

## **Multifunctionality and innovation strategies of EU rural organisations**

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### **Abstract**

The main purpose of this paper is to discuss the potential of MFA model to enhance innovation in rural areas build on the analysis of information from a database of best practices on innovation in EU rural areas collected by the RAPIDO project<sup>1</sup>. The analysis shows innovation to be strongly related to multiple-activity. This suggests the synergies between functions and land-uses to overlap the competition for resources between activities and that MFA shows a promising approach to enhance innovation in rural areas. In addition, the paper discusses the need to redesign the innovation referential in order to cope with multiple-sectoral and territory-based innovation.

**Keywords:** Innovation, Multifunctionality, Rural areas, Sustainability.

### **1. Introduction**

The Lisbon Agenda was adopted, in 2000, by the EU leaders as a strategic tool to face global competition making use of innovation and knowledge as the prime resources to increase economic growth and employment. This growth and competitiveness strategy was articulated with the EU strategy for sustainable development (CEC, 2001), in order to link innovation and knowledge with sustainability. In 2005 both strategies were reviewed in order to become more effective (CEC, 2006 and CEU, 2006). Innovation is since 2000, and particularly after 2005, a key word in the EU politician speeches and has been promoted by public policies, usually through special plans and programmes.

The European Commission (CEC, 2003) defines innovation as “the successful production, assimilation and exploitation of novelty in the economic and social spheres”. Furthermore, it recognises, in a subsequent communication (CEC, 2006), that all forms of innovation need to be promoted, for innovation comes in many forms others

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<sup>1</sup> RAPIDO – Rural Areas, People & Innovative Development. SSPE-CT-2006-44264.

than technological innovation, including organisational innovation and innovation in services”. Yet the predominant paradigm for innovation remains technological and firm-oriented, following the OECD definitions and methodologies to measure innovations (OECD, 1997 and 2003).

Within this technological paradigm of innovation rural areas are widely excluded, both from the study and the implementation of targeted innovation plans or programmes, which address sectors with global competitiveness potential.

However, the EU rural areas, in spite of its diversity across European regions, face even more severely the problems addressed by the Lisbon Strategy. Problems such ageing society, low employment rates and lack of adjustment potential to handle global competition, are more pronounced in the rural areas comparatively to its urban counterparts. In addition, rural areas are a key piece to the EU sustainability goals, given its territorial importance and the fact of being fundamental spaces for the nature and biodiversity safeguard. Yet these goals are also threat by land abandonment, pollution and urbanisation.

Therefore, innovation and knowledge can be envisaged as powerful tools to promote sustainable development in the EU rural areas. This is acknowledged, at some extent, by the rural development strategy for 2007-2013 (EC, 2005). However, this latter strategy is built on a sectoral vision, focusing its attention into the promotion of innovation and knowledge within the “conventional” rural sectors, agriculture, forestry and food industry. It assigns a secondary role to the multifunctional and multi-sectoral activities, whereas acknowledging its importance.

Innovation in the EU rural areas is characterised by a diversity of innovation types and actors and by minimal innovation often build on tacit know-how and supported on informal networks (RAPIDO, 2009). Another important feature of innovation in EU rural areas is that is frequently undertaken by rural enterprises with multiple activities and involved all along the value chain. The plasticity shown by the “rural innovators”, while convergent with the diversity strategies promoted by rural development policy, is not captured by the conventional support schemes to agriculture and rural development.

The gap between “rural innovators” dynamics and the public policies supporting competitiveness and rural development evidences the importance of a better understanding of the motivations and strategies of rural enterprises in order to have the

knowledge to adjust the public support and to turn it successful in promoting innovation in rural areas.

This paper provides some evidence about the innovation going on in the EU rural areas<sup>2</sup>, which highlights the importance of multiple-activity dimension within the innovative rural enterprises. This finding suggests that a multifunctional model of agriculture and rural development might be an encouraging framework for innovation in the EU rural areas. Thus, the main purpose of this paper is to analyse evidence on the multiple-activity dimension of innovative rural organisations and to discuss the potential of multifunctional agriculture (MFA) model to enhance innovation.

The paper is organised as follows. The next section provides empirical evidence from the RAPIDO project about the main features of innovation and innovators in the EU rural areas. Section 3 analyses the multiple-activity strategies of innovative rural organisations in relation with the concepts and models of MFA and the strategies of diversification. Next, section 4 discusses the need for a more flexible referential to support innovation, able to cope with broad concepts of innovation and different scales of intervention. Finally, section 5 provides some concluding remarks.

## **2. Evidence on innovation in EU rural areas**

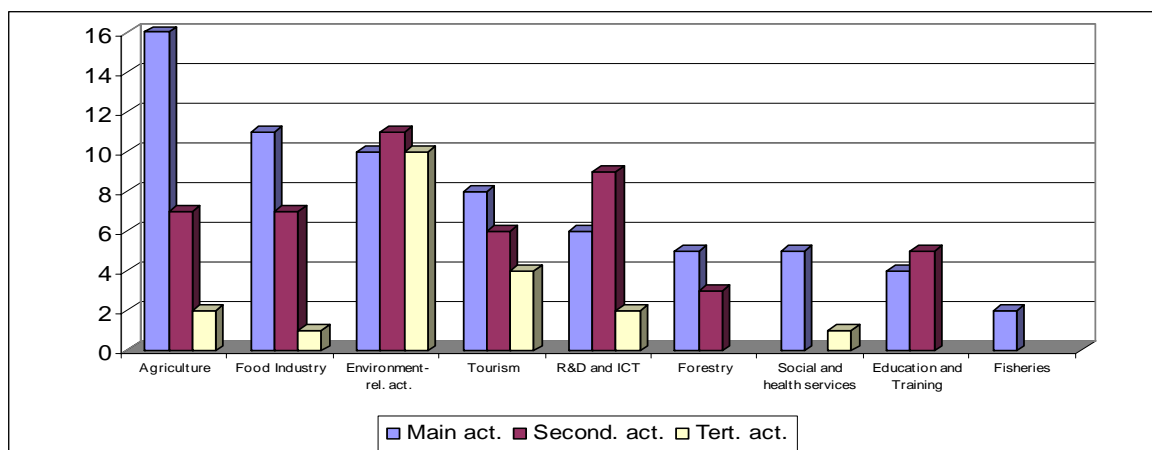
The project RAPIDO provides a database of best practices on innovation in EU rural areas with 67 case studies, spread all over 17 EU countries. The data include information on the sectors of activity, type of innovations, the promoters of the initiatives and its main characteristics (RAPIDO, 2007).

### **2.1 Innovation and multiple-activity**

The analysis of the RAPIDO database shows innovative organisations to be concentrate within the conventional rural sector's, agriculture, food industry and tourism, reflecting the relative weight of these sectors in the EU rural economies (see Figure 1).

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<sup>2</sup> Build on the data and findings of the RAPIDO (Rural Areas, People and Innovative Development) project. SSPE-CT-2006-44264. The main objective of this project was to analyse current best practices concerning the development of innovation in agriculture, forestry, the food sector and the wider rural areas as well as to analyse methods to transfer knowledge to different target groups. Detailed information can be found in [www.rapido-fp6.eu](http://www.rapido-fp6.eu).



Source: RAPIDO, 2008

**Figure 1.** Innovative initiatives by activity sector, including secondary and tertiary activities

Figure 1 show that the conventional rural sectors, the agriculture, food industry, tourism and forestry, come out mostly as the main activity of the organisation. However, all of these activities show to be also relevant as secondary activities and even as tertiary for others organisations.

The environment-related activities, which include activities such as bioenergy, landscape management, nature and biodiversity conservation and environmental education, presents a similar importance as main or complementary activity for the organisation. It is the more expressive sector appearing as second and third activity. Renewable energy production, meaning bioenergy with one exception (photovoltaic), represents 70% (7 of 10 case studies) of the case studies where these activities are the main activity. Renewable energy production shows to be less important as secondary or tertiary activity (4 of 21 case studies) (RAPIDO, 2008). The high proportion of activities related to the environment appears as a surprising finding, in particularly its importance as secondary and tertiary non productive activities.

Research and development (R&D) and information and communication technologies (ICT) reveal to be significant activities within the database. They are reported as the primary activity for a number of case studies, but mostly projects with supra-regional scope (they are reported as the main activity only for two private enterprises). Even so, while less important as the main activity compared to the conventional rural sectors and environment-related activities, they represent a relevant sector as a secondary activity.

The data highlight the weight of multiple-sectoral organisations: 70% of the case studies have a secondary activity and 30% have a third one. Further there are a significant number of organisations that integrate within its values chain activities of the three major economic sectors (agriculture, industry and services).

Agriculture appears significantly related with food industry and the environment-related activities. It comes out also associated with forestry and tourism. The ICT and R&D are also a relevant complementary activity for the organisations undertaken agriculture as its main activity.

The food industry comes out together with activities such as agriculture and tourism, whereas the ICT and R&D show a quite relevant complementary activity.

Forestry comes up strongly related with the environment-related activities.

Tourism presents as complementary activities the agriculture, forestry and the environment-related activities. In the case of tourism the social services appears as third activity within some organisations (non-profit organisations).

Environment-related activities are mostly land-based activities strongly linked to agriculture and forestry and also, while in lesser extend, with tourism. Further, some organisations reported it as complementary activities when they are also the main activity. This situation reflects the bundling of quite different activities such as bioenergy, nature conservation or environmental education. These two later activities like other, such as landscape management, are mostly joint activities.

Therefore, in addition to the multiple-sectoral dimension of innovative organisations surveyed, these findings also highlight the need for the definition of new sectors brought in by the blow up of environment-related activities.

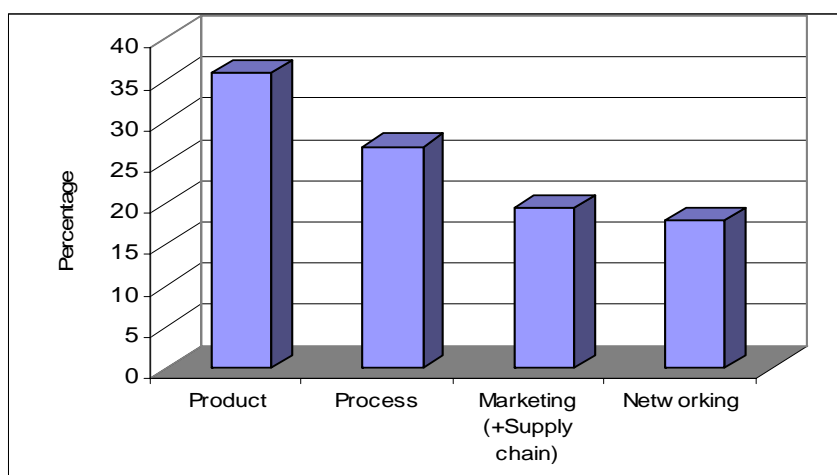
Further, the data presented put in evidence the discussion over the relationships between strategies such as multifunctionality, diversification and pluri-activity (Van Huylenbroeck et al. 2007).

A fourth aspect brought in by the data is the presence of the R&D activities within the conventional rural sectors, namely the agriculture and food industry, suggesting they play a relevant role for innovation taken place in the EU rural areas. Tourism and forestry show less relation with R&D, while that does not mean they are less innovative,

if one accounts for a broad definition of innovation including organisational innovations.

## 2.2 Innovations and innovators

Figure 2 shows the product innovation to be the most significant type of innovation undertaken by the organisations surveyed<sup>3</sup>. It is closely followed by the process innovation. Marketing (chain supply) and networking globally have a relevant weight (37.3% of the total case studies) (RAPIDO, 2007).



Source: RAPIDO, 2008

**Figure 2.** Main type of innovation developed

These figures show, that in spite of reporting only the main type of innovation undertaken, the importance of organisational innovation is quite relevant, certainly needing to be accounted for within the innovation analysis.

The analysis of the innovation type according to the main activity sector is displayed on table 1.

<sup>3</sup> Note that the respondents reported only the principal type of innovation developed/implemented for the main activity.

**Table 1.** Type of innovation by activity sector

	Agriculture	Food Industry	Environment-related	Tourism	R&D and ICT	Forestry	Social & Health serv.	Education & Training	Fisheries
	%	%	%	%	%	%	%	%	%
Product	12.4	9.1	50.0	37.5	66.6	40.0	60.0	75.0	50.0
Process	50.0	36.3	40.0	0.0	0.0	40.0	0.0	0.0	0.0
Marketing (+Supply chain)	31.3	36.4	0.0	25.0	16.7	0.0	0.0	0.0	50.0
Networking	6.3	18.2	10.0	37.5	16.7	20.0	40.0	25.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: RAPIDO, 2008

Table 1 shows product innovation to be comparatively more relevant in the services-related activities. It is the most important type of innovation reported by the organisations within the sectors of tourism, R&D and ICT, education & training, social and health services. Yet, network innovation (organisational innovation) comes out as an important type of innovation for all the sectors reported, namely for social services and tourism.

The agriculture and food industry shows a higher presence of process and marketing innovations. In the case of forestry product and process innovation come out equally important, followed by network (organisational) innovation. Marketing innovation is important for the fisheries sector, where process innovation does not come out as a main source of innovation in this case.

Environment-related activities highlight product and process innovations.

Therefore the development of new products and services appear to be particularly relevant within the sectors R&D and ICT, education & training, social and health services, environment-related activities and tourism. Within the conventional rural sectors, with the exception of tourism, process and marketing innovation come out the more relevant, suggesting changes in the productive processes related with market demand.

Networking innovation appears as especially significant for the service related activities, namely for tourism and social services. Yet this type of organisational innovation also shows relevancy for conventional rural sectors such as forestry and food industry.

Table 2 show the nature of innovators, highlighting the importance of private organisations: two in each three case studies. Public agents account for less than 20% of

total innovators, yet their importance increases when considered they subsume into the “association of categories”.

**Table 2.** Type of actors implementing the innovation

Type of actors	No	%
Service providers	15	22.7
Producers	13	19.7
Private investors	10	15.2
Tourism operators	5	7.6
Residents	4	6.1
Governmental bodies	8	12.1
Local authorities	4	6.1
Association of categories	7	10.6
Total	66	100.0

Source: RAPIDO, 2008

Regarding the type of rural area where innovation takes place, the database provides information for 53.7% of the case studies. Yet, the majority of them (83.3%) locate its activities within lagging/peripheral rural areas (RAPIDO, 2008). These figures seem to confirm the findings presented in the literature, that a peripheral location might encourages innovation (e.g. Patterson et al. 2003, North and Smallbone 2000).

Further, the importance of lagged/peripheral areas within the sample explains, probably, the relevance observed for the environment-related activities.

These results highlight the importance of the location-specific factors (SERA, 2000) to the development of innovative products and to the diversity of activities undertaken by the majority of the innovative rural organisations. They suggest also that multifunctionality favours innovation related to responses to consumers and social demands for environmental quality, leisure and food safety.

### 3. Multiple-activity strategies and the MFA model

This section relates the multiple-activity strategies observed for the innovative rural organisations with the concepts and models of MFA and the strategies of diversification and pluri-activity.



### 3.1 Concepts and approaches to MFA

There are different conceptual approaches to MFA, namely the conventional distinction between demand and supply sides (Van Huylenbroeck et al. 2007). Supply approach envisages MFA as a technical issue related to the ability of agriculture to provide multiple joint outputs; whereas, demand approach sees MFA as a societal demand, therefore as a “duty” of agriculture to supply a diversified bundle of outputs to society, including public goods and positive externalities. These alternative approaches are somewhat linked by a third view which sees multifunctionality in a broader sense and as framework for a new agri-food and rural development model (Van der Ploeg and Roep 2003, Van Huylenbroeck et al. 2007, Renting et al. 2009).

The agri-environmental measures launched by the European Commission in 1992 were basically a way of decoupling direct aids to agriculture from positive spillovers of this activity, which could be supported under the green box of the WTO negotiations arena. These measures were in a certain way the first acknowledgement of the MFA of European farmers, built on the normative/demand side concept of MFA, which allowed justifying complementary support to agriculture. Further, they emerged in a context of increasing societal and consumers demand for environmental quality, leisure and food safety. The synergies between productive activities and environmental functions have been encouraged in EU since then. Therefore, it was not surprising the importance given to the MFA under the Agenda 2000, linking it with the sustainability concept on the rural development policy ground.

In addition, rural development programmes and policies have promoted, within the later years, the MFA model build on its social dimension and its potential to enhance on-farm diversification strategies. Consumer and societal for environmental quality, leisure and food safety have reinforced these on-farm diversification strategies and the advantages of specific-location features to develop new products and services.

Van Huylenbroeck et al. (2007) reviewed the evidence available on the actual multifunctionality of agriculture and its contributions to different social values. Their review highlight the demand side studies, which demonstrate MFA to be clearly relevant both in economic and social terms. The evidence on the MFA from the supply side is scarce, nevertheless the available literature points to a significant segment of multifunctional/multi-activity farms in the EU (e.g. Van der Ploeg and Roep 2003).

The evidence presented, in the previous section, regarding the innovation in the EU rural areas reinforces the importance of multifunctional/multi-activity as an asset/strategy for the innovative organisations.

However, as aforementioned, the current rural development strategy for 2007-2013 (EC, 2005), while acknowledging the importance of MFA, is still mainly built on a sectoral vision and on a normative vision of MFA. The support to multiple-activity comes out under the Axis 3, apart from the promotion of competitiveness and innovation in the productive sectors (Axis 1), which are by its turn dissociated from the support to sustainable practices within these sectors. Further, only the multifunctionality of forestry is directly promoted under the Axis 2.

This arrangement of the public support to rural areas reflects the traditional dichotomy between competitiveness and social sustainability and the difficulty to deal with multiple-sectoral activities. This vision builds on the idea that competitiveness in global markets implies specialisation and scale. Yet, it is increasingly difficult for Europeans to be producers for open global markets. Most of the farmers and rural areas are looking for its competitiveness producing for niche and specialised markets, going further on value chains and diversifying its activities. These “outsider” strategies explain probably the importance of multiple-sectoral innovative organisations observed by the RAPIDO project.

### **3.2 Multiple-activity: diversification strategies and multifunctionality**

Van Huylenbroeck et al. (2007) highlight the analytical difference between the concepts of multifunctionality, diversification and pluri-activity. They define as multifunctional an activity with multiple outputs, whereas diversification means the combination of different economic activities into the same management unit and pluri-activity refers to multiple activities of the farmer or rural entrepreneur.

RAPIDO project (RAPIDO, 2008) concluded that innovation observed in the EU rural areas is at large extend related to two complementary strategies of the rural organisations: (a) changing land use and/or production processes to answer stimulus from domestic policies (e.g. agri-environmental and biomass incentives); (b) diversifying and developing new activities, products and services to meet consumer's demands (e.g. environment-related and cultural services for tourists).

Some of the combinations and new activities observed within the innovative organisations might be explain as resulting from diversifying strategies in both directions: “deepening activities” (to retain added value) and “broadening activities” (to diversify supply) (Van der Ploeg and Roep 2003, Renting et al. 2009). Yet, often the broadening of activities results from the multifunctionality of land-based activities, such agriculture, forestry and the agri-tourism. The growing importance of the environment-related activities illustrates a striking interaction between multifunctionality and multiple-activity.

The environment-related activities were at begin basically a bundle of non-commodity outputs from land-based conventional rural sectors that farmers (and landowners) were stimulated to provide through the agri-environmental payments. However, they are now became more and more actual activities for many rural organisations. They appear both, as complementary activities of productive sectors, such as agriculture and forestry, or associated to non-productive activities like the tourism.

The greening of European consumers demand (for food and leisure) has converted competitive outputs into complementary products. The “natural” multifunctionality of agriculture and forestry became strategic for activities like the rural tourism, which is increasingly enriching its packages with environment-related services.

The combination of tourism and environment-related activities seems particularly attractive for entrepreneurs that are new-comers in the rural areas. They appear to have inverted the direction of multifunctionality, using it as a strategy to develop new projects and business where the tourism is often the main activity, although the non-productive environment-related activities are also became increasingly an important sector by its own.

The analysis of interactions between multifunctionality and multiple-activities within the context of innovation in EU rural areas highlights two aspects. First, multifunctionality appears clearly as a source of innovation creating room for new products and process and changes in existing ones. Second, the promotion of multifunctionality at territorial level would enhance opportunities for innovation through the networking of organisations developing complementary activities.

#### **4. The need for flexible schemes to promote innovation in rural areas**

This section discusses the need for a more flexible referential to promote innovation, able to deal with broad concepts of innovation and different scales of intervention, build on the limitations identified to the current public support to innovation for the case of rural areas.

The main limitation of current referential to promote innovation is that it still relies upon a technological-biased definition of innovation. In spite of the European Commission acknowledge that there is room for a diversity of innovations (CEC, 2006), the fact is that innovation schemes are tailored to support mainly R&D activities and technological novelties in specific sectors or firms.

The difficulties of the European decision makers in outlining schemes to enhance innovation in the rural areas are patent within the current rural development strategy for 2007-2013 (EC, 2005). This strategy puts innovation basically into the Axis 1 addressing the rural firms specialised in the productive sectors and showing adjusting potential to global competition. These difficulties reflect the lack of a framework to deal with diversity of innovation, heterogeneous innovators and territorial scales.

A new framework needs to be built upon three pillars: (1) a broader definition of innovation; (2) to encompass multiple-sectoral organisations; (3) to promote interactions (networking) territory-based.

The RAPIDO project (RAPIDO, 2007) has adopted a broader definition of innovation, defining it as the introduction of a new or improved quality of a good, the introduction of a new method of production, the opening of a new market, the acquisition of a new source of raw material, or an alteration of an existing industry structure. It could also be a new process that creates or favours the introduction of social or institutional changes, which may provide an adequate environment for innovations in products, markets, etc. It encompassed in a detailed way all types of innovation, product, process and organisational. Further, it accounts for minimal and imitation strategies of innovation. This broad concept for innovation could be made operational through the Oslo Manual methodology (OECD 1997 and 2005), employed by the Community Innovation Survey (CIS) to collect data on innovative activities of European firms.

To encompass multiple-sectoral organisations is probably the major adjustment needed within the current support schemes to rural development. Lessons can be learned from the Leader approach, which adopted a territorial instead of a sectoral scale to frame the support to rural development. Yet, it remains a separate compartment (the Axis 3) of the measures under Axis 1 and Axis 2. How to overcome this? To build a new framework allowing for projects with multiple-activities and different goals would be the ideal approach. Yet, some flexibility might be introduced into the current support schemes, for instances allowing for complementary support of particular projects under the two or three Axis or adjusting project evaluation procedures to account for complementary activities of the organisation and its contribution for goals valued under the other Axis.

The third pillar of a framework, promoting territorial-based networking can be implemented in a similar way to second. It is already done through the Leader approaches, what is necessary is to make it transversal to all measures intend to support knowledge and innovation.

In addition, the evaluation of the impacts of innovation needs to adopt also a territorial scale in alternative to the current firm and sectoral scales.

Indicators to measure innovation have to be built taking innovation has a process which success depend on interactions between inputs, actions and outputs and to account for the level at the innovative activities are measured (OECD 1997 and 2005, Rogers 1998). Therefore, innovation in rural areas, envisaged as novelties or improvements in products/processes/market and organisational frames creating economic and/or social value, could be measurable in terms of positive impacts on variables such as add value, employment, social capital and environmental sustainability.

The openness to a diversity of innovation types and innovators complicates the definition of indicators able to measure accurately innovation and to evaluate its effects. However, to build the concept of innovation on a broad scope of innovators and innovative activities show fundamental to capture the non-technological and often minimal innovations taking place in rural areas that matter in terms of its contribution to the maintenance and growing of rural enterprises and to the competitiveness and sustainability of these areas.

## **5. Concluding remarks**

The evidence available about the innovation taken place in the EU rural areas, whereas still scarce indicates clearly a strong link between the diversification strategies and the multifunctionality of land-based activities. It shows also that innovation in rural areas is mostly the outcome of strategies to overcome constraints, such as a peripheral location and small economic dimension, taking advantage of the uniqueness given by location-specific features and the multifunctionality of land-based activities.

Further, it suggests that the synergies between activities and land-uses to overlap the competition for resources between activities within multiple-activity organisations. It shows also that multifunctionality is attracting new-comers, whom are exploiting it as strategic asset within the tourism and the environment-related activities sectors.

This reversal move of entrepreneurs “towards multifunctionality”, instead of the former way “from the MFA” of farmers pulled by public policies, while needing to be confirmed as a path for competitiveness, is very promising in terms of coupling triple bottom sustainability goals at individual and territory level. To get a better knowledge of this “new” trend in EU rural areas is fundamental because it would be very helpful to change the traditional view of a dichotomy between competitiveness and social sustainability (implicit within the rural development strategy for 2007-13).

This dichotomous view, which separates competitiveness and sustainability, is also responsible for the gap between “rural innovators” dynamics and the public policies supporting competitiveness and rural development. This gap makes evident the need to redesign the innovation referential (technological and sector-oriented) in order to cope with multiple-sectoral and territory-based innovation.

Innovation and knowledge in rural areas need to be studied and promoted within a flexible framework recovering old-fashioned rural assets such as multifunctionality, tacit knowledge and informal networking.

The spreading of diverse and small innovation in the EU rural areas make also evident the importance of measuring innovation impacts at different levels, economic, social and environmental (and institutional). The broadening of the concepts of innovation and its effects is fundamental to couple actually the European strategies for growth and competitiveness (Lisbon Strategy) with sustainability (Gothenburg strategy) and to encompass in fact competitiveness with sustainability.

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