



**INDEPENDENT EVALUATION SERVICE OF THE  
REGIONAL RURAL DEVELOPMENT PROGRAMME FOR  
THE PERIOD 2014-2020 OF THE LIGURIAN REGION**

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**Thematic Report - The effectiveness of selection criteria for Sub-  
measure 4.1 aimed at reducing environmental impact and introducing  
product and process innovations**

**Technical summary**

**Rome, December 2021**

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## Introduction

This report is an in-depth thematic study that the Independent Evaluator of the RDP Liguria 2014/2020 has carried out during the course of the service. In particular, in agreement with the Managing Authority, it has been decided to analyse the effectiveness of the selection criteria for Sub-measure 4.1 that are oriented towards the reduction of environmental impact and introduction of product and process innovations.

With regard to the effectiveness of selection criteria linked to the reduction of environmental impact, the following activities were carried out:

- *desk* analysis of monitoring data taken from the SIARL concerning the attribution of priority scores oriented towards the reduction of environmental impact. An analysis of the effectiveness of the selection criteria was carried out for 5 collections of applications for which the phases of the preliminary investigation procedure concerning admissibility, eligibility and financeability were completed.
- carrying out a direct survey on a representative sample of farms that participated in Measure 4.1 and that received a score on the selection criteria for the reduction of environmental impacts, in order to understand the main environmental risks in which the farms operate, the perception of the agricultural operator regarding the environmental effectiveness of the investments made and the weight that the environmental selection criteria had in the definition of the investments to be made. Part of the interviews were carried out face-to-face at the beneficiary farms and part were carried out using the CAWI (Computer Assisted Web Interviewing) methodology.
- data processing and analysis in GIS (Geographic Information System) of information on the location of farms benefiting from environmental measures with thematic maps of protected areas, nitrate vulnerable zones and areas at high risk of erosion

With regard to the effectiveness of selection criteria linked to the introduction of product and process innovations, the following activities were carried out:

- *desk* analysis of the monitoring data taken from the SIARL concerning the allocation of priority scores oriented to the introduction of product and process innovations. An analysis of the effectiveness of the selection criteria was carried out for 5 collections of applications for which the phases of the preliminary investigation procedure concerning admissibility, eligibility and financeability were completed,
- analysis of the technical documentation attached to the application for support (technical report, plan of operations, etc.) to categorise the main types of operations financed for the introduction of product and process innovations,
- application of the DELPHI technique (interviews with a selected group of experts) to identify, for the main regional production sectors, the innovative measures considered most relevant and essential.

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## 1. The effectiveness of selection criteria aimed at reducing environmental impact

### 1.1 *Analysis of the distribution of scores for investments to reduce environmental impact*

Priority points awarded to investments aimed at reducing environmental impact relate to reducing the use of energy and water resources, reducing environmentally harmful emissions and reducing the risk of hydrogeological instability.

The analysis then looked at the admitted applications, which had completed the preliminary investigation process, relating to the opening bands provided for by DGR 546/2017<sup>1</sup>. The first analysis profile verified how many of the eligible and non-eligible companies received priority scores with respect to the environmental criteria, and the respective score levels assigned. This analysis shows that:

- The vast majority of eligible applications score on the environmental criterion (93%) with slight differences between eligible and non-eligible farms (99% vs 89%). The wide spread of the score among eligible applications and the small differences in incidence between eligible and ineligible farms indicate a modest selective effectiveness of the criterion;
- the score assigned to the criterion represents 81% of the maximum score that can be assigned, with, also in this case, insubstantial differences between eligible and ineligible companies (23.9 points vs. 21.8 points). Therefore, in addition to being homogeneously distributed, the criterion also saw the assignment of similar score levels between eligible and non-eligible companies, thus confirming its modest selective effectiveness;
- the incidence of the environmental score on the total scores assigned represents 46% of the total score assigned against an incidence of the assignable environmental score on the total of 25%, highlighting how the criterion, in the presence of a less homogeneous distribution between eligible and non-eligible applications, would have assumed a much more important weight than that assigned by the programmer.

The second profile of analysis checked the value of the environmental investment and its impact on the overall investment. This analysis shows that:

- environmental investments account for 62% of the total investment cost when considering total eligible applications;
- Comparing this incidence on eligible and non-fundable applications shows that the criterion succeeded in selecting the interventions with a higher incidence, in fact the incidence of the environmental investment on the total investment for eligible applications is 71% compared to 54% for non-fundable companies. Therefore, modulating the score assigned to the environmental criterion on the % incidence of the specific intervention favoured those companies whose investment plan was more oriented towards reducing environmental impact.

The third analysis profile verified the distribution of environmental investments according to the themes identified in the call for proposals: reduction in the use of energy and water resources, reduction of environmentally harmful emissions and reduction of the risk of hydrogeological instability. This analysis shows that:

- The distribution of environmental investments according to the three themes identified by the call (in terms of reduction in the use of energy and water resources, in terms of reduction of environmentally harmful emissions, or in terms of reduction of the risk of hydrogeological instability) shows a fairly even distribution among all eligible applications, with a slight prevalence (36%) of investments to reduce the risk of hydrogeological instability;
- Among eligible companies, the prevalence is found in interventions aimed at reducing emissions harmful to the environment (38%), while investments aimed at reducing the risk of hydrogeological instability are slightly less prevalent (30%).

Finally, the last profile of analysis concerned the verification of the types of intervention linked to the themes identified by the call (reduction in the use of energy and water resources, reduction of

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<sup>1</sup> Starting with the second SIAR band (ID 19), the implementing provisions with DGR 388/2018 have been applied

emissions harmful to the environment and reduction of the risk of hydrogeological instability). This analysis shows that:

- Almost one third of the eligible investments of environmental value, totalling some EUR 20 million, are concentrated in the type of investment intended for the sustainable development of agricultural land to ensure water regulation, slope stability and the practicability of machinery, including internal farm roads. This typology refers mainly to interventions aimed at reducing hydrogeological risk;
- 26% of investments with an environmental value are dedicated to the construction, acquisition and/or renovation of buildings used for agricultural production, processing and marketing;
- 12% of environmental investments are dedicated to the purchase of tractors and motorised farm machinery with the main effect of reducing emissions harmful to the environment;
- 8.5% of the investments with an environmental value are dedicated to the construction of water and irrigation systems, thermal and electrical systems to serve crops and livestock breeding with prevalent effects on the reduction of the environmental impact in terms of reduction in the use of energy and water resources.

### **1.2 The spatial distribution of environmental interventions in relation to different environmental themes**

In order to verify the distribution of the interventions financed by Measure 4.1 that received bonus scores with respect to the criteria oriented to the reduction of the environmental impact, an analysis based on GIS methodology was carried out, which allowed the geolocation of the interventions admitted to financing<sup>2</sup>.

The distribution of investments in municipalities with protected areas (parks, national and regional reserves, protected areas) shows a slightly higher concentration than the regional average. In total, about 4.2 million euros of environmental investments are concentrated in the Natura 2000 areas; subdividing the value of the investment by the agricultural surface area (SA) shows that, compared to an overall regional average of 342 euros/hectare in the protected areas, this value rises to 386 euros/hectare, highlighting a greater concentration of interventions in those areas where the presence of environmental potential/ risk has the greatest effect.

**Table 1.2.1 Incidence of environmental investments in protected areas (parks, national and regional reserves, natura 2000 areas)**

	Environmental investment (euro)	Agricultural area (hectares)	Environmental investment/hectare SA (euro/hectare)
Protected areas	4.222.792	10.942	386
Regional total	31.683.819	92.663	342

The distribution of investments with effects on the risk of hydrogeological instability shows that the highest value of investments per hectare of SA (182 euros/hectare) is reached in municipalities with an incidence of non-tolerable erosion area above 15%, while the lowest value (42 euros/hectare) is recorded in municipalities where the risk of non-tolerable erosion does not exceed 5% of the municipal SA.

Even comparing the distribution of investments aimed at reducing hydrogeological risk by erosion class with the distribution of the SA, it can be seen that in the most moderate risk class (less than 5%), which represents 20% of the SA, only 9% of investments are concentrated, while in the highest

<sup>2</sup> The localisation of the interventions was carried out on the basis of the indication of the municipality of the registered office of the beneficiary companies in the SIAR database.

risk class (more than 15%), which represents 28% of the SA, 50% of the total investments aimed at reducing the risk of hydrogeological instability are concentrated.

**Table 1.2.2 Incidence of investments to reduce hydrogeological risk in areas with different erosion risk**

Erosion classes	Investment in hydrogeological risk reduction	Agricultural area	Environmental investment/hectare SA	percentage distribution of investments for hydrogeological risk reduction	percentage distribution of the SA
	(euro)	(hectares)	(euro/hectare)	%	%
less than 5%	893.918	18.800	48	9%	20%
between 5% and 10%	2.534.494	27.710	91	26%	30%
between 10% and 15%	1.413.932	19.981	71	15%	22%
more than 15%	4.773.598	26.171	182	50%	28%

Source: Evaluator's elaborations on Regional data

## 2. The effectiveness of selection criteria geared to the introduction of product and process innovations

### 2.1 Analysis of score distribution Investments in product and/or process innovation

The priority scores assigned to investments for the introduction of product and process innovations are included in a broader category of horizontal criteria which, in addition to the introduction of product and process innovation, also provides for the assignment of scores for investments aimed at increasing the added value of products through processing and/or marketing on the farm, the protection of animal and plant biodiversity and inclusion in cooperation projects relating to short supply chains and local markets.

The analysis concerned the admitted applications, which have completed the preliminary investigation process, relating to the opening bands provided for by DGR 546/2017 <sup>3</sup>

In order to be able to analyse the specific effectiveness of the priority given to the interventions aimed at the introduction of product and process innovation, the evaluator on the basis of the detailed table of investments and considering the amounts of the single expenditure items has reconstructed the value of the score that should have been assigned to the interventions aimed at the introduction of product and process innovation (0.12 points for each % point of incidence of the specific intervention on the total of the operation as foreseen by the call).

The distribution of this score shows that:

- The scoring concerned 15% of the eligible applications with an average score of 3.7 points out of a maximum of 6 points attributable. There were no substantial differences between eligible and ineligible farms, neither as regards the incidence of farms receiving points on the specific criterion nor as regards the value of the average score assigned.
- The score awarded to companies introducing product and process innovation represents 7% of the total score that can be awarded.
- The score is therefore not particularly selective due to the homogeneous distribution between eligible and ineligible companies and the low incidence it has on the total score awarded.

<sup>3</sup> Starting with the second SIAR band (ID 19), the implementing provisions with DGR 388/2018 have been applied

## ***2.2 The main types of funded interventions aimed at introducing product and process innovations***

In order to highlight the innovation needs expressed by regional farms, the evaluator proceeded with the analysis of monitoring data relating to the classification of individual expenditure items dedicated to the introduction of process and product innovations. The analysis showed that:

- Investments for the introduction of innovations represent 18% of the total investment, with a lower incidence among eligible applications than among non eligible ones. This figure is biased by the exclusion of one application that presented an intervention for the purchase of bioreactors for an amount of about € 6.5 million;
- The average company investment per innovation is €24,281 with a lower value among eligible companies;
- Out of a total potential investment for innovation of more than EUR 18 million, just over EUR 6 million was eligible for funding. This figure is vitiated by the exclusion of one application that presented an intervention for the purchase of bioreactors for an amount of approximately EUR 6.5 million.

Focusing on the types of investment aimed at introducing product and process innovations, it can be seen that among the financed companies:

- 38% of the total investments financed for the introduction of innovation are dedicated to the construction, acquisition and/or renovation of buildings used for agricultural production, processing and marketing;
- The purchase of farm equipment, including tractors, represents 20% of the investments aimed at introducing product and process innovations;
- The construction of water, irrigation, thermal and electrical systems to serve crops and livestock raises about 1 million euros, representing 17.3% of the investments allocated to the introduction of innovation;
- 12.4% of investments are devoted to planting multiannual crops for land improvement and the recovery of abandoned land;
- The measures dedicated to the acquisition of computer programmes including their development and/or patents, licences for processing and marketing and the production of energy from renewable sources have a low impact on investments aimed at introducing innovation.

In order to deepen the analysis, the evaluator proceeded to a reclassification of the interventions starting from the descriptions of the investments made and with the help of reading the technical reports. The result of this operation shows that

- the most significant expenditure of about 2.4 million euro (39% of total investments for the introduction of innovations) is for the renovation of buildings, including the installation of heating and electrical systems, using green building techniques and improving the energy efficiency of buildings;
- 24% of the total expenditure, amounting to EUR 1.35 million, relates to the recovery of uncultivated land either through land improvement operations or through the purchase of machinery necessary for cleaning and subsequent cultivation of such land;
- the construction of buildings and the purchase of machinery for the processing of farm produce, aimed at diversifying production and increasing the added value of the farm, accounted for 14% of total expenditure, amounting to EUR 0.88 million;
- 14% of total expenditure, amounting to EUR 0.86 million, is earmarked for the purchase of equipment to increase the level of mechanisation of cultivation operations. The

mechanisation of cultivation operations mainly concerned holdings in the flower, olive and wine-growing sectors;

- 4% of the total expenditure for an amount of 0.24 million euro concerned the introduction of the "compost barn", a special housing system with aerobic fermentation bedding promoted by the InnovaBioZoo Project of the Val di Vara Biodistrict.