



webinarios RedBosques_Clima

Forest adaptation to climate change
from a Mediterranean region perspective

Priorities in the adaptation
of Spanish forests to climate change

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GOBIERNO
DE ESPAÑA

VICEPRESIDENCIA
TERCERA DEL GOBIERNO
MINISTERIO
PARA LA TRANSICIÓN ECOLÓGICA
Y EL RETO DEMOGRÁFICO

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Forests provide essential services to humanity

Role of forests in the face of climate change

Forests and other forest lands, as carbon sinks, contribute to substantially limiting and offsetting emissions:

- By creating new forests and restoring degraded ones.
- Through long-term carbon storage in the forest ecosystem itself and in a series of harvested wood products and cork with long life cycles (wood for sustainable construction, poles, furniture, flooring, etc.)
- Supplying bio-based materials (textile fibres, paper, etc.) that can replace other fossil or high-carbon materials.
- As a source of renewable energy to replace non-renewable fossil fuels, through the use and energy exploitation of forest biomass (heat and power).

Impacts and risks for forests arising from climate change

- Longer summers in mediterranean areas
- Increase in the number of heatwave days
- Decrease in precipitation
- Expansion of the semi-arid climate
- Increase in evapotranspiration
- Increase in droughts: longer and more frequent
- Reduction in water resources
- Torrential rainfall and floods
- Expansion of invasive alien species
- Deterioration of ecosystems
- Increased risk of wildfires
- Increased risk of desertification
- No change in extreme winds



Impacts: droughts, pests and diseases. Weakening and high tree mortality.



1994-1996
drought in Murcia
(Spain)

Outbreaks of the
pine bark beetle
(Ips...)

17.600 ha and
850.000 trees

2014-2016
drought in Murcia
(Spain)

Outbreaks of the
pine bark beetle
(Ips...)

18.000 ha and 1.2
million trees

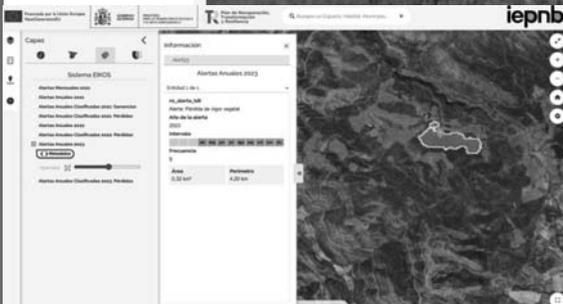


LIFE projects : FOREST CO2 Y ADAPTALEPPO.





2024



Lack of forest management in many mediterranean areas

Silvopastoralism
Restoration



Forest
management

Very high costs of forestry operations

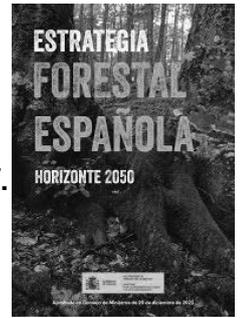
Lack of labor force in many rural areas

Complicated mechanization and access to the forest

Forest products obtained of low quality and without a market



Spanish Forest Strategy Horizon 2050



- It is the reference document for establishing Spanish forestry policy. Review and update the first EFE of 1999.
- Strong presence of the climate change component in its approach:
 - ✓ **2 general objectives** that highlight the contribution of forest management to mitigation and adaptation, as well as to decarbonisation and energy transition.
 - ✓ **1 specific line of action** dedicated to the prevention and adaptation of forest ecosystems to climate change.
- The measures to be carried out over the next decade are specified in the Spanish Forest Plan 2022-2032.

Spanish Forest Strategy Horizon 2050

STRATEGIC ORIENTATIONS ON CLIMATE CHANGE

- Integrate adaptation to climate change into forest and silvopastoral planning instruments, as well as ecosystem restoration and reforestation with species more adapted to new clima context. (New guidelines Sustainable Forest Management)
- Improve and strengthen the knowledge of the consequences of climate change on forest ecosystems and species, as well as the quantification of the contribution of forest management to their mitigation and adaptation.

Spanish Forest Strategy Horizon 2050

FOREST POLICY OBJECTIVES INCLUDED IN THE MAIN STRATEGIC INSTRUMENTS ON CLIMATE CHANGE (PNIEC 2030 AND ELP FOR DECARBONISATION 2050)

- Achieve a reforestation rate of **20,000 ha/year** in the period 2020-2050 (0.6 M ha throughout the period, increasing the forest sink by 7.04 MtCO₂eq of net absorptions in 2050 compared to the trend).
- Surface area target with a forest management instrument of **100,000 ha/year**, reaching an additional 3 million ha of managed forests by 2050.
- Development of **economic instruments** to balance the rent of landowners that generate absorptions (Forestry Best Management Practices)
- Promotion of research, development and innovation **activities focused on** improving knowledge of ecosystems and **CO₂ stores**.
- Changing behaviour among consumers and **promoting the use of forest products**.

Spanish Forest Plan 2022-2032 (PFE)

- Reviews and updates the first PFE of 2002.
- It is the medium-term planning instrument of Spanish forestry policy, which develops the Spanish Forest Strategy.
- It develops the strategic orientations of the EFE in the form of measures to be applied by both public administrations and agents in the forestry sector.
- The PFE proposes a total of 13 measures in the line of action for the prevention and adaptation of forest ecosystems to climate change, 5 of which have been identified as priorities in the process of drawing up the Plan.



Spanish Forest Plan 2022-2032

REGULATORY AND INSTRUMENTAL DEVELOPMENT MEASURES

- Incorporation of forestry measures in the instruments that make up the Strategic Framework for Energy and Climate (PNIEC).
- Promote the development of forestry measures in the Strategic Plan of the Community Agricultural Policy in Spain (PEPAC), which contribute to climate objectives.
- Development of the National Plan for Adaptation to Climate Change (PNACC-2) in forestry and desertification.
- Modification of the regulations on carbon footprint registers (RD 163/2014) to promote compensation initiatives through afforestation, reforestation and forest management.

Spanish Forest Plan 2022-2032

ADMINISTRATIVE COORDINATION MEASURES

- Planning and implementation of the measures needed to contribute to the 2050 climate neutrality goal (ELA)
- Development of silvicultural models whose main objective is the absorption of CO₂.
- Strengthen cooperation between forestry and climate change administrations, at national and regional level.
- Creation of a working group within the National Forestry Committee for the development of a methodology for estimating emissions and removals from forest management.

Spanish Forest Plan 2022-2032

MEASURES FOR THE DEVELOPMENT OF ACTIONS ON THE TERRITORY. ANALYSIS AND STUDIES.

- Enhancement of shrubs and pastures as a factor that increases organic carbon in soils, and development of methodologies for its quantification.
- Development of methodologies for the calculation of the contribution of forest management to the increase in carbon sequestration in forests.
- Research of abandoned rural land properties, in which spontaneous forest masses have emerged, to be incorporated into the forest areas classified as forest in transition (LULUCF)
- Reinforcement of research on the role of forests in climate change mitigation and adaptation.
- Incorporate climate projections and mitigation measures into forest fire management planning and restoration of fire-affected forests.

Spanish Forest Plan 2022-2032

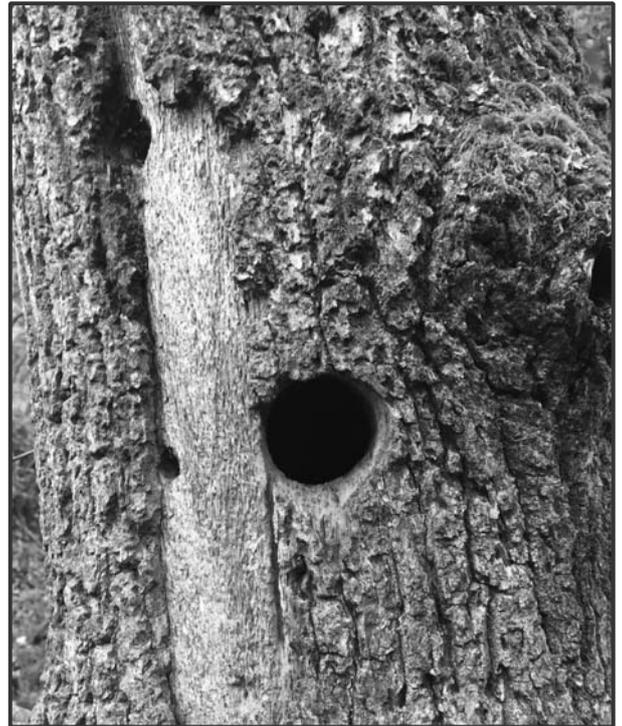
RELATED PFE INDICATORS

- Increase in forest area (20.000 ha / 3.000 million trees, 3 million ha)
- Conserving and improving forest genetic resources for future Mediterranean forests
- Carbon stored and changes in carbon stored in aboveground and underground forest biomass, forest soil, and harvested wood products.
- Forest area subject to active forestry and silvopastoralism.
- Forest area with a sustainable forest management instrument.
- Investment in the forestry sector per hectare of forest land, at national level and per Autonomous Community (€/ha).

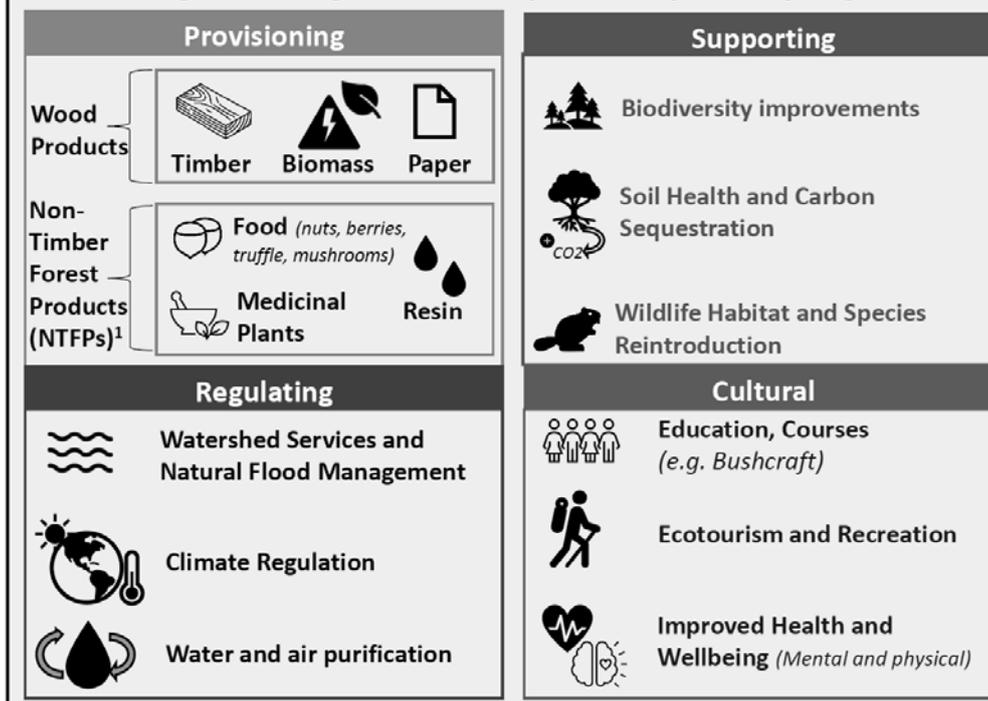


The European Union Nature Restoration Law

- **Natural habitats and species of wild fauna and flora of Union interest**
- Art. 4 Member States shall put in place the restoration measures that are necessary to improve to good condition areas of habitat types listed in Annex I which are not in good condition.
- Art. 12 Member States shall put in place the restoration measures necessary to enhance biodiversity of forest ecosystems, in addition to the areas that are subject to restoration measures pursuant to Article 4. ...while taking into account the risks of forest fires.
- Member States shall achieve an increasing trend at national level of the common forest bird index
- Member States shall achieve an increasing trend at national level of at least six out of seven of the following indicators for forest ecosystem
 1. Standing Deadwood and lying Deadwood (Forest and OWL))
 2. Share of forests with uneven-aged structure: (only FAWS)
 3. forest connectivity (remote sensing, forests)
 4. stock of organic carbon (litter and SOC (Forests))
 5. share of forests dominated by native tree species (cover > 50%) (forest and OWL)
 6. Trees species diversity (forest areas)



Examples of Ecosystem Services provided by Forestry Projects⁵



THANK YOU FOR THE ATTENTION

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