



1. Catalonia is a forested country.....

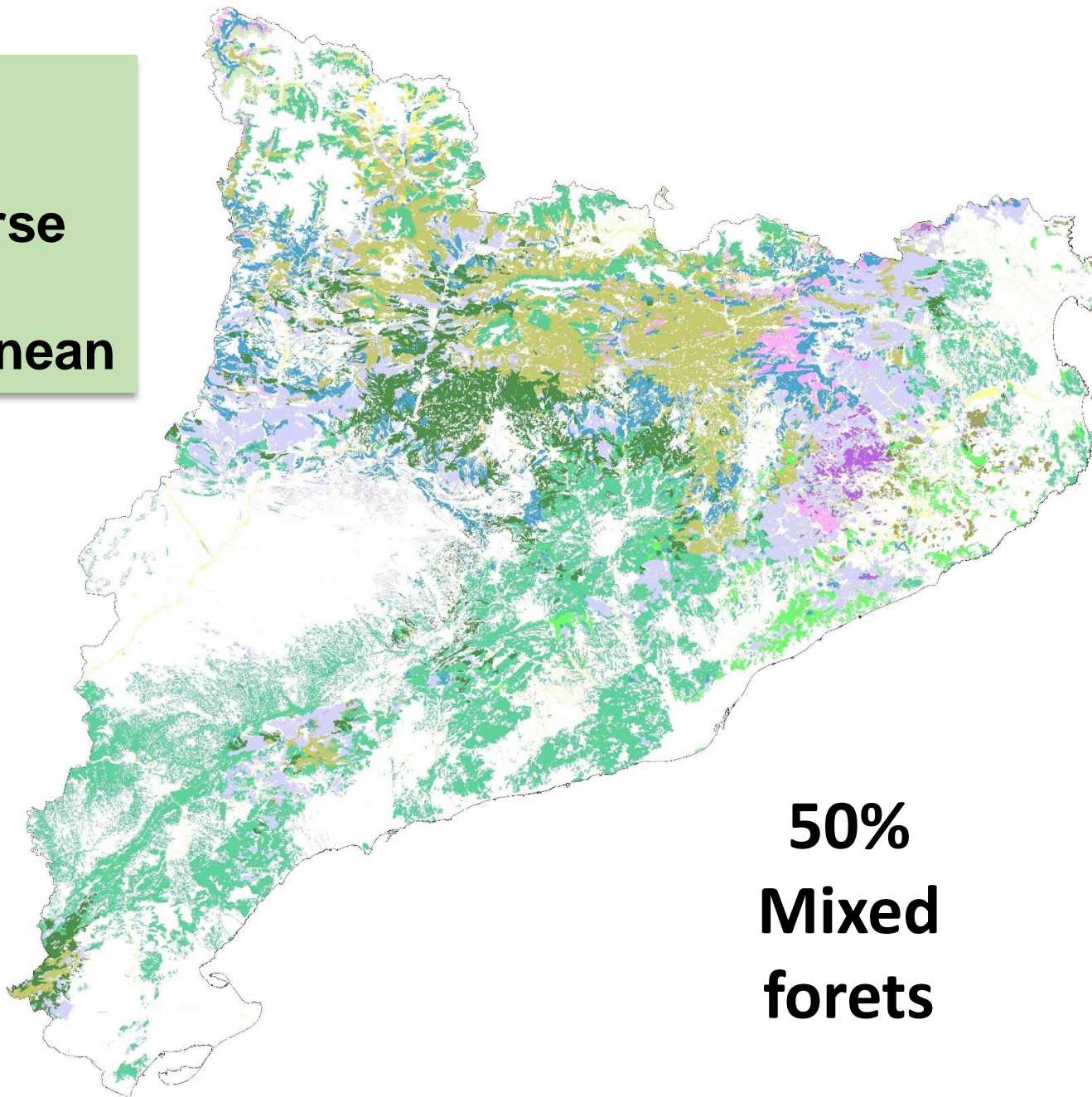
Forest area = **64,6 %** of total area  
**2 million hectares**

..... and the catalans don't know it!



2.

**Very diverse  
and  
Mediterranean**



**50%  
Mixed  
forests**

-  Avetoses
-  Bedollars
-  Castanyedes
-  Fagedes
-  Formacions de ribera
-  Pinedes de pi blanc
-  Boscos de pinassa
-  Boscos de pinastre
-  Pinedes de pi pinyer
-  Boscos de pi roig
-  Boscos de pi negre
-  Plantacions
-  Rouredes
-  Alzinars



**3.**

**Mostly new  
and young  
forests**

( $< 100$  years;  
40 % in the  
last 50 years)



1950



2020



# Main products from Catalan forests

4.

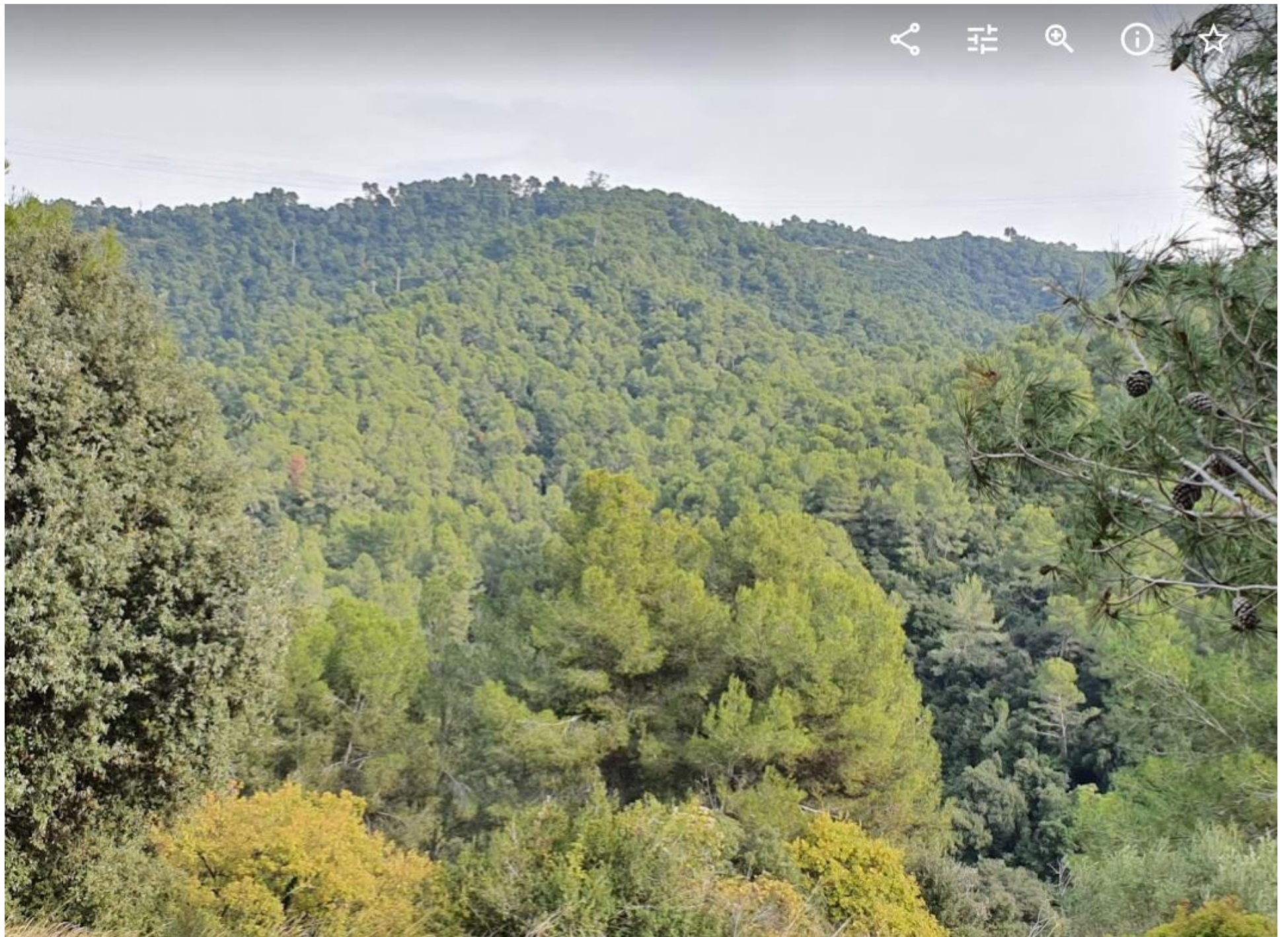
## Pallets and Pellets



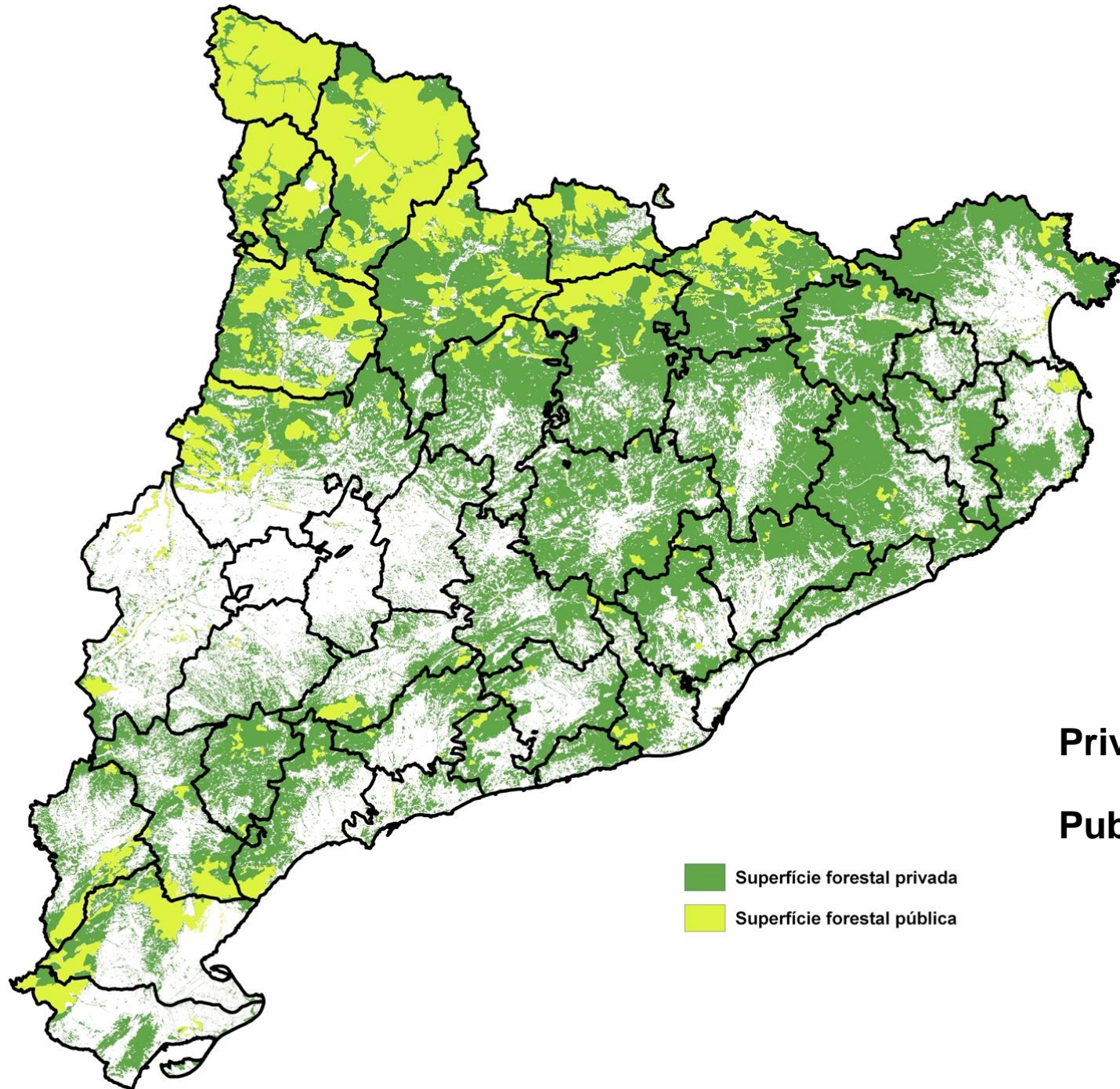


5.

**High slopes  
and lack of  
roads**







5.  
**Mostly private**

### Forest ownership in Catalonia

Private Forests **78 %** **1.569.466 ha**  
Public Forests **22 %** **367.612 ha**

■ Superficie forestal privada  
■ Superficie forestal pública



# Private Forest owners in Catalonia

**264.747** forest owners :

- **95 %** of forest owners with estates < 25 ha
- **5 %** of forest owners with estates > 25 ha

Average  
forest size:  
**1,6**  
hectares

6.

**Fragmented:  
Mostly  
small  
owners**

**FAMILY SMALL-SCALE FORESTRY**



In the 80s....

- Fragmentation
- Low economic profitability of the majority of forests
- Will to protect nature

The government had interest in promoting (sustainable) forest management

1988 → Catalan Forest Law:

New tools:

FORESTRY PLANNING

CO-RESPONSIBLE FOREST MANAGEMENT



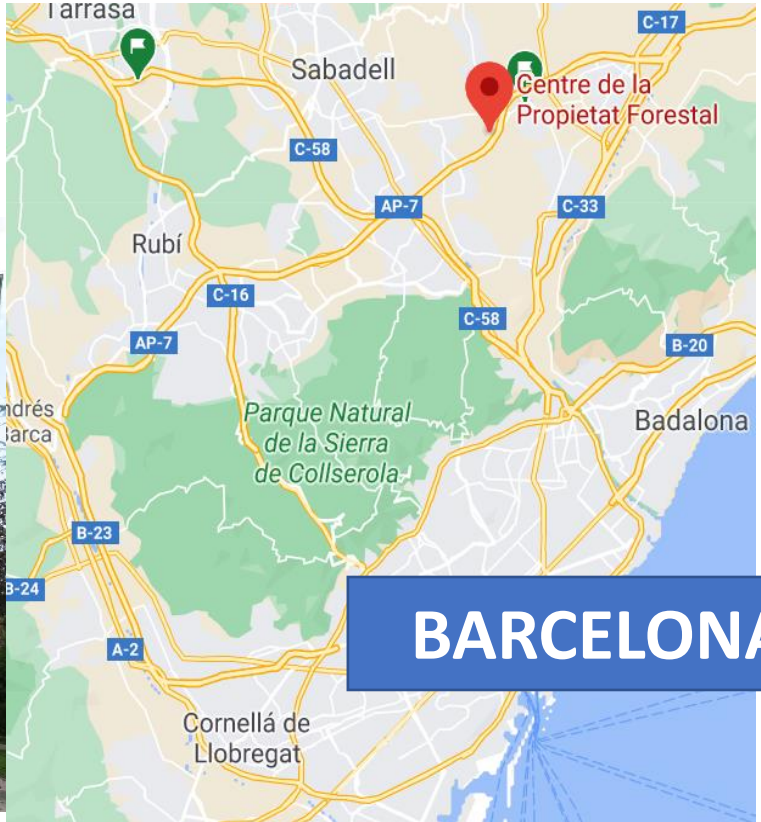
Generalitat de Catalunya  
Departament d'Agricultura,  
Ramaderia, Pesca i Alimentació



Centre de la Propietat  
Forestal

FOREST OWNERS HOLD  
**50 % OF THE SEATS**  
OF THE CPF ADVISORY  
BOARD



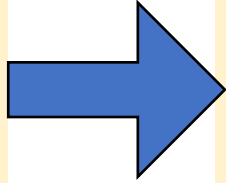


**CPF  
MISSION**

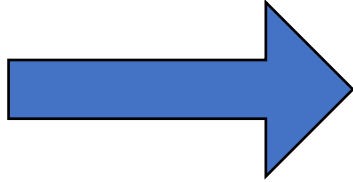
**TO PROMOTE SUSTAINABLE  
FOREST MANAGEMENT IN THE  
CATALAN PRIVATE FORESTS**



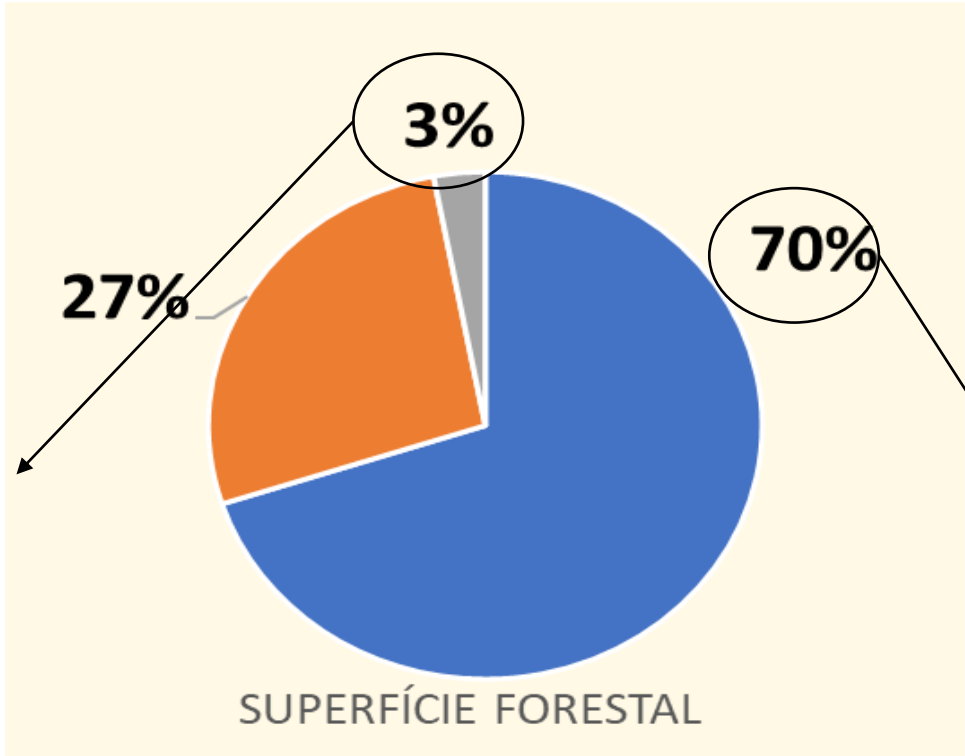
**266.000**  
private forest  
owners



CPF members :  
**4.500** private  
forest owners



CPF members  
**2%** of forest  
owners, but owning  
**33 %** area!  
Mean average  
surface/estate:  
**108**  
**hectarees**



**50%** forest owners  
(estates < 1ha)

**5 %** forest owners  
(estates > 25 ha)

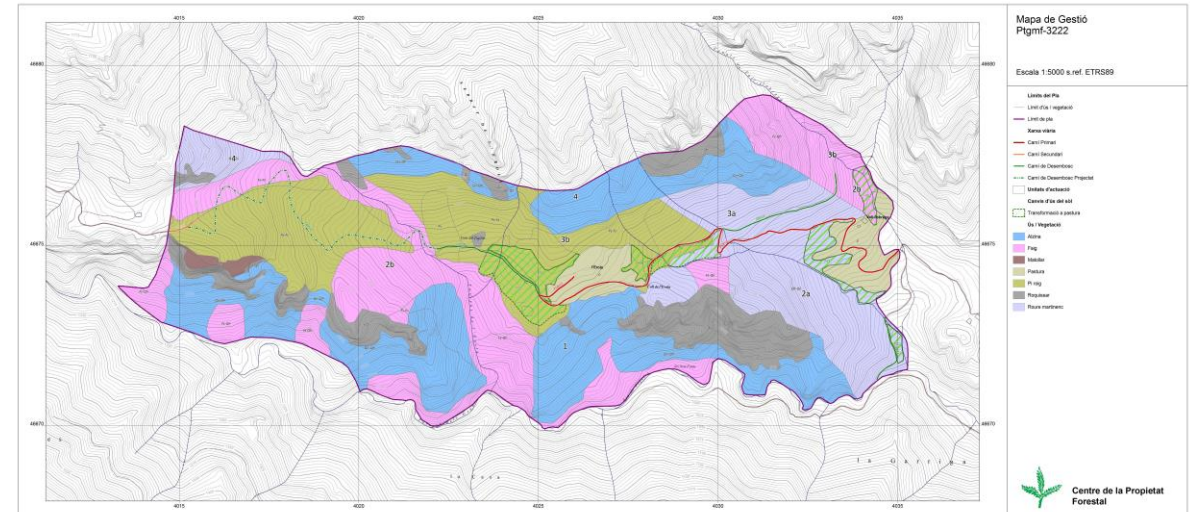


# 1 Approval of Forest Management Plans (forest scale)

## Forest Management Plans

- **Simple Forest Management Plan (PSGF): <25 hectares.**
- **Technical Forest Management and Improvement Plan (PTGMF): > 25 hectares**

**Voluntary** .... but provide some advantages (tax reduction, insurance, priority for grants,....)










# Orientacions de gestió forestal sostenible de Catalunya (ORGEST)



## Tipologies forestals arbrades



## Models de gestió per als boscos de roure de fulla petita (*Quercus faginea*) i roure martinenc (*Quercus humilis*)



## Producció de fusta i prevenció d'incendis forestals




## Models de gestió per als boscos de fagedes (Ar.)




## Models de gestió per als boscos de pinassa (Ar.)



## Producció de fusta i prevenció d'incendis forestals



## Models de gestió per als boscos d'alzina (*Quercus ilex* subsp. *ilex*) i carrasca (*Quercus ilex* subsp. *ballota*)

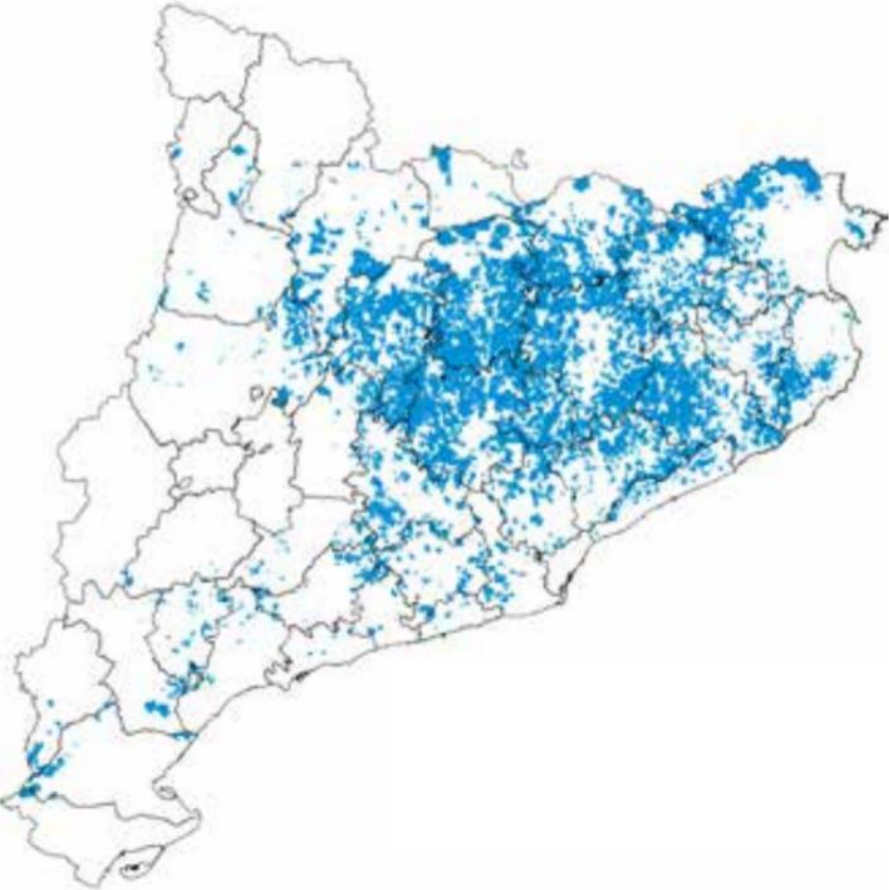


## Producció de fusta i prevenció d'incendis forestals

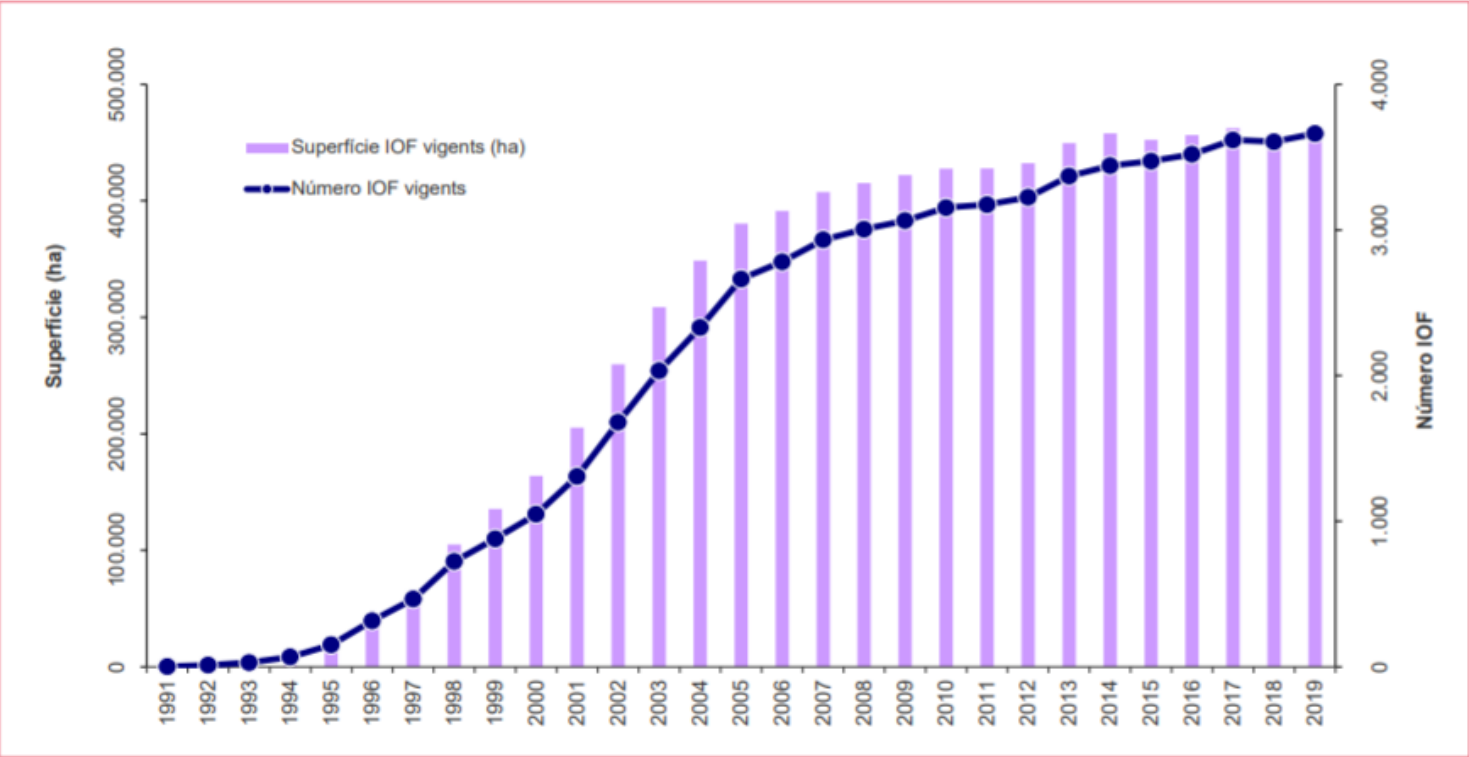


**3.700 FMP (PTGMF + PSGF)**

**450.000 hectares (33 %)**

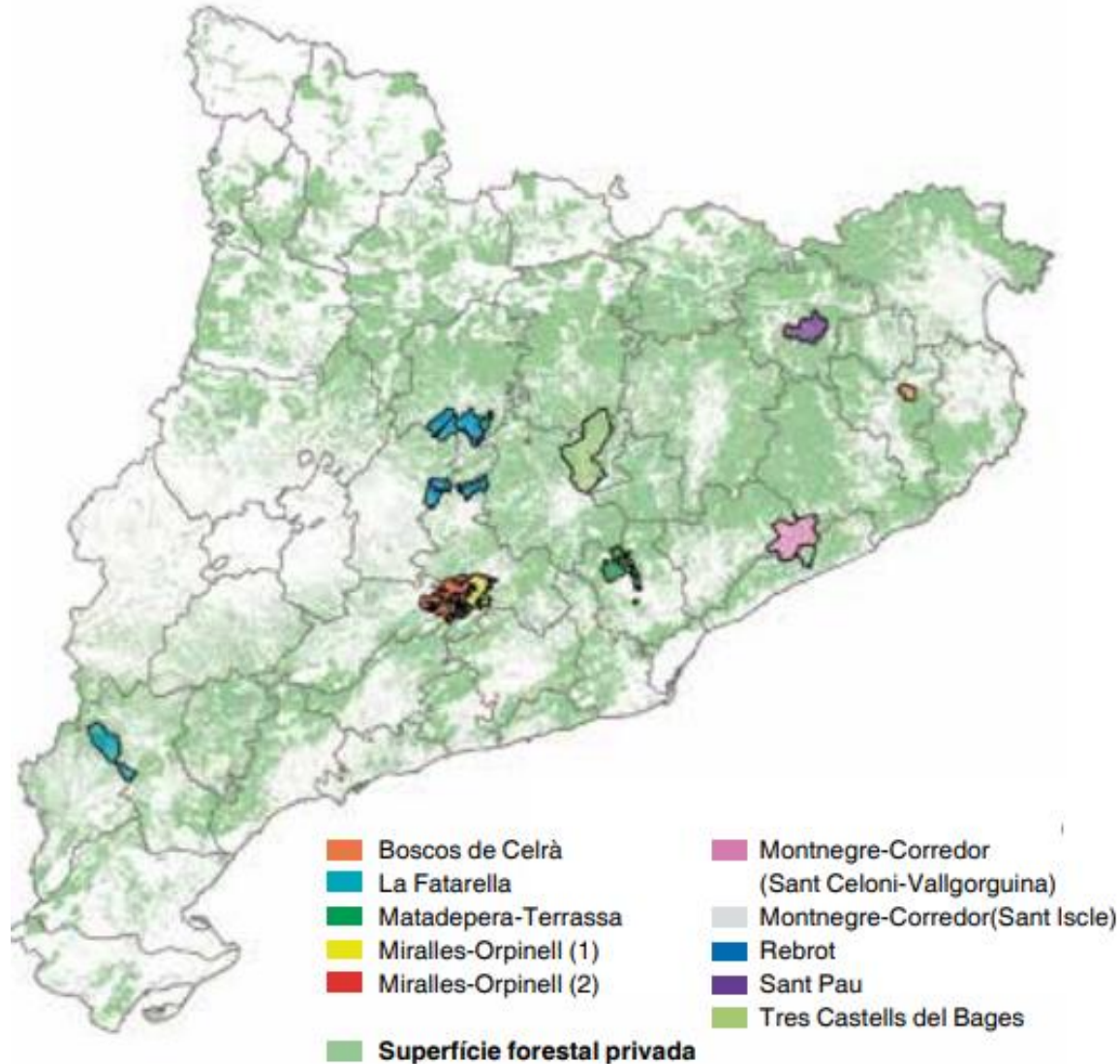


**Instruments d'ordenació forestal vigents**





- **Joint Forest Planning Instruments (PTGMFc):** joint management of several estates (around 5.000 -10.000 hectares)



	Num.	Ha
PTGMFc	16	60.000
New Forest owners	50	3.500

FIRE PREVENTION  
JOINT FOREST MANAGEMENT



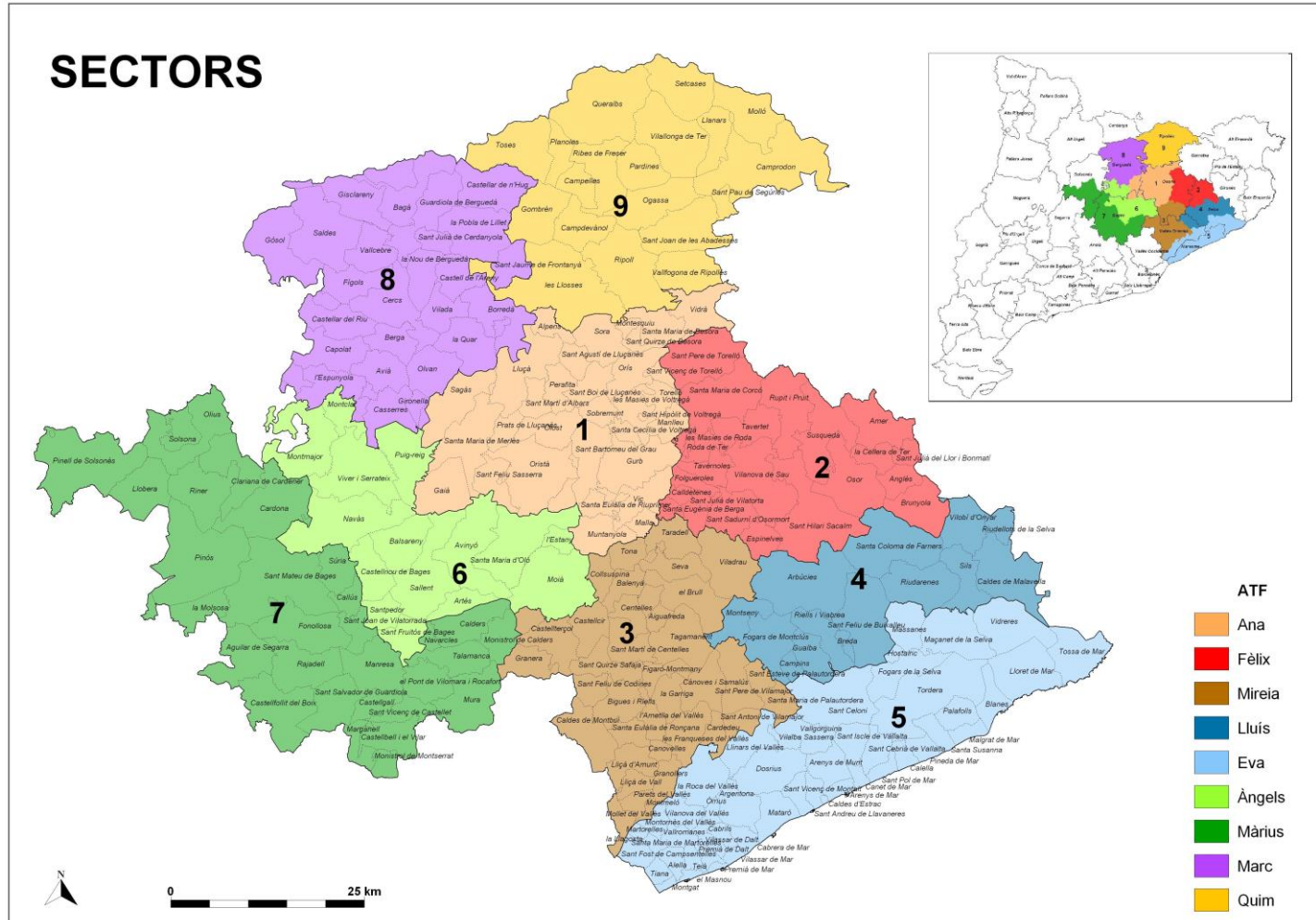
2

# Monitoring and Consultancy services on the implementation of the FMP

3

# GRANTS TO SUSTAINABLE FOREST MANAGEMENT

## Technical consultant foresters (ATFs) linked to a given territory





# 4

## KNOWLEDGE TRANSFER AND INNOVATION

Pla d'Innovació  
i Transferència  
de Coneixement  
del CPF



### HOW TO INTEGRATE BIODIVERSITY AND CLIMATE CHANGE



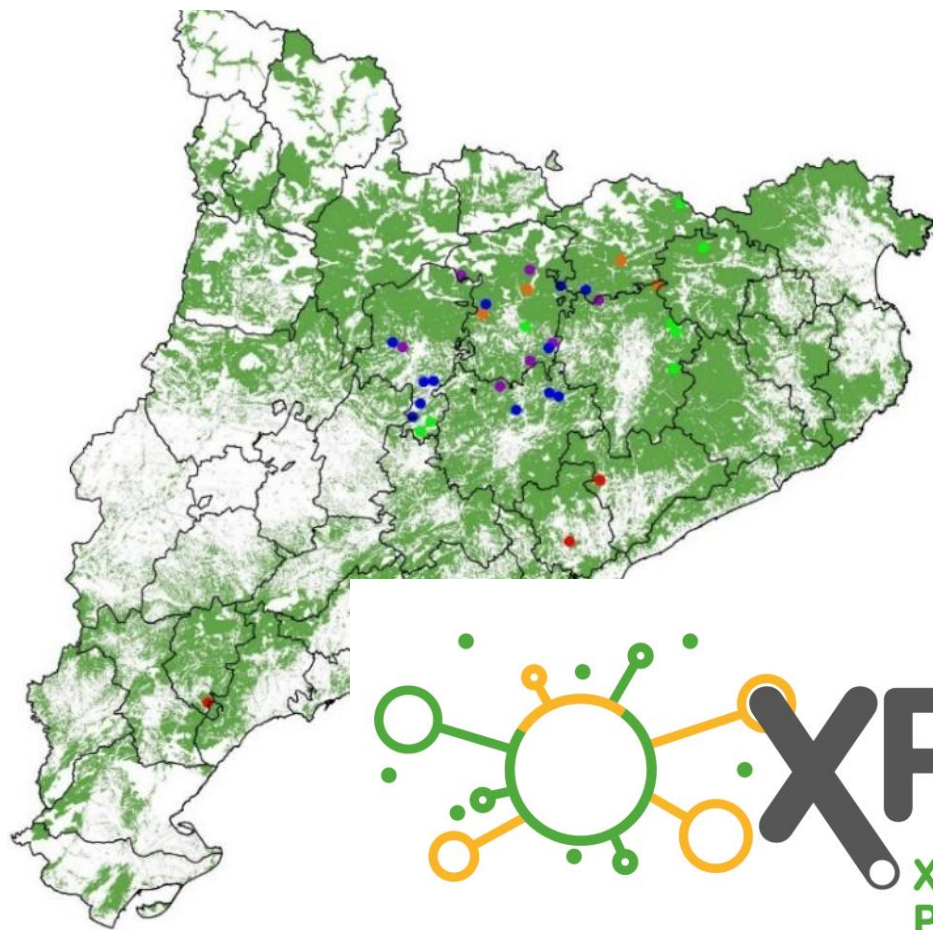
### a) EU-FUNDED PROJECTS

### PAYMENT FOR ECOSYSTEM SERVICES



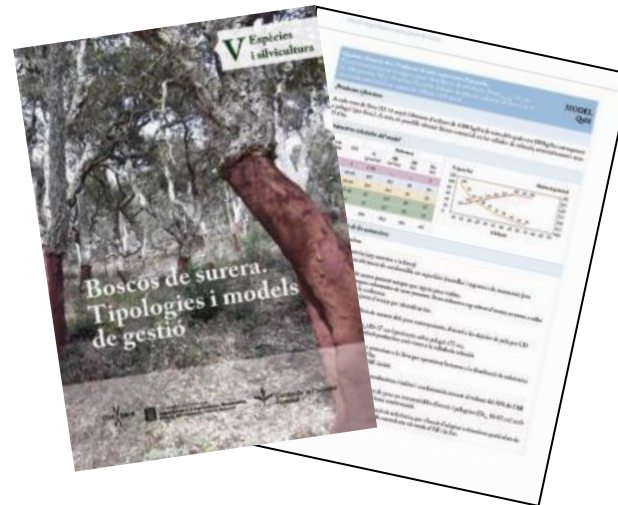


## b) NETWORK OF DEMOSTRATIVE PLOTS (> 100) IN PRIVATE FORESTS





## b) DISSEMINATION ACTIVITIES AND DOCUMENTS



**silvicultura** **78**  
Tardor 2018

**La transició forestal a Catalunya. Evolució del paisatge agroforestal a la Catalunya central (1965-2005)**

**Alerta Forestal: Una plataforma de ciència ciutadana per conèixer i predir l'estat de salut dels boscos catalans**

**Estancament o reinterpretació de la normativa vigent dels canvis tecnològics**

**El projecte Quality pinea: Innovació i millora de la competitivitat i l'aprofitament del pinyó de Pinus pinea**

**Life+Montserrat, un model mediterrani de restauració forestal, prevenció d'incendis i gestió d'hàbitats amb ramaderia**

Generalitat de Catalunya  
Departament d'Agricultura, Ramaderia, Pesca i Alimentació  
Centre de la Propietat Forestal





## e) CERTIFICATION OF SUSTAINABLE FOREST MANAGEMENT



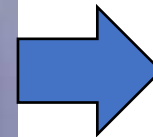
**CERTIFICACIÓ GESTIÓ FORESTAL SOSTENIBLE**

(ENSCAT)



**CERTIFICACIÓ CADENA DE CUSTÒDIA**

INDÚSTRIES SECTOR FORESTAL





Lots of  
**non-**  
**managed**  
**forests,**  
especially  
in the  
south







**Bistratified  
Mediterranean  
mixed forests –  
expensive  
management**





**High fuel volume and continuity** in Aleppo pine (the most abundant conifer): high wildfire risk





**Formerly intensively managed holm oak forests, abandoned for 50 years.**  
First thinnings to recover production capacity are an investment





Conifer forests that have **naturally regenerated on abandoned agricultural land or pastures**. Need for first thinnings.

















Difficult to use heavy machinery. Need to be small and adapted. Slowly incorporated by forestry companies









In higher slopes the only way is to use a tractor/skidder













Autocarregador  
carregat d'arbres  
sencers per a  
destinar-los com a  
biomassa en una  
planta de generació  
elèctrica. El benefici  
per la propietat és 0.











Windstorms





Pests –  
*Lymantria*  
*dispar*







Non-managed forest  
of *Pinus pinea* – high  
vulnerability to  
drought + pests.  
*Tomicus destruens*



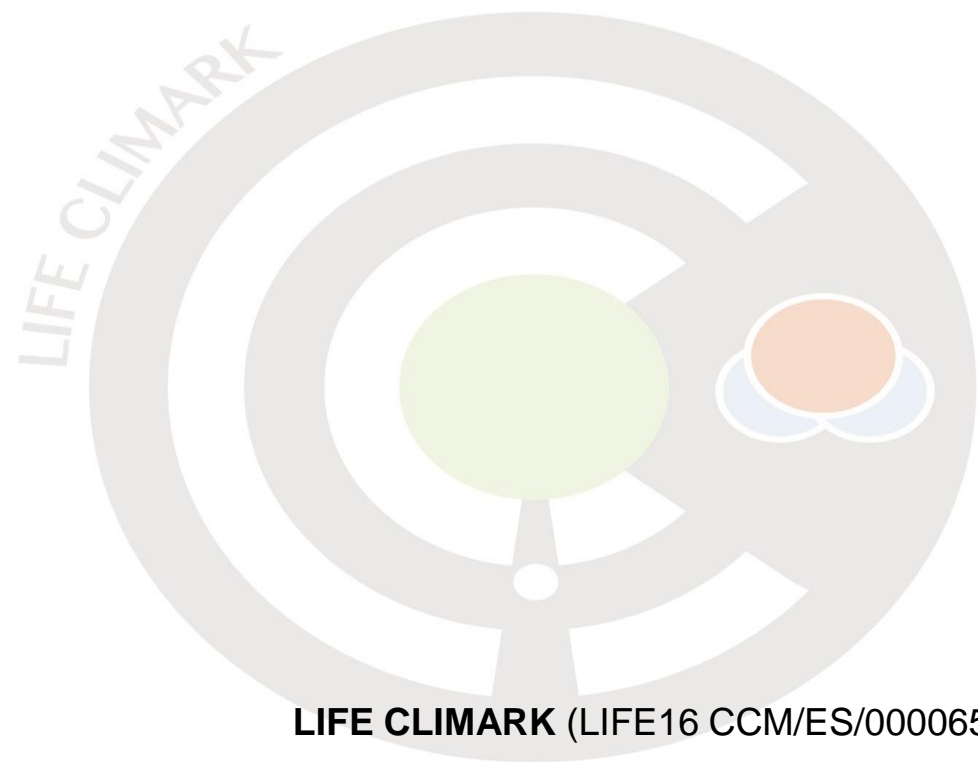
Fire





# Climate credits

a new tool to enhance forests' contribution  
to EU mitigation goals  
through multifunctional forest management



LIFE CLIMARK (LIFE16 CCM/ES/000065) has been funded by the Climate mitigation Action of the EU LIFE Program





1950

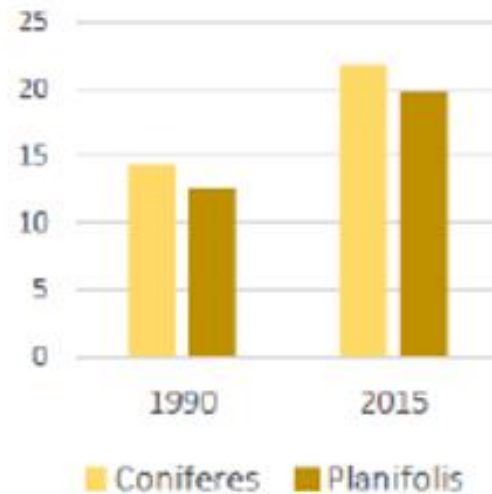


2020

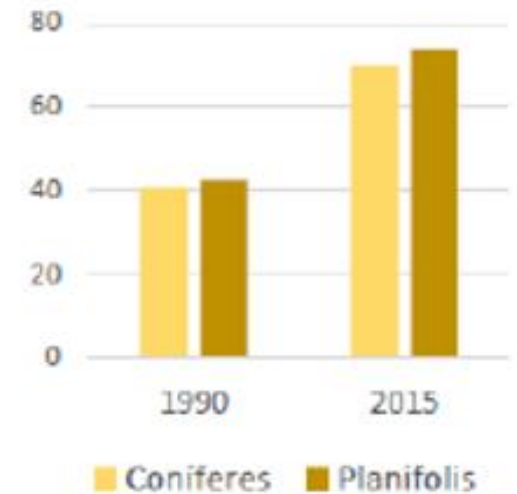
**+ 10 % forest area in the last 25 years**

## Great expansion and densification of our Mediterranean forests

**+ 57%  
Basal area**



**+ 73 %  
Biomass**







# Just planting trees doesn't solve our climate problem

In fact, **too many trees can make it worse:**

**In the last 25 years in Catalonia:**

- the **Rate of CO<sub>2</sub> sequestration** in forests has **dropped by 17%**
- **Carbon stocks** accumulated in the last 50 years **are threatened** by fire and other natural disturbances
- **Water flow** in rivers has been **reduced by 30%**



**Our  
Mediterranean  
forests need to  
be managed...  
again !**



CREAF

CTFC

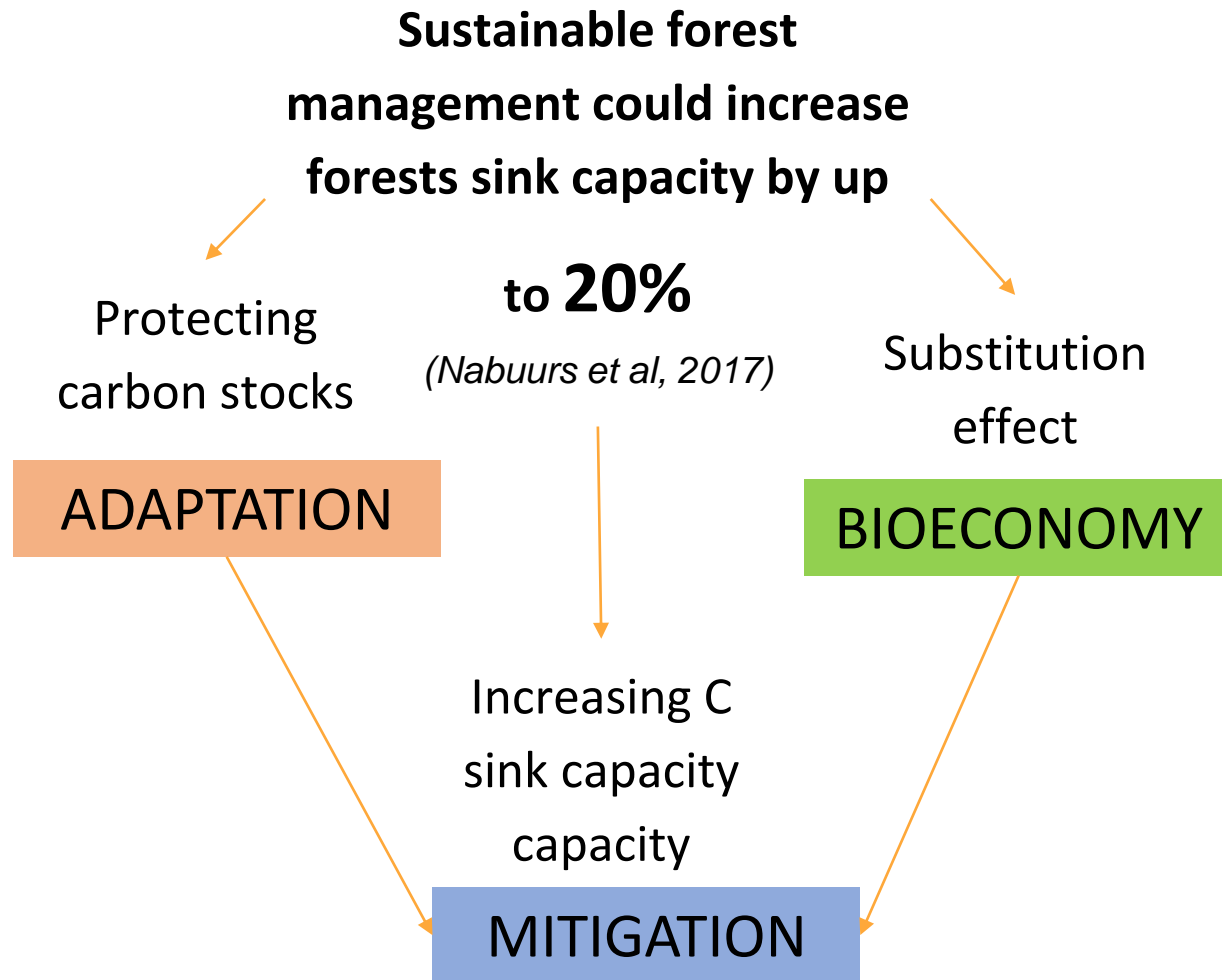






MITIGATION is a necessary goal .....

... but not sufficient: we need ADAPATION & (*inclusive*) BIOECONOMY



## Multifunctional forest management

- + carbon sequestration
- + water provision
- + biodiversity conservation
- + renewable raw material & energy + local development

**Climate-smart forestry**



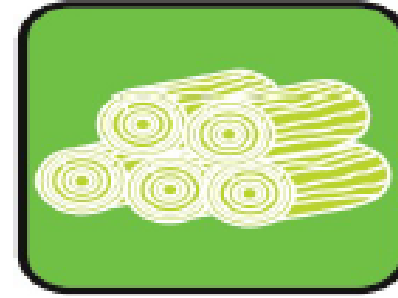


# How can we make multifunctional forest management occur?

Finding new financing ways for forestry

**A paradigm shift:**

from selling only forest products to selling a bundle of ecosystem services



+



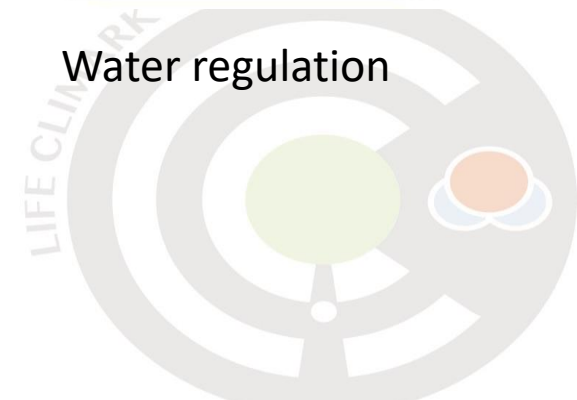
Climate regulation



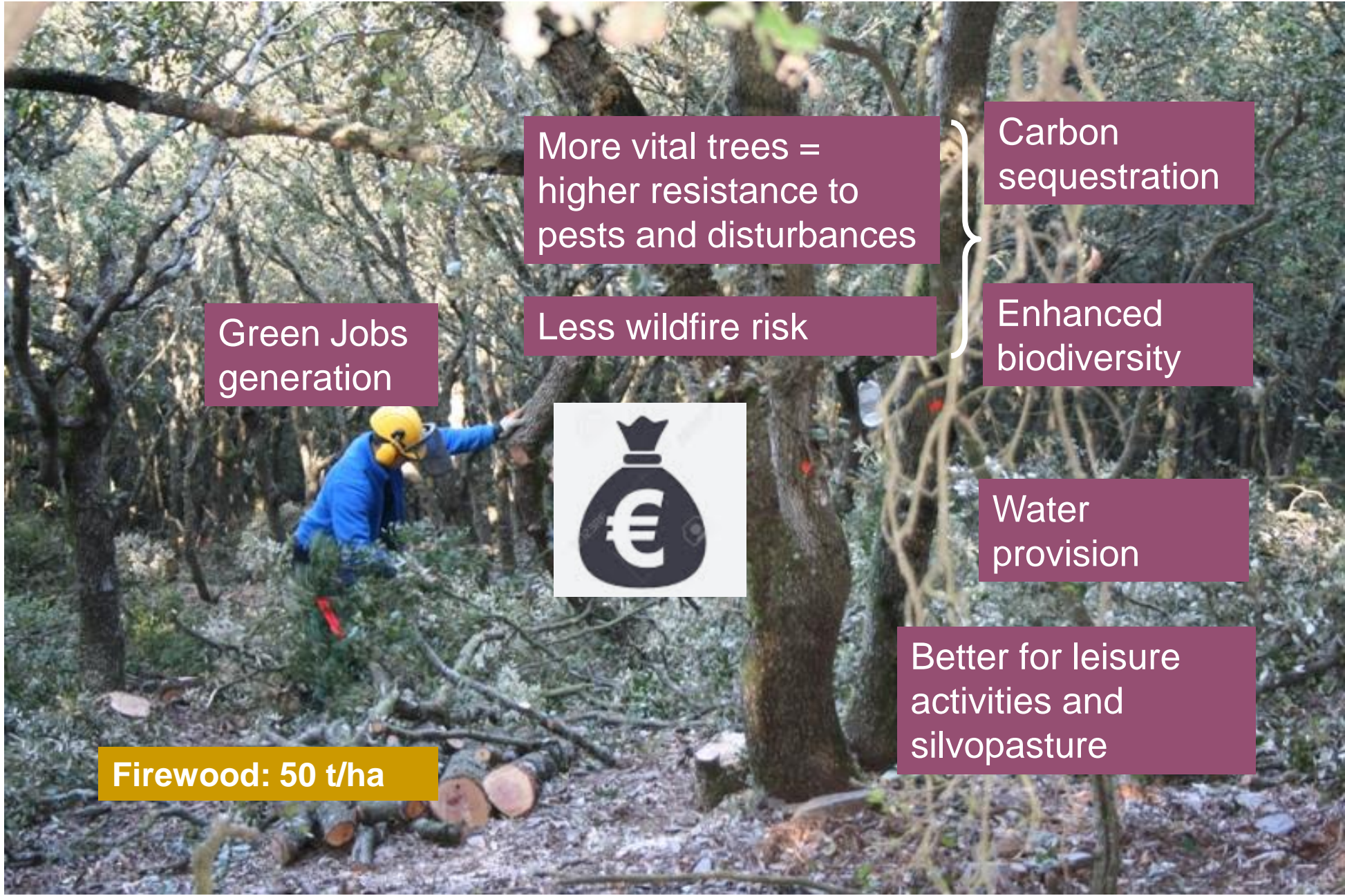
Biodiversity



Water regulation







More vital trees =  
higher resistance to  
pests and disturbances

Carbon  
sequestration

Green Jobs  
generation

Less wildfire risk

Enhanced  
biodiversity



Water  
provision

Firewood: 50 t/ha

Better for leisure  
activities and  
silvopasture





# The project: LIFE CLIMARK

## Objectives

To develop a **voluntary market of climate credits**, that allows access to environmental financing for forestry projects that enhance the provision of **CLIMATE, WATER** and **BIODIVERSITY** related ecosystem services in Mediterranean Europe.



Maintain and improve the mitigation and adaptation capacity of forests.



Design a local market of climate credits



Compensate carbon, water and biodiversity footprint of companies.



Universitat de Lleida  
Escola Tècnica Superior  
d'Enginyeria Agrària



Generalitat de Catalunya  
Departament d'Agricultura,  
Ramaderia, Pesca i Alimentació



Centre de la Propietat  
Forestal

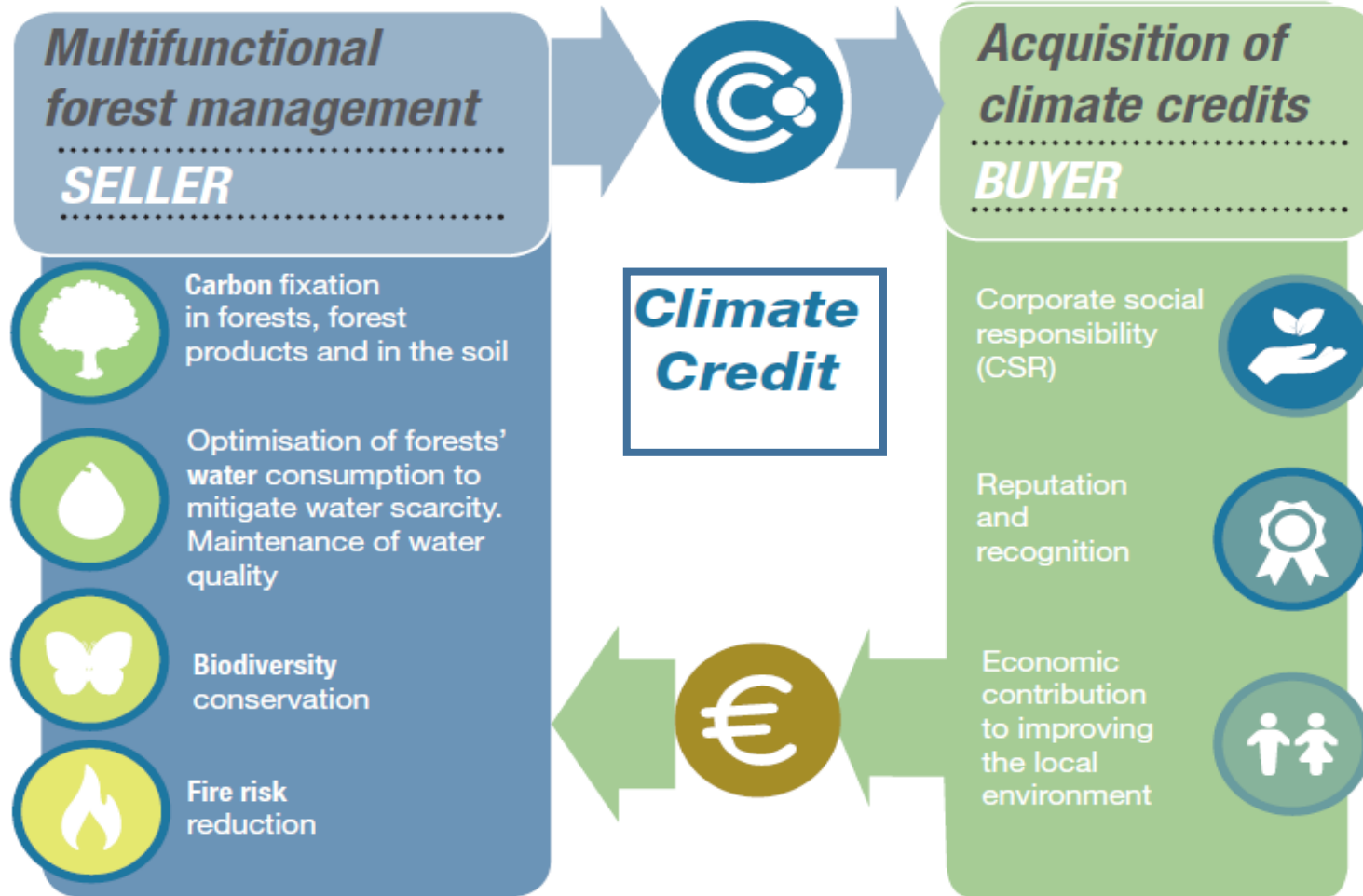


Oficina Catalana  
del Canvi Climàtic





# Our product: A new market of climate credits



*“The money a company spends to offset their own carbon or water footprint directly goes to forest managers to 'specially' manage the forests, to sequester more CO2, produce more water and protect biodiversity”*







# Which are the key features of the *Climate Credits*?

- 1 The integrative concept of the **Climate Credit** itself: valuing, at the same level the co-benefits of MFM on **Carbon, Water provision** and **biodiversity**



## Quantified impact:

- ✓ tCO<sub>2</sub> sequestered & tCO<sub>2</sub> avoided
- ✓ m<sup>3</sup> of water produced (less trees, more water !)
- ✓ % increase in biodiversity hosting capacity (*Biodiversity Potential Index -IBP*)







# Which are the key features of the *Climate Credits*?

2

**A wide list of forestry climate-Smart measures +**  
The **criteria & indicators** to measure it



**Collaborative definition of what Multifunctional forest management means in each territory**

**Thinnings** (different species and intensities)



**Tree planting** (forest plantations & agroforestry)







# Which are the key features of the *Climate Credits*?

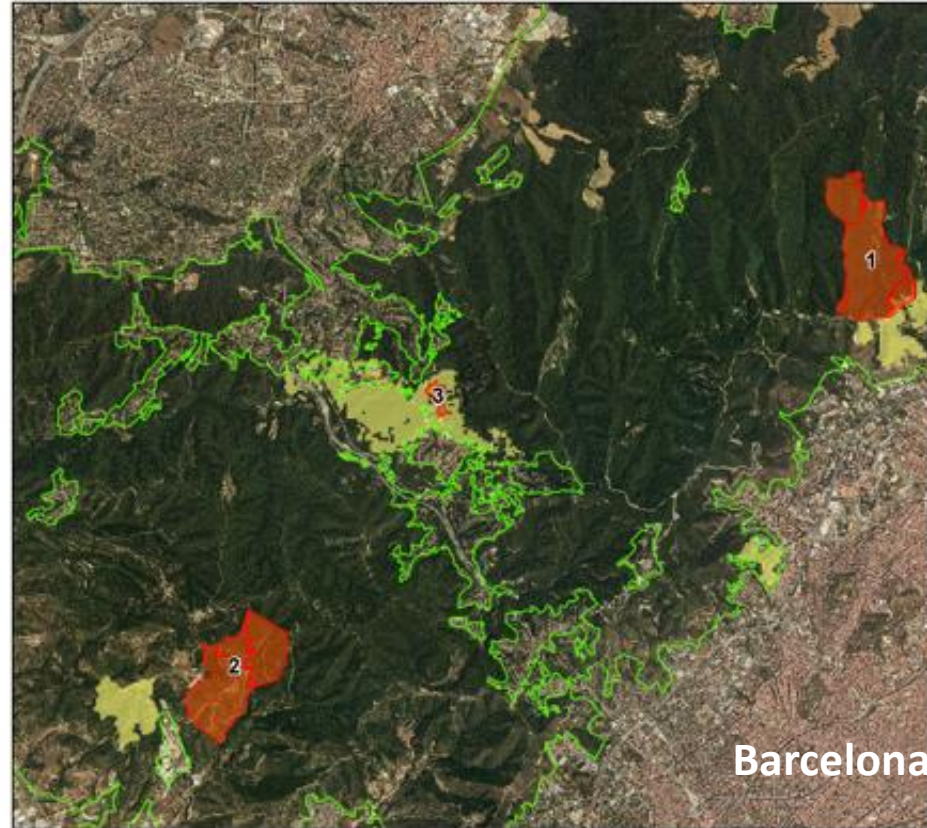
**3** A **Participatory, bottom-up and landscape approach:** to increase impact and find synergies with other functions expected from forests for a given territory



The **PROMACC** projects

(Mitigation and Adaptation Forestry Projects)

Joint Forestry Management



**Landscape level maps**

based on agreed criteria with experts to set priorities for carbon, water or biodiversity

**Landscape restoration**

**Proposta finques per prova pilot LIFE Climark**

- ▭ Límits Parc Natural de la Serra de Collserola
- ▭ Finques proposta per prova pilot LIFE Climark:
  1. Can Ferrer (Prevençió d'incendis forestals)
  2. Can Ferrisó (Regulació hídrica)
  3. Can Flor (Recuperació post-incendi)
- ▭ Incendis forestals 1994

N

E: 1:50.000

0 500 1.000 2.000 Metres

**SOCIAL FOREST**  
Creating sustainable minds





# The work behind

## 3 years of work so far (2018-2021):

- Pilot & demonstration sites in **7 locations in Catalonia (Spain) and Veneto (Italy)** to test the forestry treatments and select best indicators
- Several **Expert Committees to ensure reliability** of the whole process (on methodologies, CSR...)
- Networking with other projects** (i.e LIFE ForestCO<sub>2</sub>)
- Prototype of the **Climate Credit market**
- Sales & Marketing strategy**



**4 pilot projects with first *ClimateCredit* transactions, in 2021**

**Budget: 1,212,883.00 €**





**Thank you !**

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**@cpforestal**