



Independent Evaluation Service of the Rural Development Programme 2014-2020 of the Campania Region under the European Agricultural Fund for Rural Development (EAFRD)

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MONOTHEMATIC REPORT 2022: "THE EFFECTIVENESS OF FORESTRY MEASURES IN RELATION TO TERRITORIAL POTENTIAL AND CRITICALITIES"
NON-TECHNICAL SYNTHESIS

Rome, december 2022



Fondo europeo agricolo
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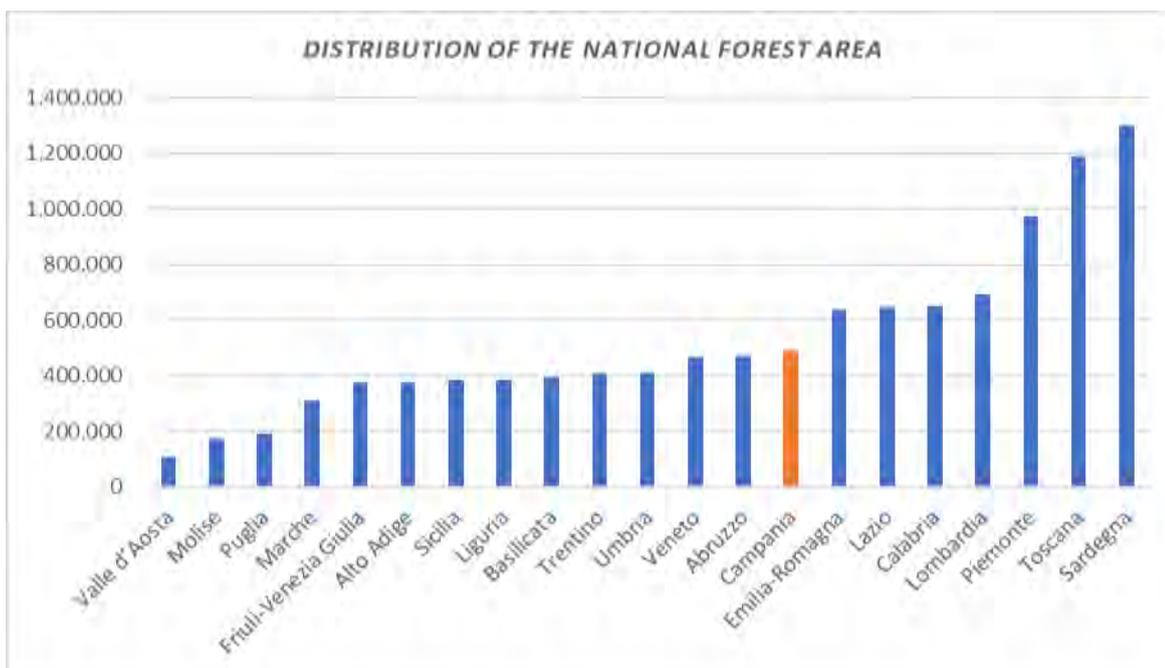
Introduction

The monothematic report is aimed at verifying the contribution of the forestry measures of the Campania RDP (M8.1.1, M8.3.1, M8.4.1, M8.5.1, M15, M16.8) to the improvement and protection of forests. The analysis provided:

- the analysis of the effectiveness of the RDP forestry measures, assuming as an assessment criterion the consistency of their territorial distribution, in relation to the different characteristics and therefore the different needs or criticalities of intervention present in the regional territory (biodiversity, erosion, hydrogeological instability and fires).
- the realization of a case study on the Vesuvius National Park Authority project that financed the forest management plan and saw the synergic and joint action of the Department of Agriculture, the Park Authority, the 13 municipalities of the Park Community and the Carabinieri Biodiversity Department of Caserta, which formed a partnership (Measure 16.8.1)
- A direct survey on all the beneficiaries of measure 16.8.1 aimed at highlighting the criticalities and advantages of the participation procedure which provided for the establishment of partnerships between different public and private subjects. The difficulties of the public beneficiaries in carrying out the tender procedures for the awarding of works, which often lead to delays in the start-up of the interventions, were also investigated.
- a counterfactual analysis comparing the territories that benefited from the measures with a positive effect on fire reduction, or that benefited the most, with the territories that did not benefit from these measures or that benefited the least
- the application of a participatory technique (focus groups) with an audience of stakeholders involved in the management of forestry measures aimed at discussing and sharing the results of the evaluation analyses

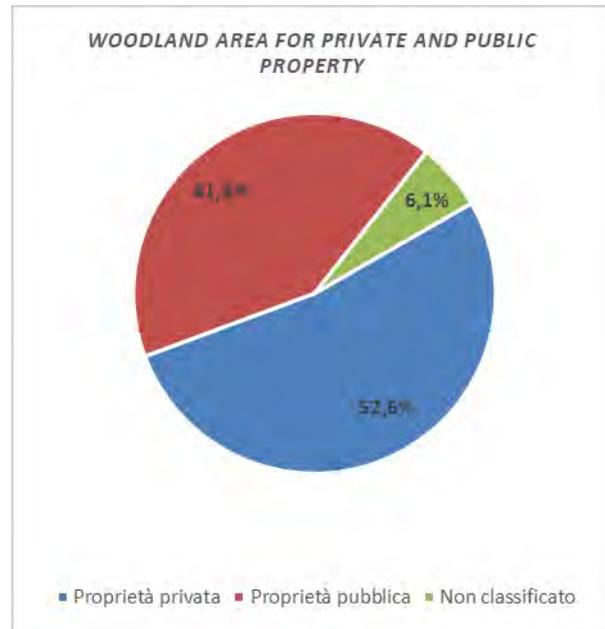
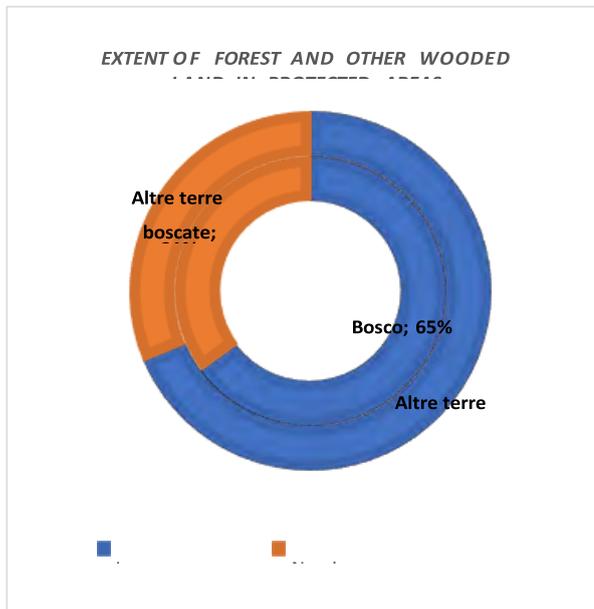
The Campania Forestry sector

The third INFC2015 national forest inventory estimated Campania's total forest area at 491,259 hectares, representing 36% of the regional territory, in line with the incidence recorded nationally (37%).



INFC2015 estimates the regional forest area in protected areas at almost 322,000 hectares (of which 262,000 hectares in Forest and almost 60,000 hectares in Other Wooded Lands), or 65.5%

of the regional forest area. This incidence is decidedly higher than the national average, which stands at 31.8%. In Campania, forest areas are mainly privately owned (52.6%).



The percentage of the woodland area with detailed plans is 21.7% in the Campania region compared to a national average of (15.3%). Furthermore, 17.6% of the woodland area is located on land with a slope greater than 60%; this value is higher than that of all southern Italian regions, confirming how important the protective function is for the region

Methodology

Spatial Elaborations and Cartographic Analyses are based on the integration ("cross-referencing") in a GIS (Geographic Information System) environment of the information deriving from the maps relating to the environmental issues analyzed with the information relating to the amounts granted and/or the areas affected by the interventions that can be obtained from the Data Banks deriving from the SIAN or from the information deduced from the regional monitoring system according to the maximum level of detail available

The following table shows the correlation between the measures and the issues considered

measure	Description	protected areas	erosion	ecological corridors	fire-affected areas	landslide hazard
M8.1.1	Afforestation of agricultural and non-agricultural land	X	X	X		
M8.3.1	Support for the prevention of damage caused to forests by fire, natural disasters and catastrophic events				X	X
M8.4.1	Support for the restoration of forests damaged by fire, natural disasters and catastrophic events				X	X
M8.5.1	Support for investments to increase the resilience and environmental value of forest ecosystems	X			Action D	Action D
M15.1.1	Payments for forest-environmental and climate commitments	X		X	X	
M16.8.1	Support for the drafting of forest management plans or equivalent instruments	X	X	X	X	X

Forestry measures and protected areas

Campania, with the establishment of two National Parks and eight Regional Parks, ranks among the first regions in Italy in terms of protected surface area, with park areas covering more than 25% of the regional territory. The territorial extension of Natura 2000 areas in the region is 367,548, which is higher than in other southern Italian regions (Calabria, Basilicata and Apulia). According to the data of the last national inventory, the wooded surface covered by protected areas in Campania exceeds 65% of the regional wooded surface compared to a national average of 32% and is equal to 257,096 hectares

Distribution of the type of intervention 8.1.1

- Good Concentration of Surface Areas and Allowed Contributions in Protected Areas: 24% of the surface areas and 26% of the allowable contributions in municipalities with a high percentage (between 80 and 100%) of surface areas in protected areas,
- Moderate concentration of surface areas and permitted contributions in ecological corridors: 7% of the surface areas and 4.8% of the permitted contributions in municipalities with an average percentage (between 60 and 80%.) of the municipal area falling in the corridors

Distribution of the type of intervention 8.5.1

- Good concentration of expenditure in protected areas, amounting to 64.4 per cent of total expenditure with a high percentage (42.2 per cent) in municipalities with more than 80 per cent of their area in protected areas, and a lower concentration of 22.7 per cent in ecological corridors

Distribution of the type of intervention 15.1

- The intervention relating to the conservation of clearings is the most widely used intervention in the region with almost 70% of the permitted areas, and in relation to this intervention about 63% of the committed area is located in municipalities with a protected area incidence between 80 and 100%.
- The intervention concerning the release of dead plants also shows a similar trend with over 78 % of the total 13,947 hectares falling in municipalities with the highest incidence of protected area.

Distribution of the type of intervention 16.8.1

- There is a good concentration, 32.3%, in municipalities with between 80 and 100% of their area in protected areas. Only 7% of total expenditure is in municipalities without surface area in protected areas
- On the other hand, the distribution of expenditure with respect to ecological corridors is different, in fact more than 54% of this is in municipalities without an area in the corridors themselves and only 4.13% of the total, of which only €56,480, falls in the area of ecological corridors

Overall there is a good correlation between all the admitted contributions (Measures 8.1.1, 15.1.1, 8.5, 16.8) favorable to biodiversity and the distribution of protected areas on the regional territory. Of the 68.6 Meuro admitted, 98% is located in municipalities with a surface area in protected areas and over 54% is located in municipalities with more than 80% of their surface area in protected areas, while only 2.29% is distributed in municipalities without surface area in protected areas.

On the other hand, the distribution of permitted expenditure in the municipalities with reference to the incidence of their surface area in ecological corridors appears to be different: in fact, about

47% are in municipalities without surface area in corridors and only 2% in municipalities with surface area in ecological corridors exceeding 80%.

Forestry measures and the risk of erosion

The Campania region is strongly affected by erosion phenomena. The provinces with the highest erosion rates are Benevento and Avellino, where average values of 14 Mg/ha/year are reached. The analysis by altitude zone shows that in general it is the hilly zone that is most exposed to erosive phenomena, due to the simultaneous presence of important climatic and morphological risk factors and the lower protection of the soil by natural vegetation, which limits the phenomenon in the mountainous area.

Distribution of the type of intervention 8.1.1

- Most of the eligible area and expenditure is located in the 94 municipalities classified with 'very high' erosion value
- In the municipalities with 'non-tolerable' erosion, the area committed is 107 hectares, 57 % of the total, while eligible expenditure accounts for more than 52 % of total expenditure.

Distribution of type of intervention 8.5.

- The distribution of eligible expenditure does not show an optimal concentration of investments in relation to erosion risk; it is evident that about 63% (€3,651,733) of the total expenditure (€5,825,238) is in low erosion areas and 30% overall in the two highest erosion classes

Distribution of the type of intervention 16.8.1

- 73% (€1,060,506) of the total eligible expenditure (€1,459,084) is in municipalities with a moderate erosion risk, while only about 14% is in the two highest risk classes.

It should be noted that, on the whole, there has not been an optimal placement of permitted expenditure for the set of forestry measures with potentially favorable effects on erosion reduction (M 8.1.1, 8.5.D, 16.8.1), in the areas at greatest risk;

Forestry measures and hydrogeological instability

The classification of municipalities in Campania according to landslide hazard classes shows that 19% of municipalities are in the very high hazard class and 15% in the high hazard class.

20% of the total municipal area is included in the high and very high hazard classes, and in total the landslide area (Attention Areas AA, Very High P4, High P3, Medium P2, Moderate P1) represents 60% of the total municipal area.

Distribution of the type of intervention 8.3.1

- The analysis of the distribution of the admitted expenditure in relation to the landslide hazard map defined by ISPRA, shows a good concentration, in fact 26% involved municipalities with very high landslide hazard and 8% municipalities with high hazard

Distribution of the type of intervention 8.4.1

Less incidental is the action of Measure 8.4, which involved a much lower total expenditure (€2,881,851) and distributed this sum over municipalities with no or low hazard classes.

Distribution of type of intervention 8.5.1 az D and 16.8.1

- Contributing to the fight against hydrogeological risk is the concentration of 33% of the eligible expenditure for Measure 16.8 in areas with the highest hazard and 14% in those with High Hazard.

- The level of concentration of Measure 8.5.D expenditure in the High and Very High Hazard areas is lower, and in fact, in the municipalities falling in the two most hazardous classes, there is an eligible expenditure of 18 % of the total Measure

On the whole, the total sums admitted for the Measures (Measures 8.3, 8.4, 8.5.D, 16.8) with positive effects on the fight against hydrogeological risk do not present an optimal territorial collocation. Of the thirty municipalities with the highest expenditure class, only five are in the high and very high hazard class. The distribution of the expenditure of the measures with a positive effect on hydrogeological instability shows how it is mainly concentrated in the attention areas and in the low hazard areas, with the exception of measure 16.8, where 47 % of the expenditure is distributed in the high and very high hazard areas.

Forestry measures and fires

In the 2010-2020 period, 23% of Campania municipalities had a forested area affected by fire of more than 20%. On the other hand, if we consider the recurrence of events, we find that 8% of Campania municipalities, in the 2010-2020 decade, recorded a number of fires exceeding 40 and 13% a number of fires between 20 and 40; only 20% of Campania municipalities were not affected by fires in the period considered.

Distribution of the type of intervention 8.3.1

- it is noted that 53% of expenditure is concentrated in municipalities where fires were less widespread (between 0 and 5% of the area covered by fire) and characterised by lower frequency during the 2010-2020 decade

Distribution of the type of intervention 8.4.1

- it is noted that a large part of the expenditure (35%) is concentrated in municipalities with an incidence of wooded area affected by fire of more than 20%, highlighting a moderate concentration of expenditure in those areas that have seen a wide spread and frequency of fires in the last decade

Distribution of type of intervention 8.5.1 az D and 16.8.1

- again, there is no concentration of expenditure in those municipalities that recorded the highest number of forest fires in terms of spread and frequency in the 2010-2020 decade

Distribution of the type of intervention 15.1.1

- By virtue of the eligibility conditions, it is noted that almost half of the area under commitment is concentrated in those municipalities with an incidence of fire-affected areas between 0% and 2%.

Considering the total expenditure, which is equal to 101,772,466 euros, it can be seen that only 8.6 million euros (9% of total expenditure) are committed to interventions in municipalities that in the 2010-2020 decade had an area affected by fire exceeding 20% of the municipal forest area. Even considering the frequency of fires in the 2010-2020 period, it can be seen that only 7% of total expenditure, equal to 6.7 million euro, is concentrated in those municipalities with a frequency of more than 40 events in the decade considered

The effects of RDP 2007-2013 interventions on fighting forest fires

In order to verify the effects of the forestry measures of the 2007-2013 programming period on the spread of fires, a counterfactual analysis was carried out comparing the territories that benefited from the measures that had an effect on reducing fires, or that benefited from them to a greater extent, with the territories that did not benefit from these measures or that benefited from them to a lesser extent. The comparison between the municipalities that benefited from the

measures and those in which they were not applied reveals that in the latter the incidence of the area affected by fire in the 2014-2020 period on the total forest area is much higher than in the municipal territories in which the measures were implemented

Measure		area covered by fire 14-20	wooded area	Fire area (2014-20) /forested area
measure 225	without intervention	27.230	237.018	11,50%
	with intervention	6.429	145.593	4,40%
measure 226	without intervention	28.854	296.474	9,70%
	with intervention	4.805	86.136	5,60%
measure 227	without intervention	31.830	334.164	9,50%
	with intervention	1.829	48.446	3,80%

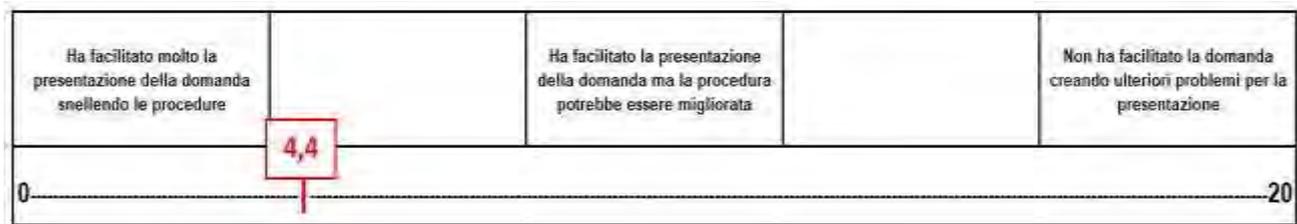
The classification of Campania's municipalities by expenditure class shows an inversely proportional trend between the increase in expenditure on forestry measures and the incidence of the area affected by fire in the 2014-2020 period on the total forest area.

Class of expenditure	area covered by fire 14- 20	wooded area	Fire area/forest area
A <200.000	2.200	30.352	7,20%
B >200.001<700.000	2.806	47.766	5,90%
C >700.001<1.000.000	1.766	34.377	5,10%
D >1.000.001<2.000.000	1.360	34.148	4,00%
E > 2.000.000	1.340	50.672	2,60%

Survey of beneficiaries of measure 16.8.1

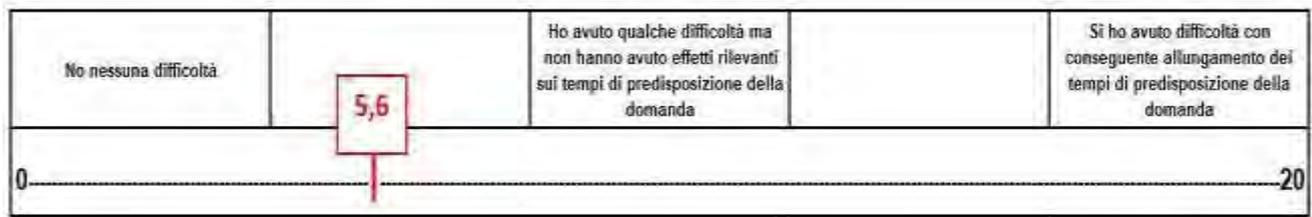
In order to highlight the criticalities and advantages of the procedure for participation in sub-measure 16.8.1, which provided for the establishment of partnerships between different public and private entities, a direct survey was conducted on all the beneficiaries admitted to funding. Below are the main findings.

Has the complete dematerialization of the tender, with the electronic submission of the necessary documents, facilitated and streamlined the access procedures?



the average value expressed by the respondents is 4.4, indicating that dematerialisation was appreciated by the beneficiaries and made it easier to submit applications. There is a more positive assessment for private beneficiaries with a score of 1.5 compared to the average score expressed by public beneficiaries which stands at 5.3

Did updating the farm file create difficulties in submitting the application for support?

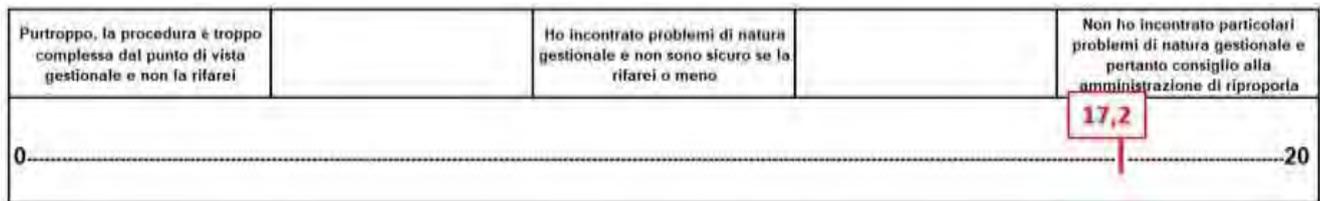


The respondents' average score of 5.6 shows that the problems related to upgrading were contained and easy to solve.

The selection criteria used in the call, in addition to the setting of a minimum score for access to the preliminary investigation (45 points), were effective in:

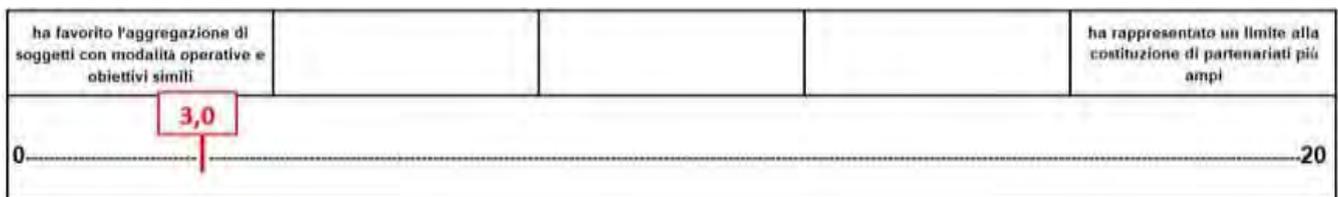
- Favoring the aggregation of several subjects
- Promoting a wide territorial extension of the forests covered by the PAF
- Encouraging beneficiaries to join other RDP measures

The eligibility condition, which required the participation of at least two entities in the application, was aimed at the Campania Region to maximize the territorial effects of the measure. In your opinion, in the case of your project, did the administrative efforts you had to make repay you for the results achieved?



The eligibility condition linked to the participation of at least two entities in the application did not create any particular problems of a managerial and administrative nature, and therefore the beneficiaries encourage the administration to repeat it in order to maximize the territorial effects of the measure

The call envisages aggregation only between public subjects or only between private subjects. In your opinion, did this choice favor the aggregation of subjects with similar operational methods and objectives or did it represent a limitation to the establishment of broader partnerships?



In the opinion of the respondents, the limitation in the call for aggregation only between public entities or only between private entities favoured the aggregation of entities with similar operational methods and objectives and did not represent a limitation to the establishment of broader partnerships

Case study on the Vesuvius National Park forest management plan

The case study concerned the financing, through the sub-measure 16.8.1, of the forest management plan that, thanks to the synergic action of the Department of Agriculture and the Vesuvius National Park Authority, will be drawn up by the Park Authority, the 13 municipalities of the Park Community and the Carabinieri Biodiversity Department of Caserta, which have formed a partnership. Two in-depth interviews were carried out at the Vesuvius Park headquarters and the headquarters of the Vesuvius Oasis land association. Below are the main findings divided according to the point of view of the public body and the private association

The dematerialization of the notice, the updating of the farm file and the electronic submission of the necessary documentation

- Public
 - the dematerialization process has generated some difficulties related to the management of electronic documents by the various components of the partnership because each has different administrative management models that are difficult to integrate with each other
 - The updating of the file was very complex, both for the Carabinieri foresters, who have only one file nationwide, and for many municipalities, which had to update the parcel section
 - it would be a good idea to avoid requesting from the beneficiaries a whole series of information that, especially as regards public bodies, is available and easily integrated into the information system
- Private
 - dematerialization has been an undoubted advantage and has made it possible to reduce the time needed to retrieve and submit documentation

Selection criteria and eligibility conditions under the call for applications

- Public
 - the priority criterion aimed at fostering the aggregation of several actors was very effective and was the spring that triggered the whole process of setting up the partnership
 - The criterion linked to participation in other forestry measures did not produce the desired incentive effect because the presence of a FMP is a necessary condition for access to the other measures
 - Participation in RDP measures requires public administrations to deploy expressly dedicated financial and human resources that are difficult to identify in organization charts that often only provide for staff engaged in day-to-day management activities.
 - The planner's choice not to allow aggregation between public and private entities is considered correct. This form of association would have favored wider territorial extensions of the FMP but at the same time would have led to a heavier bureaucratic burden
- Private
 - the eligibility conditions aimed at favoring the aggregation of several subjects and extending the territorial extension of the forests covered by the FMP, did not have any particular effect on the association as this, by its very nature, favors the aggregation of subjects owning forest areas
 - The possibility of aggregation between public and private entities would have brought undoubted advantages on a collective and homogeneous management of the entire area concerned, even if it is clear that the different procedures

characterizing the public and private sectors would have made the management of a mixed partnership rather challenging

Modifications to facilitate participation in the Measure and broaden the catchment area of potential beneficiaries

- Public
 - Essential is the streamlining of AGEA procedures and the introduction of dedicated procedures for public bodies, which by their very nature are ill-suited to those currently in place, largely designed and implemented for private entities.
 - A strong direction from the regional administration capable of guiding and accompanying the various local public bodies that oversee the territory would be necessary to foster the involvement of public bodies
 - Avoiding the need to ask beneficiaries for a whole range of information that, especially as regards public bodies, is available and easily integrated into the information system

- Private
 - for small entities, it is essential to be able to easily obtain the necessary advances for the start-up of activities without having to resort to sureties that significantly affect budgets
 - The legal status of a land association is not always fully recognized and this generates problems in accessing funding.
 - The park is often seen as a brake on the economic exploitation of forests, which is limited to imposing management rules that are often at odds with productive management. This contrast could be resolved through greater participation of the territory's stakeholders in defining the territory's development needs and instruments

The focus group with stakeholders involved in the management of forestry measures. The results of the thematic study were discussed and shared through the application of a participatory technique (focus group) with an audience of stakeholders involved in the management of forestry measures.

A first part of the meeting was dedicated to the illustration of the main results of the evaluation analyses, through the projection of specific slides shown in the annex, which concerned the territorial distribution of forestry interventions with respect to the issues related to biodiversity, erosion, hydrogeological instability and fires, the results of the sample survey carried out among the beneficiaries of measure 16.8.1, and the case study related to the Vesuvius Park.

In the second part of the meeting, a discussion was held to deepen and analyse the results that emerged and to identify further problems and possible solutions for improvement in order to make the measures dedicated to the forestry sector more effective and widespread.

A first reflection concerns the implementation of forestry measures that, in order to fully express the desired effects, cannot be limited to punctual interventions but should be implemented at the district level and with greater synergy between the different tools made available by the RDP. In order to do this, a superordinate direction would be needed, capable of involving the territories and implementing the various interventions in a coordinated manner. Such a direction becomes even more important in coastal territories where wooded areas are often small in size and characterized by stands, such as Mediterranean marquis, that are more prone to fires and consequent hydrogeological instability. Coastal areas are also the most vulnerable due to population density and the lack of territorial planning, made complex by the phenomenon of illegal

building, which often affects large swathes of public land and civic uses that in fact limit participation in planning processes.

Integration between different forestry measures finds an often-insurmountable obstacle in the absence of forest management plans, without which access to other measures is precluded, thus making the dissemination of planning tools a priority.

As highlighted, the Campania forestry sector has a significant component of private property, often represented by small extensions that to a large extent insist on protected areas. This pulverization makes the implementation of silvicultural interventions complex, both because of management costs, often higher than the value of the stand, and because of the complexity of authorization regulations. A simplification of regulations and the establishment of a single entity to interface with forest owners for the granting of the relevant authorizations would therefore be necessary.

With regard to the issue of fires, given the effectiveness that forestry measures have in limiting the phenomenon, as highlighted by the counterfactual analysis carried out, the fact that interventions are not concentrated where the surface area covered by fire and the frequency of events are greater (coastal areas) is to be found in the fact that these areas are often less protected by the actions of mountain communities, are more populated and therefore more prone to the ignition of fires of intentional or accidental origin and often lack forest planning tools.

In conclusion, the focus participants underline how for the 2023-2027 programming period the financial resources dedicated to the forestry sector have been considerably reduced, as a consequence of a general reduction in the funds available to the Campania region and of the slowness in spending that often characterizes forestry interventions. This reduction is even more worrying in an area characterized by widespread hydrogeological instability and fires, making it necessary to find additional sources of funding to dedicate to the forestry sector.

Conclusions and recommendations

Forestry measures and protected areas

Campania, with the establishment of two National Parks and eight Regional Parks, ranks among the top regions in Italy in terms of protected surface area, with park areas covering more than 25% of the regional territory. According to data from the latest national inventory, the wooded area in protected areas in Campania exceeds 50% of the regional wooded area and is equal to 257,096 hectares.

Forestry measures can play an important role in the conservation and strengthening of biodiversity and ecological connectivity, allowing, among other things, the creation of ecological and trophic oases for the many species of wild mammals and poultry typical of agricultural environments, supporting forest renaturation works, restoring degraded forest ecosystems, enhancing the ecological stability and species composition of forest stands.

The analyses carried out have shown a good concentration of all the admitted contributions (Measures 8.1.1, 15.1.1, 8.5, 16.8) favorable to biodiversity in the protected areas of the regional territory, and in fact there are 47 municipalities with more than 80% of their territory in protected areas in which there is expenditure related to the forestry measures analyzed.

Of the more than 68 million totals admitted with positive effects on biodiversity, concerning measures 8.1.1, 8.5.1, 15.1.1. and 16.8.1, 98% is located in municipalities with a surface area in a protected area, and more than 54% (€ 37,240,590) is located in municipalities (table 1.3.15) with a surface area in a protected area of more than 80%, while only 2.29% is located in municipalities without a surface area in a protected area. 71 % of the expenditure is concentrated in the

province of Salerno, which is also the province, as mentioned, with the highest percentage, over 57 %, of the presence of regional protected areas

On the other hand, the distribution of permitted expenditure in municipalities with reference to the incidence of their surface area in ecological corridors appears to be different: in fact, about 47% are located in municipalities with no surface area in corridors and only 2% in municipalities with a surface area in ecological corridors exceeding 80%.

Forestry measures and the risk of erosion

Soil erosion is a phenomenon with a strong impact on the environment, as it reduces soil fertility, can trigger landslide phenomena on steep slopes, reduces the flow capacity of watercourses by increasing flood risks, and contributes to the transport of pollutants. According to JRC calculations, in Campania agricultural soils with erosion > 11.2 t/ha/y (erosion value considered by the USDA as not tolerable) are 53% of the total, compared to a national average of 32.8%.

The contribution of the forestry measures considered in the analysis (M 8.1.1, 8.5.D, 16.8.1) to the mitigation of the phenomenon is linked to the capacity of the interventions to stabilize the slopes thanks to the soil consolidation action carried out by the roots, and to the contribution to sustainable forest management offered by the Forest Management Plans, which, among other things, allow the implementation of interventions that respect the physical characteristics of the soil.

Analyses have shown that there has not been an optimal placement of the admitted expenditure for the set of forestry measures with potentially favorable effects on erosion reduction, in the areas at greatest risk; in fact, expenditure values are only shown in 38 municipalities with high and very high erosion values, and for 29 of these the admitted amount is in the lowest expenditure class (between 1 and 100,000 €).

Forestry measures and hydrogeological instability

Campania is among the regions with the highest values of population at high risk of landslides (over 5% of residents) and has the highest number of local business units at risk, precisely as a result of hydrogeological instability. According to data from the ISPRA report 'Hydrogeological instability in Italy' In Campania, out of 13,671 square kilometers of surface area, a good 2,670.4 (19.5%) are subject to high and very high landslide risk. 20% of the total municipal surface area is included in the high and very high hazard classes and in total the landslide area (Attention Areas AA, Very High P4, High P3, Medium P2, Moderate P1) represents 60% of the total municipal area.

Prevention and restoration of damage caused to forests by fires and natural disasters, financed under Measures 8.3 and 8.4, are extremely important tools for slope stabilization as the restoration of forests can reduce the risk of landslides and mudslides, while planned and programmed sustainable forest management, supported by Measures 8.5.1. D and 16.8.1, represents a useful tool for protecting forests and supporting the ecosystem services that a forest can provide including the function of protecting the soil from hydrogeological instability.

On the whole, the total sums admitted for the Measures (Measures 8.3, 8.4. 8.5.D, 16.8) with positive effects on the fight against hydrogeological risk, do not present an optimal territorial collocation. Out of the thirty municipalities with the highest spending class, only five are in the high and very high hazard class, where the favorable commitments for combating instability have the greatest effects. High hazard areas, on the other hand, such as Upper Irpinia and Vallo di Lauro in the province of Avellino, have no or minimal spending levels.

Forestry measures and forest fires

In the 2010-2020 period, 23% of Campania's municipalities had a forested area affected by fire¹ exceeding 20%, and 8% recorded a number of fires exceeding 40. Only 20% of Campania's municipalities were not affected by fires in the period considered.

The territorial analyses carried out verified the distribution of RDP interventions that could potentially have an effect on fire fighting.

Considering the total expenditure for interventions that have an effect on reducing fire risk and restoring areas affected by fire (interventions 8.3.1, 8.4.1, 8.5.1 az D, 16.8.1, 15.1.1), which amounts to 101,772,466 euros, it is noted that only 8.6 million euros (9% of the total expenditure) are committed for interventions in municipalities that had an area affected by fire of more than 20% of the municipal forest area in the 2010-2020 decade.

Even when considering the frequency of fires in the 2010-2020 period, it can be seen that only 7 per cent of the total expenditure, i.e. EUR 6.7 million, is concentrated in those municipalities with a frequency of more than 40 events in the decade considered.

The territorial distribution of forestry interventions intended to stem the phenomenon of forest fires shows that there is no concentration in areas that would appear to be more exposed to these events: this is probably due to the fact that territories that in the current programming have shown themselves to be more attentive to prevention, restoration and proper management of the forest heritage have already carried out interventions in past periods to reduce the spread and frequency of forest fires.

Counterfactual analysis to verify the effects of RDP 2007-2013 interventions on fighting forest fires

In order to verify the effects of the forestry measures (M225, M226, M227) of the 2007-2013 programming period on the spread of fires, a counterfactual analysis was carried out comparing the territories that benefited from the measures that had an effect on fire reduction, or that benefited from them to a greater extent, with the territories that did not benefit from these measures or that benefited from them to a lesser extent.

Overall, the forestry measures activated in the 2007-2013 programming period have carried out interventions amounting to almost 160 million euro, of which the majority (71%) concerned forestry potential reconstitution and preventive interventions promoted by Measure 226, which responded to a widespread and significant demand for support from territorial public bodies.

The counterfactual analysis carried out has highlighted important effects on fire fighting and prevention, in fact, as shown in the table and in the following cartography, the comparison between the municipalities that have benefited from the measures under analysis and those in which they have not been applied reveals that in the latter the incidence of the area affected by fire in the 2014-2020 period on the total forest area is much higher (13.1%) than in the municipalities in which the measures promoted by Measures 225, 226 and 227 have been implemented (4.8%).

The classification of Campania's municipalities by expenditure class shows an inversely proportional trend between the increase in expenditure on forestry measures and the incidence of the area affected by fire in the 2014-2020 period on the total forest area

A joint analysis of the results on the spatial distribution of forestry interventions that have an effect on reducing fires and that on the effectiveness of interventions in the 2007-2013 programming period reveals that interventions are absolutely effective in reducing fire risk but are often concentrated in areas where they are less widespread:

1 The surface area was calculated without repetition, i.e. if the same surface area is covered by fire several times during the period under consideration, it is counted only once

Particularly in coastal areas, where wooded areas are often small in size and characterized by stands, such as Mediterranean marquis, that are more prone to fires and consequent hydrogeological instability; these areas are also the most vulnerable due to population density and the lack of land use planning, made complex by the phenomenon of unauthorized building, which often affects large swathes of public land and civic uses, effectively limiting participation in planning processes. In these areas where fire risk reduction interventions would be most needed, for the reasons explained above, they are also those least affected by forestry measures with an effect on fire containment

Survey of beneficiaries of measure 16.8.1

In order to highlight the criticalities and advantages of the participation procedure for sub-measure 16.8.1, which envisaged the establishment of partnerships between different public and private subjects, a direct survey was conducted on all the beneficiaries eligible for funding under measure 16.8 using a survey developed using the CATI method as an instrument.

Regarding the effects of the dematerialization of the call, the average value expressed by the respondents is 4.4, indicating that dematerialization was appreciated by the beneficiaries and made it easier to submit applications, with a more markedly positive assessment by private beneficiaries

The selection criterion found to be most effective in determining the choices of participants in the sub-measure is the one related to the size of the area under forest planning, followed by the criterion related to the aggregation of the largest number of subjects, while the priority related to participation in other forestry measures was found to be the least effective

The eligibility condition linked to the participation of at least two subjects in the submission of the application did not create any particular problems of a managerial and administrative nature, and therefore the beneficiaries encourage the administration to reintroduce it in order to maximise the territorial effects of the measure. In the opinion of the respondents, the limit provided for in the call for applications, which envisages aggregation only between public subjects or only between private subjects, favoured the aggregation of subjects with similar operating methods and objectives and did not represent a limitation on the establishment of broader partnerships.

The administration's effort to update the regional price list was highly appreciated

Case study on the Vesuvius National Park forest management plan.

The case study concerned the financing, through the sub-measure 16.8.1, of the forest management plan that, thanks to the synergic action of the Department of Agriculture and the Vesuvius National Park Authority, will be drawn up by the Park Authority, the 13 municipalities of the Park Community and the Carabinieri Biodiversity Department of Caserta, which have formed a partnership.

The case study involved two in-depth interviews carried out at the headquarters of the Vesuvius Park and the headquarters of the Vesuvius Oasis land association. The meeting with the contact persons made it possible to focus on the points of view of the public and private beneficiaries, who often face different problems and difficulties generated by the different administrative structure and specific procedural requirements.

With regard to the dematerialization of the notice, the updating of the farm file and the submission of the necessary documentation in electronic format was evaluated differently by the public and private beneficiaries: while in the case of private beneficiaries the dematerialization represented an undoubted advantage and made it possible to reduce the time needed to retrieve and submit the documentation, for the public beneficiaries the dematerialization process generated some difficulties related to the management of electronic documents by the various members of the

partnership because each one has different administrative management models that are difficult to integrate. The use of the SIAN information system has also presented some difficulties related to the fact that the portal is mainly calibrated for private beneficiaries. Differentiated functionalities should be created between the public and private sectors that consider the different administrative structures. In order to streamline procedures, it would be a good idea to avoid asking beneficiaries for a whole series of information that, especially as regards public bodies, is available and easily integrated into the information system.

With regard to the selection criteria and eligibility conditions foreseen by the call, in the case of the public beneficiary, the priority criterion aimed at favoring the aggregation of several subjects was very effective and represented the spring that triggered the entire process of partnership constitution. The criterion linked to participation in other measures of forestry interest did not produce the incentive effect hoped for because the presence of a FMP is a necessary condition for access to the other measures. However, it should be noted that participation in RDP measures requires public administrations to deploy expressly dedicated financial and human resources that are difficult to identify in organization charts that often only foresee staff engaged in ordinary management activities. To facilitate the aggregation of different subjects, there should be a regional direction that is not limited to the publication of the call for proposals but accompanies the subjects throughout the entire process of presenting and implementing projects. The planner's choice not to allow aggregation between public and private subjects is considered correct. This form of association would have favored wider territorial extensions of the FMP but at the same time would have led to a heavier bureaucratic burden.

As far as the private beneficiary is concerned, the eligibility conditions aimed at favoring the aggregation of several subjects and extending the territorial extension of the forests covered by the FMP, did not have any particular effect on the association as this by its very nature favors the aggregation of subjects owning forest areas. The possibility of aggregation between public and private subjects would have brought undoubted advantages on a collective and homogeneous management of the entire area involved, even though it is evident that the different procedures that characterize the public and private sectors would have made the management of a mixed partnership rather challenging.

With respect to the changes capable of facilitating participation in the Measure and widening the catchment area of potential beneficiaries, the Vesuvius Park points out as essential the streamlining of AGEA procedures and the introduction of procedures dedicated to public entities, which due to their characteristics are ill-suited to those currently in place, largely designed and implemented for private entities. In order to encourage the involvement of public bodies, a strong direction would be needed from the regional administration capable of guiding and accompanying the various local public bodies that oversee the territory. On the other hand, the Vesuvius Oasis emphasizes the fact that for small entities, it is essential to be able to easily obtain the advances necessary to start up activities without having to resort to sureties that significantly affect budgets, and the fact that the legal status of a land association is not always fully recognized and this generates problems in accessing funding. The park is often seen as a brake on the economic exploitation of forests, which merely imposes management rules that are often at odds with productive management. This contrast could be resolved through greater participation of the territory's stakeholders in defining the territory's development needs and instruments.

Focus group

The discussion during the focus group conducted with the forestry measure managers revealed:

- the need to carry out these interventions not in a punctual manner, but in a synergic and district-wide manner, also in order to involve municipalities with small forest areas, but which are often those most affected by fires and hydro-geological instability

- The desirability of initiating a process of regulatory simplification, especially concerning authorization processes for private owners, which also includes the establishment of a single authorizing body
- Need to identify alternative sources of funding to the EAFRD, given the reduction in the resources dedicated to forestry measures in the next programming period, in order to continue the action of accompanying the proper management of the territories