REINFFORCE

Resource infrastructures for monitoring, adapting and protecting European Atlantic forests under changing climate

Financing

Financed by Interreg IV B - Atlantic Area. But, all the partners are committed for 15 years to monitor the growths and survival rate of the all REINFORCE's species. The challenge is to do it without specific funding from Interreg. Each partner is responsible of a limited number of sites, making measurements every two years.

REINFFORCE is an infrastructure created to monitor weather, trends in the health, phenology and growth of tree species of interest for plantations in European Atlantic regions under climate change on a long-term perspective. The climatic risk addressed in the different demonstration sites are: Wind risk; Growth; Regeneration loss;

BUDGET (€)
4.000.000

START DATE:
2007
END DATE:
2013

ACTIONS PLANS

Pilot Tests

- Portugal
- The United Kingdom
- France
- Spain

CONTACT INFORMATION

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≫ Goal

In this project, tools were being set up for monitoring climate change and its impact on the forests of the Atlantic region, as well as for demonstrating the efficiency of the adaptation measures compared to current silvicultural practices. The key objectives were: To set up a network of new arboreta from Portugal to Scotland; to set up a network of demonstration sites within forests at high risk of damage under climate change;   to monitor weather, trends in the health, phenology and growth of tree species of interest for plantations in European Atlantic regions under climate change on a long-term perspective, and to share the findings with all REINFFORCE partners.

≫ Introduction

The reality of GLOBAL WARMING is widely accepted, with optimistic scenarios predicting an increase of 4°C in the next 50 years. But the regional consequences of climate change are not well-known, especially in oceanic areas, and there are still many uncertainties related to climate (local rainfall levels and the gulf stream, etc.), the economy (fossil fuel costs and world trade, etc.) and the environment (pests and diseases, sea level, etc.).

Even if it is not possible to accurately model the impact of climate change on the European Atlantic seaboard, some specific potential threats for Atlantic forests have nevertheless been identified by modelers; for example, tree life cycle disturbance, newly emerging pathogens and the maladaptation of species to new climatic conditions.

This project sets up a network from 37° to 56° N latitude, in order to monitor developments in climate change and to test the efficiency of adaptation measures. It plays a crucial role in helping maintain the sustainability of Atlantic Forest resources, as the trees that are being planted now will be harvested in fifty years' time and will need to be able to withstand the new climatic conditions.

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Methodological >> approach

The project is structured around 5 main activities comprising several actions:

A preparation phase to review existing field trials, species and knowledge and to define protocols for new field trials and data collection process.

The setting up of a network of 38 arboreta to anticipate climate change impacts on existing species by growing them beyond their natural rang

The setting up of a network of 41 demonstration stands to compare current silvicultural practices with other adaptation measures
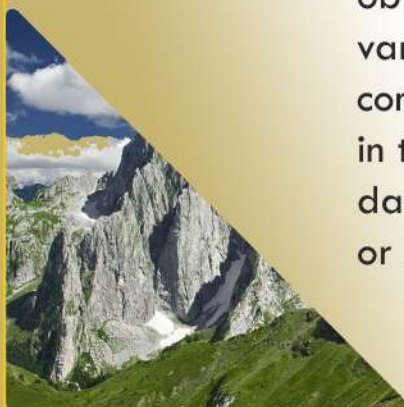
A data collection system and shared online database to monitor Atlantic Forest growth, health, and biological life.

>> Results Arboretum

The REINFFORCE network/ Arboreta is made of 38 sites where 2000 trees of 32 species and 150 provenances have been planted in the Autumn 2011, distributed in the 4 Biogeographical Regions: Atlantic, Mediterranean, Continental and Macaronesian. The objective is to install the same tree species and provenances under various climatic conditions. Then, the project partners agreed on a common protocol, defining a minimum set of data they will monitor in the next 15 years. The common protocol also includes additional data that can be collected making the most of project opportunities or local capacity.

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≫ Results Demonstration sites

Demonstration sites aims to compare the usual forest management done without any consideration to climate change and adaptive forest management anticipating future climate. In the frame of REINFFORCE we set up 41 sites to monitor the efficiency of adaptative measures. On each site we have a control with business-as-usual management and adaptive management. Usually, there is also a climatic data collection linked to these sites.

Arboretum and Demonstration site catalogue

A unique research tool has been designed to work on forest adaptation to climate change. In this catalogue, researchers and technicians can find all useful information concerning the design and content of the 79 trials that are part of this infrastructure; information to understand the data collected, the species planted, the effects observed.

Databases

Two databases where the trees species names and a register of forest monitoring trials are specified:
- Forest tree species names
- Register of forest long term monitoring trials

Reinfforce Arboretum Field Manual

This manual describes methods for monitoring growth and health of the REINFFORCE network sites. Monitoring is a critical element of sustainable forest management. The protocols here are intended for use in all the arboreta of the project and carried out by the project's partners. The development of a manual serves to standardize data collection methods and tools so that data can be more easily shared, compared and analysed amongst the different partners.

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»URL http://reinfforce.iefc.net/pt/

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