



LIFE RESILIENT FORESTS

CLOSING EVENT
VALENCIA, 22.3.2023

**RECONCILING SUSTAINABLE FOREST MANAGEMENT
WITH THE PROTECTION OF CARBON SINKS,
RESILIENCE, WATER AND BIODIVERSITY**

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SDGS AND SOCIETAL CHALLENGES

- Integration of 3 pillars
- Cross-sectoral integration
- Search win-wins
- Overcome sectoral silos
- In all, forest relevant



SDGS AND SOCIETAL CHALLENGES

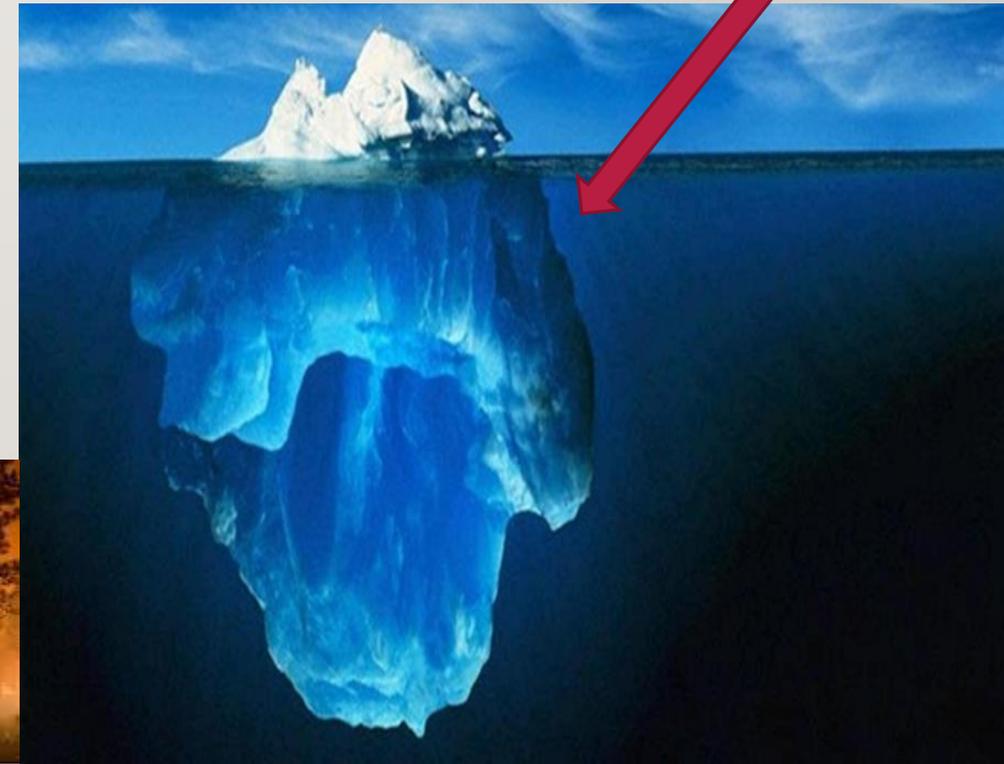
- High efficiency in facing sectoral and short term challenges BUT low in facing cross-cutting and long term challenges
- Symptomatic answer just deepens the problem or at least does not yield any positive effect distracting time, resources and political/societal interest:
 - health
 - forest fires
 - financing consequences of polarized spatial societies
 - ...

-> causes collective frustration

effect



Root causes





WHERE DO WE COME FROM?

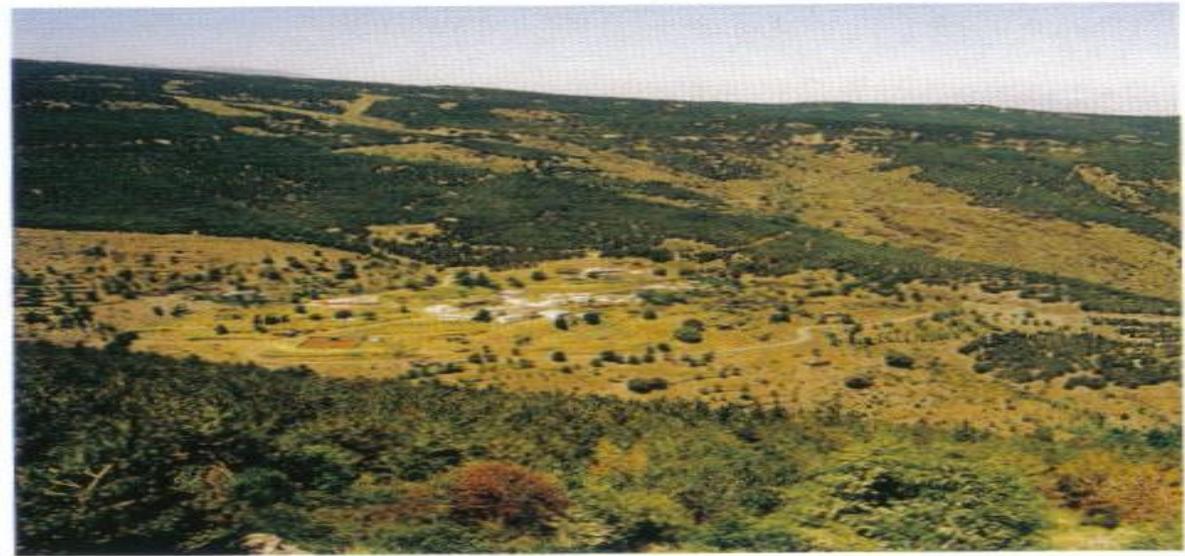


GUAR
DAMAR
AMAR





Monte Casa de la Matrona, Málaga. Año 2001



Paraje de Alcóntar, Sierra de Filabres. Años 1969 (izquierda) y 1999 (derecha).





1920



1930



1990



2004

La ausencia de claras y la edad han dado lugar al decaimiento de la masa principal. Aparece un subpiso natural de diversas especies.

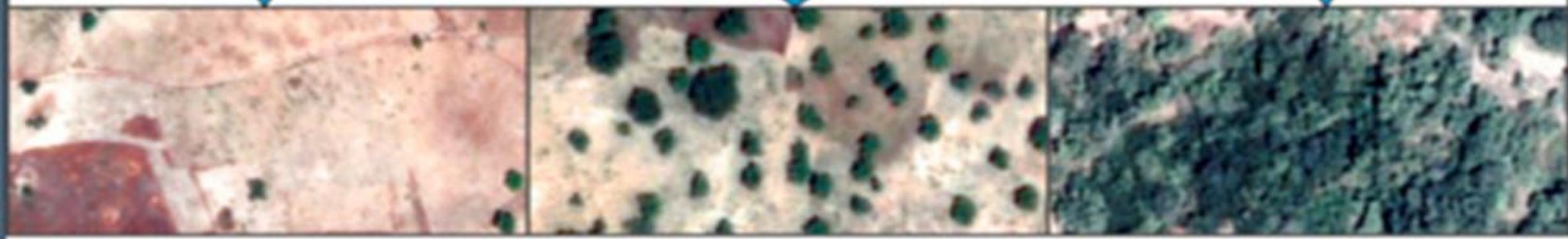
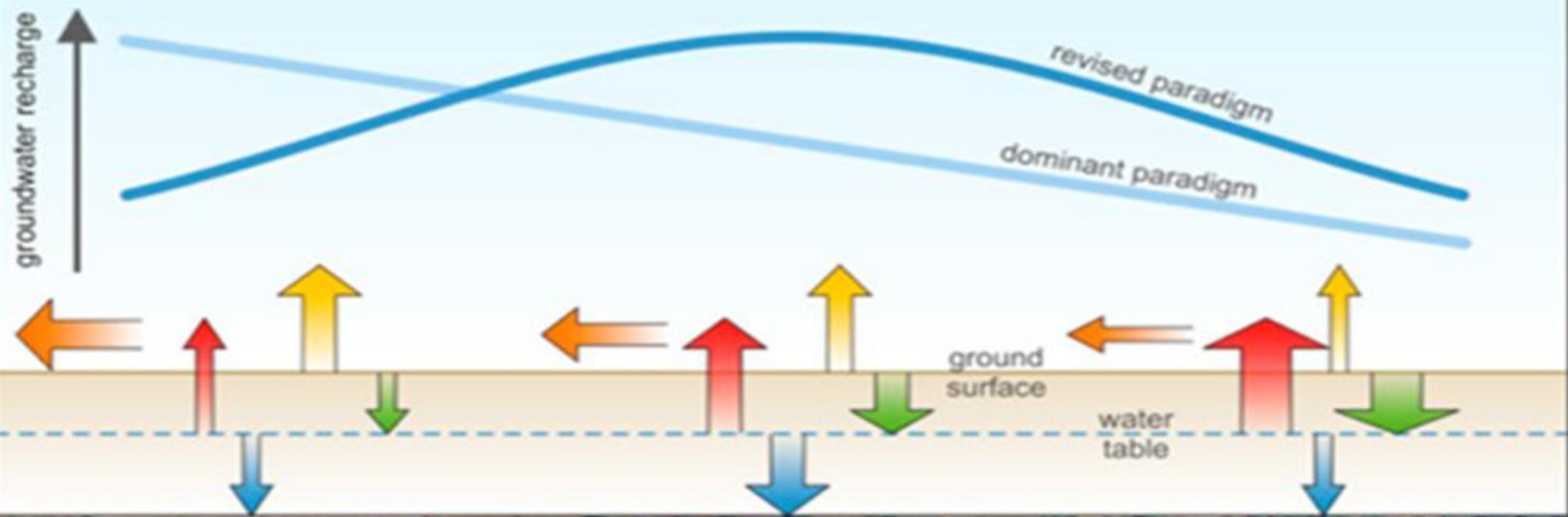
El monte *Perímetro de Tendilla*, nº GU-1003 del Elenco, comprende la cuenca del barranco de Valdeauñón. Fue adquirido por el Estado. Tiene 37 ha de superficie y está poblado por una masa regular y artificial de pino carrasco. Su historia tiene origen en la inundación del pueblo en **1915**. Se inician trabajos de repoblación forestal sobre eriales y olivares en **1923**.

WHY ARE INTEGRATED APPROACHES RELEVANT?

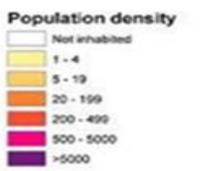
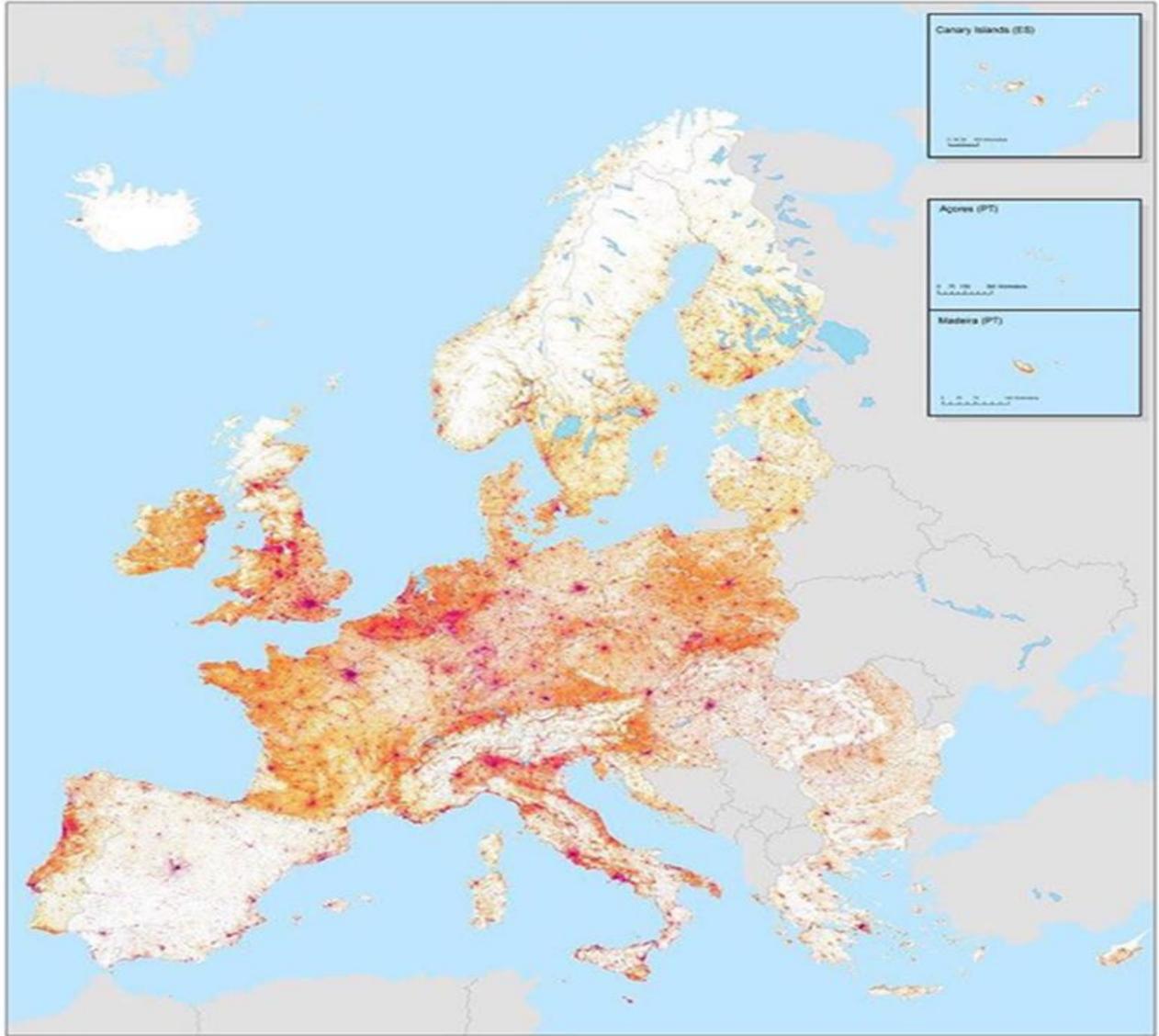
- Water (Ebro -50% water flow)
- Carbon stocks
- Biodiversity
- Fires
- Resilience
- Preventing rural decline



surface runoff transpiration + interception groundwater recharge soil evaporation infiltration



canopy cover



WHAT CAN FOREST MANAGEMENT CONTRIBUTE?

- Reduce competition (more green & blue water)
- More resilient trees against draughts and insects
- Less burnable trees
- Avoid vertical ladder (P halepensis)
- Avoid horizontal continuity



¿QUÈ POT FER LA SILVICULTURA?

- Les eines fonamentals de la silvicultura son:
 - la forma de regeneració: sexual o vegetativa (bosc alt o baix)
 - la forma d'aglutinar les edats a escala de rodal: totes presents i substantives o només una (bosc regular o irregular, regenerem en un moment concret o contínuament)
- Addicionalment hi ha altres aspectes:
 - elecció de l'espècie a plantar (1^a o successives repoblacions) o cercar en una regeneració natural o mixta
 - regulació de la densitat, especialment en bosc alt regular (aclarides, clares)
 - cercar un estrat de servei dominat
 - estassar, esporgar



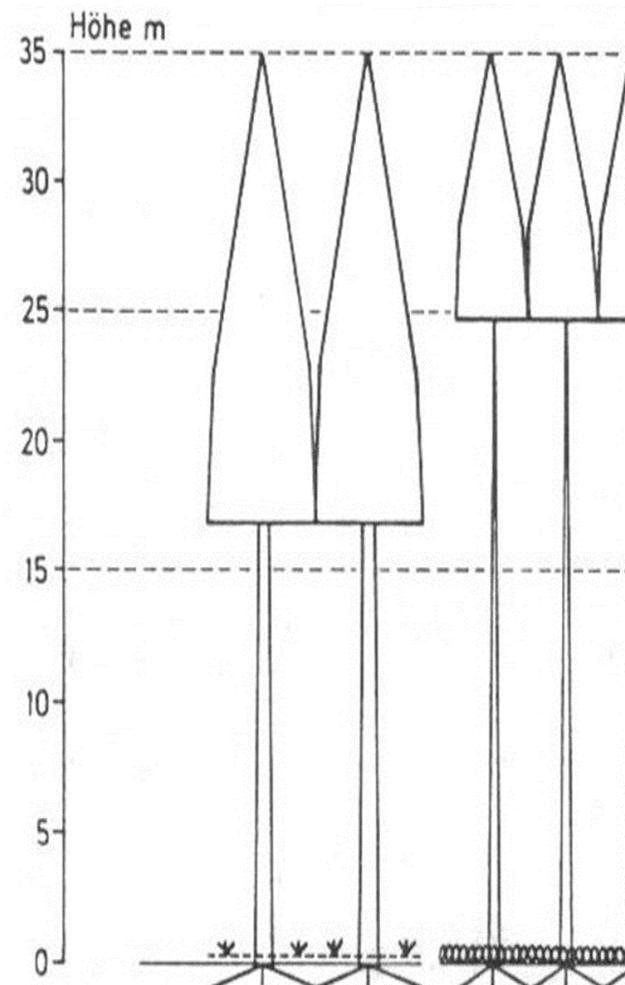
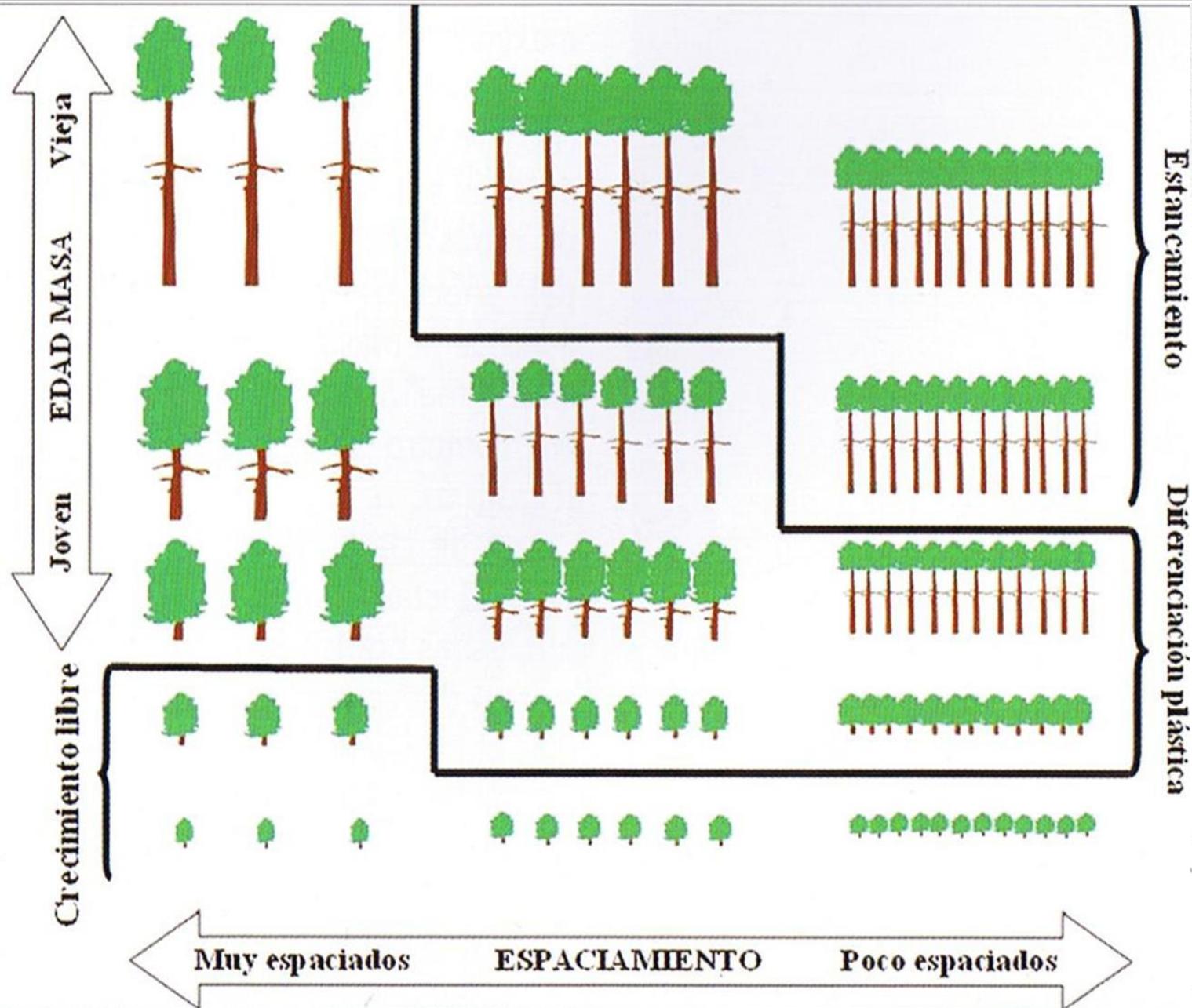






Amb clares



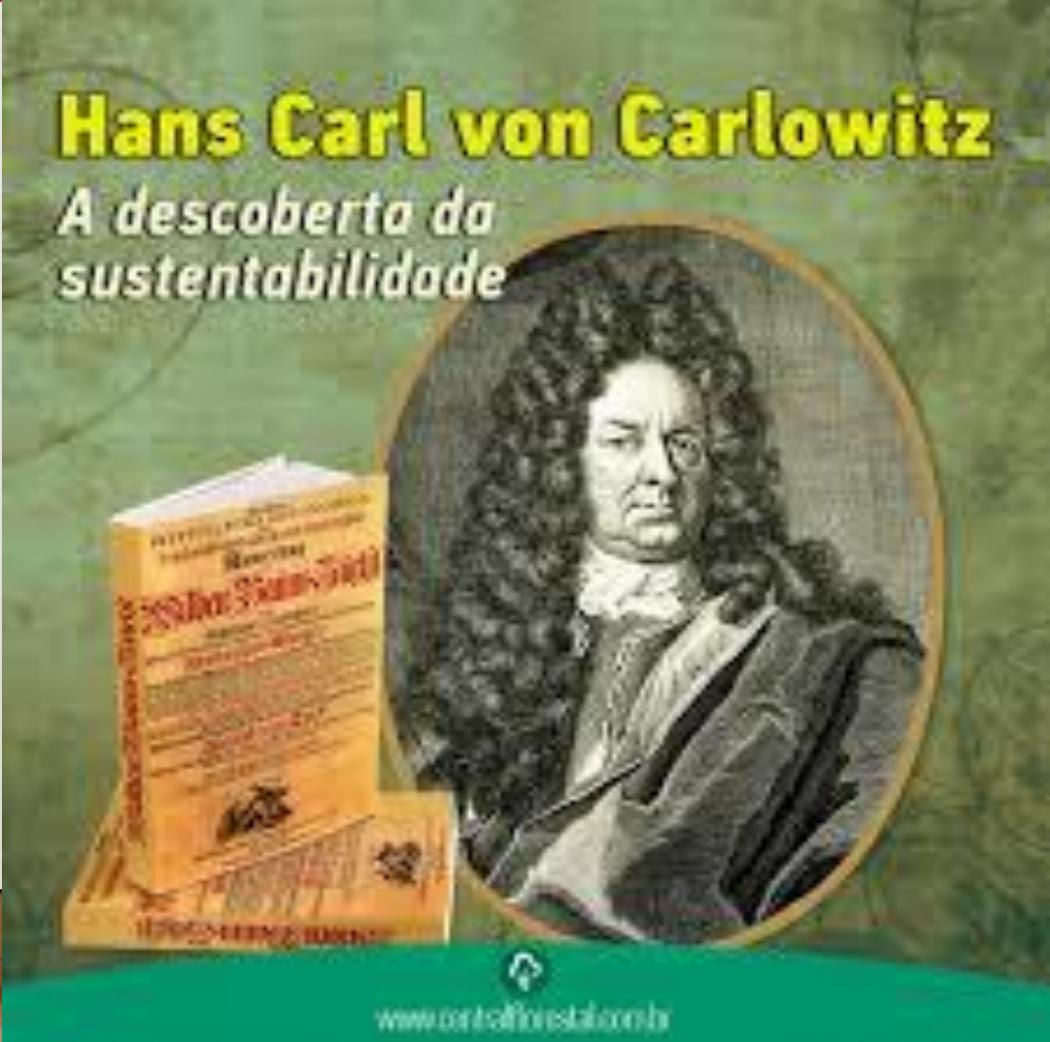


N/ha	278	625
H/D	60	100
BHD	58 cm	35 cm
Vorrat	1075 fm	994 fm

Figura 2.- Forma de crecimiento con la edad de los árboles de una plantación sujeta a la dinámica natural, para distintas distancias de plantación.

Abb. 75: Vergleich von Fichtenbeständen in Ottenstein/NÖ (POLLANSCHÜTZ-E). Nur mäßig durchforstete Bestände sind stammzahlreich, labil und von geringer Stabilität. Eine stärkere Durchforstung führt zu Stabilität gegen Schneebruch und wesentlich höherer Stabilität.

RECALL FOREST CONTRIBUTION TO SUSTAINABILITY



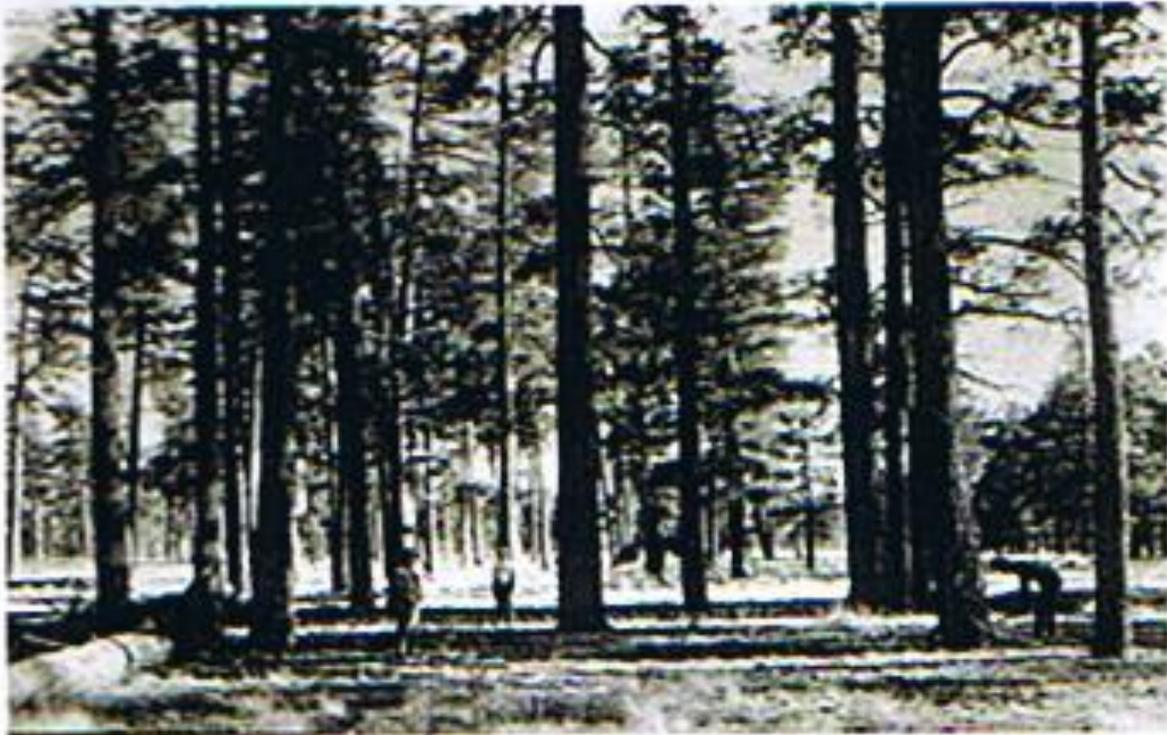
BUT AGRICULTURE IS AS WELL CRITICAL

- Extensive grazing
- Extensive agriculture



RESILIENT LANDSCAPES/TERRITORIES

FOTOS 1 I 2: TIPUS DE BOSCOS ADAPTATS AL REGIM NATURAL D'INCENDIS DE BAIXA INTENSITAT



Bosc de pi ponderosa a principis del segle XX a Arizona, EE.UU.
http://www.cpluhna.nau.edu/Research/changed_southwestern_forests.htm



Bosc de pinassa pasturat a la comarca del Solsonès, Catalunya central (Foto: E.Plana)

LES ACTIVITATS PRIMÀRIES EN LA PREVENCIÓ DEL FOC

Agricultura extensiva

- Interrupcions horitzontals del foc, especialment si està llaurat i les plantes son poc combustibles i separades (vinya)
- Més riscos: abandonament, llaurar en dies crítics, rastrolls
- Ubicació òptima com a Punts Estratègics de Gestió





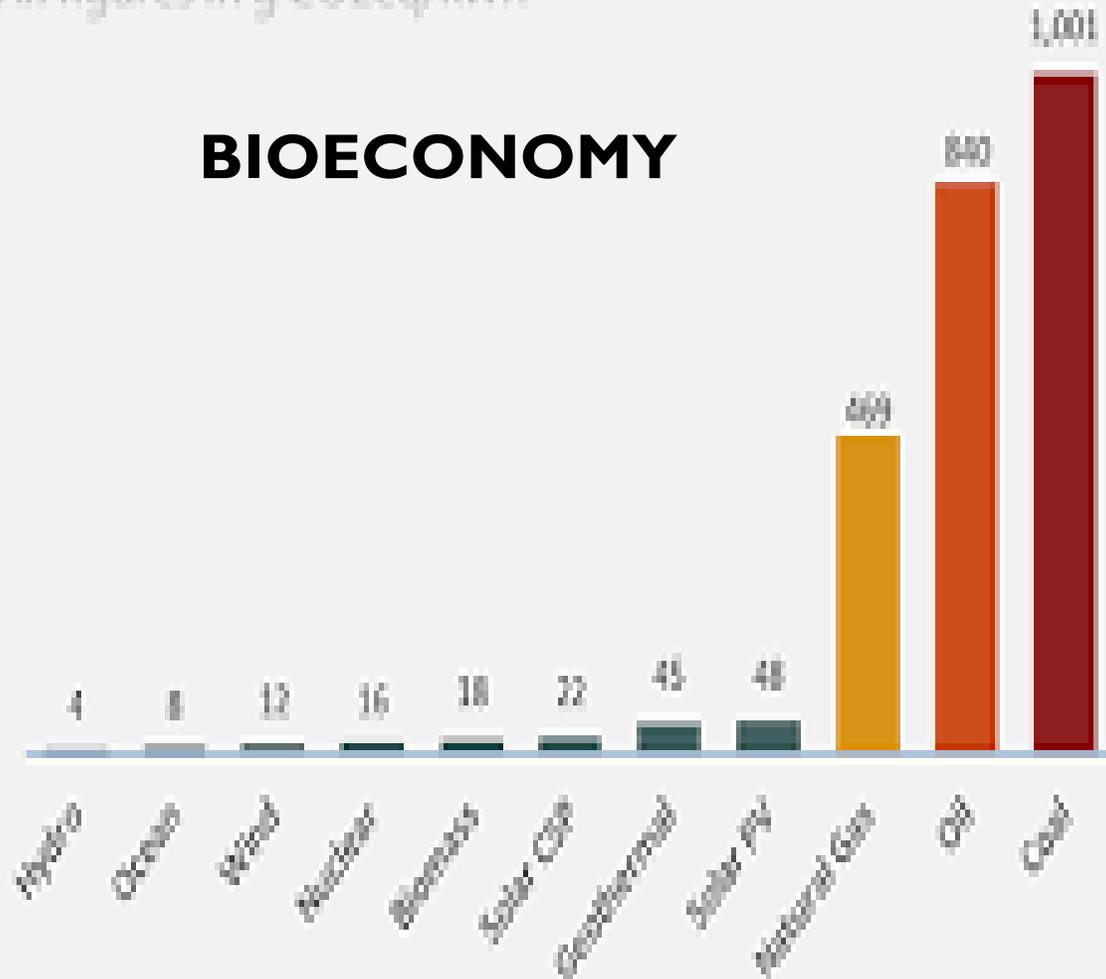
SILVOPASTORAL AND AGROFOREST MODELS



The Carbon Intensity of Electricity Generation

All figures in g CO₂eq/kWh

BIOECONOMY

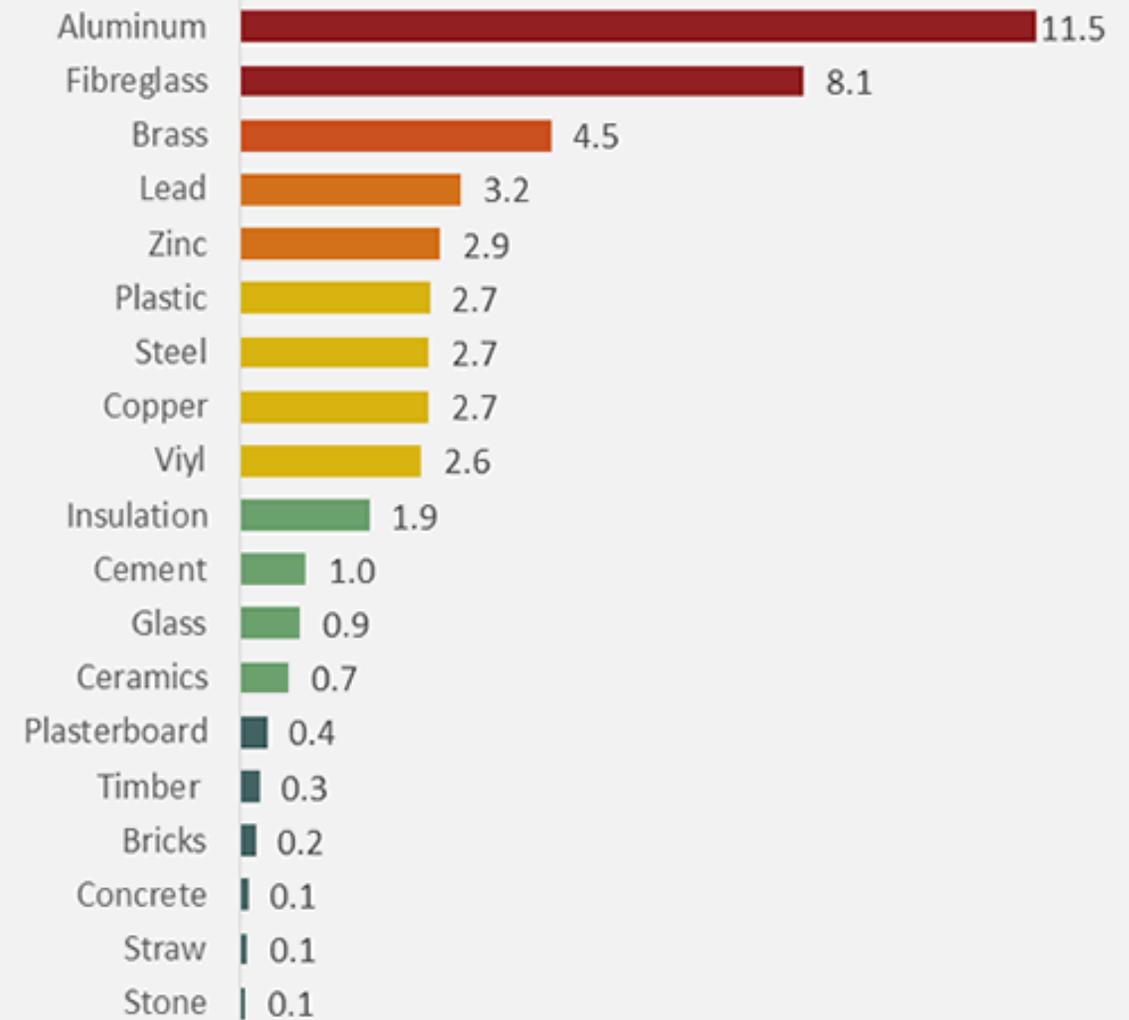


Note: Data is the 50th percentile for each technology from a meta study of more than 50 papers.

Source: IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation

The Embodied Carbon of Building Materials

All figures in kg CO₂/kg of building material



Note: This figure is intended as a beginners guide. Detailed estimation involves considerable complexity for each product. Figures for metals assume virgin material.

Source: **Inventory of Carbon & Energy (ICE) database.**

Download: <http://www.circularecology.com/ice-database.html>



Non-renewable vs. bio-based

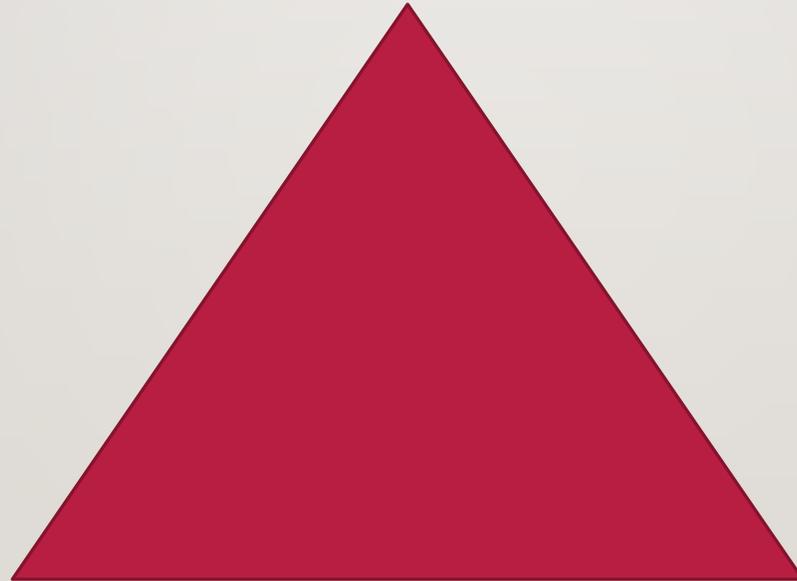
Scale difference



Shaping the Biofuture

A NEW MISSION FOR RURAL AREAS

Biomaterials



Food

Environmental and social services



BIOECONOMY PHASES

- 1) **Bioenergy**
- 2) **Bio-bulding**
- 3) **Biorefineries**

[EU Bioeconomy Strategy \(2018\)](#)

https://ec.europa.eu/info/research-and-innovation/research-area/environment/bioeconomy/bioeconomy-strategy_en

Raw materials

- Crude oil
- Natural gas

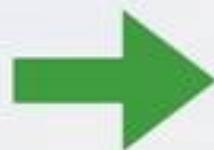


Products

- Fuels
- Chemicals
- Materials

Raw materials

- Biomass
- Waste



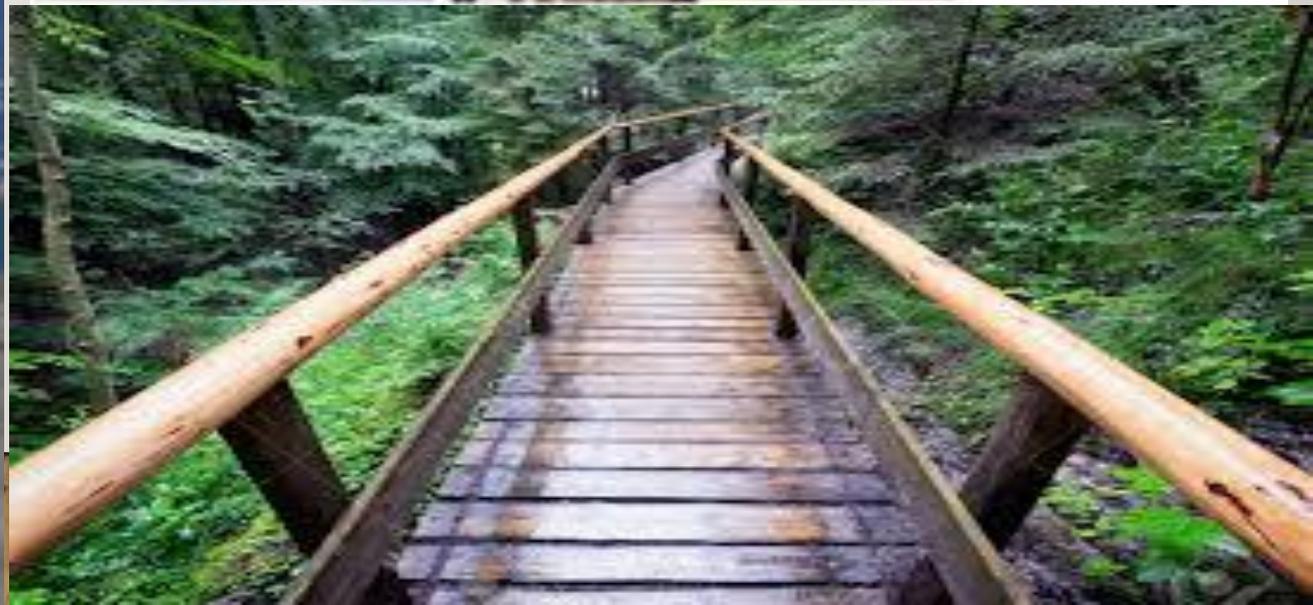
Products

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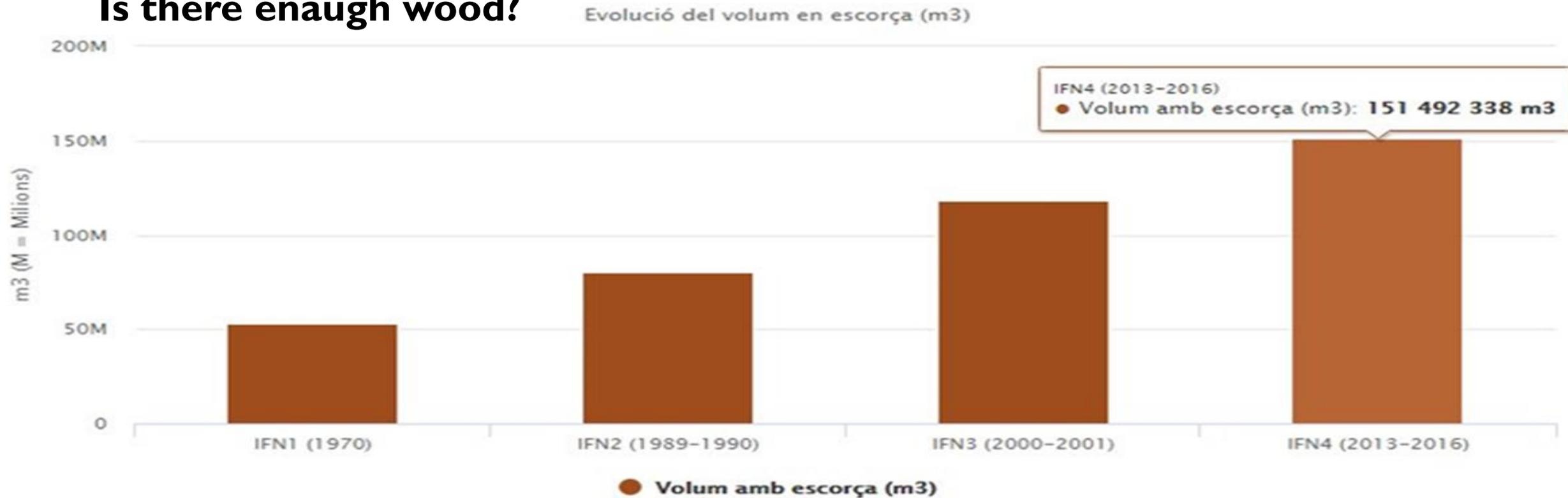
BAMBÚ





Evolució del volum en escorça (m3)

Is there enough wood?



Font: Inventario Forestal Nacional / Gràfica: @OFC

Catalunya 1970-2016): stocks x3!

Copy

Inventari	Volum en escorça (m3)	Increment	Interval (anys)	Increment anual (m3)
IFN1 (1970)	52.726.384	-	-	-
IFN2 (1989-1990)	80.005.408	34.10%	20	1.363.951
IFN3 (2000-2001)	118.117.666	32.27%	10	3.811.226
IFN4 (2013-2016)	151.492.338	22.03%	15	2.224.978

Navafría: management vs non management



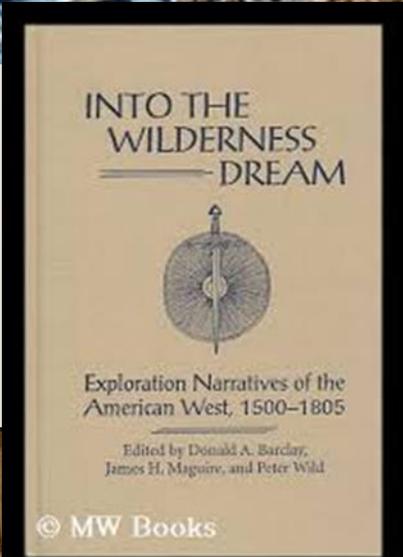
POOR POLITICAL DECISIONS

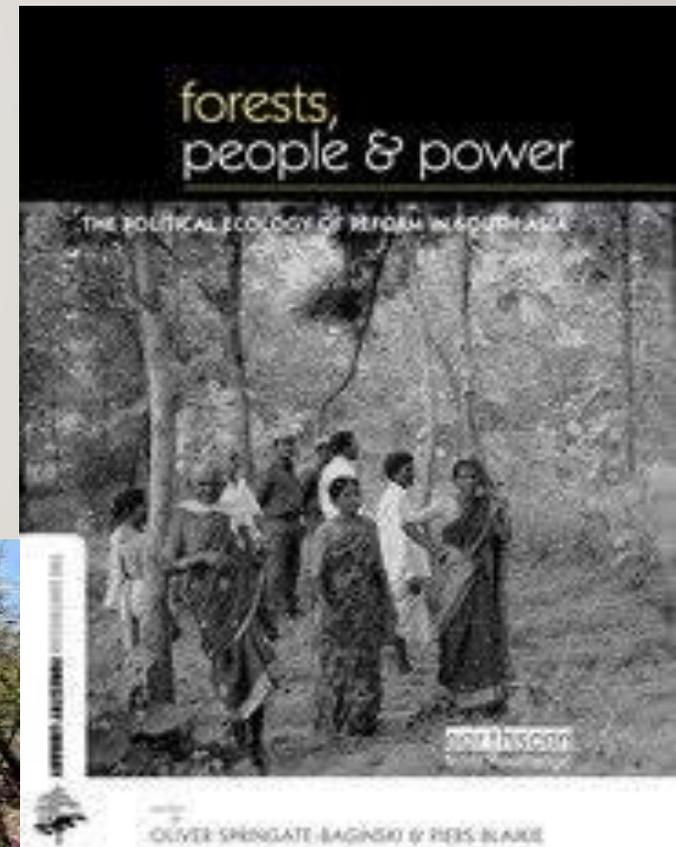
- Way the EU New Green Deal is applied in the forest area (43% territory) is very questionable

Risks implied



THE NEED FOR SOCIATAL LEGITIMATION





Thanks for your attention!

