FOREST VALUE ERA-NET Cofund

A. Innovative sustainable management of multifunctional forests:

Ecological restoration of forest ecosystems through the incorporation of Old-Growth features (FORFUTURE).

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Hypothesis and Objective

- The **hypothesis** is that organisms associated to the advanced and end successional stages, linked to old growth forests, have been eliminated by forest stand treatments and other uses that degraded or destroyed the forests. The present extension of old-growth forests in the world is threatened, and forests with features of maturity are scarce. The ecosystem services associated with these forests have also decreased.
- The **objective** of the Project is to develop ecological restoration tools, approaches and methodologies to incorporate **functional and structural characteristics of old growth forests** in conventionally managed stands and reforestations. This will increase biodiversity and ecosystem services and recover elements lost by various human activities, such as unsustainable management.
- This project wants to energize and bring together existing knowledge of many potential actors to achieve the objective of recovering more natural forests, suitable for the production of different materials, but also for recreation, conservation, carbon storage or protection of water resources.

Experience and skill of the Research Group for Sustainable Management SILVANET:

Our main research lines are focused on Ecology and Sustainable Forest Management, Modelling and simulation of natural processes, Landscape Ecology and territorial planning, Application of quantitative methods in natural systems, Recovery and processing of information by means of GIS and remote sensing, and Design, planning and management of natural areas. The Research Group has over 200 publications in peer-reviewed journals and books:

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88 research projects, 7 patents and software registers, 40 PhD Theses supervised.

International collaborations with the GEDI SCIENCE TEAM (NASA GSFC, Goddard Space Flight Center, University of Maryland), USDA Forest Service, University of Cambridge, University Eastern Finland , etc.

Possible partners:

enterprises, research and innovation teams (universities, etc.) of international scope

How to achieve the objective: Working packages

1. Relevant characteristics to be incorporated on managed stands, from studies in natural forests. These traits will be selected from research results based on structure and ecology of old-growth forests.
2. Existing approaches and experiences in management and silvicultural methods, applicable in forest transformation, to obtain features of old-growth forests in different regions.
3. Proposed approaches, tools, methodologies and methods to incorporate features of old-growth forests in different regions. Inventory, characterization and planning of forest stands to be transformed in old growth-like forests. Landscape and forest scales. Application in case studies.
4. Evaluation of consequences for the landscape, ecology, economy, production and society. Ecosystem services.
5. Selection and monitoring of an ecological forest restoration network.
6. Regional and continental scale mechanisms of application. Administrative and financial tools of application.