# COMPARATIVE IMPLEMENTATION ASSESSMENT OF THE AFFORESTATION MEASURE 221

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***Abstract.*** *Sustainable planning and management of forest resources is today a common objective across the European Union, as a way of ensuring sustainable management of natural resources, combating climate change and promoting the economic and social development of rural areas. In this sense, the European Union, through the European Agricultural Fund for Rural Development (EAFRD), established in its regulation several articles with a view to the development of space and forest resources in the EU. Namely investments in the development of forest areas and in improving the viability of forests, afforestation and creation of wooded areas, implantation and regeneration / renovation of agroforestry systems, prevention and repair of damage caused to forests by forest fires, natural disasters and catastrophic events, as well as such as investments to improve the resilience and environmental value of forest ecosystems, investments in forest technologies and in the transformation, mobilization and commercialization of forest products, and the creation of producer groups and organizations. In this way, standards and measures that meet these objectives are included in the various National Rural Development Programs, among which the 221 - First afforestation of agricultural land, a measure aimed at the afforestation of land for carbon sequestration, preventing soil erosion and other risks such as flooding and increasing the production of a renewable energy source. The main objective of this work is to make a comparative analysis of the measures taken under the norm 221, common to the National Rural Development Programs 2007-2013 of two member states: Portugal and Romania, through the results obtained at the end of the program, contained in the PRODER 2013 execution report and Final report of the ex-post evaluation of the rural development program for the continent 2007-2013 in the case of Portugal and in the Ex-post evaluation study of the national rural development program 2007-2013 and in the National Rural Development Program 2007-2013 in the case of Romania.*

***Keywords****: FEADER, Afforestation, National Rural Development Program*

## INTRODUCTION

Portugal is one of the European countries with the largest forest area. The forest spaces (forest, forests and unproductive land) occupy a total area of 6.2 million hectares, which represents about 69.4% of the continental national territory, the overwhelming majority being privately owned (ICNF, 2015).

Historically the forest in Portugal (predominant natural forest) developed about 13,000 years ago, in the Tardiglaciar period. Due to changes in the climate that has become more mild and for this reason allowed the development/expansion of oak forests (*Quercus pyrenoyca*, etc.) predominance in the North/Center regions and Mediterranean forests in the Central/South regions. In turn, in wetlands such as the banks of rivers/watercourses emerged riparian forests, jams by *Fraxinus angustifólia, Alnus glutinous, Salix atrocinerea*, etc. (ICNF, 2015).

However, due to the pressures exerted on the territory (domestication of animals / grazing, agriculture, use of fire) the forest in Portugal has undergone several changes. The different peoples who occupied the country increased the level of the population and as a consequence there was a need to increase agriculture, leading to several episodes of deforestation, especially in period III AC - V DC with the Romans and VIII - XV DC with Muslims. Later, with the time of the Discoveries, there was a great consumption of wood

(mainly oaks) for the construction of vessels. Wood being the main source of energy and construction material, it became a scarce material, and several measures were taken by the then Portuguese Navy of the Kingdom, as a way to protect and regulate the trees in Portugal.

More recently, several laws and measures have been fostered, including: the Law of Trees (1565), in which the afforestation of wastelands (land belonging to local communities), uneducated and private with indigenous species, the creation of the General Administration of Forests of the Kingdom (1824), responsible for the recovery of natural forests in the mountains of the interior of the country, was established.

Currently, according to the 6th National Forest Inventory, the forest in mainland Portugal can be organized into 4 forest formations: - Pine forests, consisting of pine brave and meek; - Perennial hardwood, the so-called Montados which are composed of cork oaks and holm oaks; -Hardwood Deciduous, composed of oaks, chestnut and other and – Silvo-industrial hardwood, formed by eucalyptus.

Of these, the formation of perennial leaves is the one with the largest area of occupation, with 1 million hectares, which represents 1/3 of the forest. Although this is a multi-use ecosystem (including hissing-herding), its main function is woody production.

The second largest forest formation is pine forests, with approximately 1 million hectares of area. However, this has been the forest formation suffering a greater reduction in the occupied area, due to pests (especially nematode) and forest fires. Finally, the eucaliptal forest formations, which have a systematic increase over the past 5 years, and which occupy an area of 845,000 hectares, approximately 26% of the continental forest area and the Deciduous leaves that are the forest formation, which despite having had a systematic increase over the last 20 years, has an area of approximately 46,000 hectares, 17% of the continental forest.

It is estimated that forest activity in Portugal represents 9% of exports (PORDATA, 2017), which makes this a sector of high importance for the country's economy.

Similarly, the Romanian forest represents one of the main contributors to the protection of global biodiversity. Its extent, richness in biodiversity, its carbon retention capacity and landscape, require conservation measures in order to preserve this ecosystem.

Historically, primary forests in Europe developed after the last Ice Age, central Europe being covered by forests of *Sylvatica fagus*. Over time, this cover was altered and transformed into settlement, agricultural land and planted forests, leading to the disappearance of the original European forest of Central Europe. Note the episode of Transylvania's conquest of the Habsburg empire to the Ottomans. Due to the exclusivity of the land of cultivation by pate of the state and the Nobility, the peasants were forced to occupy the forest areas, which led to a great pressure on these spaces and consequently led to the reduction of their area. More recently, during the communist regime, with strictly economic objectives, forestry was boosted in the country, leading to the cultivation of exotic and autochthons species outside the area of their natural growth, which led to the disappearance of large areas of primary forest.

Currently (with the exception of Russia and Scandinavia) the largest patches of primary forests are found in the Carpathians, Balkans and Dinaric Alps. As such, Romania has a large part of this heritage. According to the Inventory of Primary Forest Areas and Ancient Growth in Romania 2019, the forest areas of Romania are about 3 million hectares long and occupy approximately 30% of Romanian territory. The dominant species are beech forests (31%) and conifers (26%) (BIRIS, 2017). Also, according to the same inventory, 525,632 hectares of forest are potentially primary, representing about 8% of Romania's forest cover, including 480,054 hectares presented as absent from signs of human use at least since 1960. According to BIRIS and VEEN (2005) almost 220,000 hectares are "Virgin Forest".

However, although the Romanian forest represents a very important natural heritage at European and World level, only in the 1990s did these forests receive more attention and measures to conserve them.

According to the IPBES 29 Global Assessment report, in 2019 one of the factors that puts biodiversity at risk is global warming, the effects of which are increasingly visible, and which becomes a threat to the biodiversity of the Romanian forest. Another risk factor is the extraction of wood, legal and illegal, since conservation actions are mainly focused on "virgin" forests, leaving excluded primary and ancient forests.

In addition, the lack of data on the extent and location of intact natural forest ecosystems should be protected by the Natura 2000 Network and the Conservation on Biological Diversity (CBD)", according to the "EURONATUR" foundation and the NGO "Agent green" which called on the European Commission to take measures to protect/conserve these ecosystems.

## MATERIAL AND METHODS

The paper proceeds to an analysis based upon a synchronic approach based on secondary data sources as official implementation programming, reporting and assessing documents from the selected member states in order to secure a comparison of supported interventions publicly co-financed for the two selected EU member states, Portugal and Romania. The analysis results based on observations and findings and interpreted for concluding remarks on a pre-impact and ongoing stage of previous interventions.

## RESULTS AND DISCUSSIONS

The data presented below refer to the measures adopted by the two member states within the scope of measure 221 of Regulation (EC) No. 1974/2206 "First afforestation of agricultural lands" whose objectives are to increase forest areas, through afforestation of land and thus preventing natural hazards such as soil erosion, improving air quality, improving water retention capacity, producing biomass and increasing biological diversity. Thus, both member states in their respective NRDP contemplated measures included in this measure 221.

In analysis, it can be seen that the number of projects selected / approved in the two countries was substantially different. In Portugal, the number of applications was 965, of which 175 were rejected and 790 were approved (approval rate close to 85%), while Romania initially had 52 applications, of which 40 were accepted and only 18 were approved (rate approval rate close to 34%). The number of hectares covered is equally disparate in that the number of hectares covered by the measure in Portugal was higher than the number initially forecast (execution rate close to 118%), in Romania, the rate of hectares covered by the measure was 34% than initially planned.

*Table 1*

Application data from the two Member States

| | Portugal | Romania |
|---|---|---|
| No. of selected / approved projects | 790 | 18 |
| No. unselected projects | 175 | 17 |
| Expected number of hectares covered | 8800 ha | 875 ha |
| Number of hectares covered | 10382 ha | 344.98 ha |

DATA: Relatório Final da Avaliação Ex-post do Programa de Desenvolvimento Rural do Continente 2007-2013 (ProDeR) and Ex-Post Evaluation Study Of The National Rural Developent Programme 2007-2013

In terms of species covered by the measure, in Portugal the species with the most support area was Falling leaves, which can be explained by the fact that the Alentejo is the area of the country with the greatest support of measure 221.

*Table 2*

Number of hectares supported by classification in Portugal

| Classification | Portugal |
|---|---|
| Conifers | 9608 ha |
| Falling leaves | 13506 ha |
| Mixed plantations | 495 ha |

DATA: PRODER, 2015, Relatório de Encerramento 2007-2015

In the case of Romania, the species most supported by the measure are the "fall leaves" with an area of 228.14 ha.

*Table 3*

Number of hectares supported by classification in Romania

| Classification | Romania |
|---|---|
| Conifers | 10,12 ha |
| Falling leaves | 228,14 ha |
| Mixed plantations | 106,72 ha |

DATA: Ex-Post Evaluation Study Of The National Rural Developent Programme 2007-2013

In terms of financial execution, it is observed that in both countries the amounts paid were below the amount initially forecasted. Portugal had an execution rate of around 83% and Romania with a rate of 16%.

*Table 4*

Financial execution rate of the two member states

| Financial execution | Initially estimated amount (000€) | Total amount paid (000€) |
|---|---|---|
| Portugal | 14.522€ | 12.032€ |
| Romania | 3.201.97€ | 522.22€ |

DATA: Ex-Post Evaluation Study Of The National Rural Developent Programme 2007-2013 and PRODER, 2015, Relatório de Encerramento 2007-2015

Subsequently the result indicators are completely fulfilled in Portugal for all indicators while in the case of Romania only the soil quality is partially fulfilled, all others being unfulfilled, as introduced in the table below.

*Table 5*

Result indicators

| Result indicators | Portugal | Romania |
|---|---|---|
| Water quality | Fulfilled | Not fulfilled |
| Soil quality | Fulfilled | Partially fulfilled |
| Combating climate change | Fulfilled | Not fulfilled |
| Biodiversity | Fulfilled | Not fulfilled |

DATA: Ex-Post Evaluation Study Of The National Rural Developent Programme 2007-2013 and Relatório Final da Avaliação Ex-post do Programa de Desenvolvimento Rural do Continente 2007-2013 (ProDeR)

## CONCLUSIONS

After analysing the various result indicators, it can be said that the results obtained in the two Member States are totally disparate, with clear evidence of the success of measure 221 in Portugal and the failure in Romania. This can be explained by the low number of applications / projects approved for the measure in Romania, as well as the number of hectares. Some of the factors that may explain the degree of adherence to the measure in Portugal are related to some of the main economic and environmental threats, such as fires (the program included measures to defend forests against fire and prevent and recover burnt areas) and the decline cork and holm oak. It should be noted that the Aentejo was the area of the country with the greatest support for measure 221. In total, 13506 hectares of the afforestation supported by action 2.3.2 are classified as "Falling leaves", which include the Cork and Holm oak which are an important part of the ecosystem of forest areas with high natural value such as Montado. In turn, the failure of the measure in Romania can be explained by the decrease in the financial allocation initially foreseen for the measure, so it was the estimated initial value. Also noteworthy is the difficulty in accessing the measure, due to a poor projection.

In short, it can be said that with a slight exception in the soil quality indicator, Romania had a poor performance in terms of measure 221, unlike Portugal, which managed to obtain positive results in all indicators.

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