance training and information activities, the evaluation of the pilot projects and by the provision of micro grants through the best practices (4 examples).

Table 1: Examples of different measures/funding sources presented in the inventory

Measure	Description	No. Examples
111	Vocational training and advice	4
114	Use of advisory services	4
115	Setting up of management, relief and advisory services	3
121	Modernisation of agricultural holdings	5
123	Adding value to agricultural and forestry products	1
124	Cooperation for development of new products, processes and technologies in the agriculture and food sector and in the forestry sector	14
Axis 2	Improving the environment and the countryside	3
Axis 3	The quality of life in rural areas and diversification of the rural economy	6
Axis 4	LEADER	6
Technical Assistance	National Rural Networks	4
Other	European Social Fund, European Regional Development Fund, Leonardo Da Vinci programme, INTERREG programmes, National and regional funds etc.	39

Please note that the table refers to the number of examples per measure, i.e. some examples may cover more than one measure and in these cases they will appear twice in the table.

Interestingly, the largest number of examples (39) stress the use of additional or alternative means of finance generated through various public (e.g. national, regional administrations) and private sources (e.g. bank loans, business); as well as other EU funds (e.g. the ESF, the ERDF, INTERREG, the Leonardo da Vinci programme).

5.1 Why – The needs and opportunities leading to innovation

In the majority of the cases collected (38 examples) the innovation process originated from the *need to enable the actors of the primary sector* (farmers, cooperatives, producers, agro-food industries etc.) *to maintain and/or improve their competitiveness*. Increasing competitiveness was pursued due to a number of different reasons: farmers, producers and processors along the “value chain” in many cases (15 examples) were motivated by the need to improve the performance of their holding by adopting changes in production, farming and processing practices in order to tackle the increased costs, competition from other countries and loss of profitability.

The *need to address the beneficiaries' knowledge needs* was reported as another major reason for innovation (12 examples). This included establishing new forms of cooperation with research institutes, universities and other knowledge “generators” in order to keep up with innovations and technological advances as to remain competitive, cover the knowledge gaps which the market had no financial incentive to cover (particularly for the organic sector), address training needs or take advantage of exchanges of experience and transfer of knowledge. *Responding to changing market demands or new opportunities* (9 examples) was another strong driver for innovation as in these cases innovation emerged from the need to respond to the increasing demand for better quality or new products. The *need for cooperation* also led to innovation as the beneficiaries saw significant opportunities in achieving economies of scale or in developing new practices which would be beneficial for all the stakeholders – see box 2 below.

Box 2: The joint company of grain farmers improving their position in the market in Sweden

In Sweden, two neighbouring farmers used their own savings and a bank loan to form a joint company to cultivate grains (600 hectares), construct a large silo and a drying facility. The large scale of production and the increased storage capacity has improved their bargaining position with respect to traders. As a result they are now achieving better prices for their products. This innovation represents a change compared with the traditional supply chain, where it is the buyer and not the farmer who is usually involved in drying and storage. Their initiative was driven by the need to take advantage of scale in the production of grains and storage capacity. Also, the building of a silo would not have been profitable for only one of the farmers. Because large volumes of grains are also very attractive for traders, the firm had so far no need for marketing since information about the large silo has spread quickly through word of mouth. This case study shows that unconventional solutions, such as forming a joint company between two neighbours, may sometimes constitute a solution that enables farmers to survive and grow.

Addressing environmental issues is also an important driver for innovation (11 examples). From these environmentally-oriented examples, *renewable energy led to innovation* (6 examples) as it offers significant opportunities for farmers for decreasing their costs, creates new job opportunities and offers considerable economies of scale in production of bio-energy thus acting as a trigger for new cooperation between farmers and industry. Innovation also originates from the *need to protect the*

environment (5 examples). This included developing, demonstrating, exchanging and adopting new practices which minimise the impact of intensive agriculture in the environment and manage the available land and water resources in a sustainable manner thus creating wider benefits to the society (environmental services).

The *need for new services and addressing societal issues* in the rural areas is another trigger for igniting the innovation process (9 examples). In this category the LEADER type projects have a versatile and dominant role in promoting innovation in rural areas by addressing needs related to rural society (supporting the elderly people or promoting employment for rural youth) and supporting the diversification and development of the local economy. Another important driver for this category of innovation was also the need to overcome the disadvantages created by the lack of networks and cooperation in the rural areas which could stimulate the local markets and create opportunities for additional income.

Both problems and opportunities are key motivators in the innovation process. Table 2 provides an indication of the main problems and opportunities that lead to innovations in the three areas examined based on the information gathered from the FG.

Table 2: Main problems and opportunities behind innovation in the three areas of study

	Problems	Opportunities
Competitiveness	<ul style="list-style-type: none"> • Price pressure or fluctuation • Increased costs, competition from other countries and loss of profitability • Difficulties in following the technological advances • Lack of technical assistance and research on specific sectors (e.g. organic farming) • Product limitations (e.g. shelf-life, varying quality) • Legal requirements on the health and safety issues 	<ul style="list-style-type: none"> • Increasing demand for new or better products • Branding a new product in the market • Opportunities to increase yields and reduce operation costs • Generate or take advantage of diversifying opportunities in new markets • Achieving economies of scale • Benefits from sharing knowledge, experiences & practices
Environment	<ul style="list-style-type: none"> • Declining or scarcity of natural resources • Structural change pressures in farms • Lack of knowledge and consensus on environmental and nature protection issues • Dependency for fossil fuels 	<ul style="list-style-type: none"> • Reduce the use of pesticides or fertilisers • Lowering production costs • New sources of income (energy, fuels etc.) • Delivering environmental services to society
Rural society	<ul style="list-style-type: none"> • Poverty • Rural exodus • Population scarcity and lack of social services • Weak SME sector • High unemployment levels especially for youth • Poor cooperation between the local actors 	<ul style="list-style-type: none"> • Local products and services can stimulate the local economy and diversify incomes • Opportunities from exploiting local potentials (environment, traditions etc.) • Great potentials from energy production (income, job opportunities, environmental benefits etc.)

5.2 Who – Initiators and actors involved in the innovation process

According to the case studies collected, *farmers or farmers' organisations* are in the majority of the cases the ones who initiated the innovation process (26 case studies). *Research institutes and universities* are also an important initiator of novelties (8 examples). The role of research institutes in generating the innovation as described in the case studies indicates that elements from both the linear

and the systemic models are present. Research institutes appear to be both generators of innovations which are then transferred to and applied by the farmers (see, for instance, the case of Sietinet initiative in Belgium – box 3), as well as active and equal participants in a 'side by side' network approach, in which innovation is 'co-produced' through interactions between the stakeholders (the case of cheese processing unit modernisation example in Czech Republic – box 4).

Box 3: The Sietinet initiative - Linking the research and the ornamental plant production sector in Flanders Belgium

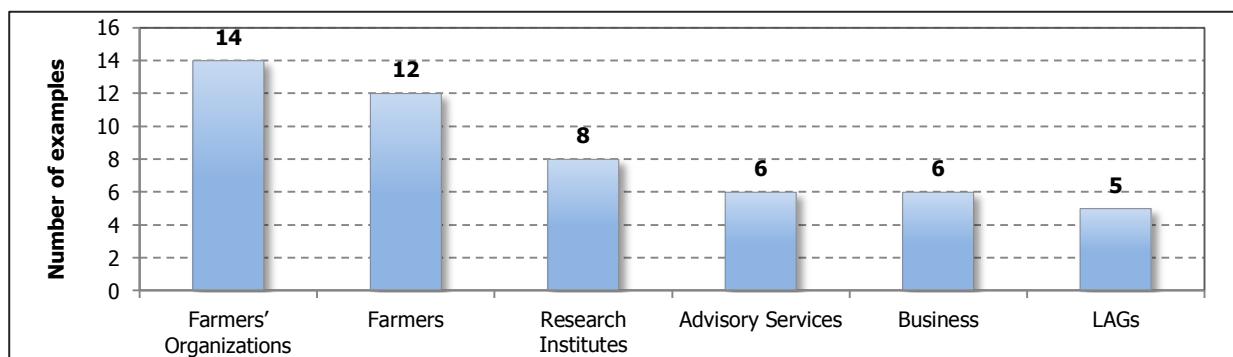
The Flemish ornamental plant production sector is export-oriented and operates in the world market. In this situation of fierce competition, innovations and technological advances are needed to remain competitive. In the Sietinet initiative the participating companies from the sector aimed to access new knowledge produced by the research. This was necessary, as it is very hard or even impossible for the companies - coming from different branches within the sector: in vitro, young plants and breeding - to gain this type of knowledge or to do research themselves. Through this initiative 9 knowledge institutes (universities, university colleges, an experimental station and ILVO) active in the ornamental plant production sector collaborated with a group of 60 companies in this sector. Through the project funding, a scientist (technological consultant) was hired and employed in one of the participating knowledge institutes to make this knowledge available in an accessible way for the participating companies.

Box 4: The renovation of a cheese processing unit in the Czech Republic

Differently, a project concerning a cheese processing unit in the Czech Republic follows the pattern of the systemic model where the innovation is generated from a synthesis rather than a one way, linear, top-down approach. The project emerged as a result of the different needs and inputs of an agricultural cooperative, a research institute for cattle production, and customers. Initially, the main focus was on the modernisation of the processing unit of one agricultural cooperative. The collaboration with research sector was assumed as a chance but with no high expectations. The research institute provided new ideas on how to improve the product and also suggestions for improvements in marketing. A study visit of the beneficiaries in Austria provided some additional ideas, while professional networks provided the signals on the market's demand for quality cheese.

The *advisory services* played a catalyst role in the emergence of the novelty in 6 of the case studies. Also in 6 examples the innovation process was initiated by a LAG and in 4 examples the agro-food businesses (see figure 2). Other actors who initiated innovations concerned NGOs, chambers of commerce / agriculture, development organisations etc.

Figure 2: Actors initiating the innovation process



Please note that the table refers to the number of initiators per example, i.e. in some examples more than one initiator are involved and in these cases they will appear twice in the table.

The actors involved in the innovation process in the examples collected are very diverse: farmers and their organisations, agri-food businesses, research institutes and/or universities, formal or informal networks and the NRNs, the public or regional administrations, as well as local action groups.

Different dynamics in the combination of actors appear to emerge when examining the case studies according to the focus of innovation – see table 3. When the innovation is oriented towards competitiveness of the agri-food sector there is an equally distributed presence of individual farmers, farmers' organisations, and of knowledge generators and distributors possibly indicating the presence of web-like interactions between different stakeholders in the innovation process based on the multidirectional flow of information. In the cases where the innovation process is addressing environmental issues, the contribution of the extension and advisory services appears to be very important. This probably highlights that such innovations depend more on knowledge transfer and exchange of information on specific technical, management, policy etc. issues thus advisory services have a central role in supporting the innovation process. Finally, in the case studies where innovations concerned wider needs of the rural society and economy LAGs were the main initiating actors given the important role and potentials of LEADER in promoting innovation in rural areas.

Table 3: Actors involved in the innovation process

	Individual farmers	Farmers' organisations	Agri-food business / industry	Universities / Research institutes	Extension / advisory service / business advice	Formal / informal networks	Policy actors / public admin.	LAGs
Competitiveness	19	21	14	22	23	8	4	2
Environment	6	6	1	5	10	4	3	1
Rural services	2	1	3	3	1	0	3	6

Please note that the table refers to the number of actors per example, i.e. in most examples a number of actors are involved and in these cases they will appear twice in the table.

5.3 What – The types of innovation supported

This section provides an indication of the types of innovation supported in the FG examples. In the questionnaire used by the FG, innovation was considered under three types (innovative product, new process or practice, innovative form of organisation - including marketing) as a close proxy to the OECD definition⁵ suitable for the context of this analysis. In the collected case studies the predominant type of innovation concerned was about new *processes or practices* (39 examples), followed by innovations on *new forms of organisation* which included marketing (27 examples) and *innovative products* (19 examples) – see figure 4.

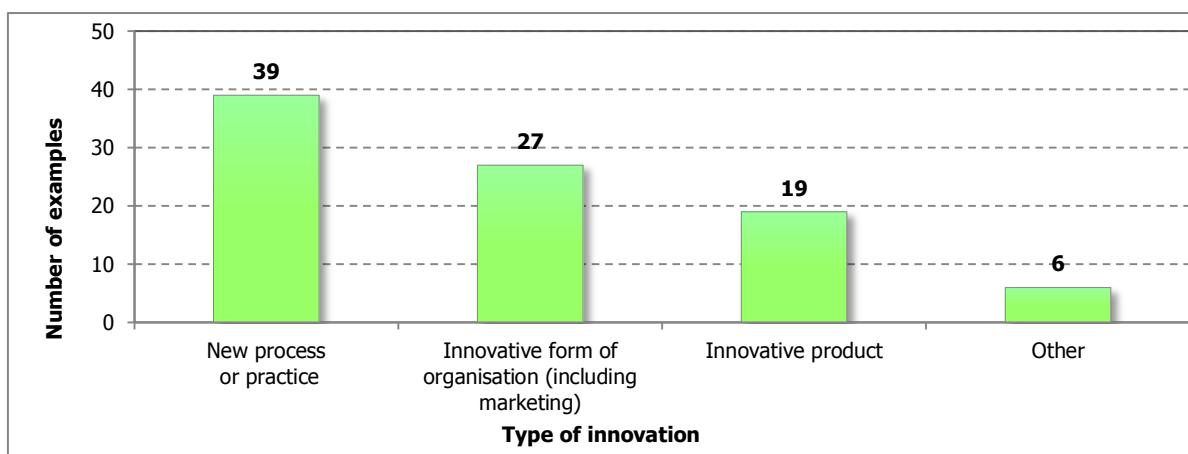
Innovations on new processes or practices included the adoption of new or improved farming or production methods and techniques (e.g. biological control of pests in farming), modernisation and utilisation of new equipment, combining or exchanging resources (e.g. exchange of straw-compost between dairy and crop farmers). The innovative forms of organisation - including marketing -

⁵ <http://www.oecd.org/site/innovationstrategy/defininginnovation.htm>

concerned the formulation and establishment of new networks aiming to facilitate experimentation, exchange of experience, transfer of knowledge and new forms of cooperation (e.g. establishment of networks between farmers, research institutes, clusters formed by forest producers both for selling purposes but also for infrastructural development etc. – see box 5). In the examples about innovative products were included the introduction of new or significantly improved products (e.g. quark which is a type of fresh cheese with pro-biotic culture, wood chip pellets from thinning) as well as the introduction of new services such as the creation of a competence centre for organic farming (KÖN) in Germany, the formation of a cluster between farmers and local industries (Valbiom) for the valorisation of BIO-Materials in France etc.

In 6 examples other types of innovation were supported mainly oriented towards the needs of rural society mainly through new and specialised types of education or training e.g. developing a new curriculum for primary schools to provide entrepreneurial skills and to strengthen the local identity of the young pupils; innovative vocational training curricula to train adults as bio-energy technicians; the establishment of a centre for practical training in small-scale processing etc. In this category also included initiatives like the establishment of a regional tourist network to facilitate the cooperation of local actors.

Figure 3: Types of innovation supported



Please note that the table refers to the number of innovation types per example, i.e. in 26 of examples more than one type of innovation were concerned and in these cases they will appear twice in the table.

Box 5: The production of energy from wood in Ireland

The County Clare Wood Energy Project (CWEPP) is a national pilot project. The project identified the need to generate a local market for farm forest thinnings and also to promote the use of wood chip boilers among large local organizations as a local, sustainable, cost-effective and environmentally friendly end-use. Among the novelties associated with this project is clustering of the forest producers both for selling purposes but also for infrastructural development. This 'spatial' grouping or clustering generates efficiencies when the forest owners are engaging forestry contractors to provide inspection paths, harvesting roadways and carry out timber harvesting operations. Such a spatial-functional focus which is more purposive and built on economic or social relations, in addition to the territorial aspects of groups, is also of relevance in terms of the funding for clusters that is foreseen under Art. 36. of the legal proposal on support of rural development after 2013⁶.

⁶ http://ec.europa.eu/agriculture/cap-post-2013/legal-proposals/com627/627_en.pdf

5.4 Benefits from Knowledge Transfer

According to the EU Commission communication on “Improving knowledge transfer between research institutions and industry across Europe”⁷, Knowledge Transfer (KT) involves the processes for capturing, collecting and sharing explicit and tacit knowledge, including skills and competences. As highlighted by the majority of the collected case studies (52 case studies), KT was a precondition or a significant part of the innovation process and it appears that the benefits of KT are also contingent to several interrelated factors such as creating partnerships, building capacity, and raising awareness.

From the side of the end users of the innovation (farmers, agri-food businesses, local entrepreneurs and the local society), it was emphasized how important KT was for igniting and/or realising the innovation. KT made it possible for most the beneficiaries to identify the opportunities that existed for new products, processes, methods, tools and markets as well to find tailored methods, technics and equipment to their needs and situation – see box 6. However, the benefits of KT were not limited only to what the beneficiaries could do but also on how to do it. Capacity building was the second major contribution from KT, for example, trainings, demonstration events, on line tools and platforms etc. which enable them to improving their skills and competences; and gain access to new knowledge.

Box 6: The instalment of anti-hail equipment in a blueberry orchard in Poland

One of the main problems which the farmer had to face was seasonal hails, which destroy all crops within seconds. The idea of installing anti-hail equipment in the blueberry orchard came from the farmer. The grower was inspired to make the investment after a study trip organized by the regional extension service to foreign countries, where he could observe functioning of similar instalment. The farmer consulted potential technologies and equipment with regional extension service employees and also with experts from an Institute of Pomology and Floriculture in Poland. The extension services also enabled contacts with potential suppliers of the equipment and advised on sources of investment financing. A good cooperation with the Belgian company producing anti-hail equipment from which the equipment was bought in terms of technical support also needs to be highlighted.

KT was not only beneficial for the end users of innovation but also for research sector as explicitly stressed in a number of case studies (7 examples). In these cases through KT were created win-win situation where, for example, demand-driven research questions are identified and picked up by the science sector. Researchers learn from the farmers and from the (private) advisers and are aware of how their research is interpreted or can be applied and adapt their research on that basis – see box 7. Mutual trust was developed between the research sector and the beneficiaries, which is beneficial to the establishment of long-term partnerships. The research institutions through KT enhanced their research activities, for example by improving the research institution project management skills, complementing the research institution competence base by new skills and techniques developed in the field, improved understanding of market needs and of farmers actual problems, and enhancing their training competences by focusing on the actual needs of the beneficiaries.

Box 7: The project ‘CASDAR Simplified Implantation Techniques’ in France

A project in France investigates the applied phytosanitary practices with regard to direct seeding. The research focuses on what are the conditions for controlling diseases - especially Fusarium and mycotoxins, how to reduce the use of pesticides, and what is the rate of degradation of phyto-molecules in no-till systems. The direct seeding and abandonment of tilling have both economic and

⁷ http://ec.europa.eu/invest-in-research/pdf/download_en/knowledge_transfe_07.pdf

environmental advantages. However, the references are still incomplete with respect to the technical and economic feasibility of these systems. Moreover, their environmental impact is also subject to controversy as the introduction of direct seeding is accompanied by an increase in the frequency of phytosanitary treatments. The project brings together farmers who are practicing direct seeding with advisers and researchers in order to exchange experiences about the real benefits and constraints of these new practices.

Some of the case studies stressed the beneficial aspects of KT for the public administration and the policy makers (3 examples). Through KT the administration and the policy makers can be informed about the implementation of the policies at ground level and receive feedback which will help them to improve the policies and its instruments. For example recommendations for nature friendly farming and improvement of rural development policies based on "real farm" data and experience was developed and distributed in Estonia and Latvia - see box 8. In Ireland the evaluations of existing agri-environmental schemes showed that their voluntary nature meant that sufficient clustered uptake might not occur to effectively deliver the required environmental public goods. Finally also in Latvia an e-library for farmers demonstrate to decision and policy makers the library's role in assuring social and economic development of the community.

Box 8: The project "DEMO FARM" for the development of Latvian-Estonian network demonstrating environmentally friendly farming practices

A two year project, partly related to measures 214 - Agri-environment payments and 224 - Natura 2000 payments, established a network of demonstration farms promoting sustainable and environmentally friendly farming in Latvia and Estonia. Apart from the direct work with the selected demonstration farms, experiences in field of nature friendly and economically sustainable farm management were gathered and published in the form of recommendations for sustainable farming. The recommendations were based on real farm examples emerging from the "real world" cases of 20 demonstration farms. The publication also contained concrete recommendations for the improvement of rural development policies which were in fact based on the lessons learnt in the project farms. One of the main findings from the DEMO FARM project was that the implementation of agri-environmental measures should be more targeted and adjustable/flexible than in the current RDP of Latvia.

5.5 Role of existing networks / advisory services or NRNs

In the examples collected typically the networks involved in the innovation process include a diverse range of actors: farmers, farmers' organisations, agro-food businesses, regional governments, universities, research institutes, advisory and extension services etc. The contribution of these formal as well as informal networks was versatile and important during all phases of the innovation process. Networks transmitted information on the changes in the market demands or the problems of the sector thus igniting the innovation process. Networks stimulated awareness raising on problems and opportunities by bringing together the stakeholders / organizing meetings to exchange through business clubs, groups etc. Networks also initiated and facilitated the establishment of new networks and new forms of cooperation that lead to innovation. In some cases it was the networks that promoted, designed and implemented innovative projects. It was also reported that networks contributed to research and development when for example in France a network of farmers and local industries funded a thesis on the development of agro-material from cereals. In the scaling-up phase, networks played a key role in disseminating information about the innovative projects and their results. One important

contribution of the networks was also that they can reach and bring into the innovation process the individual farmers who otherwise would not be accessible by other channels.

The advisory services as highlighted in section 5.2 can play a central role in the innovation process. An important reason for this is that they can act as intermediaries between practice – the farmers - and scientists and they transmit information, data, scientific questions and then suggestions and solutions etc., developed by researchers to producers for practical use. Advisory services can have a key role in bringing together stakeholders and support the formulation of partnerships. The advisory services also provide project coordination, technical and legal advice. It is also important that the advisory services are important for supporting the stakeholders to identify possible financial sources for the investment and assist them in completing the application for financial support. In some cases, like the example of a new technique for biological control of pests in agriculture developed by the advisory services of a cooperative in Spain (see box 9), the advisory services played a key role in all phases of the innovation process from the identification and study of the novelties, testing the novelties and providing Knowledge Transfer and dissemination of the novelties. Training and disseminating the innovation is another significant contribution from the advisory services in the up scaling phase of innovation.

Box 9: The development of a new method for controlling pests in Spain

Experts from the Spanish Agro-food Cooperatives started to test new approaches of biological control which means controlling pests including insects, mites, weeds and plant diseases using other living organisms and then, they informed farmers about the most appropriate methods for specific land types and market. This new process of pest control without using phytosanitary products meant less costs and positive impacts for the environment. These new practices were initiated by the advisory services of the Spanish Agro-food Cooperatives and provided advice not only about the conditions for applying such methods but also about agronomic innovative methods adapted for that specific area but what is more important, a method focused on that specific market.

The examples that have been analysed show that the National Rural Networks have contributed through a variety of ways in the innovation process (11 examples) – see box 10. NRNs supported financially innovative projects either by giving subsidies which allowed the innovative project to move from prototype to pilot and evaluate it in a real environment or by providing a micro grant – as a best practice example – which assisted the elaboration of the innovative concept. They also played an important role in disseminating information about the implemented project and its results as well as promotional support and assisted the stakeholders in organizing demonstration events and trainings.

Box 10: The activities of the Grassland Centre in Lower-Saxony and Bremen, Germany

Niedersachsen and Bremen is the most grassland rich region in Northwest Germany and intensive dairy farming is the most important farming activity. The farms however suffer from structural change pressures and land scarcity. In this context there is raising need for regional dialogue, advice and new strategies centering around the use and protection of grassland. The Centre for Grassland ("Grünlandzentrum Niedersachsen / Bremen") constitutes a focal point where forces are joined by tying together science, policy, economy including practice. In this case, the German NRN contributed by providing advice and support to the centre's activities in this collaborative effort to bring economic growth to the sector through sustainable grassland management.

Transnational cooperation was part of the innovation process in a number of case studies (6 examples) in which it mainly facilitated the exchange of knowledge and experiences as well as the formation of

information exchange networks, like in the cases of Cataluña and Languedoc Roussillon, where a cross-border network was established (REDBIO) in order to promote and facilitate experimentation, exchanges of experience and transfer of knowledge in the organic agriculture sector of the two regions. In another case, transnational cooperation between LEADER LAGs contributed to the development of innovative vocational training curricula for bio-energy technicians. The curricula were developed and introduced in Hungary by transferring and amalgamating training material and methodology from an Austrian training institute and a Dutch research institute.

5.6 Results of the innovation

The results of the innovation process are very diverse in the case studies examined and they can be clustered based of the main beneficiary of the innovation. In the case of farmers the most common result was increased competitiveness as farmers achieved increased effectiveness in production through higher yields, lower production costs, improved quality and better adaptation of their farming techniques to the specific climatic and soil conditions. In relation to the market the farmers managed either to find or to create new markets for their products. In addition by introducing organisational innovations the farmers benefited by establishing networks with other farmers, universities, advisory services, networks etc. for sharing best practices, new product and service solutions and updated information on market trends and technical advances.

In the agro-food businesses a competitive advantage was also achieved in most cases by either the introduction of new or significantly improved products but also as an indirect benefit it was observed the increased qualification of company staff and the exploitation of new knowledge in the training of food industry experts. The introduction of an innovation also lead to an increase of the added value of commodities processed thus resulting better economic results, higher labour productivity and company profits.

Innovation was also beneficial for the environment as in many cases new farming techniques resulted minimising the use of chemical inputs in agriculture (pesticides, fertilisers etc.) and improved resources management had a positive impact on the soil and the biodiversity. With regard to renewable energy projects such innovations contributed to the reduced use and dependency on fossil fuels and to lessen carbon emissions.

Information collected through the questionnaire also pointed out that rural society also gained significant benefits through the innovation process. The local economy was stimulated by the creation of new markets and the introduction of new services. Moreover innovations offered solutions to societal problems such as the unemployment of young people in rural areas and the lack of support services for the members of society which are in need like the elderly.

Finally innovation appeared also to be beneficial for the intermediaries and generators of knowledge (advisory and extension services, universities, research institutes etc.) as through the novelties applied the training services, information and counselling services became more realistic and more attached to the real needs of the farms. In some cases innovations helped research to expand its knowledge base and broaden the research fields as more data became available as in the case of remote beehive monitoring project in Spain. In this case each of the monitored hives will be equipped with sensors and all information is sent to a single terminal which processes the data and registers them into a database. Such a database is essential to carry out the research on climate change and ecology, due to the important work of pollination done by *Apis mellifera* and their value as bio-indicators of the state and the phenology of many ecosystems.

5.7 What worked well and “bottlenecks”

The main bottlenecks highlighted are related to **eligibility criteria and bureaucracy**. The eligibility criteria have been deemed too narrow to encompass the rather versatile scope that innovative products, processes or forms of organizations may entail. Some respondents claimed that there is almost no funding for projects with uncertain results (which is in fact how innovations occur); for on-farm research and experimentation; or for farmers study tours which are so crucial to KT.

Besides, many respondents complained about additional problems: the **need for pre-financing**, as support usually comes after the realization and financial fulfillment of the project; **lack of funds before revenues are generated**; high administrative burden associated with the **compilation of documentation needed and payment claim** and; **difficult and lengthy application procedures** particularly in comparison with the relatively low amount of support received.

Project plans must be very detailed and complete. This has a limiting impact on implementation, and ideas generated during the project seem almost impossible to implement. Too much bureaucracy in the form of **additional instructions and reporting is undesirable** from the perspective of those implementing the project.

Yet, as stressed by respondents, up to a certain extent these can be overcome as long as there is **good communication and cooperation** with regional/national/and EU authorities. Efforts were made to simplify the administration procedure of the support scheme, and in some cases the LAGs took a leading role in providing technical assistance and offering substantive constructive comments as feedback at the first stage of the application. In other cases the above constraints were overcome when stakeholders presented the usefulness of the innovation to the national and European authorities, thus generating additional support for it.

The respondents claimed that the success level concerning the implementation of innovation projects depends of the **level of engagement of actors**. They also stressed that practical organizational matters in view of the multi-stakeholder approach prove to be more difficult than in theory. Although in the end a farmer-driven approach gives more satisfaction, at the start, **farmers need to be persuaded to participate in on-farm experiments**. Respondents highlighted problems regarding convincing farmers to work together not only with one another, but also with research institutes and industrial entrepreneurs. While there are important strategic differences between farmers and industrial entrepreneurs, cooperatives are often sceptical about what can be offered by **research institutes, with extremely high participation costs and a complicated language** that seems far from their practical needs. This leads to significant starting period to get acquainted, to gain trust and to get really operational.

Yet, this bottleneck was transformed into advantage when stakeholders were brought together by **common social, economic, or technical, problems. Social network, local input, entrepreneurial spirit and past experience** were key resources and decisive for success. In some cases, technical consultants organised a great diversity of actions that provided technological advice - by phone, e-mail and farm visits, workshops – advice that was tailored to the specific needs of different stakeholders, and thus overcome the above mentioned bottlenecks. Also, driven by common interests, the initial obstacle generated by the compulsory cooperation with research institutes turned into some sort of a ‘symbiosis’ of theory and practice during the project implementation and relationships were established which outlast the life of the project. As active producers are cooperating with researchers and are interested in new scientific information systems, innovations become ‘self-sustaining’.

Another factor that worked well was **training for advisory services and beneficiaries**, which provided them with guidance and support.

In the case of innovative ways to implement agri-environment schemes, it was indicated from evaluations of existing schemes that their voluntary nature meant that sufficient clustered uptake might not occur to effectively deliver the required environmental public goods. In this case, the **localisation/spatial focus** of certain projects, together with the **participatory approach to Knowledge Exchange** with local farmers around ways to 'reinstate' traditional farming practices, were critical to the project's successful outcomes.

With regard to **transnational cooperation** it was argued that it can be hindered by the lack of synchronicity in terms of project cycle, eligible costs and other rules, as well as from communication difficulties due to language differences. For example, the Estonian and Latvian rural development programmes do not support investments outside the formal project partnership, so some of the demonstration ideas needing investments on farm level could not be implemented. This was overcome by trying to build good cooperation with administration bodies in order to overcome these limitations.

Also, **lack of complementarity between different funds**, and between their sub-programmes have led to the situation where crucial input provided by multiple actors falls outside the realm of funding and is thus not being considered. **Joint funding applications** from farmers' organisations, research institutes and advisory services (some private, some public) have proved highly complicated. Further complications arise when projects are partly financed from national/regional funds, which depend on different variables such as size of budget, changes of government etc.

An additional advantage highlighted by the case studies is the **spill-over effect of innovation**. While the example of, and lessons from the implementation of certain innovation projects are being viewed as a possible template for other counties/regions to consider replicating, the number of stakeholders increases. This can also occur through the recruitment of volunteers, or as friends of the innovators joined as co-owners of the project. Also, new social groups are engaged as some activities involved the challenge of reaching marginalized people such as the youth and elderly. Innovative ways of approaching such people and telling them about the project had to be found.

5.8 Lessons learnt

Based on the analysis of the examples collected by the FG and the outputs of the FG meeting held in Brussels (November 2012), this section provides a summary of the main lessons learnt and the key factors which appear to have a determining role in the successfulness of the innovation process. It also explores some of the most commonly identified barriers that hamper innovation, with a view to understand how these barriers can be overcome in the next programming period, while highlighting relevant examples and pointing out the reasons of success or failure behind them.

5.8.1 Positive lessons ("how to boost innovation")

Importance of animation

Supporting and animating potential innovators appears to be a very important element of the innovation process. Very often the local actors have identified the problem or an opportunity and may have already conceived a possible novelty, however due to the lack of knowledge of how to support their idea they may not proceed further. This was clearly indicated from the evaluation of measure 124 in the Netherlands which highlighted that: almost all of the farmers (92%) were already thinking about

an innovation before they knew about the possibilities for support and; in more than half of the projects the innovators applied for support (51%) because advisors notified them about this possibility. Another example where innovation aimed to address societal needs emphasised that in order to ensure the more effective use of public money, it is also necessary to support local actors' involvement and voluntary work (see Box 11). Also a number of case studies clearly illustrated the fact that local animation is a catalyst for innovative projects, particularly when accompanied with a clear identification of the problems, thus allowing engaging and mobilize volunteers more easily (see Box 12).

Box 11: The creation of a new type of voluntary work for supporting the elderly in Finland

Studies have shown that loneliness and insecurity cause health problems and that their cost to society is high. A new model for voluntary work was created in Päijät Hämme, Finland in order to enable the organisation of peer networks among elderly people who are not reached by other kinds of networks and thus excluded from social interactions. The activities are composed of peer phone calls made by trained volunteers. The volunteers are given dedicated phones for calling their customers at times agreed in advance. The frequency of calls depends on the customer's needs and the service is provided for free. No costs exist also for the volunteers, since the mobile phones and call costs are covered by using funds allocated for this purpose as part of the project.

Through cooperation between the elderly, their relatives, the service system and volunteers, the project promotes older people's ability to function and enhance their quality of life and postpone the use of more-intensive services by the elderly, thereby generating cost-savings for society. The contribution of the volunteers was a key factor in this process and one of the project's activities was to provide them with the necessary skills though tailored training and advice.

Box 12: A new form of vocational training in renewable energy and resource management in Hungary

The hilly area of the South Transdanubian Region in Hungary is confronting many ecological problems including the severe soil erosion, the loss of biodiversity etc. mainly due to the large-scale farming applied. At the same time family farmers with smaller farm sizes wanted to quit producing the usual commodity crops (corn, wheat, sunflower) as they were too exposed to larger farms and traders. In order to tackle these problems a LAG commenced an initiative to turn family farms into the production of perennial crops to be used for biogas production. These crops require less fossil fuels and chemicals and reduce the soil erosion while offering significant income opportunities.

In order to motivate and engage the potential stakeholders, the Hungarian LAG with the assistance of a German LAG, organised a study trip to Austria and Germany for local farmers, municipality and school principals. The purpose of this study trip was to inform them and to study how to operate renewable energy production systems based on biomass. This led to the development of an innovative vocational training curriculum for training bio-energy technicians. The local vocational school was transformed into a renewable energy technical centre, based on a small, experimental biogas unit using the production output of the school farm. The school also became an experimental station for farmers where the production and use of different plant cultures is tested and surveyed.

Importance of advisory services and 'innovation brokers'

From the analysis conducted it became evident that the innovation process is often a challenge with a high level of complexity as multiple actors need to find ways to cooperate and to address different requirements at the different stages of the process (preparation, implementation, dissemination etc.). The advisors and innovation brokers have a central role in facilitating this process (see Box 13). On the one hand these subjects need to be well trained and inspired, but also financially supported by receiving compensation for their operational costs. Most importantly it is also necessary to ensure the facilitators' independence from any vested interests in the innovation process which would otherwise jeopardise the cooperation and mutual trust between the stakeholders.

Box 13: The evaluation of Measure 111 in the Netherlands

The purpose of the scheme "Practical Networks" in the Netherlands is to contribute to the development and dissemination of innovative management techniques and to increase the strategic space (e.g. new ways in business development) so that more farmers will use the knowledge and techniques. The principle behind the practical networks scheme is that participants learn in networks, but the participants are not only farmers. Education, research, water boards and municipalities can also participate in the networks, in which coalitions and interactions generate new knowledge and stimulate agriculture to innovate and to develop. The process facilitators in these networks were advisory services, which had also formed their own networks in order to learn from each other as well.

The evaluation of this scheme strongly emphasised that for running networks which pursue innovation, it is important to have skilled facilitators. It also underlined that investing in their training and in certifying their qualifications is also a necessity.

Communication and cooperation (including TNC)

Innovation is more and more been produced through interactive processes in which various actors combine different competences; and the establishment of good communication and cooperation is of added value for all the actors involved. Both vertical and horizontal cooperation and communication when in place, enabled the successful identification of needs and solutions, pooling of resources, sharing strengths and capacities, sharing know-how and gaining an effective management and implementation of the innovation process (see Box 14). The examples highlighted that these two elements were important both when only farmers or only research institutions had to cooperate between them (horizontal) and when communication and cooperation had to be established between farmers, advisors, researchers, the administration etc. (vertical).

Box 14: Introducing a series of innovations in the dairy production sheep farms in Spain

This project was developed by the Agricultural Technological Institute of Castilla y León and the Technical Institute of Livestock Management of Navarra and two non-profit organisations that seek to introduce innovations in dairy production sheep farms that allow improving profitability, sustainability and competitiveness of farms in both regions. The project itself is a network of two partners working together for introducing innovations in dairy sheep ranching. The direct transfer of the results to the sector is made by the two organisations through their field technicians. These technicians are in continuous contact with farmers or across technical personnel of other organisations, such as cooperatives, which have received the information of the project itself.

The main lesson learnt from this example has been to confirm the advantages of the cooperative projects over the individuals. The technical exchanges between the partners (research institutes) and

the continuous feedback and communication with the final beneficiaries (dairy farmers) enabled the creation of innovations which were beneficial for the whole sector. The synergies obtained were very positive and compensated the efforts which were required for promoting and achieving a well coordinated teamwork.

Good cooperation and communication is also an important element when bringing together actors from different regions or Member States. As indicated by one of the examples (see Box 15) very often producers from both sides of the borders can mutually benefit by sharing knowledge and practices. However this would imply establishing genuine cooperation relationships and not strictly thinking in terms of competition which in a globalised environment can only be beneficial in the short term.

Box 15: The project Redbio in France

Two cross border regions, Cataluña and Languedoc Roussillon promoted knowledge transfer and exchange between the farmers and advisors from both sides of the borders. Through the project REDBIO they established a cross-border network between service consultants, organic and conventional farmers from both sides of the Pyrenees for experimentation, in order to exchange of experience and transfer of knowledge on organic agriculture.

The project aims to bring added value by putting in value similarities in terms of agricultural production in the two regions, complementarities between the structures of research, testing and advisory, the growing societal demand for organic agriculture and the change in markets and consumer demands. This project highlights the opportunities which lie in cross-border cooperation, especially on technical issues and on pooling experimental tools addressing common needs.

Market needs assessment

Innovation needs to be demand / market driven (see Box 16). In a range of examples it is stressed out how important it is to take into account the changing consumer and market needs towards a successful innovation with a positive economic impact. This requires being able to assess and to respond to the consumer's needs by investigating the demand changes based on long-term trends and hidden preferences through market surveys and research.

Box 16: The production of organic aromatic and medicinal plants in Greece

In order to respond to the market trends the company "ANTHIR SA" invested on research of new technologies and series of experiments in Greece and abroad, for producing organically grown aromatic and medical plants. The company established a modern facility with integrated production systems and modern technologies for producing controlled products in stable quality under strict controlled health and safety conditions while taking under consideration environmental protection. Thanks to the introduction of new approaches in production the company is now producing the highest level of quality at the lowest possible cost.

This project is an example in which the recognition and response to the requirements of the market, resulted in high sales prices and increased competitiveness of the company in the domestic and foreign markets. The consumers wish to buy high-quality products which are produced in compliance with strict specifications and high standards, while monitoring of the product's origin and the certified environmental protection reinforces their confidence.

Combination of funds / measures

The combination of different funds and measures appears to be another useful lesson learnt as it enables implementing more complex projects and making use of different options available (see Box 17). In this respect the cases studies suggested that support for the match funding centrally by the RDP MAs would be beneficial for all stakeholders as it would potentially simplify the procedure.

Box 17: A new form of entrepreneurial education for rural schools in Hungary

A Local Action Group in Hungary combined resources from the European Social Fund and the EAFRD in an initiative to develop a new form of education for rural primary schools. This programme will teach the young pupils how to put in value their local traditions and the local agricultural potentials. This will strengthen their local identity and in parallel it will provide them with better employment potentials in the local area and prevent them from leaving the region.

The LAG financed the development of the new courses through the ESF programme (TÁMOP 5.1.3.). In parallel, for the delivery of the courses, the LAG used the local community facilities for workshops which were financed by the LEADER+ programme and the EAFRD. The latter supported the creation of an experimental "dairy school" which included a stable for cows and a little milk processing unit, supported under Axis 4 of the Hungarian RDP for 2007-2013. As highlighted by this example, the combination of the ESF and the EAFRD can be much more effective for supporting innovation, particularly when used together through multi-funded CLLD.

Building the right partnership

The case studies indicated that supporting innovation largely depends on the successful engagement of different actors and stakeholders both from the research and the farming sectors (see Box 18). The success/failure of a project is significantly related to identifying and bringing together the most suitable combination of partners who have the motivation, the skills, the knowledge on the subject and they are willing to invest into a successful partnership.

Box 18: The joint development by growers of new potato varieties adapted to the local conditions in Emilia Romagna, Italy

Two associations of potato growers in the region of Emilia-Romagna and the Italian Plant Production Research Center (CRPV) worked together in a two year project for identifying and breeding a selection of high quality varieties of potatoes which would be introduced in the typical cultivation environment of the region. The training institution and its faculty as well as technical consultants were involved in the activities since the early stages of research. The project resulted in the identification of three varieties of potatoes and the innovation was immediately incorporated by all the participating producers. This synergy allowed increasing the competitiveness of the regional potato growers at the national and European market.

This example emphasises the importance of promoting the active role of the greatest possible number of players, especially those who handle the relevant parts of the innovation process. The size and quality of the "team" is the determining factor for the success of the project for the creation of innovation. In addition, greater integration with the other instruments of knowledge (training, information and counselling) and other networks greatly improves the quantity and quality of the impacts.

Another important element which appears to play a significant role in the continuation of the innovation process is the formalisation of the partnership (e.g. the creation of a cluster – see Box 19) and the integration of different actors of the supply chain. Moreover the broader involvement of actors enables

a multiple use of innovation, in the sense that it can serve simultaneously for example both public and private interests.

Box 19: The production of native plants certified for ornamental and natural use in Lombardy region, Italy

The objective of this project was to test and verify the possibility of producing native plants for ornamental and natural use which were certified directly in specific nurseries. Initially three agencies participated in the project - the centre of Autochthonous Flora (University of Pavia), the Natural Park of Monte Barro (Lecco), the Foundation Minoprio (Como) - and ten plant nurseries. During the implementation of the project a cluster was created which now consists of more than 60 members and includes plant nurseries, consulting services, services for publishing and exhibitions, greenhouses producers etc.

As a continuation of this project, the Cluster established an initiative which aims at starting the actual full-scale production of the certified native plants and restoring the native flora in protected areas through large-scale projects. This is characteristic example where a successful collaboration between public administration and private sector was constitutionalized as the number of engaged actors increased. This ensured the continuation of innovation process leading to increased profitability for the private sector and environmental benefits for society.

Local business model

The development of local business models is also an important aspect to be taken into account when considering how to best promote innovation in rural areas (see Box 20). Such a model which is adapted to the local specificities and incorporates the economic, social, and cultural characteristics of the area is deemed necessary for ensuring the harmonious and integrated development of the rural areas and communities. The adoption of such a customised local business model should be based on building on the identity of a region by implementing specific education programmes, and also through the proactive involvement of the local community.

Box 20: The creation of a system for travel arrangements between car drivers and potential passengers in Sweden

Rural areas are sparsely populated and this creates difficulties in providing adequate infrastructure, and services including public transportation. In this context, the innovator supported by a local NGO and a LEADER LAG developed a new product, which is a system for co-ordination of travel arrangements between car drivers and potential passengers. The system is based on an application for a mobile phone, SMS support and webpage adjusted for mobile phones. The drivers register the time and destination of the trip they intend to take and how many seats in the car are available. The potential passengers sign for joining if they are interested, and pay the drivers for their service.

Providing adequate services, of all kinds, to rural population is vital but challenging in sparsely populated areas. Finding innovative solutions in the local context, like this co-ordination of private travel, is important and the role of LEADER in supporting innovators and enabling them to access and involve the local society is vital.

5.8.2 Lessons from failure

Ensuring the flexibility of authorities and regulations

A number of useful lessons equally emerged from the constraints which had to be overcome or even hampered the innovation process in the examples collected by the FG. The evidence based investigation of the FG highlighted the importance of flexibility on how the rural development policy is implemented and supports the innovation process (see Box 21). Some of the constraints most commonly appearing were the lack of the possibility to adapt the project plans to the changing and evolving requirements of the innovation process, the fact that the budget allocations were inflexible and consequently could not change individual elements of the projects, such as labour, equipment, marketing, etc. as required along the process.

Box 21: The development of a platform for monitoring beehives remotely in Spain

In order to address the crisis of the beekeeping sector caused by increasing hives' mortality and consequent drop of farm profitability, two Universities in cooperation with two beekeepers' associations developed an innovative sound-based hive monitoring system. Thanks to this new management tool, which allows the beekeeper to remotely collect information from all the hives in the apiary and monitor their activities, bees' mortality has been minimised. The piloting phase of the project was supported by the National Rural Network (Technical Assistance budget).

Such projects with a research component are very uncertain and change constantly. On the contrary, the system for supporting this kind of projects is inflexible and creates uncertainty and delays in the project's implementation due to the rigid administrative requirements of the EAFRD. As a consequence of this situation, the entity which implemented the project had difficulties to meet the deadlines and to comply with the required procedures for the justification of the expenditures made.

Managing risk and handling failure

As clearly indicated by the majority of the examples, when designing and implementing projects which aim to produce innovation the positive outcome cannot be guaranteed in advance. As a consequence to this fact risk taking and the possibility of failure are integral parts of the innovation process (see Box 22). Therefore, if a certain degree of risk is not allowed and foreseen in the innovation process this would seriously limit innovation.

Box 22: The production of bean-based chips from locally grown beans in Sweden

In this case, based on local raw material the innovators created four different varieties of bean based chips and became competitive in an already established market. The technical support for the development of the production technology was provided by a high school (Kalmar) and a research institute (Institute for Food Technology). The innovation was awarded the "Rural Innovation of the Year 2011" price which was organised by the Swedish National Rural Network.

In this case the innovators had to confront the lack of funding before any revenues from selling the product could be generated as no one wanted to support an uncertain idea. Moreover, the lack of trust and support from regional agency for supporting innovation and small businesses also hampered the development of the new product. Finally, friends of the innovators joined as co-owners of the project and supported its continuation and successful outcome.

Need for a clear innovation support framework

The lack of clear framework regarding innovation (not defining the innovation but the measures and conditionality) can limit the implementation of innovative projects.

5.8.3 Reasons behind the success (or failure) of the innovation process

Based on an analysis of the examples provided and initial lessons learnt as previously developed, this section provides a summary of the key factors which the FG has identified as having influenced the successful outcome of the innovation process. These factors are clustered and illustrated in the following table.

Table 4: Factors to be taken into account when designing the innovation process

Market potential	<ul style="list-style-type: none"> – The existence of a market potential for the innovation. – Having a good knowledge of the market context.
Funding flexibility	<ul style="list-style-type: none"> – Funding the risk of failure: farmers cannot bear the totality of the risk. – Adjustable budget and project plans been able to change in order to cover other (emerging) elements of the project.
Quality of advisory services & role of innovation brokers	<ul style="list-style-type: none"> – The role and quality of advisory services in inspiring, framing and maintaining the innovation process is important. – Advisors and facilitators need to be more broadly and continuously trained and motivated. – The need of a catalyst for innovation was underlined, in particular the important role of innovation brokers to boost and promote innovation.
Building the right partnership	<ul style="list-style-type: none"> – Building a partnership which involves a critical mass of actors, includes a wide range of competences and shares a common interest is important to implement a successful project and to create the right motivation. – Having the key people on board and involving the entire supply chain is often a success factor for a project. – Informal networks, such as kinship partnerships, friends, neighbours, should be used as an important asset in the implementation of innovative projects and not be restricted or affected by the policy. – Cooperation between different sectors and actors involved in a project represents an important element to build a strong partnership.
Communication, motivation and leadership	<ul style="list-style-type: none"> – Communication & cooperation at both farm and regional level, horizontal-vertical chains. – Good leadership (management). – Passion/engagement of the innovator. – Having a clear and genuine vision.
Changing the approach to research	<ul style="list-style-type: none"> – Clear framework for researchers to operate, geared towards the needs of farmers. – Clearer articulation of needs.

6. POSSIBLE INTERVENTION AREAS AND PRACTICAL RECOMMENDATIONS

The evidence gathered by the FG from practice across the EU has contributed to identify a series of possible intervention areas and practical suggestions for current and future RDPs. Challenges in the rural development context do demand for innovations and improvements in innovation processes and many examples illustrate why and how. Also, according to the analysis, several existing RDP measures have elements that definitely serve innovation processes in the frame of future challenges.

Most recommendations appear valid both for the European level and the Member State level. The text below will indicate what suggestion is specifically relevant for policy at the European level (EU) or for the Member State level (MS).

EC's proposals on EIP and Operational Groups are considered to be very promising in strengthening innovation in rural development through the future RDPs. But before enlisting the suggested intervention areas, it is relevant to highlight that the emerging innovation paradigm is very relevant for future rural development policy. Several cases examined by the FG have confirmed the need for a shift in the 'rural development paradigm', thereby confirming the analysis by OECD and SCAR and the intended objectives of the agricultural EIP⁸. This shift is interesting in the frame of CAP, as it underlines the interdependency of the two pillars of the policy and the need to innovate in both of them for achieving sustainable development. This shift has two dimensions: the domain is broadening and processes are becoming more complex.

1. Innovation is very relevant in the domain of agricultural production and processing but also in the domain of social and environmental issues and public goods. Social questions are addressed in 8 cases. They include, for instance, training and employment of rural youth, internet access in sparsely populated areas, ICT for catering of local produce, early education in local identity and entrepreneurship at primary schools, building tourism networks. Wider societal challenges have been addressed in 7 cases. They include reducing climate problems, improving biodiversity and habitat, landscape, water quality, new training in renewable resource management, local energy communities, but also regional food autonomy and reducing food miles.
2. In the design and analysis of innovation processes both the systems model and the linear model are relevant. Both concepts harbour elements that are useful to understand and support innovations in rural development. The FG is of the opinion that most lessons and recommendations deducted from the evidence gathered do fully match with the intentions of future Operational Groups (OG) and the EIP's 'interactive innovation model'. As will be explained further in this chapter, the interactive innovation model covers two basic conditions that emerge 'from the field': relevance of the research object for end-users, and targeted composition of the partnership of actors.

The results of the FG's analysis and reflections are clustered in six intervention areas: i) simplify rural development regulations, ii) connect RDP-networks, innovation networks and EIP-networks within the EIP, iii) enable a climate for innovations –also considering complex innovation processes; iv) allow for a wide stakeholder involvement; v) strengthen the Agricultural Knowledge and Innovation System and; vi) support relevant networks in an emerging stage. For each intervention area some practical suggestions for the forthcoming programming period have been put forward.

⁸ http://ec.europa.eu/agriculture/eip/pdf/com2012-79_en.pdf

Intervention area 1: Simplify the legislative framework to enable innovation processes

Before anything else, the FG insists on one intervention area that is a precondition for all other policy interventions to be effective: simplify the legislative framework to enable innovation processes. This is valid in general but most important for the benefit of small projects dealing with emerging innovations. Suggestions from the cases include alleviating the application of state aid rules (e.g. fairly high administrative requirements particularly in more complicated projects focused on innovation which include the cooperation with a research entity, the supporting schemes to be flexible to follow the unforeseen demands of the innovation processes etc.) and the monitoring system.

Practical recommendations:

At EU and MS level

- Minimise the **administrative burden** related to all innovative projects from the application phase to reporting and control requirements.
- Keep also the monitoring and evaluation system simple for the innovators.

Intervention area 2: Connect RDP-networks, innovation networks and EIP-networks within the EIP

- At European level coordination mechanisms have been proposed between the general rural development network (ENRD) and the two specialist networks on innovation (EIP) and evaluation (European evaluation network). Despite the margin of manoeuvre left at national level, many MS are keen to get suggestions for ensuring national coordination.
- It is extremely important to have good communication and coordination between the RD policy and EIP. RD policy is embedded in the Common Strategic Framework and this fact invites to broaden the working field of innovation. This means that many stakeholders are relevant. Active cooperation among them is considered to be essential.
- Several MS express a strong need for practical guidelines for setting up EIP networks and Operational Groups and relating them to AKIS and NRNs. The FG underlines the need for early information and good understanding of the new policy and its implementation opportunities.
- It is important to understand and disseminate best practices in innovation processes as well as good selection criteria to ensure the quality of participants. In this respect benchmarking and networking are important.

Practical recommendations:

AT EU and MS level

- Invest in good **communication on EIP at the EU and MS level**. Clear signals and suggestions to the MAs will facilitate a quick start of Operational Groups and exchanges in national and international networks. The FG suggests requesting current **NRN's to be of assistance** in this communication in preparation of the next planning period.
- Provide comprehensive information about "**why innovation**" as one of EU2020 priorities (possibly in cooperation with other actors, such as DG REGIO) and "**how innovation**" through the setting up of OG's.

- Invest in active **cooperation between EIP network / ENRD / National Rural Networks** and in communication with the activities of European Evaluation Networks at the EU and national level.
- Member States with regional RDPs may require **one single national framework for implementing EIP** in order to avoid the risk of having several operational groups focusing on the same subject without coordination.
- Communicate the **possibilities of the EIP operational groups** to work on themes with stakeholders beyond agriculture production alone as provided in the list of areas for innovative actions in the EIP Commission Communication⁹.

At EU level

- Elaborate **guidance to MS in addressing innovation in the current programming process** preparing the next phase. **MS without** past experience with **measure 124** need assistance in establishment of innovation measures.

Intervention area 3: Create an enabling climate for innovation

- As stated in the Background paper an exact definition of innovation is not helpful. There is however a demand for a practical description of what is 'desired innovation'. RD policy could prompt stakeholders to innovate on themes that are 'desired' –or required- from the evolving context and current challenges. A clear message from the EU and MS level will help operational groups and innovation brokers to understand and explain the importance of innovation. On the other hand, to capture 100% bottom-up cross-cutting ideas for innovative actions, it may be desirable to leave the themes open, to decide upon by operational groups in their project plan. Evidence on the relevance for end-users of the project objectives and the targeted composition of the partnership to reach the goals of the project will then be essential to investigate. The pragmatic approach of interactive innovation processes by the EIP is considered useful in practice.
- Innovation procedures should be kept very open: local administrations need enough freedom in defining what type of innovation process and dialogue is most functional and enough freedom to use concepts that fit solving the problems. One case in particular suggests that 'a maximum level of subsidiarity' for innovations is required. In practice this also suggests that future EIP operational groups would need a certain level of autonomy and flexibility in defining their own functioning.
- Accept a level of financial risk. In this aspect current policy still discourages innovating initiatives, and because businesses and the banking sector are wary about investing in innovations at the initial phase (e.g. prototypes) - especially in an uncertain economic situation - the innovation dies off. There is the need to recognize and be able to handle risk in innovation by addressing the financing of risky innovation processes and accepting possible failure. This is an issue in which there is a lack of know-how, selection criteria and indicators.
- It is noted that resource efficiency and climate and energy are among the cross-cutting priorities in the future RD policy. So the need is clear for innovation in the social and environmental and

⁹ 2012: COM(2012) 79 final - [on the European Innovation Partnership 'Agricultural Productivity and Sustainability'](#)

governance domains. And the recognition that this type of innovation processes needs other funding rules, as they are less market driven. For example in fields as environment, climate, biodiversity, water management and animal welfare where the market still is little responsive to safeguard the public interest, so innovative initiatives crucially continue to rely on public funding.

- Three measures in the future RD policy framework hold much potential for support of innovation and knowledge transfer, namely the measures on cooperation (article 36 of the EC's proposal for 2014-2020), on training (article 15) and in advice (article 16). In particular, article 36 on cooperation will in principle allow for flexibility, joint working processes and projects, vertical and horizontal cooperation, support to thematic clusters and networks and to the establishment and operation of future EIP OG's.
- There is the need to invest in the role of innovation brokers and facilitators in order to boost interactive innovations that are responding to real needs; support (e.g. services, training) for their activities could come from the RDP budgets.
- Innovation often implies a need for a change in behavior and culture. There is an inter-generational issue that is overlooked and can be tackled through education of future generations and creating a cultural sense of innovation.
- Lack of harmonisation of legislation and administrative procedures in MS can hamper transnational cooperation projects and learning (e.g. solar energy subsidies and green energy pricing differ a lot).
- Some cases indicate that the implementation at national level of **food regulations** hinder innovation. The flexibility offered by these regulations is not used in all Member States. In certain cases national procedures are only designed for the large scale processing industry and not adapted to small-scale innovations developed by small food producers in early stages; they do not enable an innovation climate for smaller initiatives.
- The need is expressed for tailored monitoring and evaluation and adequate indicators. One case suggests indicators for monitoring financial aspects of innovation - including both costs and benefits - as well as who is finally benefiting from the innovation and to what extent. This is relevant for a fair attribution of costs and benefits eventually, as is also suggested in studies of OECD and SCAR. This may however pose problems in the case of innovation related to public good related services where the market does not deliver sufficient benefits.

Practical recommendations:

At EU and MS level

- RD policy should support innovation processes from **the same inclusive conceptual framework** as the agricultural EIP has proposed. The concept of 'interactive innovation model' is most welcome. This will allow a wide range of types and subjects of novelties and innovation that reflects the wide variety of contexts in the EU MS.
- It is important for RDP measures to include **non-agricultural innovations** as well (wider rural perspective).
- Realise that not all innovations – like new environmental services from farmers- will eventually be paid by **market-forces**. So it is important to allow at least initial payments from RDP budgets.
- Support both innovation itself and the **experimentation with the novelty** in practice. The current provisions on the future EIP already suggest this as a possibility.

- Encourage RDP's to make use of **article 36** (cooperation) and **article 15** (training) and **article 16** (advice) to also promote innovation. For example to support innovation brokers.
- Design guidelines for collectives (of farmers, among others) to deliver green (nature) and blue (water) services. Two specific demands came from the cases: a) a legislative framework allowing payments for these services and; b) a format for contracts between collectives and authorities.
- Deepen the notion of "**innovation brokers**" and challenge creative entrepreneurship. In other words: promote the "innovation spirit". **Monitoring & Evaluation** of innovative projects should not only focus on the results but also on the process. The option of failure has to be accepted as part of the innovation processes. The **European Evaluation Network** could invest some effort in the design and appropriate M&E system for innovation.

At MS level

- Find and share good **benchmarks** of innovation process support.
- **Increase Technical Assistance (TA) support**, in particular within the NRN action plan for training and include training on "leadership", CLLD, innovation facilitation and brokerage, business and marketing skills, understanding environmental, social and communication issues.
- Devote **a substantial part of the NRN budget to support and train** innovation advisors / brokers on innovation processes, on an inclusive view on innovation, facilitation of transnational exchanges and cooperation at local, MS, and EU level.
- In innovation processes **the risk** is difficult to foresee. In such circumstances it is recommended to follow a step-wise approach in planning and in funding. And allow for failure. In such case it is important to learn from the experience.
- Allow a **risk-taking attitude**. Design and experiment with risk **guarantee funds** and monitor their performance. Revolving funds (for guarantees / loans) could be co-funded from the RDPs 2014-2020 budgets.
- Allowing exemptions from large industry food processing regulations for small innovative initiatives is very important. Such an approach is helpful to foster innovative initiatives.

Intervention area 4: Get the stakeholders involved

- Innovation requires doing things differently, with the support of diverse stakeholders. Without an **inclusive approach** to innovation there is not sufficient success in implementation. In farming business the farmers should be included in setting the innovation agenda. In wider rural issues, also local communities should be asked for research topics/needs.
- RD policy should enable innovation not only in research stations or agribusiness firms. Small enterprise and local communities are stakeholders in rural development and should be 'enabled' as well. Many cases stress the need to have farmers involved in designing the research topics in AKIS. Several cases advise to give access to research funding also to private SME and extension staff involved in the innovation dynamics.
- Several cases mention the relevance of NRN's in communicating about innovation and in bringing stakeholders together.

- There is a clear expressed need for guidance on how to formally established public-private-partnerships (PPP), for example through outlining formats/templates for PPP contracts.

Practical recommendations:

At EU and MS level

- Promote **training in facilitation and leadership** in complex processes involving systems innovation, as keeping the various stakeholders together is a challenge, also at local level.
- Design and share **simple formats for PPP contracts** (e.g. for the delivery of environmental services).

At MS level

- **Start informing** relevant actors on the objectives and opportunities of the EIP Operational Groups for 2014-2020 already in 2013.
- Include information activities and support to innovation processes and stakeholder involvement into the tasks of the next generation of **National Rural Networks**.
- **Challenge CLLD groups / LAGs** to lead innovation and building local or regional partnerships. From this experience they will be able to generate relevant issues for rural development research.

Intervention area 5: Strengthen the Agricultural Knowledge and Innovation System

- An enabling policy would require a substantial improvement of the functioning of current AKIS. Both the studies of OECD and SCAR and more than half (33 out of 59) of the FG cases stress the need for a much better collaboration among partners in the AKIS. This suggestion is particularly relevant for the attitude of researchers within the 'linear innovation' model of on-farm technology or processing technology of farm products. In fact it is relevant for all actors to adopt an 'interactive innovation' approach.
- Many examples of interactive systems innovations have been presented, that are much more complex than the linear innovations in the case on-farm technology. An enabling RD policy should include training of advisors in facilitation of such complex processes and, to a wider extent, in innovation needs beyond farming.
- There is a need for practical tools for promoting knowledge transfer and exchange such as physical meetings and trainings, use of media, collection, clustering and sharing of examples.

Practical recommendations:

At MS level

- Make sure the actors in AKIS are inspired by the **EIP suggestions for Operational Groups**. Either by direct information from the Managing Authority or the relevant ministry.
- **Farmers** should be included in developing agricultural research agenda's, as rural inhabitants should be involved in setting the agenda for rural research.
- In most MS also the **NRN** can assist in promoting the potentials of EIP Operational Groups in strengthening the AKIS and in linking existing local networks with EIP.

- Include a '**rural relevance**' condition for research proposals if it is to be financed from RDP budgets: relevance of the innovative project to end-users is key. Researchers should be rewarded not only according to their academic publications etc. but also by the impact of their work in rural areas and interactive processes.

Intervention area 6: **Support emerging innovation networks**

- Twenty cases collected from the FG confirm that the LEADER approach, Local Action Groups and National Rural Networks can play a significant role in supporting KT&I. They are important in building social capital, through knowledge sharing, building networks, self-confidence and local governance. Examples show a huge variety of activities in this respect: identifying and addressing a problem; helping in formulating relevant project proposals; disseminating information and best practices; providing training; promoting webinars, Transnational Cooperation, inviting for partnerships; co-funding projects; introducing innovators in their networks; sharing information on funding possibilities etc.
- From various cases the idea emerges that LAGs -and therefore CLLD groups- could develop much more into a role of initiating and supporting 'a broader innovation dynamics in rural areas' as well as in connecting rural and urban areas, or producers and consumers. Public interest, governance and social issues should be considered.
- Two cases have learnt that 'rural schools' (primary and secondary) can play a role in innovation dynamics. This innovative approach helps making children and parents aware of the power of local identity and of business initiatives that can relate both to sustainable use of regional resources and to new local or regional market opportunities. These cases have made clear the need for developing practical concepts of 'grass root economy' and 'local business models'.
- The support to 'emerging innovation networks' should be possible for periods of several years to become strong enough to continue on their own.

Practical Recommendations:

At EU level

- Suggest models for '**local business development**' and '**grass-roots economics**' to inspire emerging networks.

At MS level

- **Challenge CLLD/LAGs** in the next programming period to initiate and support innovation by building local or regional partnerships and developing 'grass root economy' and 'local business models'.
- Ensure transparency in evaluating emerging innovation networks and **share M&E indicators** within the European Evaluation Network.