FOREST4EU

ITHub 3 - Sustainable Forest Management and Ecosystem Services

FOREST4EU partner: UNIFI
OG: SURF
OG's country: Italy
Type of Innovation: Social

GO SURF: decision support system for a participatory approach to forest management

Introduction

The European Forests, Biodiversity and Social Strategy, together with the Italian National Forest Strategy, recognize the critical importance of sustainable forest management in addressing new challenges. These challenges include the increased severity and frequency of natural disturbances such as windstorms, droughts, and insect infestations, as well as the diverse and sometimes conflicting social demands placed on sustainable forest management and forest systems. So, it is essential to engage both public and private forest owners and forest company and civil society in the decision-making process give them also access to stadardized information regarding forest resources.

Among the possible innovations useful to the sector, Decision Support Systems for Forestry (DSSF), which are complex computer systems designed to assist users in decision-making processes through a set of tools, data, and analysis models, are recognized as an important tool for the implementation of forest management for the provision of multiple ecosystem services. In fact, FDSS represent a useful tool for enhancing the environmental, economic, administrative, legal, and social aspects associated with sustainable forest management.

However, despite the availability of advanced technologies, in the past, other examples of Forest Decision Support Systems (FDSS) have disappointed end users' expectations, mainly because their use was limited to experts due to excessive complexity or logic that deviated from the users' perspective. This often highlighted how the gap between the world of research and practical application is seen as one of the reasons why SSDs are not effectively implemented.

In this context, OG SURF adopted a participatory approach in the development of the DSS, allowing for open dialogue among all stakeholders involved in forest management and the creation of a system based on the actual needs of identified users. It should be noted that, on the scientific side of the partnership, it would have been possible to develop a more complex system. However, this would have risked not being adopted by the target users because it would have been too complicated and less relevant to their actual needs. In this approach, every phase of system development was discussed to ensure it met the real needs of users. In details, for the development of the SSDF, the four key components were examined: the problem analysis system, the knowledge management system, the results presentation system, and the development language. The four key components were analyzed recursively to guide the development process, employing a participatory approach for each of them. Firstly, the "problem analysis system" was examined by identifying

the target users of the OG SURF system and the needs to be addressed (Table 1). The identification of target users was carried out by involving ten individuals within the partnership, while analyzing the results and architecture of similar SSDF systems developed in other territorial contexts.

The analysis of the actual needs of each of the target users then guided the "knowledge system," which in the case of OG SURF consists of the data hosted within the SSDF and the analysis tools used to query the data and generate information for decision-making. Subsequently, a detailed analysis of the "results presentation system" was conducted, which guided the technical implementation of the SSDF. During this analysis, it became evident that the application should have a web-based Geographic Information System (Web-GIS) interface designed to streamline the use of spatial analysis tools and enable report generation. Finally, considering the first three key components of the SSD, the technicians responsible for developing the platform chose the "system development language".

Lessons learned

In the case of the OG SURF project, the participation of various stakeholders involved in different aspect of forest management has improved the outcomes in the development of FDSS. However, a participatory approach also has some disadvantages: it requires time and resources (Carberry et al., 2002), the identification of appropriate stakeholders is necessary , and stakeholders must agree on process objectives. In the case of OG SURF, the opportunity to establish an Operational Group within the PEI-AGRI initiative allowed for the identification and involvement of various stakeholders from the inception of the operational group through measure 16.1 of the PSR. This helped create alignment in process objectives, which were realized through measure 16.2 of the PSR in the development of the application.

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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.go-surf.it/

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