



Rome, May 2022

## Ministry of Agricultural, Food and Forestry Policies

**NATIONAL RURAL DEVELOPMENT PROGRAMME  
(NRDP) EVALUATION SERVICE 2014-2020**

**CIG 75393482CA**

**CUP J81F180070007**

**Dissemination report relating to the results of the annual evaluations (2022)**

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## Introduction

As required by art. 1 Letter f) of the Technical Specifications, we hereby provide a dissemination summary of the results of the evaluation activities conducted in 2022 and returned in the annual evaluation report.

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### 1 Annual Evaluation Report (AER) of the National Rural Development Programme (NRDP) for the year 2021

The purpose of this Annual Evaluation Report is to analyse the use of resources and to verify the effectiveness and efficiency of the 2014-2020 NRDP, with reference to the state of implementation as at 31/12/2021.

The methodological framework envisaged for the drafting of the report is based on a participatory approach that involved the officials and technicians of the Ministry and of the structures involved in the Technical Assistance to the Programme, such as ISMEA and CREA, through the realisation of numerous meetings and gatherings that made it possible to focus on the themes that were the object of the evaluation analyses and to fine-tune the most suitable methodologies for the different analyses.

The Report focuses on the three main issues that the NRDP measures aim to address and specifically:

- support for the prevention and management of business risks;
- support for the restoration, preservation and enhancement of biodiversity;
- support for more efficient use of water in agriculture.

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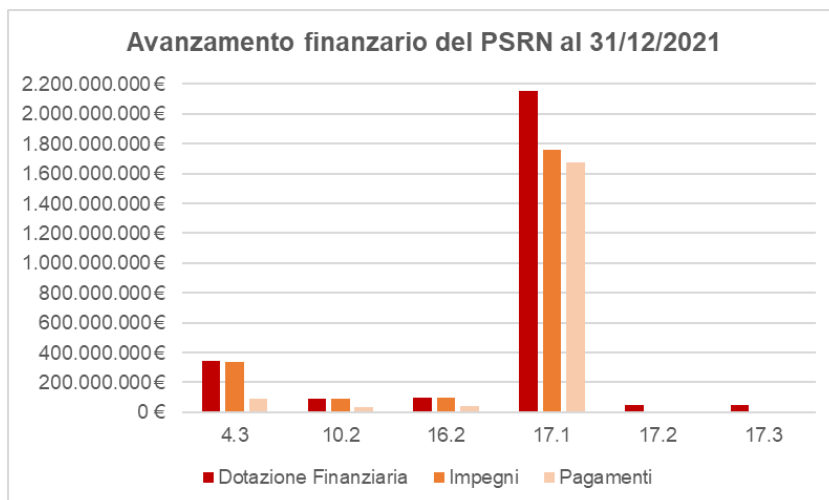
#### 1.1 The Status of Programme Implementation

The National Rural Development Programme for the period 2014 - 2022, agreed in the State-Regions Conference, was approved by the European Commission by decision (C2015)8312 of 20/11/2015.

Version 11.0 of the NRDP extended the period of support from the EAFRD fund in the years 2021 and 2022 and increased the amount allocated to sub-measure 17.1 (crop, animal and plant insurance) to allow beneficiaries and farmers a smooth transition by ensuring continuity of payments.

The NRDP 2014-2020 contributes to the realisation of the Europe 2020 Strategy by pursuing thematic objectives 3 and 6 of the Common Strategic Framework, linked to the Union's Rural Development Priorities 3, 4 and 5 and their related Focus Areas.

In terms of financial implementation as at 31 December 2021, an amount of €2.3 million was committed, representing 81.5% of the new Programme budget. At the same time, payments amounted to more than EUR 1.8 million or about 65% of the same financial envelope.



As shown in the graph and in the following table, the theme of risk management plays a preponderant role in the NRDP, at least in terms of available resources, with Measure 17 dedicated to it absorbing almost 2.2 million euro, 81% of the Programme's total financial allocation, a large part of which is related to Submeasure 17.1. In spite of the huge financial allocation, Measure 17 shows a good degree of progress, with more than 1,672.9 million euro paid out by 31.12.2021, entirely attributable to 17.1. For the other two intervention lines activated under Sub-measures 17.2 and 17.3, no payments have been recorded.

Sub-measure 4.3, with a budget of € 343,907,163.56 (€ 154,758,223 EAFRD allocation), was launched in 2017 with the approval of the Public Notice for the selection of project proposals. The final approval of the ranking list of applications eligible for support took place in March 2019. The delay that occurred in the first phase of implementation was mainly due to the complexity that characterised the preliminary phase of the applications submitted slowed down the flow of payments. During 2021, significant progress was made in the disbursement phase of the committed resources (amounting to €336,564,166) and €90.5 million, representing 26% of the financial envelope, was paid out.

With regard to sub-measure 10.2 on the first call (1st public notice annuality 2016-2019), a total of 23 approved applications for support and a total granted contribution equal to approximately € 43 million were accepted, while for the 2nd public notice annuality 2020-2023, a total of 24 approved applications for support and a granted contribution equal to € 45 million were accepted. As of December 2021, payments amounting to more than €35.7 million had been made for an expenditure progress equal to 40% of the total endowment.

As far as measure 16.2 is concerned, in May 2019 the only application submitted named LEO project "*Livestock Environment Open data - Open data platform for Livestock*" was approved. The project, presented by AIA - Associazione Italiana Allevatori (Italian Livestock Breeders' Association), as leader of the partnership, envisages an expenditure of more than EUR 93 million, with a level of payments made as of 31/12/2021 equal to 43,599,440.60 (about 78%).

**Table 1 - Financial progress of the NDP as at 31/12/2021**

Priorities	Focus Areas	Under Measure	Budget - A	Commitments - B	Payments - C	%	%	%
			Total	Total	Total	B/A	C/B	C/A
5	5A	4.3	343.907.163,56 €	336.564.166,00 €	90.504.859,00 €	98%	27%	26%
4	4A	10.2	88.775.508,27 €	88.606.669,11 €	35.796.369,76 €	100%	40%	40%
		16.2	93.162.601,00 €	93.162.600,80 €	43.599.440,60 €	100%	47%	47%
3	3B	17.1	2.156.355.873,53 €	1.755.885.132,00 €	1.672.905.667,00 €	81%	95%	78%
		17.2	48.500.000,00 €	- €	- €	0%	0%	0%
		17.3	48.500.000,00 €	- €	- €	0%	0%	0%
<b>TOTAL</b>			<b>2.779.201.146,36 €</b>	<b>2.274.218.567,91 €</b>	<b>1.842.806.336,36 €</b>	<b>82%</b>	<b>81%</b>	<b>66%</b>

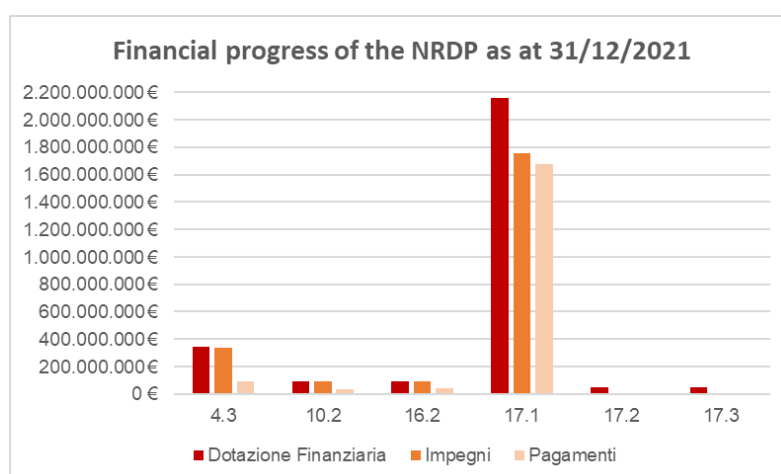
Source: PSRN monitoring system

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## 1.2 Supporting corporate risk prevention and management

Sub-measure 17.1, which encourages the take-up of insurance instruments through a contribution to the cost of the policy and targeted information and dissemination actions, absorbs the bulk (87%) of the resources programmed for Measure 17 and about two-thirds of the total resources available to the Programme.

The state of implementation of Sub-measure 17.1 as at 31.12.2021 shows more than 1,058,000 applications accepted for funding, for a granted amount of almost 1,756 million euro; the total number of paid applications is 994,364, for 1,672.9 million euro of granted contribution.

The evaluation project therefore, recognising the great strategic importance of the issue of risk management, prepared a specific in-depth study on the analysis of the effects of adherence to subsidised agricultural insurance on business competitiveness.

The in-depth study carried out showed that, for all the areas and production sectors considered, the beneficiary companies of Sub-measure 17.1 have a larger operational and economic size than non-beneficiary companies, are more capitalised, efficient and inclined to invest.

Farms that continuously adhere to Sub-measure 17.1 show positive trends in farm turnover, despite operating in areas heavily damaged by adverse weather events; on the contrary, farms that do not make use of subsidised insurance show stagnating or even declining turnover (in the case of permanent crops) in the period considered.

The effect brought about by the public contribution through Sub-measure 17.1 is between EUR 14,500 per horticulture holding and EUR 25,000 per wine-growing holding.

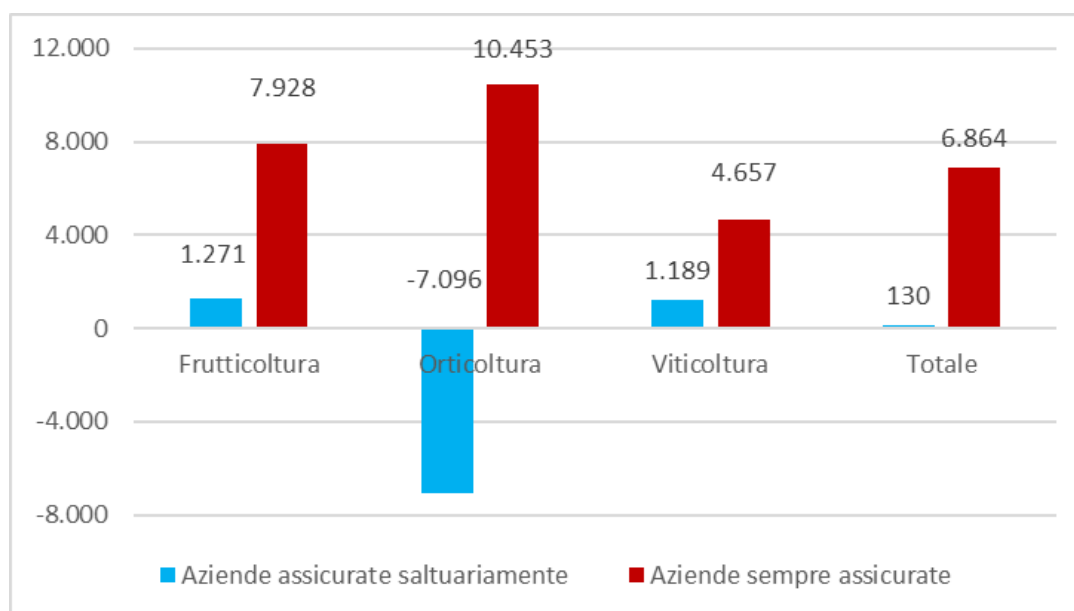
The contribution granted through Sub-measure 17.1 also determines a 'leverage effect', i.e. how many euros of additional annual company turnover are activated for each euro spent through Sub-measure 17.1: the values are shown in the table below.

For each farm operating in one of the three macro-sectors analysed, about 13,000 euro of contribution is granted, with a net effect on farm turnover of about 22,000 euro. The leverage effect is therefore 167%: for each euro of public contribution granted under sub-measure 17.1, the company's PLV increases by 1.67 euro.

The support offered by Sub-measure 17.1 has direct effects on the business turnover of the beneficiaries and at the same time, of course, impacts on business productivity.

The following graph shows the changes in productivity (company turnover per labour unit) determined by whether or not the subsidised policies were adhered to, broken down by macro-crop analysed.

**Graph 1 - Variation in farm productivity (PLV/ULT) over the period 2015/2018 broken down by crop and between farms participating and not participating in Submeasure 17.1**



Source: evaluator's elaborations on data from PSRN monitoring system and FADN sample

The farms that are always insured all show improvements in productivity, ranging from around +5,000 euro/ULT to +10,000 euro/ULT depending on the sector considered, with the most positive effect noted for processing tomatoes. Holdings that make only occasional use of Submeasure 17.1, on the other hand, show stagnating or even declining productivity (horticulture).

### 1.3 Support for more efficient use of water in agriculture

The intervention line dedicated to the efficiency of the irrigation resource is sub-measure 4.3, which finances interventions aimed at recovering the efficiency of the existing infrastructures (networks and reservoirs), at the realisation of new accumulations, as well as at the re-use of wastewater for irrigation purposes. The sub-measure contributes to guaranteeing a greater availability of resources with the same amount of withdrawals, protecting water bodies on the one hand and guaranteeing irrigation activity also in periods of scarcity on the other, safeguarding the competitiveness of national agricultural and zootechnical production and the production chains connected to them thanks above all to the greater profitability of irrigated cultivation systems and to the greater qualitative and quantitative stability of the products obtained through irrigation.

In March 2019, on the basis of the financial availability foreseen for the Sub-Measure, the final ranking list was published, from which 46 applications were eligible, while 19 applications were accepted for funding, for a total amount of €272,761,773.80.

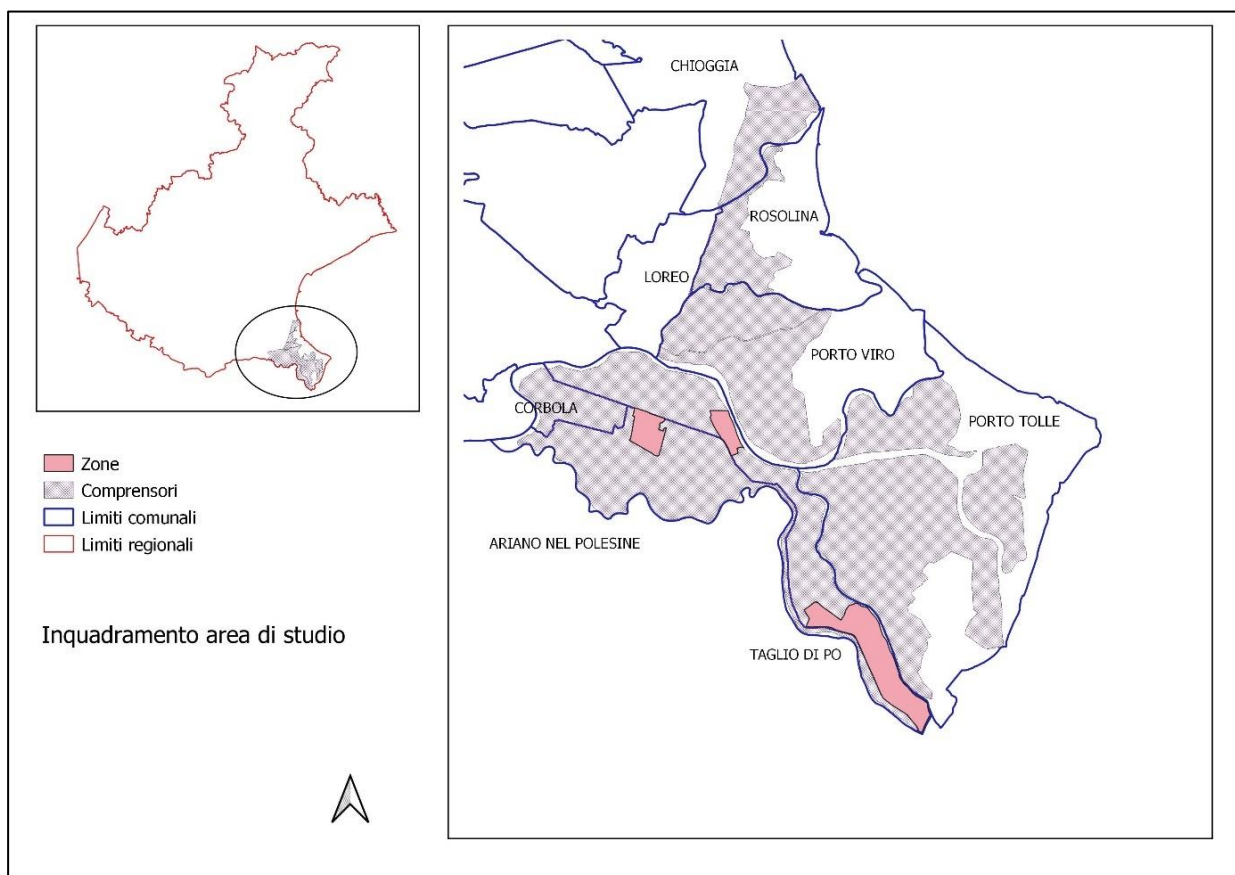
Thanks to the increase in the Measure's budget, which rose from €291,000,000 to €369,907,163.56, the granting decrees were issued for a further 9 applications in the ranking list, for a total granted amount of €356,134,173.90 and for a total of 45 financed projects.

The evaluation analyses focused on estimating the increase in agricultural water use efficiency in projects supported by Measure 4.3 of the NRDP expressed in m<sup>3</sup>/€ and calculated through the ratio of irrigation volume to production value.

Considering that the interventions have not yet been concluded, in order to anticipate the estimation times of the indicator, it has been agreed with the MA to calculate the indicator in an irrigation Authority beneficiary of the measure that presents an irrigation district that has already undergone the conversion from canals to pipelines ("with" situation) while the district subject to intervention, but where the works have not yet been concluded and therefore the water distribution is still through canals is considered "without" intervention.

The choice of the areas under analysis falling within the irrigation district of the Consorzio di Bonifica Delta Po was made in consideration of the fact that the year taken as the reference drought year is 2017.

**Figure 1- Overview of the study area**



The yield estimation was carried out through the use of the TETHYS system, a computer application developed by the proponent, which allows the quantification of evapotranspiration, biomass and yield of agricultural crops through the processing of satellite images and weather and soil data.

In total, an area of 523 ha was analysed, 50% of the total area of the three crops in the three zones: of these, 356 ha were maize (90% of the total), 127 ha soya (33% of the total) and 40 ha beet (15% of the total).



For maize, yields for the counterfactual were 23% lower than the factual, similarly, soybean was -20%, while for beet, there did not seem to be a significant difference between factual and counterfactual only -4%.

**Table 3 - Yields obtained in areas with and without intervention - territorial analysis**

Culture	With and without intervention	Biomass	Yield	Irrigation volume
		kg/ha s.s.		m3/ha
Corn	Without intervention	13.542	6.386	2.721
Corn	With intervention	17.399	8.247	3.357
<b>Difference</b>		<b>-22%</b>	<b>-23%</b>	<b>-19%</b>
Soya	Without intervention	7.352	2.835	3.362
Soya	With intervention	8.739	3.528	3.753
<b>Difference</b>		<b>-16%</b>	<b>-20%</b>	<b>-10%</b>
Beetroot	Without intervention	13.034	10.495	3.226
Beetroot	With intervention	13.570	10.926	3.399
<b>Difference</b>		<b>-4%</b>	<b>-4%</b>	<b>-5%</b>

Source: evaluator elaborations with Tethys system

The results show that in the zone "without" intervention for maize and soya there was a drop in yield of more than 20%, probably due to a lower availability of water, which for maize was estimated at 19% and for soya at 10%. For beet the results seem less evident, the differences in yields between actual and counterfactual are very small, as are the irrigation volumes; this result is probably attributable to the small surface area analysed for the actual, only 9 hectares, which does not allow a solid analysis to be carried out and a judgement to be made on the results.

Using the yield differential obtained from the comparison between the areas 'with' and 'without' intervention and the counterfactual areas and the statistical information periodically collected by ISMEA as part of the agricultural and agri-food market observatory, it is possible to derive the increase in the value of production that will be obtained, in a drought year, as a result of the modernisation of the consortium distribution network.

Overall, the economic benefit of the intervention is almost 187,000 Euro. It should be noted that the ratio of irrigation volume drawn on the value of production goes from 16.4 m<sup>3</sup>/€ in the situation without intervention to 10.2 m<sup>3</sup>/€ in the situation with intervention with an increase in water use efficiency of 38%.

**Table 4 - The ratio of irrigation volume drawn on the value of production (m3/€) "without" and "with" intervention**

	Without Intervention	With intervention	Difference	
			absolute	%
Withdrawal (m3)	22.077.306	15.651.321	-6.425.985	-29,1%
Value of production (€)	1.348.902	1.535.889	186.988	13,9%
<b>ratio of irrigation volume drawn on production value (m3/€)</b>	<b>16,4</b>	<b>10,2</b>	<b>-6,2</b>	<b>-37,8%</b>

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## 1.4 Supporting the restoration, preservation and enhancement of biodiversity

The operational strategy of the PSRN concerning the preservation and improvement of biodiversity is implemented through M 10.2 and M 16.2, which are linked by close synergy. While the former involves the Breeders' Associations in the identification and collection of phenotypic and genetic indexes that can provide specific information on the animals bred, M 16.2 centralises this information, making it available to operators in the sector.

The objective of sub-measure 10.2 is the preservation and characterisation of the animal genetic heritage and the maintenance of genetic variability through a series of actions aimed at the characterisation, collection and sustainable use of genetic resources in agriculture, in order to know and valorise their genetic uniqueness and their current and future production potential.

The Genetic Improvement of Livestock and Animal Biodiversity is one of the three main lines of intervention of the NRDP, which must act in synergy with the regional RDPs, ensuring the coherence and complementarity of the strategy and measures implemented.

As far as sub-measure 16.2 is concerned, the LEO (Livestock Environment Opendata - Livestock Environment Opendata Platform) Project aims to respond to all the objectives indicated in the sub-measure through a series of coordinated and synergic actions planned over 6 years of activity and organised with a strict interoperable and sequential logic.

The LEO Project consists of five actions, which in turn are divided into a total of 21 tasks.

- Action 1: Identification of new parameters and their validation
- Action 2: Data collection and production
- Action 3: Data Validation
- Action 4: Development of open data platform
- Action 5: Dissemination activities

In 2021, in line with the project timeline, the first version of the open database, which makes available an initial set of data collected by the project, went online. The database home page can be accessed via the LEO project website at the following link: [www.leo-italy.eu](http://www.leo-italy.eu).

The new IT platform, accessible in open data mode, once completed and integrated with the information made available through application cooperation, will make available data and/or information useful to farm advisors, breeders, Public Administrations and operators in the sector, including Breeders' Bodies (as defined by Article 2, point 5 of Regulation (EU) 2016/1012) that use this information to fine-tune their genetic indexes, also aimed at improving the quantity and quality of livestock production.

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### 1.4.1 In-depth analysis of M 10.2 projects in the sheep and goat sector and for the pig sector

In agreement with the Ministry structures in the RAV, the projects financed by submeasure 10.2 in the sheep and goat sector (1st Notice: Conservation, Health and Efficiency Empowerment of Small Ruminant, CHEESR and 2nd Notice: Sustainability Health

Environment Economy Profitability & Genomic Organisation Animal (pheno)Typing (SHEEP&GOAT) and pig sector (1st Notice: Sustainable Environmental Swine Farming, SUIS, 2nd Notice: Sustainable Environmental Swine Farming, SUIS2) and some evaluative considerations are proposed concerning the results achieved by the funded activities and their impact with respect to the set objectives.

The sheep and goat sector projects (financed through the 1st and 2nd Public Notice), were presented by the **National Sheep and Goat Association (AssoNaPa)**.

**The projects Conservation, Health and Efficiency Empowerment of Small Ruminants, (CHEESR) and Sustainability Health Environment Economy Profitability & Genomic Organisation Animal (pheno)Typing (SHEEP&GOAT)**

*Table 5 - Summary of some CHEESR Project IOVs*

Project	N. Genetic characterisations	N. Phenotypic characterisations	Collection of biological material and germplasm: no. of samples of biological material or germplasm
1st Notice - CHEESR Project	6.081	4.447	1.025

- ✓ The common goal of the projects is to improve the sustainability and competitiveness of the sector and to safeguard the genetic heritage.
- ✓ Ten genetic types present in Italy were researched: Sardinian Sheep, Istrian Sheep, Comisian Sheep, Massese Sheep, Langhe Sheep, Fabrianese Sheep, Apulian Gentile Sheep, Camosciata delle Alpi, Garganica Goat and Nicastrese Goat.
- ✓ The project activities refer to the collection and use of phenotypic and molecular data and the creation of a biobank to safeguard the genetic resources in the area.
- ✓ Inbreeding in sheep and goat populations was monitored and genetic progress was achieved through the development of 11 genetic/genomic indices
- ✓ The collection of parameters relating to animal health and susceptibility to disease (reduced morbidity, improved product health, reduced use of

antimicrobials) has improved parameters relating to animal health and welfare

- ✓ The achievement of the project objectives is monitored through Objectively Verifiable Indicators (IOVs).
- ✓ Through the analysis of the progress reports, the evaluator collected and systematised the main IOVs foreseen by the project, grouping them by the types of actions foreseen.

Projects in the pig sector (financed through the 1st and 2nd Public Notice), were presented by the **National Association of Pig Breeders (ANAS)**.

**1st Notice: Sustainable Environmental Pig Farming, SUIS, 2nd Notice: Sustainable Environmental Pig Farming, SUIS2**

**Table 6 - Summary of some IOVs of the SUIS Project**

Project	No. genetic characterisations	No. phenotypic characterisations
SUIS Project	1.133	3.910

- ✓ The project aims to describe, characterise and valorise the traditional native breeds for heavy pig production (Large White Italian, Landrace Italiana, Duroc Italiana) the 'endangered' native breeds (Apulo Calabrese, Casertana, Cinta Senese, Nero Siciliano, Mora Romagnola and Sarda) and the 'synthetic' breed Nero di Parma
- ✓ All priority objectives of M 10.2 are considered: animal welfare, environmental impact, disease resistance, biodiversity
- ✓ The achievement of the project's objectives is monitored through the Objectively Verifiable Indicators (IOV).
- ✓ Through the analysis of the progress reports, the evaluator collected and systematised the main IOVs foreseen by the project, grouping them by the types of actions foreseen.

The evaluative analysis on the effectiveness of project activities for the sheep and goat and pig sectors financed by Sub-measure 10.2 was carried out considering:

- the Objectives foreseen in general in Measure 10 and in particular in Submeasure 10.2:
- the specific objectives indicated by the two projects under analysis.

These criteria were then used to formulate the overall judgement, which was developed using specific Judgement Criteria.

**Table 7 - Analysis of Achievement of Objectives and Related Judging Criteria**

Target set	Judgement criterion
To what extent has it contributed to the preservation and improvement of livestock biodiversity of interest to livestock?	Morphological and genetic characteristics were identified and genetic and genomic indices, mating plans and reproductive management were estimated
To what extent has it been possible to conserve and valorise Animal Genetic Resources of Livestock Interest (RGAiz)?	The existing livestock gene pool has been valorised
	Inbreeding has been restricted



Target set	Judgement criterion
To what extent are initiatives to ensure animal health and welfare supported?	Breed-specific genetic traits related to the most common diseases have been identified
	Breed-specific behavioural characteristics have been identified
To what extent has a lower impact on the environment and climate been achieved?	The morphological and genetic characteristics identified have made it possible to reduce the environmental impacts related to livestock activity
To what extent were the accompanying actions effective?	Information, dissemination, training, consultancy and the preparation of thematic technical reports and technical-scientific reports have made it possible to effectively reach out to operators in the sector

For the projects financed for the sheep and goat and pig sectors (CHEESR, SHEEP&GOAT, SUIS and SUIS 2 projects), the results achieved were analysed not only from the point of view of the adherence of the activities carried out with respect to the budgeted amount, but also with respect to the achievement of the objectives set out in M 10.2 and the individual projects.

Through the use of appropriate Judgement Criteria, the effects of the activities carried out until the end of 2021 were then defined:

- *Activity Progress*: Both Projects concluded the activities related to the 1st Public Notice and started those related to the 2nd Public Notice. For the SUIS Project, the progress of activities also made it possible to submit a first application for funds related to the new component;
- *Conservation and valorisation of Animal Genetic Resources of Livestock Interest (RGAiz) and control of inbreeding*: for the pig sector, characterisation of the predisposition to lean meat production and improvement of the accuracy of genetic value estimation through a new Genomic Fertility Index has been achieved. For the sheep and goat sector, the control of inbreeding in sheep and goat populations and genetic progress was pursued through the development of 11 genetic/genomic indices;
- *Animal Health and Welfare*: parameters related to animal health and disease susceptibility were collected (reduced morbidity, improved product health, reduced use of antimicrobials);
- *Environmental impact reduction*: for the pig sector, a specific analysis was carried out on the subject, through the verification of the ICA (Food Conversion Index). For the sheep and goat sector, the activity had a more indirect character, through the overall improvement of production performance.