

Sustainable forest management in Menorca in a context of climate change (LIFE BOSCOS-MENORCA) ^[1]

Autor:

In January 2009 the Consell Insular de Menorca launched the LIFE + BOSCOS project: 'Sustainable Forest Management in Menorca in a context of climate change'. With a duration of 5 years, the main objective of the project has been to contribute to the adaptation of Mediterranean forest ecosystems to the negative impacts of climate change through sustainable forest management.

Case Study Description

Challenges:

The Mediterranean islands are particularly susceptible to the effects of climate change. All the models coincide in foreseeing an increase in water stress and its associated risks for this region: drought, pests, fires, as well as those related to a change in ecological conditions (extinction of species, mutualism desynchronization, alteration of biodiversity, phenological changes). Insularity is also a factor that will increase the vulnerability associated with said effects.

To the changes related to the acceleration of climate change we must add socioeconomic ones (livestock crisis, increase of recreational activities, energy crisis, economic crisis), which draws a scenario of significant transformation in the forest structure of the island that may affect the adaptive response capacity of the forest communities and put the ecosystem supply, regulation and cultural functions and services at risk.

Objectives:

General objective: Contribute to the adaptation of the Mediterranean forest ecosystems of Menorca to the negative impacts of climate change, through sustainable forest management.

Partial objectives:

1. Demonstrate the feasibility of reducing the vulnerability of forest systems to climate change through forest management actions carried out on private farms.
1. Design forestry management guidelines at the island level, with governance and participation criteria that allow adaptation of forest ecosystems to climate change scenarios.
1. Train owners, managers and other social agents linked to forests in aspects related to sustainable forest management and good forestry practices.
1. Increase public sensitivity in general on the values of forests, the impacts of climate change and the role of sustainable forest management in this context.

Adaptation measures implemented in the case study:

[Structural/physical: Technology options](#) [2]

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[Social: Education options](#) [4]

[Social: Information options](#) [5]

[Social: Behavior options](#) [6]

Solutions:

- Information and analysis of the effects of climate change on Mediterranean forest areas

- Definition of forest management guidelines in the insular domain

- Drafting of pilot forest management plans for farms

- Pilot testing of forest management plans on farms

- Environmental assessment of the implementation of forest management guidelines

- Cost-efficiency evaluation of actions

- Analysis of the non-implementation of guidelines

- Manager training

- Information to the general public

- Dissemination of results

Execution of pilot tests: in 10 farms, silviculture activities on 22,30 ha of forests and improvements in 581 meters of stone walls.

-Reduce competition among trees

-Reduce scrub cover

-Favor pasture (cattle entry)

-Favor regeneration by seeding

-Health treatment (pruning)

-Hydrological restoration

Additional Details

Stakeholder engagement:

- Agência Menorca Reserva de Biosfera
- Conselleria de Agricultura, Medi Ambient i Territori del Govern de les Illes Balears.
- **Other research centers:** Instituto Menorquín de Estudios y Observatorio Socioambiental de Menorca
- Project scientific committee, with staff from Universitat de Illes Balears, Generalitat Catalunya, Centro

Tecnológico Forestal de Catalunya, Universidad de Alcalá de Henares

- **Other participating entities:** Monitoring Committee of the project, which integrates social agents of the island, among them the Grupo Ornitológico Balear, Unió de Pagesos, Association of forestry entrepreneurs, Menorca hikers Union ...

Awareness and dissemination actions performed are related to:

- Guide to good forest management practices for adaptation to climate change in Menorca
- Training Seminar on Forest Management for adaptation to climate change: challenges and opportunities

Manual for the preparation of forest management plans

Project interest:

The inclusion of practical pilot actions in the project subject to subsequent monitoring has made it possible to make an initial evaluation and redefinition of the planning and management guidelines of forests in Menorca in the face of climate change.

In addition, the information obtained has been transferred within the agroforestry sector of the island and shared in seminars and congresses, with the aim to promote sustainable and adaptive forest management of forests in Menorca, and by extension, of the Mediterranean basin, to climate change.

Success and limiting factors:

During the development of the LIFE + BOSCOS project, much importance has been given to the execution of direct actions geared at improving forest planning and management of the island (the “what”) as to the development of governance tools in the application of such measures (the “how”) .

For example, worked has focused on the participation of society in decision-making; establishing formulas for relationship and collaboration between farmers and owners; achieving compatibility between the economic and social activity of the forest without compromising its conservation; lastly, instruments have been developed to improve coordination between the competent administrations responsible for managing the territory.

Budget, funding and additional benefits:

Total project amount: 1,145,000 € (571,000 €, contributed by the EU)

The additional benefits of the project have resulted mainly in three major areas:

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Environmental awareness, in terms of its contribution to achieving greater understanding from an environmental point of view of the effects of climate change and environmental services in general. In this sense, a demographic study was conducted at the beginning of the project and at its conclusion, which is available on the project's website.

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Another important additional benefit has been the adjustment and introduction of measures financed through public subsidies for the agricultural sector that contribute to improving the adaptation of forest systems to climate change. Specifically, knowledge generated in cost/benefit studies of pilot farms has been leveraged in order to transfer it to all the farms of the island as part of the Agricultural Biosphere Reserve Contract (public call that recognizes the environmental services of farmers).

A third environmental benefit has been the improvement of the public's understanding of the diagnosis of the forestry sector. As a result of the participatory meetings to define adaptive forest management guidelines, progress was made in the degree of mutual understanding of the different sectors involved.

Legal aspects:

The project has used planning tools such as the Forest Management Plans; in addition, since its implementation the project has specifically contributed to these tools so that they may incorporate adaptive management actions to climate change through the publication of the Manual for the preparation of forest management plans.

In turn, the drafting and approval of the Forestry Plan of the Balearic Islands took place in parallel with the execution of the LIFE-BOSCOS project. The inclusion of climate change as a factor to be considered is contemplated therein, within the following:

*AXIS II.- ENVIRONMENTAL SAFETY**CHALLENGE 2.- FOREST MANAGEMENT AND ADAPTIVE FOREST SELVICULTURE TO THE FORESEEABLE EFFECTS OF CLIMATE CHANGE***Implementation time:**

January 2009 - June 2015

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Websites:

<http://lifeboscoss.cime.es/> [9]

Sources:

Informe Layman LIFE-BOSCOS: http://lifeboscoss.cime.es/WebEditor/Pagines/file/WCATALA_LW_Layman.pdf ...

[10] Gestión forestal adaptativa en Menorca (cap. 45 de la publicación Los bosques y la biodiversidad frente al cambio climático: Impactos, Vulnerabilidad y Adaptación en España) <http://www.mapama.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad> [11]...

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