FOREST4EU

ITHub 1 - Wood Mobilisation

FOREST4EU partner: CESEFOR

OG: GO PROMINIFUND

OG's country: Spain

Type of Innovation: service

Methodology for assessing the economic-financial sustainability of forest holdings

Introduction

Historically, the Spanish forestry sector presents a deficit in the economic study of forestry operations in terms of the analysis of either the capitalization of the income obtained by the forest owner or the income derived from the extraction of the different types of products in the different types of forestry operations. A calculation methodology is proposed to evaluate the economic-financial sustainability of the most relevant forestry exploitations in Spain, incorporating the analysis from the perspective of the forester-producer and/or the investor, by calculating the profitability, the Internal Rate of Return (IRR) and the Net Present Value (NPV). The profitability analysis is based on the annual income per reference Agricultural Work Unit in the Spanish agricultural sector, established at 30,622.23 for 2021. The analysis from this new perspective makes it possible to evaluate the profitability of the forest, compare it with those of other forestry systems that could occupy the same areas and establish a minimum area for each forest with which to obtain a "forestry" income equivalent to the agricultural income. The assessment of the economic-financial sustainability of forest holdings has usually been analysed from the point of view of the investor, so that the periodic forest income obtained, which could share many aspects and be assimilated to a certain extent to agricultural income, has generally not been taken into account.

Methodology

The purpose of this methodology is to evaluate the economic and financial sustainability of the most relevant forestry operations in Spain, both from a business perspective -with a broader approach from the point of view of a private investor- and for the owner/forester. The methodology proposed in this work incorporates the perspective of the annual income for the owner/forester into the more usual analysis of profitability, by calculating the IRR and NPV. The key aspects for the evaluation of the economic-financial sustainability of the forest holdings analyzed were: Market situation, Variability of timber prices and rotation cycle optimisation. control of expenditure, forest activity diversification, determination of IRR and NPV and economic evaluation comparable to agricultural crops. The forestry systems analyzed where: 5 *Pinus sp.* systems (for wood, pine cones and resin production), 5 *Quercus sp* systems (for wood, cork and dehesa systems), chestnut (for wood

and fruit), poplar, eucalyptus and beech for wood use and finally, scrub and grassland. Regarding the choice of silvicultural models, the most representative models existing in Spain have been identified, trying to establish for each of them a standard model that encompasses all possible scenarios and that can at least be applied in the greatest number of possible situations. For the calculation of the annual costs of each silvicultural treatment, many variables were taken into account: whether or not the land can be mechanized, whether or not it is steep or stony, the average productivity according to the quality of the season, etc. Average operating costs and acceptable quality and health status have been taken into account. For the calculation of income, three season qualities are established: OPTIMAL, ADEQUATE and MARGINAL, based on three productions (high, medium or low). The prices are constant for all models and have been set with different references such as (1) prices from the study on the profitability of different Spanish forest species carried out by the Polytechnic University of Madrid for the Ministry of Ecological Transition and Demographic Challenge (Ortuño, 2018). Data from the Observatorio de Precios de la Madera de la Confederación de Organizaciones de Selvicultores de España (COSE, 2015). The prices used by the technicians of the Forestry Associations of Castilla y León. For the standardization of methodology and results the application of the designed methodology has been standardized by creating an Excel file per silvicultural model with a standardized structure distributed in five tabs: starting assumptions, expected income, expected costs, analysis tables and results. In this file, starting conditions must be established and a list of costs and revenues that will occur in the different years of the production cycle must be entered. All the information is used in the analysis tab to establish the corresponding silvicultural itinerary in which both, the costs to be assumed and the income to be obtained, are detailed, specifying the year in which each of them occurs. From this itinerary and automatically, the corresponding analysis table is fed, used to generate all the calculations presented in the results tab. The final results generated are grouped under four headings: (a) NPV and IRR of the logging operation for the discount rate set in the baseline assumptions (also for 4, 6 and 8 %). (b) Determination of the annual equivalent income and minimum harvest size. (c) Valuation of the profitability of the logging operation without considering financing: costs, income and final balance, referred to in €/ha and €/(ha/year), referred to € year 0, € end-of-shift and € end-of-shift applying the CPI. (d) Same values as in the previous section, but considering financing

Lessons learned

With the data from the analysis in the current economic framework, it can be concluded, for economic calculation purposes, the similarity of forestry and agricultural holdings, as well as the need to use profitability calculation systems already identified in the agricultural activity. Of particular importance is the exhaustive control of costs, which is considered an essential issue for the viability of the forest exploitation. It is recommended to continue developing the methodology with analyses based on different silvicultural models and to incorporate environmental benefits not contemplated in this study, such as income from carbon sequestration, which could make plantations profitable that apparently are not. A future development of the market for greenhouse gas emission allowances, in which direct compensation to landowners for carbon sequestration is established, may generate new economic benefits from net carbon sequestration in forest biomass and wood products. Internalizing carbon or other ecosystem benefits in land-use change

decisions can clearly favour the expansion of some species in areas where valuing the net benefits of the commercial goods and services associated with their exploitation alone does not favour this investment.

The information presented in this factsheet was developed by the FOREST4EU partner, drawing on the innovations and knowledge generated by the indicated operational group with their explicit authorization.

Further information

https://www.minifundio.es/sites/default/files/editor/2_rentabilidad_ok.pdf

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