

**MIDTERM EVALUATION OF THE EMILIA-ROMAGNA
REGIONAL RURAL DEVELOPMENT PLAN (RDP)
2007/2013**



EX POST EVALUATION
NON-TECHNICAL SUMMARY

December 2016



AGRICONSULTING

SUMMARY

OVERVIEW	1
1. SUMMATIVE INFORMATION ON THE PROGRAMME	1
2. EVALUATION PROCESS	3
3. SUMMARY OF EVALUATION RESULTS	4
3.1 General aspects	4
3.2 Answers given to evaluation questions per Measure	4
3.2.1 <i>How and to what extent has the Measure contributed to improving the competitiveness of beneficiaries?</i>	4
3.2.2 <i>How and to what extent has the Measure contributed to improving the environmental situation?</i>	7
3.2.3 <i>How and to what extent has the Measure contributed to the economic diversification of beneficiaries?</i>	9
3.2.4 <i>How and to what extent has the Measure contributed to improving the quality of life of beneficiaries?</i>	10
3.2.5 <i>To what extent has the Measure enhanced beneficiaries' capacities to improve economic diversification and quality of life in rural areas?</i>	11
3.2.6 <i>The Leader approach</i>	11
3.3 Answers to cross-cutting common evaluation questions	12
C1. <i>To what extent has the RDP contributed to the growth of the whole rural economy? (Lisbon Objective)</i>	12
C2. <i>To what extent has the RDP contributed to employment creation? (Lisbon Objective)</i>	14
C3. <i>To what extent has the RDP contributed to protect and enhance natural resources and landscape, including biodiversity and HNV farming and forestry?</i>	14
C4. <i>To what extent has the RDP contributed to the supply of renewable energy (Health Check Objective)</i>	15
C5. <i>To what extent has the RDP contributed to improving the competitiveness of the agricultural and forestry sector?</i>	16
C6. <i>To what extent has the RDP accompanied restructuring of the dairy sector? (Health Check Objective)</i>	16
C7. <i>To what extent has the RDP contributed to climate change mitigation and adaptation? (Health Check Objective)</i>	17
C8. <i>To what extent has the RDP contributed to improvement of water management? (Health Check Objective)</i>	18
C9. <i>To what extent has the RDP contributed to improving the quality of life in rural areas and encouraging diversification of the rural economy?</i>	19
C10. <i>To what extent has the RDP contributed to introduction of innovative approaches? (Health Check Objective)</i>	20
C11. <i>To what extent has the RDP contributed to creation of access to broadband internet? (Health Check Objective)</i>	20
C12. <i>To what extent has the European Network for Rural Development (NRN) contributed to RDP objectives (creation of best practices for rural development)?</i>	21
C13. <i>To what extent has the Technical Assistance (TA) contributed to RDP objectives?</i>	21
C14. <i>How efficiently have the resources allocated to the RDP been used in relation to achieving the intended outputs?</i>	21
3.4 Answers to regional specific evaluation questions	22
ER 1. <i>To what extent has the Programme contributed to soil protection in terms of preventing soil erosion?</i>	22
ER2. <i>To what extent has the Programme contributed to improving animal welfare?</i>	22
ER3. <i>To what extent has the Programme contributed to protecting the health of workers?</i>	22
ER 4. <i>To what extent has the Programme contributed to protecting the genetic diversity of animal and vegetable species of agricultural interest?</i>	22

<i>ER5. To what extent has the Programme contributed to the maintenance of sustainable agricultural activities in disadvantaged mountain and hill areas?</i>	<i>22</i>
<i>ER6. To what extent has the Programme contributed to an integrated approach to rural development (sectoral projects)?.....</i>	<i>22</i>
<i>ER 7. To what extent has the territorial approach contributed to improving the effectiveness of the Programme and what was the carryover effect of interventions?</i>	<i>23</i>
<i>ER8. To what extent has the pursuance of cross-cutting priorities produced positive effects?</i>	<i>24</i>
4. RECOMMENDATIONS	26

OVERVIEW

This document is a 'Non-Technical Summary' of the Ex Post Evaluation Report of the Emilia Romagna Rural Development Programme (RDP) 2007-2013 compiled by the independent Evaluator Agriconsulting S.p.A.

The Report structure is based on the specimen proposed in the Common Monitoring and Evaluation Framework (CMEF) Handbook and the information subsequently supplied by the European Commission (DG Agriculture) representatives and the European Evaluation Network experts.

More specifically, the EU guidelines for the Ex Post Evaluation (EPE)¹ require answers to three types of evaluation questions:

1. measure-related common evaluation questions, to evaluate the contribution of individual questions to Axis objectives;
2. Programme-related cross-cutting evaluation questions, to evaluate the contribution of Members States to EU policy objectives;
3. specific regional questions, to evaluate specific aspects of the territory in question that are not covered by common questions.

The Emilia Romagna Ex Post Evaluation contains answers to common evaluation questions, to which 8 specific regional questions were added. Evaluation methods were developed and contextualised to reflect the peculiarities of the Emilia Romagna RDP and suitably tailored in accordance the regional requirements – as emerged at the level of the evaluation steering group.

The following chapters cover:

- summative information on the Programme structure and priority objectives (Ch. 1);
- a short description of the applied evaluation methods and process (Ch. 2);
- main evaluation outputs in relation to common and specific regional evaluation questions (Ch. 3);
- recommendation for the 2014-2020 Programming period (Ch. 4).

1. SUMMATIVE INFORMATION ON THE PROGRAMME

The RDP structure

The Emilia-Romagna 2007-2013 RDP is comprised of 32 measures, structured into 3 Axes: competitiveness, environmental sustainability and improving quality of life in rural areas, to which the Leader method (Axis 4) was added for particularly disadvantaged and vulnerable areas through an approach of intervention programming and management directly run by local stakeholders.

AXIS 1 – IMPROVING THE COMPETITIVENESS OF THE AGRICULTURE AND FORESTRY SECTORS	
Measure 111	Vocational training and information actions
Measure 112	Setting up of young farmers
Measure 114	Use of advisory services
Measure 121	Modernisation of agricultural holdings
Measure 122	Improvement of the economic value of forests
Measure 123	Adding value to agricultural and forestry products
Measure 124	Cooperation for development of new products, processes and technologies in the agriculture and food sector and in the forestry sector
Measure 125	Infrastructure related to the development and adaptation of forestry
Measure 126	Restoring agricultural production potential after damages caused by natural disasters and introduction of suitable prevention measures
Measure 132	Participation of farmers in food quality schemes
Measure 133	Agrifood information and promotion activities

¹Capturing the success of your RDP: guidelines for the ex post evaluation of 2007-2013 RDPs" (June 2014) – European Evaluation Network for Rural development – European Commission

AXIS 2 – IMPROVING THE ENVIRONMENT AND THE COUNTRYSIDE	
Measure 211	Natural handicap payments to farmers in mountain areas
Measure 212	Payments to farmers in areas with handicaps other than mountain areas
Measure 214	Agri-environment payments
Measure 215	Animal welfare payments
Measure 216	Support to non-productive investments
Measure 221	First afforestation of agricultural land
Measure 226	Reducing the risk of forest fires
Measure 227	Support to non-productive investments in forestry
AXIS 3 – IMPROVING THE QUALITY OF LIFE IN RURAL AREAS AND DIVERSIFICATION OF THE RURAL ECONOMY	
Measure 311	Diversification into non-agricultural activities
Measure 313	Encouragement of tourism activities
Measure 321	Basic services for the economy and rural population
Measure 322	Village renewal and development
Measure 323	Conservation and upgrading of the rural heritage
Measure 331	Training and information for economic operators in rural areas
Measure 341	Skills acquisition and animation
AXIS 4 – IMPLEMENTATION OF THE LEADER APPROACH	
Measure 410 Local development strategies	411 Competitiveness 412 Environmental and land management 413 Quality of life and diversification
Measure 421	Inter-territorial and transnational cooperation
Measure 431	Running the LAG (Local Action Group), skill acquisition, animation
TECHNICAL ASSISTANCE	
Measure 511	Technical assistance

Programme strategy and priority objectives

The RDP intervention strategy is focused on improving the competitiveness of undertakings through an integrated type of collaboration of stakeholders operating in different sectors, improving the distinctiveness of products, fostering enterprise internationalisation, protecting environmental resources, and emphasising the multifunctionality of agricultural holdings and their promotional role.

The focus put on support to the most marginal areas of the Region is another strategic element of the Programme and involves the definition of territorial priorities for each of the intervention axes.

Axis 1

The RDP allocates 46% of the total public budget to support the intervention strategy for improving competitiveness in the agriculture and forestry sector (Axis 1). The allocated amount is in turn split into the four priority objectives: 71% of resources are meant for interventions contributing to the promotion of modernisation and innovation in undertakings and sectoral integration, 15% for actions in favour of the improvement of business and professional skills in the agriculture and forestry sectors, with a special emphasis on support to generational renewal in farming and forestry; 2% for the consolidation and development of quality in agricultural and forestry production, and the remaining 11% for the upgrading of physical infrastructure.

The Axis 1 strategy revolves around the introduction of innovative implementation instruments that meet the need for a more comprehensive support to the regional farming system. It is mainly reflected in sectoral projects, which imply a contractual relationship between various stakeholders who operate at every level of the supply chain, as well as an integrated use of various measures. The selection methods (i.e. 'priority criteria') for sectoral projects, as described in the RDP, were developed on the basis of the regional experience in the implementation of decisions in favour of agrifood undertakings. In territorial/sectoral terms, the

Measures of Axis 1 group interventions by area (west, centre and east) and altimetry (lowland, hill and mountain areas) and different production sectors. This choice, which applies to animal sectors in particular, favours undertakings located in mountain areas, i.e. those belonging to the 'most disadvantaged' group.

Axis 2

The general and specific objectives of Axis 2 are consistent with national and Community priorities and relevant to the intervention requirements of this Region, characterised, on the one hand, by the still high pressure put on resources (water, soil and air) by the most intensive and specialised components of regional farming and, on the other, by an improvement of management behaviours, of the applied management and regulatory instruments (e.g. the Nitrates Directive, expansion of Natura 2000 areas etc.) and of the adopted farming / animal husbandry production systems with a high level of environmental sustainability (e.g. organic and integrated production).

Axis 2 has a budget allocation of 472 million euros, or 41% of the overall programmed resources. With the HC reform, the amount was increased by around 37.4 million euros, of which around 34 designed to improve climate-change adaptation, water-resource management and biodiversity protection, and the remaining 3.4 million allocated to handicap payments for land protection. 83% of resources, or more than 368 million euros, were earmarked to protecting water, soil, biodiversity and high natural value (HNV) farmland and forestry, reducing greenhouse gases, preventing farmland marginalisation, and improving animal welfare.

A qualifying element of the regional strategy for Axis 2 is its search for qualitative and quantitative differentiation of interventions, which were designed commensurately with the environmental requirements. This approach implies the definition (at regional and provincial level) of (mainly territorial) eligibility and selection criteria. In particular, the measures of Axis 2 prioritise preferential areas (environmentally sensitive areas as defined by the European, national or regional legislation), with special reference to nitrate-vulnerable areas (within the meaning of Directive 91/676/EC) and the "Natura 2000 Network" areas (within the meaning of Directives 79/409/EC and 92/43/EC). Finally, the application of measures also targets mountain, hill and lowland areas as defined by the Regional Territorial Landscape Plan (*Piano paesistico territoriale regionale*).

Axis 3

The Axis 3 objectives are job creation and retention in rural areas and improving the attractiveness of rural territories for the population and enterprises. The budget allocated to Axis 3 is in excess of 98.5 million euros, or 8% of the overall programmed financial envelope. Out of this amount, 6.5 million are HC resources for meeting the new challenge of reducing the digital divide in rural Municipalities.

The intervention strategy has a marked 'territorialisation', i.e. it is centred on support to areas with a higher degree of rurality (i.e. areas D with overall development problems and areas C or 'intermediate rural areas') and to mountain areas. Service interventions of public bodies are being implemented through a highly inclusive negotiated-selection process with coordination sought between local actors as well as with current territorial policies.

Axis 4

The objectives of Axis 4 are improving governance and mobilising the endogenous development potential of rural areas through three measures. The budget of Axis 4 amounts to 49.6 million euros, or 4% of the RDP. Interventions are meant for areas D (areas with development problems) and C (intermediate rural areas), eligible territories in specialised farming areas are limited to the Municipalities covered by the Leader + initiative.

2. EVALUATION PROCESS

The Emilia Romagna RDP evaluation process started in 2009 and involved the compilation of eight Ongoing Evaluation Reports, all along the Programme implementation period – more specifically, two overall Midterm Evaluations were also made in 2010 and 2012 respectively to assist the Managing Authority in its choices for, *inter alia*, the new programming period. Two output-annexes were attached to the Midterm Evaluation Reports.

The evaluations draw closely on the Common Monitoring and Evaluation Framework (CMEF), which identifies,

among other things, the indicators to be used to measure the Programme effects.

Indicators were quantified by different methods, specifically:

- § methods of statistical analysis for collected primary and secondary data, through which a comparison was made between values of indicators calculated for RDP beneficiaries/interventions and values of similar indicators calculated or estimated in a no-intervention situation (counterfactual method) or in the regional reference context (impact indicators); similarly a comparison was made between actual and target indicator values, as defined in the RDP (comparisons were made with the target values of RDP version 1, RDP version 4 post Health Check, and RDP version 11) in order to assess the effectiveness of interventions;
- § territorial analyses based on the GIS (Geographic Information System) so as to cross geographical information with statistical alphanumeric information (e.g. statistics on the sale of fertilisers and agrochemicals) or information on interventions (chiefly in relation to 'surface measures');
- § analysis techniques based on an exchange between experts (focus groups, etc.) for data interpretation and acquisition of qualitative aspects.

3. Summary of evaluation results

3.1 General aspects

The programming approach and general RDP implementation criteria as a whole meet the requirement of consistency between pursued objectives and national and Community priorities for rural development which relate to the specific requirements found in the regional context.

The physical and financial progress of the Programme confirms the effectiveness of the governance action of the regional government in relation to programming priorities and the achievement of cross-cutting objectives.

All of the **programmed resources (1,163 million euros)** were spent. All measures were implemented. As a whole 54,974 applications were accepted for financing (net of annual confirmatory applications for agri-environmental premiums). A total of 28.804 beneficiaries were reached including **25,456 agricultural holdings**, 35% of those surveyed by the Italian Statistics Institute report ISTAT 2010. **Beneficiary holdings in mountain areas** (pursuant to Law 10/2008) were equal to a total of 10,157, or 40% of total beneficiary undertakings and 57% of undertakings surveyed in mountain areas. **Organic holdings** were 12% of beneficiary undertakings and 92% of the organic holdings in the regional list.

The total **UAA** (utilised agricultural area) covered by the RDP was 65% of the regional UAA. The UAA concerned with agri-environmental interventions was **26%** of the regional UAA.

Young farmers (owners of individual holdings) having qualified under at least one Measure in the RDP amounted to 4,682, or 22% of total beneficiaries. The Programme approach ensures a high level of access of young farmers to aid with a significant concentration compared to their regional representation (8% of farmers are young). The analysis on individual holdings shows that **women** (5.193) owned 18% of beneficiary individual holdings.

3.2 Answers given to evaluation questions per Measure

3.2.1 *How and to what extent has the Measure contributed to improving the competitiveness of beneficiaries?*

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

Training and information actions promoted by **Measure 111 (Vocational training and information actions for persons engaged in the agricultural, food and forestry sectors)** involved 14,819 participants (81% of the target value) and a total of 81,895 days of training were delivered (46% of those estimated in the programming phase). Successfully trained participants were 9,944 in total (60% of the target value).

Training courses covered such topics as management, administration and marketing (59% of interventions and total training hours) followed by courses in ITC-related subjects and process-level technological innovation. The educational offer of the "Green Catalogue" was judged positively and in line with trainees' expectations. Although the Measure failed to reach the targeted number of people trained, around 100% of trainees successfully completed their course, which shows the high efficiency of the overall offer. The Measure contributed significantly to the dissemination of knowledge in the farming sector: 17% of regional agricultural holdings participated in the training and information actions. There was an important impact in terms of competitiveness and in the field of environment: 31% of beneficiaries used their acquired knowledge to improve the competitiveness of their holdings whereas 37% of them applied the acquired knowledge on environmental sustainability to their own organisation.

Advisory services under **Measure 114 (use of advisory services)** were provided in large numbers (7,608 as a whole) and concerned 8% of regional agricultural holdings. Advisory services covered a wide and diversified range of topics. Altogether, the judgement of advisory service beneficiaries was positive. The surveys made show that 75% of beneficiaries applied their acquired knowledge in their organisation. 50% used it to implement changes in their management or production cycle, which resulted in improved competitiveness. Advisory services played a key role in the promotion of quality products: 33% of beneficiaries had introduced or started participating in voluntary certification schemes.

Through **Measure 112** (Setting up of young farmers) a total of 1640 young farmers had set up a new holding (92% of the target value). The Measure's contribution to encouraging generational renewal in farming was essential and also favoured the reduction of the average age of farmers (-32.4 years). Funded set-up projects were 17% of all those registered with the Chambers of Commerce of the Region. Setting up mainly concerned legacy-holding takeovers (51%) and business transfers (31%) and, to a relatively lesser degree, new start-ups (18%).

Half of the young farmers invested in the modernisation of agricultural holdings (Measure 121) – with heavy sums invested in a number of cases. Selection criteria encouraged the submission of applications for funding that included Business Development Plans (BDPs) and investments in the introduction of innovative technologies (80%), which caused the retention or creation of a total of 1,814 jobs in the holdings concerned (0.40 FTEs per holding). The BDP implementation increased business profits and favoured the innovation of production processes, job creation, the dissemination of quality systems, the integration of environmental and animal welfare aspects, the improvement of irrigation and energy efficiency, thereby ensuring better results and the retention of young farmers in the farming sector. A comparison with the performance levels of holdings run by young farmers (and not benefiting from the setting-up support measure) confirms the validity of this approach, which resulted in a higher net increase in saleable production, higher added value, higher employment levels and higher labour productivity in the beneficiary holdings.

Business retention at six years from setting up was high (94.6%). The factors that most affected the discontinuance of business were the economic size and the location of holdings. The discontinuance rate was higher in holdings sized below 16 European Size Units – ESU (9.5%) and in mountain areas (7.1%).

Beneficiary holdings under **Measure 121** (Modernisation of agricultural holdings) were 3,377 in total, of which 1,671 were involved sectoral projects (77% of the target value) and had made significant financial investments (146% of the target value), which shows a marked propensity to invest.

Beneficiary holdings were 6% of the total number of active holdings registered with Chambers of Commerce. The applied priority criteria and terms of implementation for Measure 121 ultimately helped focus interventions in high and medium priority areas and production sectors, and effectively impacted on the age of beneficiaries. 42% of beneficiary holdings had obtained a qualitative production improvement after the interventions. 46% of holdings having completed interventions had made innovative interventions (priority criterion) by investing more than 200 million euros, which amount was mostly allocated to cost reduction (33.9%) and rationalisation of production cycles (30%). The Evaluator's analysis of the economic performance of beneficiary holdings shows that, as a whole, the Measure generated 116 million euros worth of added value (297% of the target); the heavy investments made were more efficient in generating an increase in added value than was estimated ex ante. The increase of added value in beneficiary holdings (+15%) was higher than the level measured in non-beneficiaries (+7%). What is more, beneficiaries saw an increase in employment (0.39 FTEs per holding) whereas counterfactual holdings recorded a fall in the employed staff,

with an average loss of 0.29 FTEs per holding.

Measure 122 (Improvement of the economic value of forests) funded forestry interventions designed to diversify forestry production and offer market outlets to forestry holdings. In addition, it promoted integrated actions for the establishment and/or modernisation of forestry holdings to favour the development of sustainable forestry supply chains. The Measure was implemented through sectoral projects (a total of 30), individual projects (55) and collective projects (32).

The 110 beneficiary holdings under Measure 122 (65% vs. the target value) having made investments were characterised by high diversity in terms of production activities, forestry products sold, size, and business organisation, with the consequent emergence of problems and the diversification of requirements: (i) medium to large sized forestry holdings established in the form of cooperatives, (ii) agri-forestry holdings active in fruit chestnut growing, (iii) livestock, agricultural and forestry holdings also active in forest utilisation as an ancillary activity. The estimated financial results of the holdings concerned show an increase over time of gross added value in the beneficiary population (53% of the target value) with no tangible effects on economic growth.

Medium to high sized forestry holdings, set up by merging multiple forest properties (consortia or joint proprietorships) with management plans in place achieved better performance levels by exploiting economies of scale. The results of agri-forestry holdings were negatively affected by a drop in chestnut growing (-80% of production); a part of these small to medium sized agri-forestry holdings had invested largely in new forestry machinery, which improved utilisation and processing operations in the service area, helped them to become more competitive on the market and to exploit other forms of horizontal integration. Finally, through the funding received, livestock, agricultural and forestry holdings chiefly active in animal husbandry were involved in forest improvement and cutting works and, in a few cases, land defence works.

The 236 beneficiary agri-food holdings under **Measure 123** (Adding value to agricultural and forestry products) - Action 1 - were 145% of the target value and had invested nearly 341 million euros (109% of target). Financial support from Measure 123 reached 14.3% of manufacturing businesses active in the regional food and beverage sector.

The value added to beneficiary undertakings amounted to 165 million euros (131% of target value). The counterfactual analysis pointed to a net +3.9% growth in value added to beneficiary undertakings vs. non-beneficiaries and higher employment levels (4.02 FTEs for beneficiary undertakings; 1.60 for non-beneficiaries), with a net (average) increase of 2.42 FTEs per beneficiary. Job growth was followed by the improvement of labour productivity to the extent of 6.8% per production unit in beneficiaries (+2,700 euros/FTE) vs. +4.2% per production unit in non-beneficiaries.

In the forestry sector, Action 2 achieved the objectives of product and process innovation but, as for economic performance, results were contradictory. There was a significant increase in produced quantities from 5,100 m³ in 2007 to 19,000 m³ in 2013 but, concurrently, labour productivity was down from 33,800 €/FTE in 2007 to 30,990 €/FTE in 2013. Labour units increased in beneficiary undertakings, partly in anticipation of a rise in production value, which has so far not been fully achieved – most plausibly for the unfavourable economic cycle.

Measure 124 (Cooperation for development of new products, processes and technologies) supported 87 cooperation projects, 114% of target, of which 42 were sectoral projects. 460 undertakings active in the primary, processing or marketing sectors (85% of target) are estimated to be directly involved in the testing activities initiated by the RDP under Measure 124, of which 315 in the context of sectoral projects. These undertakings have a medium to large size, are organised in the form of cooperatives and a part of them are involved in the tests. In actual fact, the number of cooperatives involved is higher than the reported value, as the effects were extended to a larger group of indirectly involved undertakings. 35% of expenditure in testing activities concerned the fruit and vegetable sector, followed by the cereals and meat sectors.

The pre-competitive dimension of the Measure, which mainly influenced the prototyping and testing of new products and/or production processes, did not encourage the introduction of innovations with an immediate impact on the competitiveness dynamics. It might be argued that the marginal effort of adding 'accounting' value to the undertakings involved in the testing phase could be pursued in the medium to long term. The value added by the measure however had systemic, relational and scale effects. As a result, a competitive

advantage was achieved in the long-term process, through crop proximity, meant as the opportunity for different stakeholders to interact towards a single common objective.

Under **Measure 125** (Infrastructure related to the development and adaptation of forestry), investments were made to the tune of more than 13 million euros to fund interventions in water distribution systems and facilities (14 projects), with the construction of a new 186 km-long network serving agricultural holdings. In addition, 5 new water storage facilities (reservoirs) were built and capacity was increased in 3 existing facilities. Both water reservoirs and distribution systems contributed to reduce the summer water deficit for crops and keep the quality of grown products high (mainly orchards and vineyards). The used-water monitoring system helped ensure a high level of control over the Minimum Vital Outflow of torrents from which the Basin Authority draws water.

Measure 126 (Restoring agricultural production potential after damages caused by natural disasters and introduction of suitable prevention measures) was introduced in version 8 of the Emilia Romagna RDP (2012) following natural disasters (mainly the earthquake). Financial resources were fully spent, with an overall contribution worth 51.8 million euros, by a below-target number of beneficiaries. 33% of resources under the Measure (more than 17 million euros) were allocated to the dairy sector.

Measure 132 (Participation of farmers in food quality schemes) achieved the programmed objectives. A total of 2,851 beneficiary undertakings were reached, or 100% of target. 90.3% of eligible applications were submitted for participation in the organic system: the use of priority criteria was instrumental in the selection of an organic quality system as a driver for the competitive development of a few leading sectors of regional economy, such as cereals and fruit and vegetable production. The Measure plays a key role through its support to disadvantaged areas, as 65.7% of the 3,000 plus regional organic holdings operate in disadvantaged hill and mountain areas. Through support from Measure 132, Emilia-Romagna now ranks first in Italy by number of undertakings active in organic-product processing and/or sale, and fifth by number of primary undertakings. The value of farming production subject to quality brands and standards exceeds 820 million euros.

Under **Measure 133** (Agrifood information and promotion activities), 53 applications were paid for, or 400% of target. Production value amounts to 3 billion euro (100%) with a clear contribution to the overall value from the cheese segment, or around 44% of total (Parmigiano Reggiano), followed by meat products (Vitellone Bianco dell'Appennino and Prosciutto di Parma) at 43%. In terms of production value, the whole fruit and vegetable sector has a less significant impact on the overall production value, despite the high number of submitted applications in this sector.

3.2.2 *How and to what extent has the Measure contributed to improving the environmental situation?*

Axis 2 – Improving the environment and the countryside

The Measures under Axis 2 are characterised by a high level of integration and complementarity in the pursuance of the main environmental objectives (biodiversity, water protection, soil and land protection, greenhouse gas reduction and climate change mitigation): multiple Measures/actions combine to contribute to a single objective, conversely a single Measure/Actions determines diversified environmental effects which ultimately fall into multiple objectives.

Measures 211 (Natural handicap payments to farmers in mountain areas) and **212** (Payments to farmers in areas with handicaps other than mountain areas) have primarily contributed to combat the desertion and marginalisation of farmland in mountain and disadvantage areas, thus reaching and even outperforming the targeted objectives under the Programme. The support provided involved 6,957 holdings (20% of those in mountain/disadvantaged areas) and contributed to the 'retention', in accordance with a sustainable management logic, of nearly 114,000 hectares, or 25% of the UAA of disadvantaged areas – the more direct beneficiaries of this improvement were medium sized undertakings, with extensive husbandry practices, located in areas of natural interest (e.g. Natura 2000). The Evaluator's performed analyses confirm that the overall handicap payments significantly contributed to holdings' incomes, specifically in a proportion of 53% of income from work and of 22% of income from family work (which is relatively more important in disadvantaged areas) (see *Specific question ER5* of the Ex Post Evaluation Report).

Moreover, as **Measures 211** and **212** promote the maintenance of the semi-natural plant cover in mountain and hill areas and sustainable pastureland management, they contributed to the maintenance of high natural value (HNV) farming systems and their associated biodiversity, with an impact in HNV agricultural areas estimated at around 26,000 hectares, of which about 3,000 in areas of the N2000 network.

Through **Measure 214**, the Programme promoted biodiversity and the dissemination of HNV farming systems on an overall surface of more than 177,000 hectares (93% of the Programme target), which ensured the following: a reduction of chemical inputs damaging flora and fauna and the application of low-impacting agricultural practices (e.g. crop rotation, reduced tillage in areas with steep slopes, etc.) (Actions 1 – Integrated production and 2 – Organic production); the adoption of sustainable management methods for permanent grassland and/or pastureland (Action 8 – No-till farming and extensive grassland farming); the strengthening of the ecological infrastructure of agro-ecosystems (Action 9 – Natural and semi-natural space and agricultural landscape conservation); the maintenance of wetland, wet grassland, ‘maquis-glade’ complexes and permanent grassland areas (Action 10 – Land set-aside for environmental purposes). All of these interventions helped combat the decline of biodiversity and favoured the maintenance or extension of regional high natural value (HNV) agricultural areas, with an estimated impact in excess of 50,000 hectares.

Further, (through Actions 1, 2, 3, 4, 9 and 10) **Measure 214** promoted the reduction of water-polluting agricultural inputs on a surface of more than 183,000 hectares (91% of the Programme target value) with partially satisfactory results (see *the answer to Cross-cutting Question C8*).

The RDP devoted special attention to soil protection, both in terms of protection from water erosion, and in terms of organic matter retention (see *Specific Question ER1* in the Ex Post Evaluation Report). It is estimated that the management methods promoted by **Measure 214** reduce soil loss, compared to a no-commitment situation, by more than 1.526 million tonnes per annum (-40% vs. the reference no-commitment situation). The most effective actions include total grassing in orchards throughout the year (Action 3, -98%); autumn-winter grassing of orchards (Actions 1 e 2, -66%); the obligation not to exceed a 30 cm depth in soil tillage and to implement autumn-winter cover crops (-45%); and the maintenance of permanent grassland and/or pastureland (Action 8, -38%).

In addition, the application of **Measure 214** determines an average increase of the Stable Organic Matter in the soils of Emilia Romagna, equal to 185 kg/ha/annum. As a result, the hypothetical effect, in terms of increased stable organic matter (SOM) content in soil can be quantified at +0.03% on average over the seven years of the RDP. This value does not seem to significantly affect qualitative soil improvement. However, the contribution of Action 4 is particularly significant, as it is likely to increase the SOM by 0.17% over seven years in the areas concerned.

Through Actions 5 and 6 of **Measure 214**, the RDP countered the regional trends of vegetable and animal genetic diversity impoverishment associated with farming and animal husbandry. In particular, Action 5 (protection of indigenous animal breeds) was targeted by a fairly high number of applications (854) and helped support livestock breeding (active on-farm conservation) to the extent of more than 9,500 LUs (livestock units) of indigenous animal breeds. Similarly, Action 6 (protection of indigenous vegetable species) was fairly successful, with 76 beneficiaries and 56 hectares of areas under cultivation with numerous fruit, vine and vegetable cultivars. Through Action 6, a number of integrated district-level projects were developed, of which 7 at provincial level, which concerned indigenous animal breeds and vegetable species. Projects were centred on information and communication actions, resource morphological and genetic characterisation actions and resource conservation actions (see *Specific Question ER4* of the Ex Post Evaluation Report).

Measure 214 also contributed to: the reduction of greenhouse gas emissions e.g. by driving down nitrous oxide emissions following the reduced use of nitrogen fertilisers; carbon sink in soils as a consequence of actions for the retention or increase in the content of organic matter; and the reduction of greenhouse gas emissions in farming and husbandry production processes (lower carbon footprint) (see *the reply to Cross-cutting Question C7*).

Through **Measure 215**, the RDP contributed to an overall improvement in the welfare of reared animals; this resulted in the achievement of the target values, both in terms of secured contracts (130% of target), and qualified holdings (120%), and helped demonstrate the Measure ability to compensate for the additional costs implied by the adaptation to target values in a short time span. Among the different strategic commitments the highest level of participation (take-up rate) was observed in “*environmental control*”, with a 41% take-up,

and “*husbandry and housing systems*” with 21% take-up out of total beneficiaries under the Measure (see *Specific Question ER2* of the Ex Post Evaluation Report).

Measure 216 (Support to non-productive investments) was instrumental in encouraging interventions for the protection of biodiversity and the dissemination of high natural value (HNV) agricultural systems; in particular, Action 1 (Fauna management) contributed to the protection of wild fauna and the reduction of wildlife disturbance levels in Natura 2000 areas, or other areas under natural protection, whereas Action 2 (Conservation of high natural and landscape value ecosystems) helped finance conservation projects in the wetland areas falling within the SPA (Special Protection Area) of the Po Delta, one of regions of greatest national interest for the conservation of the water and migratory bird population. In addition, through Action 3, the RDP enhanced the regional ecological networks through lowland planting of 155 hectares of tree groves, 68 hectares of hedgerows and 18 hectares of ponds, which ensured a functional connection to the Actions under Measure 214.

The investments made through **Measure 216** also contributed to reducing water-polluting chemical inputs by driving down nitrogen and phosphorous contents and through the filtering/buffer action of the planting projects implemented under Action 3. The same Action also contributed to climate change mitigation in terms of reduced nitrous oxide emissions from mineral fertilisers and atmospheric carbon absorption/fixation in wood biomass (c-sink).

The afforestation Measures (**Measure 221** + carryovers) involved around 6,000 hectares and contributed to reduce greenhouse gas emissions of agricultural origin and the storage of atmospheric CO₂ in the wood biomass.

The Measures also contributed to reduce the risk of soil surface erosion, with a value estimated at 246,422 tonnes/ha/annum. Both the implemented and carryover afforestation projects contributed to restore high natural value (HNV) farming systems and strengthen the regional ecological network, as a way to foster increased differentiation in agro-ecosystems as well as the creation and strengthening of the interconnection between natural habitats (protected areas, Natura 2000 sites, channel systems etc.) in lowland areas. With Actions 1 and 2, the Measure helped reduce water-polluting chemical inputs, which in turn drove down the supply and concentration of surplus nutrients from crops in surface waters (phyto-purification) and of possible toxic products (phyto-remediation).

Measure 226 supported the reduction of forest fire risk and a general improvement of the ecological condition of forests over an estimated surface of more than 1,000 hectares, or 89% of target. It therefore contributed to the protection of biodiversity, the improvement of soil quality and climate change mitigation.

Through **Measure 227**, the RDP made a direct contribution to non-productive interventions for the promotion and maintenance of the public functions of forest areas, natural forest regeneration, a balanced development of wild fauna in sensitive areas, forest structure diversification, and biodiversity conservation, on an overall estimated surface of 1,500 hectares (64% of target).

3.2.3 *How and to what extent has the Measure contributed to the economic diversification of beneficiaries?*

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

Measure 311 (Diversification into non-agricultural activities) achieved the objectives defined in the programming phase for the increase in number of projects (134%) and outputs for beneficiaries and the surrounding territories in terms of added value (+25%, of which 13% in diversification activities only) and employment (+21%, with an average increase of 0.41 total labour units-TLUs per holding). The most significant effects were felt in new holiday farms, while in energy and retention interventions in the existing holiday farms, the effects were negligible.

Diversification into non-agricultural activities is recognised as an effective means for the modernisation and strengthening of holdings. However the project pool was still focused on traditional forms of diversification exposed to a risk of saturation (holiday farm segment). Notwithstanding this, the effects of subsidised investments on the economy and employment levels met the expectations and were more than satisfactory.

The initiatives financed under **Measure 313** (Encouragement of tourism activities) supported the local tourism infrastructure mostly in terms of ancillary services (hiking and thematic itineraries, road and tourist signage, training/information centres etc.) and only marginally in terms of interventions on accommodation facilities (3). The regional choice to concentrate interventions in the enhancement of food and wine tourism in the context of specific itineraries– already recognised by Law 23/2000 – helps make the most of the scarce resources allocated to the measure (around 2.7 million euros) with effects that may potentially attract a larger number of end-users (in holiday farms and holdings linked to such itineraries).

The analysis of statistical data on tourist flows shows a positive growth of visitors in the Municipalities falling in the funded food and wine itineraries in the provinces of Parma, Forlì-Cesena and Modena, while a difficult situation persists in inland mountain areas (Piacenza and Reggio Emilia), which once more emphasises the need for stronger interventions in these districts and continued support to system-level actions for the enhancement of the historical, cultural and culinary heritage in rural territories to increase their tourist attractiveness as wished by almost all beneficiaries under Measure 311 (rural tourism) who were interviewed in sample surveys.

3.2.4 How and to what extent has the Measure contributed to improving the quality of life of beneficiaries?

The objective of improving the attractiveness of rural areas for farms and the local population was pursued by different measures from public associations, which operate on various levels to improve the quality of the rural territories. The objective benefits from Measures 321 (services for rural territories), 322 (village renewal and development) and 323 (conservation of the rural heritage).

Measure 321 (Basic services for the economy and rural population) provided a positive response to the need to improve basic infrastructure for rural population, which need is also confirmed by a survey on the quality of life using infrastructural indicators. The Measure exceeded the target values in terms of outputs and results. The interventions implemented on infrastructural networks (rural water supply system, rural road links, local biomass-fuelled power plants, and ICT networks) were positively judged by the privileged ‘witnesses’ (survey respondents), who had to assess the quality of life, although a limited impact on the surveyed territories was observed. Even if negotiated programming has increased the relevance of initiatives to the actual needs, the effectiveness of the Measure was limited in its financial and physical size, compared to the extent of the social/territorial phenomenon and it was aggravated by the difficulties encountered by municipal administrations in completing interventions, and by the poor degree of coordination with other lines of funding both within and outside the RDP. A large number of respondents agreed on the need to ensure and increase the connection of themes to holdings and the population, which need is also in line with the choices of the 2014-2020 Programming.

Despite financial constraints, **Measure 322 (Village renewal and development)** has improved the attractiveness of rural territories in areas C and D of the Region through renovation works in the built areas of 167 villages, or 90% of target. These projects were allocated investments worth more than 29.2 million euros, or 90% of target. Although these investments fall short of the target value, the project implementation level, despite the difficult economic conditions in which public bodies operated, was positive. Similarly, Measure 322 made a positive contribution to the objective of improving territorial attractiveness and the quality of life, with special reference to the quality of landscapes and sites. The effects sought on the local economic system were less visible and need to be accompanied in the future by a clearer definition – in calls for projects – of the management solutions to be applied for the creation of services in the renovated buildings.

The implementation of **Measure 323** (Conservation and upgrading of the rural heritage) was instrumental in the compilation and approval of Specific Conservation Measures for 100% of Natura 2000 sites (158), and Management Plans for 50% of Natura 2000 sites. The protected area subject to Management Plans or Specific Conservation Measures measured 265,108 hectares. For agricultural activities, specific guidelines were developed, which were later integrated into the Specific Conservation Measures and Management Plans. The identified problems mainly related to the difficulties encountered by the regional government in the management of the various processes of compilation, grouping and streamlining of Specific Conservation Measures and Management Plans, owing to the multiple authorities that manage the already numerous

regional Natura 2000 sites, as well as to the recent transfer of powers from provincial governments to the regional government, which is still to be completed in a few cases.

3.2.5 *To what extent has the Measure enhanced beneficiaries' capacities to improve economic diversification and quality of life in rural areas?*

The initiatives funded by **Measure 331 (Training and information for economic operators)** supported training in activity diversification, in the tourism sector for the most part (93%), and the enhancement of local features; in the majority of cases (52%), the pursued goal was the improvement of marketing capacities for the holdings' products and services. The interventions helped train 2,833 persons (96% of all trainees), of whom 44% were female and 41% young. Most of them already had a job, chiefly as self-employed workers (73%). Training activities were therefore designed to improve professional skills and the knowledge of active workers and, to a lesser degree, to encourage new professional profiles. 62% of respondents declared that their acquired knowledge had positively impacted on their professional status. As many as 75% of respondents declared that they wanted to put their acquired knowledge to use, while only 20% of them declared they had been encouraged to make investments. Among those who had made investments after the course, three had started a new business (i.e. an education farm or a B&B).

Measure 341 (Skills acquisition and animation) funded information dissemination and socialisation initiatives, awareness-raising campaigns, and technical assistance/support for provincial RDPs. The multiannual activity programmes reported on an annual basis envisaged information actions, which had involved 91 provincial officers, who had judged the information initiatives useful for the improvement of their know-how and skills.

Communication interventions for rural operators and the local population – designed for the dissemination of information on the Rural Development Programme and on the achieved results and outputs – had reached 1,541 undertakings. The information was centred on innovative topics to assist diversification strategies, including bio-energies, hosting initiatives in the rural environment, social activities, and enterprise networks.

3.2.6 *The Leader approach*

The Leader approach was implemented in Emilia Romagna by 5 Local Action Groups (LAGs) in a manner essentially consistent with the LEADER+ programming. The territories concerned with local development strategies had a population of 495,416 inhabitants and extended over a surface of around 11,281 km².

The Local Action Programmes (LAPs) developed by the LAGs pursued strategies aiming at increasing territorial attractiveness, with promotional activities combined with actions designed for local supply chains and tour operators, in an effort to enhance the distinctive (agricultural, environmental and cultural) elements of the territories.

For the implementation of LAPs, about 50 million euros were made available to LAGs – broken down into 82% for implementing local development strategies (Measure 410), 6% for cooperation (Measure 421) and 14% for management costs (Measure 431). The LEADER Axis absorbed all of the programmed resources.

To implement Measure 4.1.0 - Local Development Strategies, LAGs could choose from a range of 17 measures included in the RDP Axes as well as Leader Specific Actions.

Under Measure 4.1.0, more than 1,000 projects were implemented, which involved 883 beneficiaries. 63% of the spent resources concentrated on Axis 3, 29% on Axis 1 and the remaining 8% on Axis 2. Forty projects concerned Specific Actions. The 12 projects funded through LEADER Specific Actions in the context of the 'Competitiveness' objectives concerned initiatives that were complementary with those developed under Measure 411. Projects were characterised by a more marked control by the LAG (LAG leadership) and a more accurate identification of areas in which pilot initiatives could be initiated, such as short supply chains and niche products. Under Measure 412 – Environment – the 5 Specific Actions mainly concerned awareness-raising campaigns or pilot initiatives for – *inter alia* – energy saving (zero-carbon tourism). Under Measure 413, the 23 projects on Specific Actions concerned system-level initiatives for the enhancement of existing tourist itineraries and/or the design of new initiatives (as a complement to Measure 313), as well as thematic

promotion interventions on the tourist attractors of LAG areas, or interventions falling under Measure 312 – Support for micro-enterprise creation (not contemplated in the RDP).

The 10 cooperation projects implemented under Measure 421 were inter-territorial projects. In nine projects, the Emilia Romagna LAGs were in the lead. Six cooperation projects were only developed at regional level, with the creation of different teams consistently with the themes covered and the priority themes of the LAP. Four projects involved LAGs from other Regions, more specifically: a project on the Routes of Europe (16 partners), a project for the enhancement of Eco-museum Systems (4 partners), and 2 projects on enhancing the river landscape and the park of the Po Delta (with Veneto LAGs). Through cooperation projects, the LAGs managed to create extraterritorial networks by enhancing the initiatives developed under Measure 410, in particular those on tourism in LEADER areas.

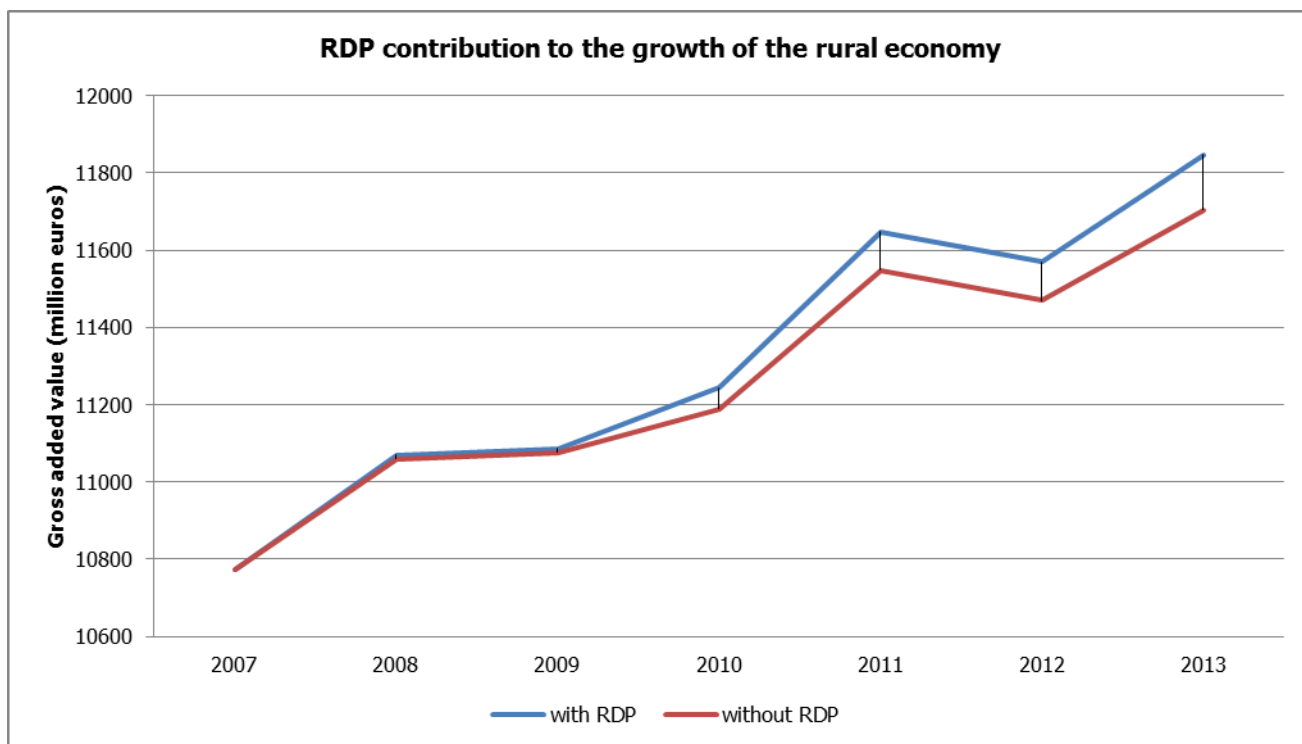
The implementation of the 5 LAPs took place with satisfactory margins of effectiveness vs. the targets. However the LAGs' role to favour the creation of added value from the implemented initiatives was concentrated on Specific Actions. In particular, although they had programming means with a large scope for action, LAGs could not always effectively adapt the Measures made available under the RDP to the local context. This was the case especially in actions implemented through calls for projects, which replicated – in terms of conditions of eligibility, types of intervention and selection criteria – the provincial arrangements. In the implementation of more complex projects in the context of Specific Actions, which involved the participation of, and cooperation between different actors, the LAGs' role and capacities differed. This condition was identified, in particular, in LAG-lead projects, which were more suited to bring out the LAG role and the added value of the Leader approach in terms of higher integration, cooperation between different local actors in the development of projects, innovativeness and multi-sectoral nature of initiatives. The organisation model prepared by the regional government for the Axis implementation was judged valid, with the set up of a LEADER Technical Committee as an innovative element; this should be kept and improved in the future programming phase.

3.3 Answers to cross-cutting common evaluation questions

C1. To what extent has the RDP contributed to the growth of the whole rural economy? (Lisbon Objective)

The investment funded by the Emilia Romagna RDP generated an economic growth worth 141.7 million euros, above regional expectations. The agricultural sector played a vital role in achieving this result, with nearly 90 million euros worth of added value, followed by the agri-food and beverage sector, with more than 42 million euros. Investments in the diversification of agricultural activities – chiefly in the most marginal rural areas – made up 7% of such growth.

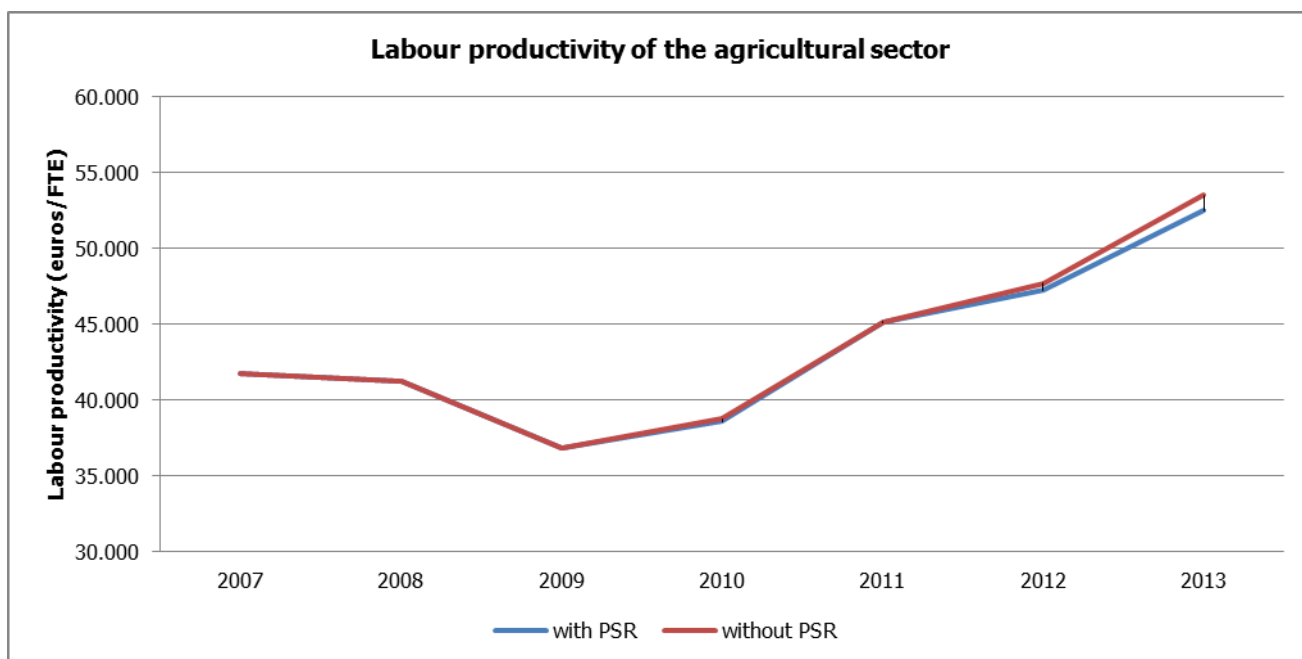
The RDP contribution to the growth of rural economy, calculated from the difference between RDP situation and non-RDP situation, was 1.2%.



Source: data processed by Agriconsulting (Counterfactual Analysis) and Istat, Conti economici territoriali (2015)

The investments (Measures 112 and 121) also contributed to an overall improvement in holdings' labour productivity, which increased 2,144 euros/FTE on average and compares to a much lower target value (1,395 euros/FTE).

The results obtained by Measures 112 and 121 determined a different trend, if projected to the full agricultural sector, as shown in the chart below, where actual productivity from agricultural work (through the RDP) is compared to the situation which would have arisen without the RDP. This assumption was made by calculating labour productivity on the basis of gross added value and labour units (FTEs) in the agricultural sector, net of the increases determined by the RDP on both factors. As a result, over the last few years, labour productivity has grown, although it did in 2013 with slightly smaller values in the situation with RDP (-1.9%) vs. values without RDP, due to the RDP causing a relatively higher increase in the number of workers (4.7%) than the increase in gross added value (2.7%).

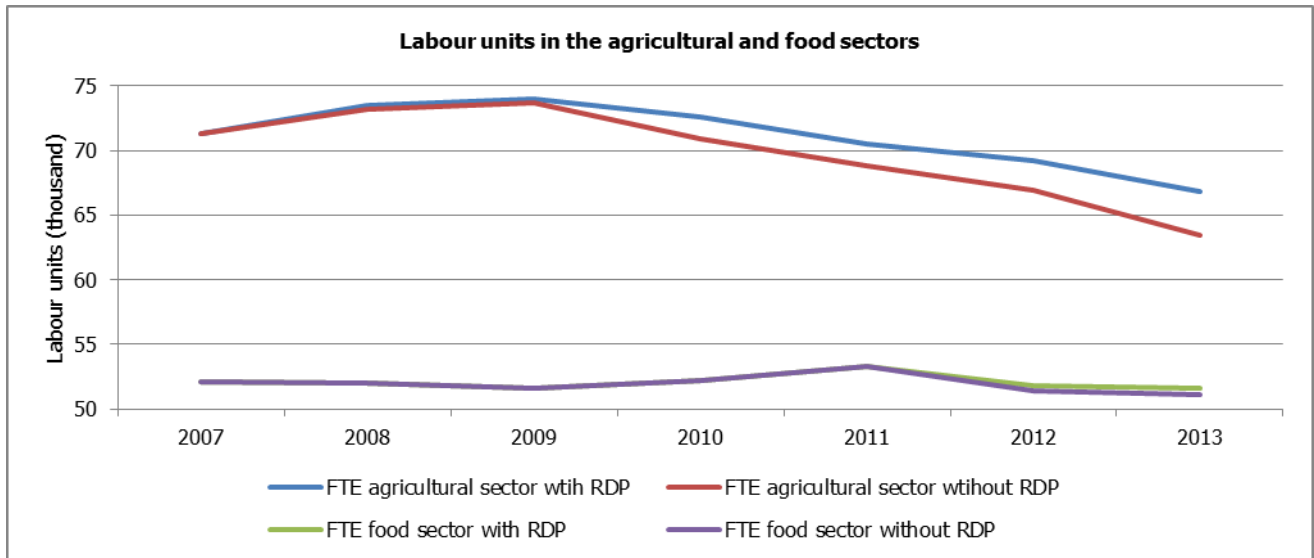


Source: data processed by Agriconsulting (Counterfactual Analysis) and Istat, Conti economici territoriali (2015)

C2. To what extent has the RDP contributed to employment creation? (Lisbon Objective)

By the main Measures that could have determined effects on employment (112, 121, 123 and 311), the RDP contributed to mitigate the drop in employment levels in the agricultural sector (with an average annual change of -1.5% between 2007 and 2013). This situation generated an overall labour increase in the agricultural and food sector and in the diversification of activities to the tune of 3,898 labour units, or 154% of the target value.

The chart below shows the RDP contribution to employment compared to a hypothetical situation without the Programme (with the inclusion – in the agricultural sector – of jobs created by the diversification of agricultural holdings).



Source: data processed by Agriconsulting (Counterfactual Analysis) and Istat, Conti economici territoriali (2015)

The RDP-created employment is reflected in an increase of labour units (compared to the no-RDP situation) of 5.3% in 2013 in the agricultural sector (including diversification), and of 1.1% in the food sector, with the consequent mitigation of the decline of employment in the sectors considered.

C3. To what extent has the RDP contributed to protect and enhance natural resources and landscape, including biodiversity and HNV farming and forestry?

The different Measures which contribute to the objective in question involve an overall agricultural and forestry area of 242,906 hectares (common indicator of R6/a) or nearly 101% of the programmed objective and 26% of the regional UAA.

A comparison between the incidence of the area under agri-environmental commitment over the utilised agricultural area (UAA) at regional level (26%) with that calculated in Natura 2000 sites and Areas under Nature Protection shows a positive concentration of interventions in Areas under Protection; this concentration is attributable to both selection criteria and to Measure 211, a specific measure for mountain areas, in which the large majority of Natura 2000 sites fall.

The test of the Biodiversity objective through the measurement of the **Farmland Bird Index** (FBI) shows that, when agri-environmental payments and afforestation measures of the Emilia Romagna RDP were applied, overall positive effects were observed in the dynamics of the bird population in agricultural areas. These effects were more marked in hill and mountain areas, with an Index differential between areas under commitment and control areas of 15% and 10% respectively, while in lowland the differential was 5%.

When the effects of individual actions (or groups of actions) in the three altitudes considered are analysed, then better cumulative effects from non-productive vs. productive measures can be noticed in lowland (a

standardised concept from the ecological standpoint) while, in the more environmentally diversified hill and mountain areas, the reverse is true. As for effects on individual species, they generally seem consistent from the ecological standpoint; a significantly positive targeted effect of a few agri-environmental measures was also noticed on the dynamics of species of Community interest and/or declining species (skylark, stonechat and red-backed shrike).

As regards the conservation of agricultural and forestry habitats classified as High Nature Value (HNV), based on the performed analyses the RDP contributed to the maintenance or restoration of HNV farming systems through interventions on an overall area of 81,447 hectares, or 46% of the farmland classified as HNV. More specifically, changes were observed in significant agricultural uses, to the extent of increasing the overall HNV area by more than 6,000 hectares.

The Programme made an extremely significant contribution to the enhancement of knowledge and governance of the natural heritage and the Natura 2000 network. Through support from Measure 323, all regional N2000 sites were placed under Specific Conservation Measures (SCMs); in addition, around 50% of N2000 sites are now subject to a Management Plan (Italian acronym PdG). The amount of data produced and organised through the RDP helped achieve a particularly comprehensive and up-to-date understanding of habitats and regional N2000 species.

C4. To what extent has the RDP contributed to the supply of renewable energy (Health Check Objective)

Although support to the development of renewable energies was already considered as a key theme of the 2007-2013 RDP, it has been further enhanced through the reform that was introduced by the Health Check (HC) and approved by the EU regulation on new market policies (Reg. (EC) 73/2009).

The RDP contributed to this objective by funding the use of plants fuelled by Renewable Energy Sources through specific Measures under Axis 1 (Measures 121, 112 and 123) and Axis 3 (Measures 311 and 321). As a whole, in the programming period, the RDP funded the construction of 771 renewable-source plants, with an overall investment worth nearly 109 million euros.

So far, the Measures of Axis 1 helped implement 223 projects for the production of energy from renewable energy sources, with an investment worth more than 23 million euros. Main technologies were solar PV (61% of investments) and biogas (30% of investments), both for the production of electricity.

The Measures of Axis 3 are the main Programme instrument for the development of the regional energy sector in agriculture, with a total of 548 funded interventions, correlated to an overall investment of around 85.5 million euros and a granted contribution of about 22.5 million euros. The most impacting measure under Axis 3 was Measure 311, which alone triggered investments worth nearly 77.3 million euros, with the highest contribution made through a dedicated action (98% of investments). In this case too, the renewable energy sources that saw the highest degree of development through the dedicated action under this Measure (i.e. Action 3 of Measure 311) were the solar photovoltaic source and biogas. A less important contribution was made by Measure 321 which, through its dedicated action (Action 3), favoured the construction of 25 biomass-fuelled thermal energy generation plants connected – in a few cases – to district heating systems serving a like number of Municipalities and other public bodies.

The total installed capacity of the constructed plants ensures an annual energy production of around 161,750 MWh, corresponding to 13.9 ktoe². This value can be compared to the target value of 6.896 ktoe, which shows that the target was achieved and outperformed by over 200%.

Interestingly enough, biogas-fuelled plants, with their individual contribution in terms of annually produced energy (8.58 ktoe/annum) helped achieve and overcome the target value. The contribution of biomass-fuelled plants was equally significant (3.20 ktoe/annum), especially if a comparison is made with the relatively low level of overall cost (an overall investment of around 10 Million euros). Solar PV energy, for which as many as 559 projects were funded for a total investment of more than 47.5 million euros, ensures a production of

² 1 Ktoe = 1,000 tonnes of oil equivalent. Conversion factor (1toe=11.63MWh), from International Energy Agency (IEA).

energy of only 1.33 ktoe/annum, this factor however depends on solar radiation and it is in any case a virtuous example of production if account is taken of the overall installed capacity on the territory.

It is worth noting, however, that the achievement of an annual renewable energy production value equal to twice the target value, as shown above, is mainly attributable to the particularly favourable incentive scenario observed from 2009 to 2012, which, together with the RDP, has driven regional investments in renewables up.

C5. To what extent has the RDP contributed to improving the competitiveness of the agricultural and forestry sector?

The RDP contributed to the improvement of “competitiveness” in the agricultural and forestry sector through various actions for: the improvement of farmers’ business skills and professional skills, the introduction of new technologies and the development of innovation, the improvement of environmental quality and sustainability of production processes, and the increased market orientation of holdings through, *inter alia*, their integration with other actors in the supply chain.

The qualitative improvement of production and, in particular, the adoption of the quality systems required by the distribution chain (EurepGAP, BRC, IfS), was one of the qualifying objectives in 13% of Business Development Plans of young farmers (Measure 112). Interventions under Measure 121, designed for the improvement of business production quality concerned 244 beneficiary holdings (7% of total) for an overall investment volume of 23.5 million euros (3.3% of the total investment volume). The Programme has also supported the organic farming method (Measure 214) by funding interventions on over 85% of the regional organic area and contributing to reduce the environmental impact of farming.

The Programme supported innovation both directly, by encouraging cooperation among entrepreneurs and research institutions for test projects (Measure 124), and indirectly through the specific intervention priorities required under Measures 121 and 123. A total of 2,558 undertakings introduced new products and/or techniques (54% of target) of which 74% were beneficiary agricultural holdings under Measure 121 – these had invested mainly in the adoption of innovative technologies and in the rationalisation of technical means so as to reduce production costs. 6% of undertakings that had introduced innovations were in the food sector (Measure 123) and used these innovation to increase business profits and efficiency, improve the quality of products, adapt products to market demand, and improve workers’ safety and working conditions.

The 86 cooperation projects funded under Measure 124, of which 50% falling in the group of Sectoral Projects, were mainly of ‘technology-push’ type, i.e. interventions driven by technology tests for improving production processes and the quality of existing products, rather than for testing new products.

C6. To what extent has the RDP accompanied restructuring of the dairy sector? (Health Check Objective)

The dairy sector has a considerable significance in the regional agrifood macro-sector and involves nearly 5% of regional agricultural holdings, about 13% of the regional farmland and standard production, and 14% of regional agricultural employment in terms of hours of work. The RDP, therefore, supported the restructuring of the dairy sector, with overall allocated resources worth 19,137,600 euros (60% of which were Health Check resources), entirely under Measure 121. At the end of 2015, investment applications from 156 beneficiary agricultural holdings were paid for, little more than half of the eligible holdings; however their investments exceeded 53.3 million euros and were consequently above the target as a result of higher average investments. 68% of interventions and 47% of investment volumes were made by holdings situated in mountain areas.

87% of interventions were intended for the rationalisation of production cycles and cost reduction. A good incidence was also observed for interventions for the improvement of qualitative standards of milk and milk products (10%), while investments for increasing the share of added value in farm production were marginal (2%).

45% of Sectoral Projects concerned the dairy sector. A positive response had come from this sector as early as at the time of the call for sectoral projects (2009), with 19 proposed projects (of which 17 in the segment

of cheese with protected designation of origin and 2 in the drinking milk and fresh milk product segment) out of the 67 total funded projects. Through the second call for proposals (2011) the regional government intervened specifically in the dairy sector to favour the pursuance of sectoral restructuring projects following the abolition of the milk quota system and the consequent liberalisation of the dairy market.

C7. To what extent has the RDP contributed to climate change mitigation and adaptation? (Health Check Objective)

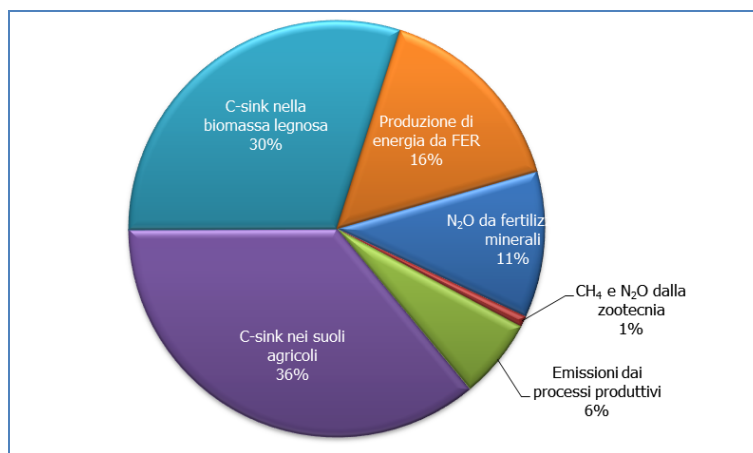
The RDP contributed to climate change mitigation and adaptation through specific interventions for the reduction of greenhouse gases, with an overall Programme contribution of 238,341 tonnes of CO² equivalent. The highest contribution from the implemented projects is associated with Axis 2, through the two following components:

- *Direct reduction of emissions from agriculture*, through 3 reduction categories, i.e. N₂O from mineral fertilisers; CH₄ and N₂O from animal husbandry; and GHG from production processes;
- *Carbon absorption*, through 2 categories, i.e. c-sink in farmland, and c-sink in wood biomass.

The two components contributed to a greenhouse gas emission reduction equal to 84% of the overall value, with carbon absorption identified as the most effective instrument, as it ensures – in its agricultural and wood components – a value close to 66% of the total reductions of the Programme.

Reductions driven by agriculture played an important role, which was however less significant in terms of greenhouse gas savings, as they only accounted for 18.5% of total reductions made through the Programme.

An additional contributor to the final output is the energy sector, specifically through electricity generation from renewable energy sources (equal to 13.9 ktoe per annum), with savings of around 16% of total reductions.



However, it is worth noting that the target value of the additional indicator (Contribution to climate change mitigation – Greenhouse effect – Reduction of regional annual emissions of GHG from the agricultural sector, expressed as tCO₂/annum and related to Measures 214 e 221), as shown on the RDP, only includes the reduction components of nitrous oxide from mineral fertilisers and carbon sink in the biomass of areas afforested under Measure 221, limited, for the latter component, to new interventions only (which therefore exclude carryovers).

The target value is equal to 47,714 tCO₂eq per annum, as the sum of the impact indicators “Contribution to climate change mitigation – Greenhouse effect (tCO₂/annum)” related to Measures 214 and 221. Therefore if the actual contribution of reduced nitrous oxide from mineral fertilisers (27,030 tCO₂eq) is added to the contribution of increased c-sink in biomass from the new forest planting projects made under Measure 221 (3,417 tCO₂eq), an overall value of 30,447 tCO₂eq is obtained, which is 64% below the Programme objective (47,714 tCO₂eq).

C8. To what extent has the RDP contributed to improvement of water management? (Health Check Objective)

The overall agricultural and forestry area covered by the objective of water-quality improvement extends over around 189,304 hectares (Result Indicator R6/b), or 91% of the regional objective; almost all of this area (183,338 hectares) is farmland. More than 20% of the regional UAA is affected by agri-environmental actions (integrated agriculture and organic agriculture) favouring the maintenance or introduction of production systems with lower levels of use of potentially water-polluting agricultural inputs (fertilisers, agrochemicals and herbicides) and by Measure 221, and both factors determine a permanent change of soil use from agricultural use to forestry use.

The area under commitment (81,495 hectares) includes zones subject to hydro-geological protection (43%) and Nitrate Vulnerable Zones, or NVZs (31%). The area-under-commitment/utilised-agricultural-area concentration index in the two zones is equal to 18% and 17% respectively, i.e. below the regional average (20%), the lower concentration being in the zones more in need of intervention.

The detailed analyses conducted by the Evaluator confirmed the effectiveness of agri-environmental actions promoted by the RDP in relation to this objective.

The calculation of the impact indicators, load and surplus for both nitrogen and phosphorus and a comparison between the two scenarios, i.e. with and without agri-environmental commitments, show an average fall of the nitrogen load in the areas under commitment of 38% (-26 kg/ha), corresponding to 81% of the RDP objective. This not fully satisfactory result was due to the limited use, in conventional holdings, of fertilisers, which helped reduce the gap between factual and counterfactual situation. Considering the entire regional territory, a fall in the nitrogen load of 4.9% was found; this value was still below the Programme objective (with a 64% effectiveness indicator) and resulted from the low reduction of the nitrogen load in one hectare of the overall area under commitment.

The phosphorus load (PL), instead, remained unchanged with the application of Measures; however, it is worth saying that the load values were very low and, consequently, no special changes could be expected after the application of agri-environmental Measures.

The Evaluator's performed analysis for the calculation of the nitrogen surplus (DN) and the phosphorus surplus (DP) shows a positive situation from an environmental standpoint, and confirms the environmental effectiveness of the actions considered; for the nitrogen surplus, values were found to be always negative in the situation 'with commitments', and almost always positive in the counterfactual situation, and therefore the change was equal to 13.5 Kg/ha for nitrogen and 1.7 kg/ha for phosphorus.

At regional level, reductions were relatively modest for both nitrogen and phosphorus owing to the low surplus levels of conventional holdings.

For agrochemicals, very limited uses of toxic products were found (T) both in areas under commitment and in conventional areas. The effect of funded actions, however, determined a significant reduction (of around 12-13%) in the use of toxic products (T) with possible carcinogenic and/or teratogenic effects (R40 and R63), although these values too were not always in line with targets (effectiveness index between 57 and 100%).

The adoption of Actions determined a reduction in the load of agrochemicals, which were weighted for toxicity specifically in mountain and hill areas (49% and 12.7% respectively); a net increase was found in the use of non-toxic products bearing organic certification, to the detriment of those with less favourable toxicological and environmental characteristics.

As regards the quality of water resources, the Programme interventions produced higher efficiency in the use of water. The total number of holdings that implemented interventions for the correct use of water were 580, of which 118 had improved their irrigation system through Measure 121. In particular, direct surveys found that 10.7% of the interviewed holdings had shifted from low-efficiency irrigation systems (furrow irrigation, flood irrigation and sprinkler irrigation) to high-efficiency systems (micro-irrigation and low-pressure systems). 462 holdings had increased their water storage capacity after taking up Measure 125. Altogether, the investment volumes in water management improvements amounted to 42.2 million euros. Measure 125 helped increase the overall storage volume by 650 thousand m³ per annum. This irrigation volume could meet 21% of the irrigation demand for the areas concerned; therefore, the implementation of interventions certainly determined an integration of the irrigation volumes drawn from aquifers, but did not completely

replace them with surface watercourses. The main environmental benefit obtained through interventions was to ensure a Minimum Vital Outflow (MVO) by minimising shallow water flows, which normally put pressure on the hydro-biological balance, and to preserve the biodiversity of water bodies.

The RDP also promoted water savings through Training/Information and Advisor Service actions for holdings (Measures 112 and 114); the conducted surveys show that 18.4% of beneficiary holdings declared having taken up water-saving methods and practices. More specifically, more than 15% declared they used efficient irrigation systems and more than 2% said they were growing less water-intensive crops.

C9. To what extent has the RDP contributed to improving the quality of life in rural areas and encouraging diversification of the rural economy?

The RDP impact on the improvement of quality of life and the diversification of economy was affected by the general context of crisis. However, a survey – conducted in four rural areas with a comparison made between the perceptions of groups of local witnesses in the period between 2011 (assumed as T0 at the start of the RDP) and 2016 (T1, at the end of the RDP) on 6 dimensions (social, economic, infrastructural, environmental, cultural and participatory) and 25 indicators – shows that the perceived quality of life was substantially stable with slight changes between T0 and T1 on the economic, environmental and cultural dimensions – on which the considerable contribution of the RDP was recognised.

The perception analysis found the lowest contribution to the quality of life in the economic dimension, with very negative perceptions regarding the solidity of the production system and the employment situation. The exit from the market of many undertakings and the consequent loss of labour units, who were often of an older age, were the issues that caused the highest concern in the rural population, who were somewhat more influenced by an economic system that offered less opportunities and was consequently less responsive. It is no surprise that the rural development policy for these areas considers the objectives of employment and diversification of economy as key to support better living conditions. The RDP impact on the economic system was positively perceived by the local witnesses, although it was confined to the agricultural system – e.g. support to innovation, environmental sustainability, improvement of the local territory, and setting up of young farmers. However, despite the results quantified by indicators, the local population did not seem to have a clear perception of the higher stability of the production system and employment growth, as themes that were still regarded as extremely weak points for rural areas. For this reason, the RDP's support to the development of the rural economy was described as an imperative for the future, especially in mountain areas, so as to favour minor supply chains, multi-functional and service agriculture, and workers' vocational training. Better efforts were said to be needed to enhance diversification of the economy and promote rural tourism. In this sector too, local witnesses perceived an evolution, and even made reference to the growing tourist flows, including those from outside Italy, saying that tourists were attracted by natural resources, landscapes, local traditions and local food and wine. However the RDP acted more on the infrastructural component of the tourist accommodation system (number of beds) and less on the creation of a quality tourism package, and the search for synergies between the farming and the tourism segments. The RDP contribution was therefore low and the applied policy has been judged as having margins for improvement.

A key role in the perception of a high-quality lifestyle is played by services. Although the financial envelope in regional rural areas was considered sufficient, a growing concern was found with regard to a clear failure to adapt the supply to the demand arising from social changes (e.g. household working time, population ageing, and the ongoing fall in the number of commercial businesses). These perceptions were more critical in mountain areas, where the population decline and ageing were higher, and where the lower density of facilities and road/transport infrastructure makes the use of services more costly to people. The 2007-2013 RDP failed to intervene in services for the local community and, consequently, to reduce their concerns about the continuity of the welfare system, given the thinned budget margins of public agencies. Local witnesses said they hoped the 2014-2020 programming would include service-centred interventions and forms of support to new projects through partnerships involving the agricultural holdings in the provision of services.

The RDP was recognised as having contributed to the quality of the settlement and infrastructural system, and consequently to the improvement and rationalisation of the local infrastructure (rural water supply systems, local rural roads, energy power plants fuelled by local biomass, and ICT networks). However, especially in mountain areas, the lack of ICT access was still clear, together with the need to "use technology to reduce the

gap of inland territories". The lack, or low efficiency, of the available broadband internet access was judged a weakness by both the local community and local enterprises. The RDP intervention, albeit geographically limited and based on a 'negotiated' approach, can only have a limited impact, given the scope of pending issues. The need for further interventions was therefore confirmed. Interventions, however, were perceived as a sign of institutional proximity to the local territory, and the RDP was considered as an opportunity for Municipalities, which are running the risk of seeing access to basic services shrink for lack of resources.

No doubt, the environment and the landscape positively contribute to the quality of life, and the Programme acted vigorously on these elements through lines of funding favouring the conservation and more rational use of resources, and regional biodiversity, as well as the exploitation of the cultural heritage, all of which play a key role as constituting elements of a 'high quality lifestyle' index.

The interviewed witnesses emphasised the bureaucratic complexity of cultural heritage interventions, which was attributable to the existing restraints and the poor financial resources available to public agencies – they also complained about the critical issue of entrusting private individuals, who operate locally, with the management of the new service functions in the field of 'recovered cultural properties' – in this respect, it was said, a clearer definition of the management solutions to be applied to the created services was needed in the calls for projects. Without considering the criticalities associated with the limited resources and the frequent lack of integrated promotion, the RDP's impact on the cultural dimension was positively judged by focus groups.

C10. To what extent has the RDP contributed to introduction of innovative approaches? (Health Check Objective)

The RDP made an important contribution to the introduction of innovative approaches, through Measure 124 – Cooperation – and specific intervention priorities within Measures 121, 122, 123. As a whole, a total of 2,634 undertakings introduced new products and/or techniques, the large majority of which (1,936) were agricultural holdings. More than half of the beneficiary undertakings under Measure 121 introduced innovations for reducing costs and rationalising production cycles; this output was interesting given the level of regional undertakings participating in the RDP.

3% of forestry holdings introduced innovations to diversify their goods assortment and enhance production capacity, while improving working conditions and environmental standards with more modern machinery. The beneficiary agri-industrial undertakings under Measure 123 introduced innovations mainly related to process automation, product quality and/or packaging improvements, and finally the working environment health and safety.

Under Measure 124, 87 cooperation initiatives were funded (of which 42 in the context of Sectoral Projects), and involved 460 undertakings (of which 315 in the context of Sectoral Projects) in the tests for the development of new products, and in the introduction of process technologies mainly in the fruit and vegetable, cereals and meat sectors. It was shown by surveys that most of these activities were pre-competitive tests requiring investments after the testing phase, in order to develop the various phases of actual production, marketing and product sale.

C11. To what extent has the RDP contributed to creation of access to broadband internet? (Health Check Objective)

The RDP has promoted the development of ICT as a strategic element for the development of rural economy. Through Measure 321, Action 4, sub-measure A, in particular, the RDP contributed to the improvement of internet access in rural territories by funding the construction of a broadband backhaul network infrastructure in the Digital Divide areas. The infrastructural interventions on the 16 regional sections of the network, for an overall investment worth 6.9 million euros, concerned 18 Municipalities in area D, with higher concentrations in the Bologna and Modena provinces, and a potential catchment area of 12,277 users, or 5% of the population covered by broadband services (259,298) in areas C and D.

The RDP's developed infrastructure involves municipal territories hosting 2504 agricultural holdings and 4012 non-agricultural businesses - some of which will use the infrastructure to gain a better access to basic and ITC

services. In 2015, 7 out of the 16 network sections were assigned to Telecom, which effectively activated the fibre optic infrastructure and enabled 4,770 phone lines, as a key step for the subsequent access to the internet by local residents. In addition, through radio connection and other complementing infrastructure, municipal administrations and public agencies could gain access to faster connections in 13 municipalities, with 9 Wi-Fi hotspots activated in public areas.

C12. To what extent has the European Network for Rural Development (NRN) contributed to RDP objectives (creation of best practices for rural development)?

The National Rural Network or *Rete Rurale Nazionale* (RRN) Programme 2007-2013 purports to improve governance, strengthen project and management capacities, disseminate best practices and know-how. In particular it involves the activation of Regional Network Locations or *Postazioni Regionali della Rete* (PRR) acting as interface between the national facilities of the RRN (Agriculture and Forestry Ministry, Inea and Ismea research institutes) e and the regional implementing bodies (management authority, Leader and local partnerships).

The questionnaire-based evaluation surveys conducted show that the performed activities and the instrument made available by the RRN to improve coordination at national level with the Agriculture Ministry and other managing authorities were effective. The RRN organised workshops and created workgroups through which an exchange of experiences and documentation between managing authorities was possible (topics of common interest were discussed); the RRN also created webpages to disseminate cross-cutting information for the benefit of all Regions, and promoted the sharing and dissemination of best practices. Among the difficulties found was a limited involvement of managing authorities in the planning and implementation of activities, which determined a few inefficiencies in the exchange and communication process, and the occasionally belated discussion of criticalities and problems given the different state of advancement of Programmes between Regions.

C13. To what extent has the Technical Assistance (TA) contributed to RDP objectives?

Measure 511 "Technical assistance" involved the implementation of three different Actions: Evaluation; Support, Information and Communication. In general, the available resources were effectively spent for technical assistance activities. The activity consisting in the Acquisition of Management, Monitoring and Control Services under Action 2 absorbed the highest share of resources (53.2%); other key activities included the provision of IT services to support management and control functions (7.9%), software design and development (3.8%), and the supply of hardware equipment to support those activities. All of the above activities helped manage all financial and physical data related to the Programme implementation in the various phases, and check the progress of the RDP objectives.

Other relevant activities for the use of available resources included the selection of an evaluator (17.6%) and the purchase of communication services (7.6%). The activities were particularly intense during the Programme implementation phase, with specific HR training activities (1.6%), information dissemination through conferences, workshops and meetings (0.6%) and the development of ad hoc surveys and studies (0.8%). Another important aspect is technical support for the compilation of annual reports (1.6%) and handbooks (1.5%).

C14. How efficiently have the resources allocated to the RDP been used in relation to achieving the intended outputs?

The efficiency level achieved in the use of public resources was estimated by comparing, on the one hand, the value of public funding (input indicator) with the increase in added value produced by public funding (output indicator), and, on the other, the actual indicator values achieved in the situation at December 2015 (achieved effectiveness) with the values calculated for the programmed input and output indicators in version 4 of the RDP (2009), after the Health Check (programmed effectiveness).

The comparisons clearly show that the achieved efficiency, expressed as euros of added value produced per invested euro, met the expectations in case of Measures 112 (0.10 vs. 0.05), 121 (0.46 vs. 0.16), 123 (1.42 vs. 1.11)) and 311 (0.40 vs. 0.18). These Measures produced a higher efficiency of investments in added value vs. the ex ante estimate, which was based on the results achieved in the previous programming period. The best performance in terms of public expenditure efficiency and increase of gross added value, which was recorded for

Measure 112 (R2= 222% of target), is attributable to the integrated implementation of interventions, which was not envisaged in the 2000-2006 programming period. Similarly, the positive results obtained for Measures 121 (R2=295% of target), 311 (R7= 219% of target) and 123 (R2= 129% of target) were above those of the ex ante estimates (investments were more efficient and actual values were above target).

A much worse than estimated efficiency output was obtained for Measures 125 and 313, probably as a result of the output indicator target having been initially overestimated (the target had been calculated indirectly from the funded investments and was much higher than the value achieved at the end of 2015).

3.4 Answers to regional specific evaluation questions

ER 1. To what extent has the Programme contributed to soil protection in terms of preventing soil erosion?

(see Measure 214).

ER2. To what extent has the Programme contributed to improving animal welfare?

(see Measure 215).

ER3. To what extent has the Programme contributed to protecting the health of workers?

The RDP contributed to protecting the health of workers by reducing the levels of used agrochemicals damaging workers' health. This was possible through the application of specifications for integrated and organic farming encouraged by Measure 214. In particular the surveys conducted show that the majority of treatments in the beneficiary holdings (66%) were made with non-toxic (or 'non-T') products; the use of harmful products (Xn) was limited to 31% of treatments, with quantities well below those of the control group of holdings in the sample that follow an ordinary type of management; the use of toxic ('T') products was sporadic (1.1% of total).

As a whole, in Emilia Romagna - although the situation differs depending on crops and regional areas- a gradual shift to the use of increasingly less harmful agrochemicals in favour of non-T or organic products is under way; agri-environmental actions favour and accelerate this trend, which however involves the full regional context, showing an evolution towards better environment friendliness in the regional agricultural production system.

ER 4. To what extent has the Programme contributed to protecting the genetic diversity of animal and vegetable species of agricultural interest?

(see Measure 214)

ER5. To what extent has the Programme contributed to the maintenance of sustainable agricultural activities in disadvantaged mountain and hill areas?

(see Measures 211 and 212)

ER6. To what extent has the Programme contributed to an integrated approach to rural development (sectoral projects)?

In the context of **sectoral projects**, a total of 87 projects were implemented (of which 20 in the dairy sector) with an overall investment worth more than 313 million euros. The subsidies paid (110,619,976 euros) accounted for 20.8% of resources spent within the Axis 1 (532,242,706 euros) and 9.5% of the whole RDP financial envelope of the Programme (1,163 million euros).

All measures that could theoretically be brought to bear in sectoral projects were actually used. From an analysis of the 'activated' measures it is clear that there was a high rate of participation of undertakings in sectoral projects. More specifically, the following types of undertakings were involved: under Measure 121,

1671 agricultural holdings (50% of total beneficiaries); under Measure 122 - 30 forestry holdings (27%); under Measure 123, 109 agri-industrial businesses (46%); under Measure 124, 315 (68%); under Measure 111, 500 successfully trained people (55%).

The sectoral approach involved the main farming sectors of the region (dairy, beef, pork and poultry meat production, egg production, fresh and processed fruit and vegetable production, the wine, cereals, seed, and animal feed sectors), minor animal and vegetable sectors and the forestry/timber sector.

There was a high number of projects under Measure 124 (42 projects out of 87). The 'innovation' element was found in all sectoral projects, even when no direct reference was made to Measure 124. In particular, an incremental type of innovation was sought, mainly for the improvement of products and processes – which required knowledge/technology transfers and contextualisation through participatory projects.

As a whole, sectoral projects encouraged investments within the main regional agri-food supply chains, which was even more significant given the innovative aspects and the higher complexity of the applied procedures and project implementation process as opposed to the procedures and process required by individual projects, and given the overall crisis situation. Indeed, the approach applied in sectoral projects also resulted in the innovation of procedures – e.g. in the form of agreements signed by direct and indirect beneficiaries to create or better organise relationships around shared objectives either horizontally (setting up of producer pools) or vertically. Another achievement was the development of processes for rebalancing added value in the various steps of the supply chain concerned. The legal significance and duration of projects (at least three years) contributed to favour cohesion between producers and ensure economic returns over time for the agricultural holdings involved. Another innovative element was the joint definition (by the actors concerned) of a set of interventions for achieving specific measurable objectives, i.e.: description of the initiative to be implemented by applicants and identification of measures/actions (under Axis 1 of the RDP) that will support the investments and strategies for achieving the objectives contractually agreed between the various parties. The interviews made in the survey showed there was widespread satisfaction among project leaders and participating agricultural holdings with the funding received and the consequent benefits, which would hardly be obtained by an individual project; moreover, in the case of cooperatives, sectoral projects were an opportunity to consolidate and, in a few cases, extend the social base.

ER 7. To what extent has the territorial approach contributed to improving the effectiveness of the Programme and what was the carryover effect of interventions?

The inclusion within the RDP of Measures exclusively designed for **priority areas** (mountain, rural and disadvantaged areas) as well as targeted, absolute or relative territorial priority criteria in the Measures under all Axes towards the strategic areas – in relation to objectives – contributed to satisfactorily concentrate aid in targeted areas.

The **mountain areas** specified by Law 10/2008, with a low statistical weight by number of farms (24% of total region farms) and population (10%) benefited from 35% of the public financial envelope that can theoretically be allocated to territories. The 10,157 subsidised holdings in agricultural mountain areas accounted for 39% of the undertakings concerned with the Programme. The RDP concerned 57% of the holdings interviewed in the most recent Agriculture Survey (2010) conducted in regional mountain municipalities – with most resources in absolute terms coming from Axis 2 (more than 219 million euros).

Rural areas (i.e. a pivotal programming element for Axes 3 and 4) benefited from 65% of public aid, and 65% of the beneficiary holdings originate from these areas. The rate of participation of areas with general development problems (D) was high; the almost 5,000 subsidised holdings were 61% of those surveyed in these areas and 20% of beneficiary holdings.

Disadvantaged areas (EEC Directive no. 268 of 28 April 1975) making up 31% of the overall regional area, with a large majority of disadvantaged mountain areas, were allocated **37% of overall subsidies** from the RDP. The beneficiary holdings of these areas accounted for 41% of the RDP beneficiaries.

In **Natura 2000 areas** (specifically Sites of Community Importance/SIC and Special Protection Areas/SPAs), which account for 16% of the overall regional area, the RDP grants absolute or relative priorities intended to favour the concentration of interventions, in particular in the Measures of Axis 2. The area under commitment

in this category measures 23,300 hectares with an area under commitment/UAA concentration of 39%, well above the corresponding regional concentration level (25%). The most frequently applied actions in these areas were handicap payments, integrated and organic farming and the intervention scope of Action 10.

Nitrate Vulnerable Zones (NVZ) – which undergo the highest level of farming pressure and account for 28% of the regional territory – were characterised by a lower intervention capacity of Axis 2 as a whole: the concentration of the total area under commitment relatively to UAA was 17%, i.e. below the regional average. It is worth noting, however, that 44% (32,200 hectares) of the area concerned with Action 1 of Measure 214 (Integrated farming) is classified as NVZ. Integrated farming, through the application of its dedicated commitments, fulfils an important protective function for water resources, with a reduction of nitrate leaching into aquifers.

ER8. To what extent has the pursuance of cross-cutting priorities produced positive effects?

Support to young entrepreneurs

The RDP supports young entrepreneurs with a dedicated Measure and a priority system favouring access to aid. A total of 4,682 **young entrepreneurs** owning individual holdings benefited from at least one Measure and absorbed around **12%** of resources (more than 138 million euros). The widespread participation of young entrepreneurs lowered the average age of RDP beneficiary farmers and increased the concentration of participants in the age group below 39 years of age, who accounted for 22% of beneficiaries although they only made up 8% of regional farmers. As many as 1640 young farmers had set up their holding through RDP aid, which contributed to reduce the average age of farmers.

Organic farming

Support for the development of organic farming – delivered both directly (“Agrifood Award”) or through the other Axes of intervention (Axes 1 and 3) – was targeted to 2,954 organic farms, or 12% of beneficiaries and 92% of farms listed in the Organic Producers’ Register (excluding ‘preparers’). Access of organic farms to the opportunities offered by RDP was significant (30% of subsidies), especially for Actions and/or Measures dedicated to this category.

Development of biopower

The RDP subsidised 84 biopower plants, including direct combustion plants (heating boilers) and biogas plants, thus enabling the development of:

- supply chains for the cultivation and exploitation of dedicated crops for energy generation purposes;
- supply chains for the recycling of farming, forestry and agri-industrial waste for energy generation purposes.

The creation of the above supply chains was encouraged not only by the Programme but also by a particularly favourable incentive scheme for biogas/biomass plants, especially for plants constructed before 31/12/2012 and benefiting from a reduced pricing system, with the further opportunity to use dedicated crops with no limit of use in those plants.

The biomass quantities required to be supplied to the plants constructed under the RDP 2007-2013 were estimated as follows:

- for 31 constructed biogas plants for an overall capacity of around 13.6 MWe (megawatts electric) à a biomass requirement of 505,000 t/annum using agri-industrial by-products and dedicated cereal crops.
- for 53 constructed biomass fuelled plants for an overall capacity of around 14.5 MWt (megawatts thermal) à a biomass requirement of 13,300 t/annum. Given the size and type of the constructed thermal plants, it is assumed that the type of biomass to be used consists of agricultural by-products (plant cuttings/plant or tree removal) and forestry by-products (brushwood and tree branches).

The growing of dedicated crops generated alternative farming income because, in addition to rich annual yields, the sector could benefit from a guaranteed price for deliveries over a number of years. However, the growing of dedicated crops has artificially distorted the farmland lease market, with even a 25% price surplus and consequent effects in the market of conventional crop leases.

The exploitation of waste materials for energy generation was found to be:

- Ø an important way of integrating agriculture with energy and promoting circular economy, in line with the incentive schemes introduced on 06/07/2012 and the recent legislative decree of 23/06/2016;
- Ø a valid alternative to combustion of waste cuttings in the fields, which is prohibited by the applicable law as a form of illegal disposal of waste (with the opportunity of temporary municipal derogations);
- Ø a valid alternative to the propagation of pathogens and the problem of soil fatigue following the burial of cuttings from farming activities;
- Ø an input for the farming sector after the creation of local organisations for the collection of plant cuttings and removals to be dismantled as waste;
- Ø a benefit for the forestry sector because by-products such as tree branches and brushwood – normally left in forests and therefore likely to cause fires – will find a new commercial use through energy exploitation.

Public or private users having opted for the installation of biomass-fuelled boilers with an equal capacity (in replacement of conventional boilers) may benefit from the lower costs implied by their access to this 'money-saving' source. At the same time, the use of a more sustainable type of fuel contributed to reduce CO₂ emission levels.

Quality farming

The interventions for the qualitative growth of farming make up for a large part of the Measure under Axis 1.

Under Measure 112, 13% of newly set-up businesses had introduced voluntary certification schemes through investments designed for product qualification. As a result, holdings run by young farmers had a higher propensity to product diversification and the introduction of innovations in the farm. The surveys shows that 36% of farmers had started working in farms that had already joined an EU quality system, which in 50% of cases was an organic production system.

The qualitative growth of farming also contributed to the development of advisory services under Measure 114, which involved 8% of active agricultural holdings registered with the Chambers of Commerce of the Region –which significantly contributed to the dissemination of knowledge among workers in the farming and forestry sector. 33% of beneficiary holdings funded from Measure 114 had introduced in their farm or were participating in voluntary certification schemes. Of these, 57% participated in product quality schemes, 11% produced organic products and 31% followed the practices and methods of integrated farming.

Under Measure 121, the interventions for improving product quality concerned a limited share of beneficiary holdings (7%) and investments (3.3%). Only 0.1% of resources were allocated to the introduction of voluntary quality certification schemes. However, the surveys showed that 34% of beneficiary holdings were already participating in a EU quality scheme. The collected data, however, show that, following investments, 42% of holdings had achieved qualitative improvements in production, which favoured participation in EU certification schemes (19%), voluntary certification schemes such as EurepGAP, BRC and IfS (10%) and regional quality certification (QC) schemes (7%). Following interventions, 25% of beneficiary holdings had increased the share of gross saleable production subject to food quality schemes.

Under Measure 123, 109 beneficiary holdings participated in voluntary certification schemes. In line with the situation surveyed in agricultural holdings, agricultural raw materials processed in the beneficiaries of Measure 123 and certified for quality had grown in both quantity (20%) and value (26%). The growth of quality production concerned 87% of the sample of beneficiaries; this was so especially in the dairy sector (54%), followed by the fruit and vegetable (20%) and meat (13%) sector. The survey also pointed to a significant share of farm sales of quality products (+54.4%), and the incidence of quality product sales on total sales had increased 0.4%.

The production quality objective was bolstered by Measure 132 through which the RDP supported participation in certified quality schemes of 2,851 holdings, or 100% of target, 90.3% of which were organic holdings. The priority of quality and typical products contributed to promote the territory in social and economic terms; the choice of organic products facilitated the retention of holdings in areas where agriculture was found to be at risk of desertion owing to environmental difficulties: 65.7% out of the 3,000 plus regional organic farms operate in disadvantaged hill or mountain areas.

Measure 133 was a further contributor to the current thinking on the competitive dynamics of quality products benefiting from the RDP. The Measure intervention structure focuses on support to information and training actions, whose function is to increase the consumption of quality agrifood products. A predominant role (63%) was played by nationwide promotional and information campaigns in the context of Sectoral Projects directly filed by consortia, associations, etc. The intervention concentrated on the domestic market (consistently with the current level of participation in sales networks and market share) as well as on the cereals and the fruit and vegetable sectors.

4. RECOMMENDATIONS

The Evaluator's recommendations were made on the basis of the evidence collected in the Ex Post Evaluation of the RDP 2007-2013 and are meant for the 2014-2020 Programming.

Transfer of knowledge and innovation

The Emilia Romagna knowledge and training system ensured the participation and training of beneficiaries through a 'Green Catalogue'. The Evaluator recommends strengthening the initiatives that increase the usefulness for and impact on the farm, on the basis of the knowledge requirements of potential trainees in the various sectors of intervention for rural development, and the usefulness of educational, information and advisory services. As regards the implementation of the Measure on innovation the following is recommended:

- Ø to accompany the implementation processes in order to simplify procedures and methods for links to be established between the Administration and Beneficiaries – this applies to both financial circuits and the overall approach to innovation;
- Ø to provide potential beneficiaries with a single interface for access to investment opportunities, which will possibly simplify administrative procedures, disseminate as much knowledge as possible on regional plans for innovation and communicate a cohesive vision of the Programme policies externally, whether or not the strategies are implemented on the basis of EAFRD, ERDF or other sources of financing;
- Ø to coordinate the overall approach to innovation in a broader context within the regional innovation framework, which implies a higher level of strategic, programme-oriented and implementation-centred interaction with all bodies and institutions in charge of governing regional research and innovation. The creation of mechanisms of demarcation and complementarity with instruments in favour of the regional agrifood industry is crucial, especially in the context of the Smart Specialisation Strategy, which involves the approaches of ERDF Regional Operational Programmes and of the ESF, but needs a strong level of coordination with the RDP – equally for implementation purposes;
- Ø to define a governance framework that would also apply to roles and responsibilities, so as to favour the best possible qualification of interventions, and adept innovation to competitive needs. The coordination of policies needs to be followed up in a context of unity and consistency, irrespective of the funding system;
- Ø to follow up on the experience of the 2007-2013 Programming, in the context of Measure 124, in the new 2014-2020 Programming, with specific Actions that could encourage the subsequent development and dissemination of previously tested innovations;
- Ø to launch networks for the innovation of production practices and the introduction of new products on a national scale (this applies to product categories with a large production area, such as the dairy sector).

Young farmers and generational renewal in the agricultural sector

- Ø To strengthen integrated farming projects through a package for young farmers in order to increase synergies with other RDP Measures, in particular to improve the professional skills and capacities of young farmers through training initiatives and the use of advisory services;
- Ø to devise development plans having the necessary elements to effectively improve holdings' profitability, to improve project-quality evaluation instruments and promote actions to accompany and measure results in the implementation phase, for farmers to adopt any required corrective actions;

- ∅ to strengthen the link between innovation and corporate development plans in order to favour the creation of new-generation holdings that are aware of market sensitivity and are focused on the improvement and promotion of quality products.

Promotion of agri-food and forestry supply chains

- ∅ To envisage procedures especially designed and differentiated to favour and improve the implementation of interventions with special reference to the less structured supply chains and minor sectors;
- ∅ to envisage a phase of animation by the public administration, in order to initiate informative and promotional actions dedicated to sectoral projects and meant for the potential beneficiaries, in advance of the publication of a call for proposals;
- ∅ to improve informative instruments dedicated to sectoral projects within the Region in order to provide support in case of any requests for clarifications, not only during the project presentation phase but also in the following monitoring and reporting phase;
- ∅ to consider introducing or optimising financial instruments within the banking and credit system to support the implementation of interventions in sectoral projects.

Promotion of agricultural and food products

- ∅ To introduce instruments for the measurement of results of promotional initiatives into implementation mechanisms - as a form of additional commitment for the implementation of interventions, in order to receive direct feedback on the quality of the implemented promotion/information actions;
- ∅ to promote innovative promotional approaches that will be in line with the evolution of business communication dynamics and have a higher impact on targets.

Agri-environment and climate

- ∅ To envisage mechanisms for collective participation in agricultural, climatic and environmental actions and in the forestry sector so as to favour the growth of a 'critical mass' in the areas most in need of intervention;
- ∅ to promote the fine-tuning of innovation-related actions on environmental themes and actions for the prior evaluation of commitments and their effects on the environment. To continue monitoring the effects of environmental measures, to favour the participation of the organic animal husbandry system and enhance effects on the reduction of greenhouse gas emissions;
- ∅ to evaluate the introduction of the Measure on animal welfare through the adoption of rigorous commitments based on a preventive analysis of regional production methods, while bearing in mind the need to have be less numerous and less complex commitments, which will simplify procedures to be followed by beneficiaries in order to access the Measure.

Diversification of rural economy and local development

- ∅ To support innovative diversification activities, e.g. in sectors such as bio-economy, creativity, culture, rural tourism, social services, innovative craftsmanship and ICT services;
- ∅ to improve interventions in services by relying on new technologies to reduce the isolation of rural communities and holdings;
- ∅ to accompany, through LAGs, new rural-economy innovation processes through territorial animation and the dissemination of pilot examples in order to create better exchange opportunities, and to strengthen the creation of networks and exchanges of experiences in rural territories;
- ∅ to strengthen selection criteria and procedures so as to favour, if need be with LAGs' cooperation, integration between public and private organisations in the development of social interventions in the rural areas, and to ensure their subsequent management and economic sustainability;
- ∅ to strengthen the supra-municipal management of projects for interventions in the rural territory; to apply selection criteria favouring integration between interventions under the various RDP Measures, as well as with projects and activities subsidised through other sources of funding.