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Rome, May 2023

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 (2023)

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MONITORING & EVALUATION

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 2023 and returned in the annual evaluation report.

1 Annual Evaluation Report (AER) of the National Rural Development Programme (NRDP) for the year 2022

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 31/12/2022.

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.

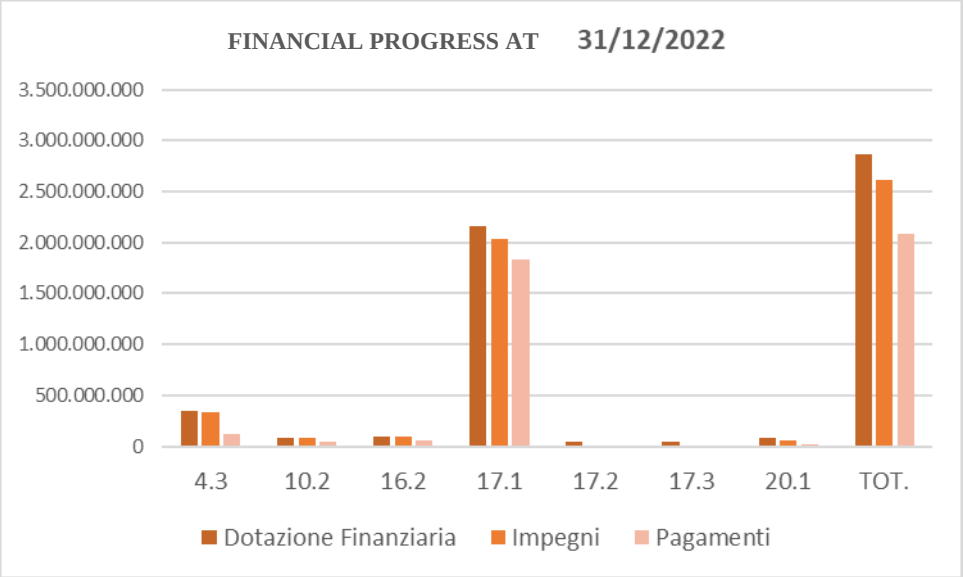
1.1 The Status of Programme Implementation

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 2022, an amount of €2.611.989.285,01 was committed, representing 91,3% of the new Programme budget. At the same time, payments amounted about 73% 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 1.831 million euro paid out by 31.12.2022, 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, 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 2022, significant progress was made in the disbursement phase of the committed resources (amounting to €339.303.495,70) and €124 million, representing 36% 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 2022, payments amounting to more than €50,9 million had been made for an expenditure progress equal to 57% 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 31/12/2022 equal to 56.897.099,83 (about 61%).

Table 1 - Financial progress of the NDP as at 31/12/2022

Priorities	Focus Area	Under Measure	Budget - A	Commitments - B	Payments - C	%	%	%
			Total	Total	Total	B/A	C/B	C/A
5	5A	4.3	343.907.164	339.303.495,70	124.008.559,24	99%	37%	36%
4	4A	10.2	88.775.508	88.606.466,15	50.944.388,31	99,80%	57%	57%
		16.2	93.162.601	93.162.600,80	56.897.099,83	100%	61%	61%
3	3B	17.1	2.156.355.874	2.036.834.097,01	1.831.253.019,72	94%	90%	85%
		17.2	48.500.000	-	-	-	-	-
		17.3	48.500.000	-	-	-	-	-
			20.1	81.088.889	54.082.625,35	20.315.775,48	67%	38%

Source: PSRN monitoring system

1.2 Supporting corporate risk prevention and management

The NRDP responds to risk factors for national agricultural production through Measure 17 'Risk Management', with a budget of 2,156,355,873.53 euro, which aims to promote the supply and use of risk management tools in agriculture through different lines of action

- sub-measure 17.1, aimed at strengthening, developing and extending an already existing system of support for subsidised agricultural insurance;
- sub-measure 17.2, which aims to introduce mutual funds for adverse weather, animal and plant diseases, pest infestations and environmental emergencies;
- sub-measure 17.3, which supports income stabilisation tools based on mutuality between farmers, such as the Income Stabilisation Tool (IST).

A large part of the financial endowment of Measure 17 pertains to Sub-measure 17.1, activated through the issuing of annual public notices: the state of implementation of Sub-measure 17.1 as at 31.12.2022 shows more than one million applications accepted for funding, for a granted amount of more than 2 billion euro; the total applications paid out are more than 1.1 million, for almost 1.9 billion euro of contribution paid out.

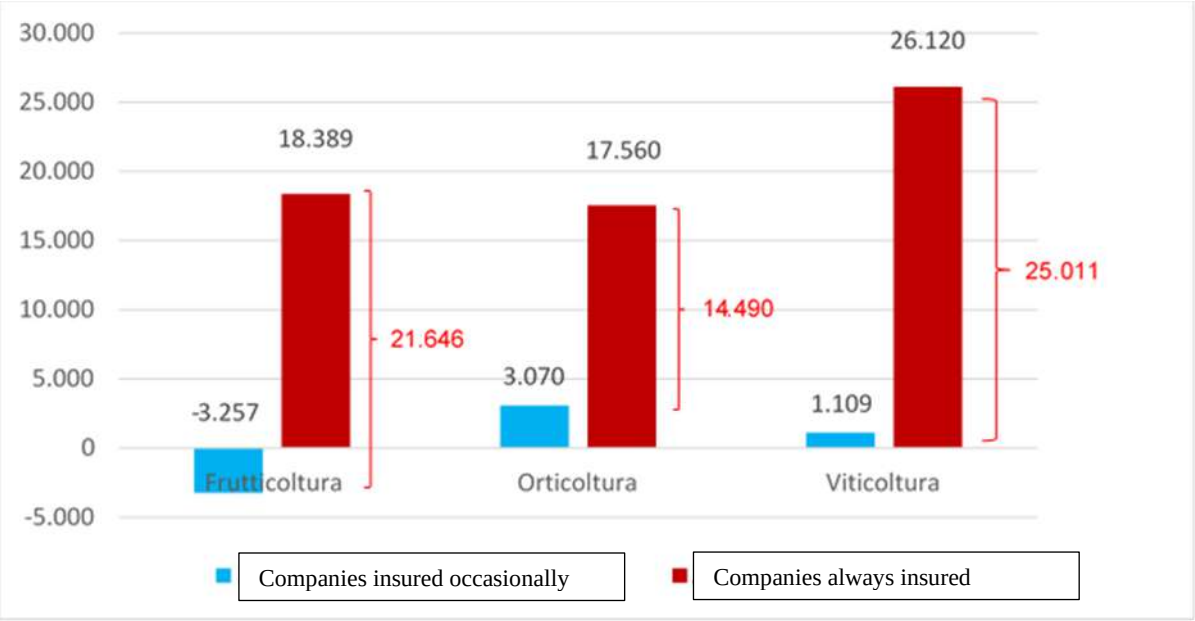
The in-depth study carried out on the effects of the support and subsidised insurance on business competitiveness has shown that, for all the production areas and sectors considered, the companies benefiting from Sub-measure 17.1 have a larger operational and economic size compared to non-beneficiary companies, and are more capitalised, efficient and inclined to invest. The adhesion to Sub-measure 17.1, and therefore the collection of insurance compensation, seem to have on the whole contributed to maintaining high levels of productivity and sustained rhythms of growth, in contrast to the much more modest economic performance recorded in the non-insured farms.

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 have recourse to subsidised insurance show a stagnant or even declining turnover (in the case of permanent crops) in the period considered.

The net effect determined by the public contribution granted through Sub-measure 17.1, obtained by combining the change in turnover of the 'factual' holdings (beneficiaries of the NRDP) and that recorded in the 'counterfactual' sample (holdings not beneficiaries of the

NRDP), is therefore between 14,500 euro per horticulture holding and 25,000 euro per vine-growing holding.

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 support offered by Submeasure 17.1 determines direct effects on the business turnover of the beneficiaries, but at the same time obviously has an impact on business productivity, which registers a net improvement of about 9% in the beneficiary companies, contributing substantially to better risk management and to the economic sustainability of the companies.

On the other hand, with regard to Sub-measures 17.2 and 17.3, which were activated with the aim of increasing the number of companies adhering to risk management tools and helping to reduce territorial differences, as at 31.12.2022 the preliminary activities for

- 5 mutual funds (Submeasure 17.2), of which:
  - 2 mutual funds for plant diseases,
  - 1 mutual fund for wine grape plant diseases,
  - 1 mutual fund for plant diseases of arable crops,
  - 1 mutual fund for climatic and sanitary risks.
- 6 IST funds (Submeasure 17.3), of which:
  - - 3 bovine milk IST funds,
  - - 2 IST Apple funds,
  - - 1 Fruit and Vegetable IST fund.

Sub-measures 17.2 and 17.3, due to the long delays suffered at the start-up, but also to the innovative character that characterises them, have not yet recorded payments as at

31.12.2022. Having almost reached the end of the programming period, the expenditure targets envisaged for the two sub-measures will therefore presumably not be met. The changes to the NDP proposed in March 2023, which concern among other things a shift of resources of 40 million euro from sub-measures 17.2 and 17.3 to sub-measure 17.1, are in line with this trend. These risk management tools, which are particularly innovative, have therefore shown an overall lack of attractiveness towards potential demand for intervention, which has also been hampered by delays in the start of the application collection phase.

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), the realisation of new accumulations, as well as 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, on the one hand, the water bodies and guaranteeing, on the other, the irrigation activity also in periods of scarcity, safeguarding the competitiveness of national agricultural and zootechnical production and the production chains connected to them thanks, above all, to the greater profitability of the irrigated cultivation systems and to the greater qualitative and quantitative stability of the products obtained through irrigation.

The sub-measure, with a financial allocation of almost 344 million euro, was launched in 2017 with the approval of the public notice for the selection of project proposals. The technical-administrative appraisal procedure verified the admissibility of the applications for support submitted for a total of 84 applications involving 125 projects and approximately EUR 1,003 million in total support requested.

As at 31 December 2022, advances had been disbursed for a total of 26 applications, amounting to over 82.4 million euro, and 22 applications for work progress, amounting to 41.6 million, for a total disbursed amount of 124 million euro.

Overall, the area covered by the investments promoted by sub-measure 4.3 for the irrigation efficiency of the consortia amounts to 546,072 hectares and corresponds to 17.7% of the national served area. The real water savings achieved by the investments, i.e. the volumes of water that are no longer withdrawn, amount to 36.5 Mm3. These savings are quite limited, amounting to only 0.17% of withdrawals. Most of the savings declared by the beneficiaries are potential, i.e. they will be used to fully meet crop water requirements and thus to make the irrigated areas served more efficient. This volume totals 235 Mm3 (1.1% of total withdrawals).

The evaluation analyses focused on the estimation of the increase in the efficiency of water use in agriculture in the projects supported by Measure 4.3 of the NRDP expressed in m3/€ and calculated through the ratio of the irrigation volume on the production value.

Considering that the interventions have not yet been concluded, in order to anticipate the estimation time of the indicator, and to provide the first evaluation indications in useful times also in view of the new programming, it has been agreed with the MA to calculate the indicator R13 in an irrigation body beneficiary of the measure that presents an irrigation district that has already undergone the conversion from canals to pipelines ("with" or "factual" 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.

On the basis of the data provided by the Consorzio di Bonifica Delta del Po on the water balance of the study area, it was possible to estimate indicator R13 "Increase in the efficiency of water use in agriculture". It was possible to calculate:

- the "real" water saving achieved by the intervention i.e. the volume that is no longer withdrawn, equal to 6.4 million m3 or 29% of the withdrawal,
- the "potential" water saving, i.e. the volume that will be used to fully satisfy the water requirements of the crops and therefore to make the irrigated areas served more efficient, 418,015 m3 equal to an increase of 15%, which when added to the "real" saving leads to a total saving of 6.84 million m3 31% of the withdrawal "without" intervention,
- the reduction of losses obtained from the efficiency of the consortium distribution network equal to 3.88 million m3 35% compared to the situation "without" intervention,
- an increase in the value of production of 186,988 (+14%).

Table 2 - The water balance of the Ca' Lattis area "without" and "with" intervention and calculation of indicator R13 "Increasing the efficiency of water use in agriculture".

Variables	Without intervention	With intervention	Difference	
			Absolute	Percentage
Withdrawal (m3)	22.077.306	15.651.321	-6.425.985	-29%
Dispersion along main and farm network (m3)	11.256.148	7.367.366	-3.888.782	-35%
Irrigation volume or requirement (m3)	2.845.567	3.263.582	418.015	15%
District and company release (m3)	7.975.590	5.020.373	-2.955.217	-37%
Distribution network efficiency	49%	53%		
Value of production (€)	1.348.902	1.535.889	186.988	14%
Indicator R13 (m^3/€)	**16,37**	**10,19**	**-6,2**	**-38%**

Source: evaluator elaborations on data provided by the Consorzio di bonifica Delta Po

The combination of the effects of the intervention on the reduction of withdrawals and the increase in the value of production determines the quantification of indicator R13. Overall, it is noted that the indicator goes from 16.4 m3/€ GSP (gross saleable production) in the situation without intervention to 10.2 m3/€ GSP in the situation with intervention, i.e. the quantity of withdrawn water needed to produce one € of GSP is reduced by 6.2 m3 with an increase in water use efficiency of 38%.

1.4 Supporting the restoration, preservation and enhancement of biodiversity

The operational strategy of the NRDP 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 2022, in line with the project timeline, activities continued to implement and update the data in the aforementioned open BD. With Ministerial Decree No. 461943 of 23 September 2022, the following methods were also defined for accessing and downloading data from the BD-LEO:

- open (free access): data are available both on the individual animal, anonymised in compliance with current privacy regulations, and aggregated at farm level; furthermore, data are broken down by province and region and characterised by species and breed;
- accredited (qualified access): allows the breeder and the farm consultant, previously authorised by the same breeder through a specific computer procedure, to download the data, disaggregated, of the individual animals present on their farm.

Access to the database is through the LEO project website at the following link: www.leo-italy.eu.

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 sub-measure 10.2 in the equid sector (1st Notice: EQUINBIO project and 2nd Notice: EQUINBIO.2 project "Innovation and Biodiversity for Equids") and the rabbit sector (1st Notice: CUN-FU Project and 2nd Notice: CUN-FU Project 2 - The rabbit farming of the future: "Focus on Biodiversity, Welfare and Sustainability of Italian rabbit farms) and some evaluation considerations are proposed concerning the results achieved by the financed activities and their impact with respect to the set objectives.

The projects in the equidae sector were presented by a Temporary Purpose Association comprising the following Associations:

- ASSOCIAZIONE NAZIONALE ALLEVATORI CAVALLI RAZZA HAFLINGER ITALIA (ANACRHAI),
- ASSOCIAZIONE NAZIONALE ALLEVATORI DEL CAVALLO AGRICOLO ITALIANO DA TIRO PESATE RAPIDO (ANACAITPR),
- ASSOCIAZIONE NAZIONALE ALLEVATORI CAVALLO MAREMMANO (ANAM),
- ASSOCIAZIONE NAZIONALE ALLEVATORI RAZZE EQUINE ED ASININE ITALIANE (ANAREAI)

Project EQUINBIO "Innovazione e Biodiversità per gli equidi"

Table - Summary of some IOVs of the Progetto Equinbio

Project	No. genetic characterisations	No. phenotypic characterisations	Collection of biological material and germplasm: no. of samples of biological material or germplasm
***ANACRHAI* -Razza Haflinger**	56 Genomic analyses 65k GGP+ 153 DNA analysis	220	403
***ANACRHAI* - Razza Noriker**	40 Genomic analyses 65k GGP+ 35 blood analysis	46	110
ANACAITPR – Cavallo Italiano Tiro Pesante Rapido	16.888	1.620	226
ANAM – Razza Maremmana	35	106	198
ANAREAI - RAZZE EQUINE ED ASININE ITALIANE	232	1.942	358

- ✓ The aim of the project is to safeguard and contribute to the numerical conservation and expansion of the genetic heritage of equids in a national context for the breeds involved in the project, safeguarding the biodiversity and genetic variability of the horse and donkey breeds involved in the project
- ✓ Numerous national and local breeds of horses and donkeys were researched: Haflinger, Noriker, Cavallo Italiano Tiro Pesante Rapido, Maremmana, Bardigiano, plus 27 other local horse and donkey breeds
- ✓ Phenotypic and genetic characterisation, identification of genetic resistance traits, development of new genetic indexes, management of the information acquired and subsequent dissemination, as well as control station trials for some of the breeds involved were carried out.
- ✓ The objectives pursued by the various projects are manifold, from selection for subjects intended for recreational-sports use and promotion of rural areas, - agri-tourism and equestrian tourism activities - (Haflinger breed) to the proposition as a valid strain for amateur activity with attacks or in dedicated sports circuits, to niche agricultural work in the organic or eco-sustainable sector, to mule production as a maternal base (CAITPR), to the transfer of athletic quality, elasticity and effective sporting gestures (Maremmano), to the maintenance of

	the current population and the simultaneous improvement and preservation of the same (ANAREAI) ✓ Through the analysis of the progress reports, the evaluator collected and systematised the main IOVs envisaged by the project, grouping them by the types of actions envisaged.

The projects in the rabbit sector (financed through the 1st and 2nd Public Notice), were presented by the Associazione Nazionale Coniglicoltori Italiani (ANCI).

2nd Notice:

Table - Summary of some IOVs of the CUN FU 2 Project - The rabbit farming of the future: 'Focus on Biodiversity, Welfare and Sustainability of Italian rabbit farms'

Project	No. genetic characterisations	No. phenotypic characterisations
Project CUN FU 2	384	502

✓ The main objective of the project is the conservation of biodiversity, breeding sustainability, welfare, phenotypic and genomic data collection and genetic improvement, together with the evaluation of the economic-ethical-environmental impact as the focus of the project activity

✓ The actions are aimed at carrying out synergic actions aimed at the phenotypic, genetic and genomic characterisation of Italian rabbit breeds with the general objective of assessing and conserving biodiversity and improving the productive and reproductive performance of rabbits in breeding, with particular regard to animal welfare issues and the reduction of environmental impact, evaluating the economic, ethical and environmental aspects of the various activities

✓ The project activities focus on all recognised rabbit breeds, including both native genetic types 'TGA' and cosmopolitan breeds belonging to the class 'other types'.

✓ Through the analysis of the progress reports, the evaluator has collected and systematised the main IOVs envisaged by the project, grouping them by the types of actions envisaged.

The evaluation analysis on the effectiveness of project activities for the equine and rabbit sectors financed by Submeasure 10.2 was carried out considering

- the Objectives foreseen in general by Measure 10 and in particular by 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 2 - Analysis of Achievement of Objectives and Related Judging Criteria

Obiettivo prefissato	Criterio di giudizio
To what extent has it been possible to contribute to the preservation and enhancement of livestock biodiversity of livestock interest?	Morphological and genetic characteristics were identified and genetic and genomic indexes, mating plans and reproductive management were estimated
To what extent has it been possible to conserve and enhance Animal Genetic Resources of Livestock Interest (RGAiz)?	Existing breeding stock was enhanced
	Inbreeding has been limited
To what extent are initiatives to ensure animal health and welfare supported?	Breed-specific genetic characteristics relating to the most common diseases were identified
	Breed-specific behavioural characteristics have been identified
To what extent has it been possible to achieve a reduced impact on the environment and climate?	The morphological and genetic characteristics identified have made it possible to reduce the environmental impacts linked to livestock activity
To what extent have accompanying actions been effective?	The information, dissemination, training, consultancy and preparation of thematic technical reports and technical-scientific reports have made it possible to effectively reach operators in the sector

For the Projects financed for the equine and rabbit sectors (EquinBio and CUN FU 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 activities, 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 2022 were then defined:

- Progress of activities: All the Projects concluded the activities related to the 1st Public Notice and started those related to the 2nd Public Notice;
- Contribution to the preservation and improvement of zootechnical biodiversity of zootechnical interest: For the equids sector, both nationally widespread breeds and numerous local breeds, horses and donkeys were considered. For the rabbit sector, the main breeding breeds, both 'cosmopolitan' and TGA (Autochthonous Genetic Types) were involved. The genetic heritage to be preserved is therefore very varied and important, linked to both the various productive uses (especially for rabbits) and recreational activities (for equids). Activities have been carried out to recover and catalogue genetic material, enabling even breeders of 'minor' breeds to select reproducers with an appropriate scientific knowledge base.
- Conservation and valorisation of Animal Genetic Resources of Zootechnical Interest (RGAiz) and containment of inbreeding: the programme for the detection of the main genetic and functional characteristics, with the collection of numerous Genetic Indexes, has provided specific indications on the various production parameters (especially for the rabbit sector) and behavioural parameters (for equids). The development of systems capable of accurately identifying the degree of inbreeding has also contributed to limiting this phenomenon and avoiding the negative consequences associated with the manifestation of certain diseases.
- Animal Health and Welfare: for equids, resistance to diseases and resilience to environmental and specific breeding conditions (Warmblood Fragile Foal Syndrome,

osteochondrosis, laryngeal hemiplegia and others) was analysed, also through the identification of particular phenotypic traits. For burros, the focus was on diseases such as foot sores, genetic resistance to megacolon, dwarfism, ear and dental diseases and the 'yellow fat' genetic defect.

- Environmental impact reduction: although this aspect does not constitute a specific priority for the projects implemented, the impacts on the environment and climate are mainly - albeit indirectly - linked to improved production performance (improvement of the Food Conversion Index, FCI), which also leads to a reduction in effluents and thus nitrogen and carbon in the environment. Also to be considered is the support for the diffusion of extensive type breeding and the improvement of the hardiness of the breed, which leads to a lower consumption of veterinary medicines, in particular antibiotics.
- Accompanying actions: The entire Action 10 is aimed at this purpose, with the realisation of training courses and meetings with technicians, breeders, universities, participation in various trade fairs and scientific conferences, and the elaboration of publications in the specialised press, articles, popular material, as well as for the activation and management of dedicated websites. These activities were able to be carried out almost normally, having overcome the negative impacts of the COVID found in the years 2020 - 2021.

Table 3 - Evaluation of the overall effectiveness of the interventions

Parameter	effectiveness				
	1	2	3	4	5
Safeguarding and enhancing livestock biodiversity of interest to livestock					
Enhancement of Animal Genetic Resources of Livestock Interest (RGAiz					
Animal Health and Welfare					
Reducing environmental impact					
Accompanying actions					