XIII European Mountain Convention

Shaping the future of mountain economies

15 - 18 October 2024 | Puigcerdà - Catalonia

Generalitat de Catalunya
Government
of Catalonia

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Resilient landscapes in Catalonia

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Current challenges

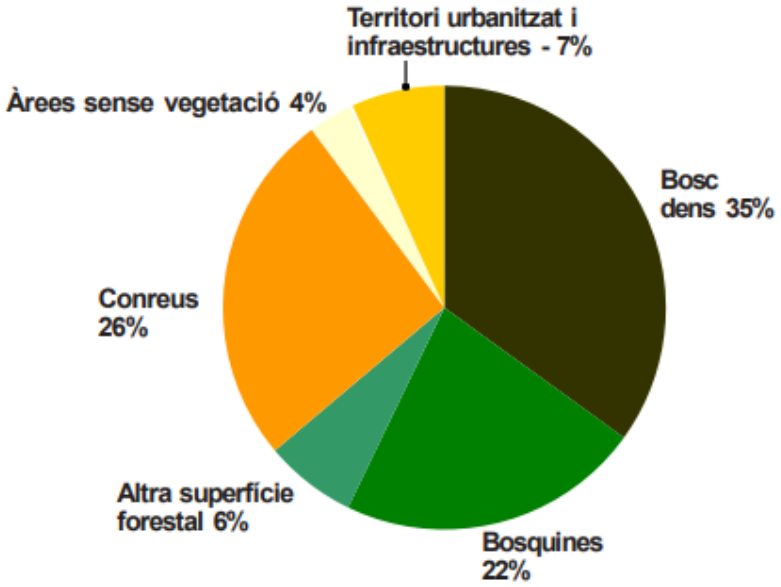
In the context of current climate and socio-economic change, it is expected

- A decrease in rainfall
- More vulnerability to pests and diseases
- Exacerbated land abandonment tendencies
- More drought and more vulnerability to lack of water
- Loss of biodiversity
- Increased vulnerability to forest fires
- Decrease in arable land and soil quality
- Increase in conflicts with hunting fauna





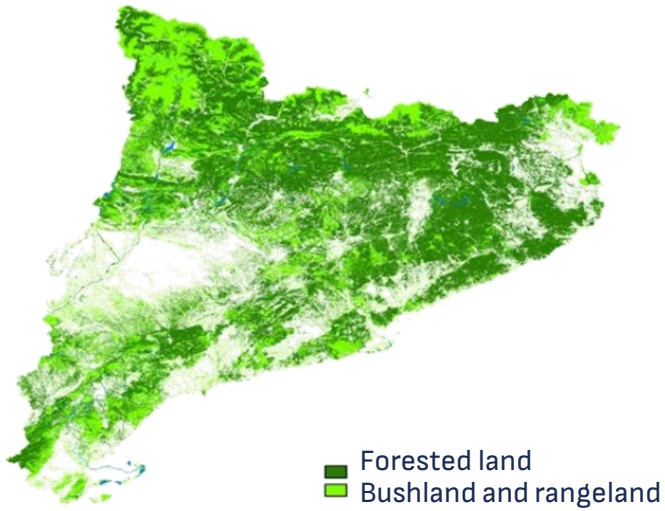

A large number of interests and management visions converge in the territory that often overlap and that make an understanding necessary.



Area dedicated to agriculture of 35% of the total area

Protected Areas and de Natura 2000 network

35% of Catalonia is forested
30.4% has a protection figure



Forested land
Bushland and rangeland

EBC2030

ESTRATÈGIA
DE LA BIOECONOMIA
DE CATALUNYA 2030

Descarrega't
l'EBC2030

Generalitat
de Catalunya

Objectives of the EBC2030

GENERACIÓ D'ACTIVITAT ECONÒMICA

- Aprofitament de la biomassa — O1
- Teixit empresarial — O2
- Consum de Bioproductes, bioenergia i biomaterials — O3
- Paisatges resilients i serveis ecosistèmics

TRANSVERSALS

- Coneixement com a motor
- Rol de l'Administració
- Preparar la societat per al canvi

EBC 2030

ESTRATÈGIA DE LA BIOECONOMIA DE CATALUNYA 2030

PLA D'ACCIÓ 2022-2024

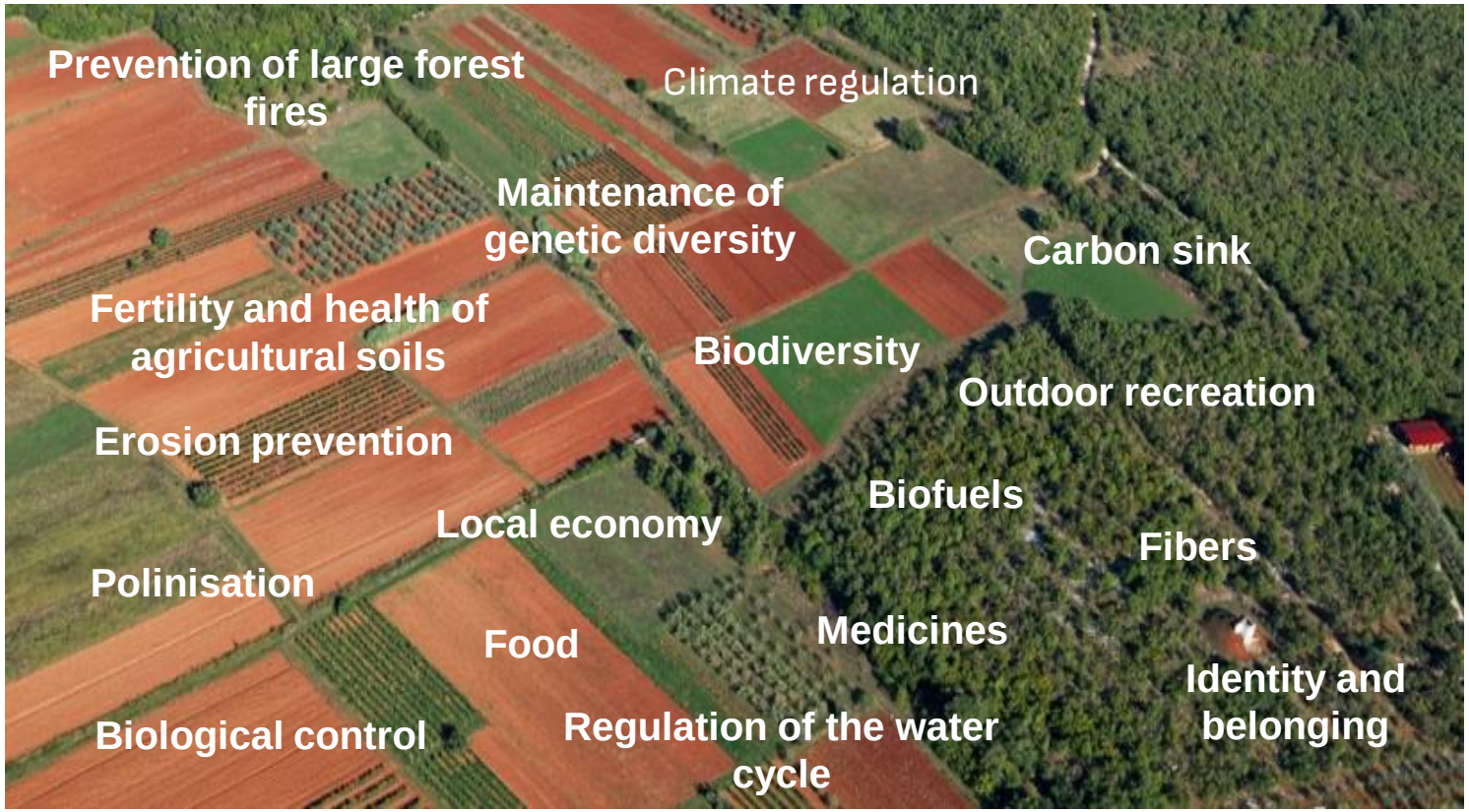
Generalitat de Catalunya

Descarrega't el Pla d'Acció 2022-2024

What do we mean by resilient landscapes?

Multiple processes and functions in the same territory

Resilience within the project is understood as the ability of ecosystems to return to their initial equilibrium after a disturbance.



- The concept of resilience at the landscape scale also includes the socio-economic dimension and focuses on this interaction of natural and social systems due to the co-creation and interdependence of both.
- A landscape cannot be resilient without socio-economic activity and a strong, structured and active rural community.
- There's a need for science based and integrated landscape management

How does it work?

It incorporates scientific evidence to help design the most appropriate management.

Knowledge is put at the service of the problems of the territory

Involvement of the territory through a co-design process

Technical experience of the DARP and other departments, with the involvement of all managers

Definition of consensual proposals

Focus on transversal and synergistic actions

Prioritisation of actions with greater transformative capacity

Focus on locally-based economic activities that provide resilience and ensure the maintenance of actions

What does it intend?

- To generate a shared vision of the territory among administrations, productive sectors, citizens, experts and science.
- To create science/knowledge based management
- To promote actions that help to configure multifunctional landscapes that are more adapted to climate change and global change

- To improve the functionality of ecosystems to make them more resilient
- Recover-generate locally-based economic activities that help to retain the population
- Support local initiatives to manage their own environment
- Promote Bioeconomy based economic activities

The Resilient Landscapes Programme

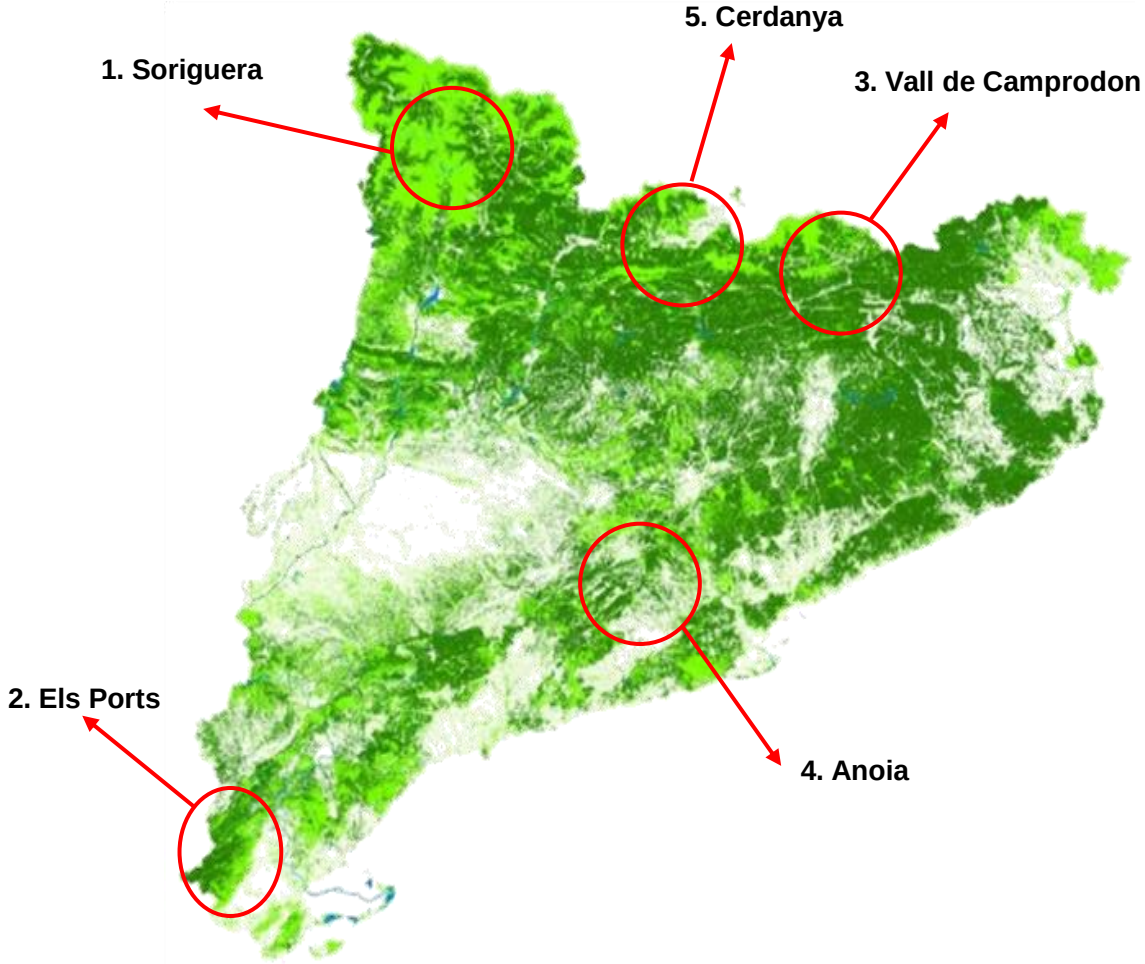
Three main features

5 Experimental Pilots

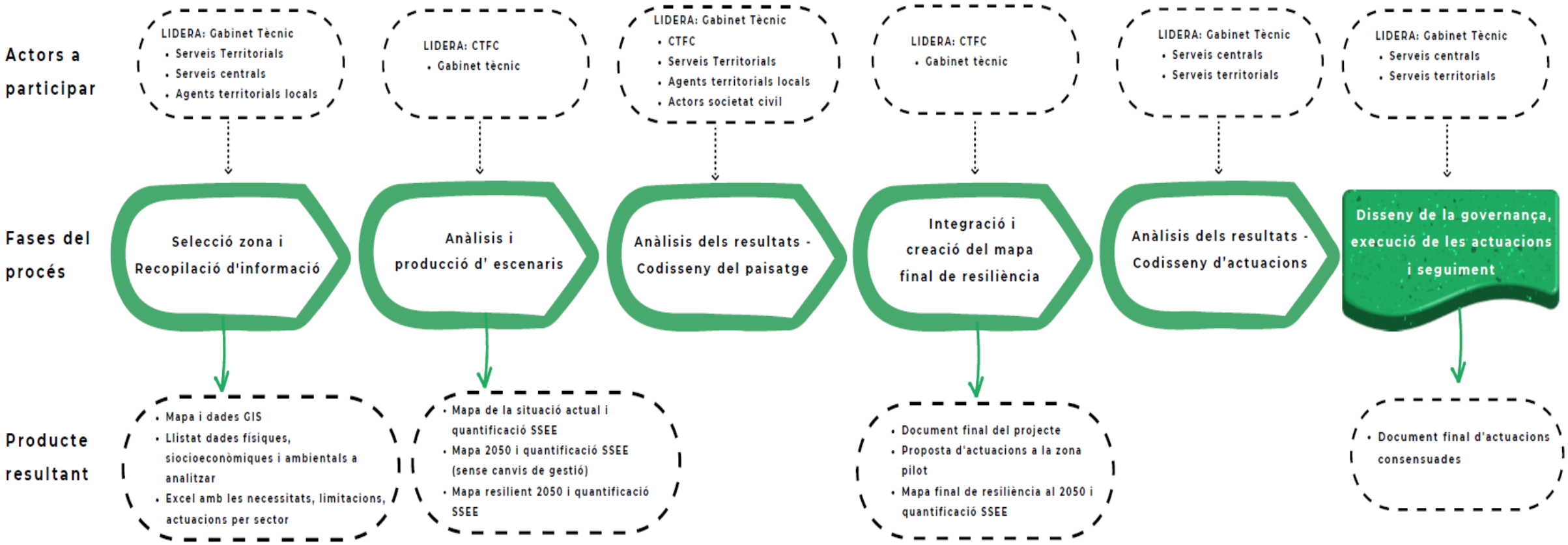
- 4 pilots financed by the Next Generation fund
- 1 pilot applying the RIS3CAT methodology

Subsidy scheme for the creation of resilient landscape projects throughout Catalonia

Support for the governance and networking of projects

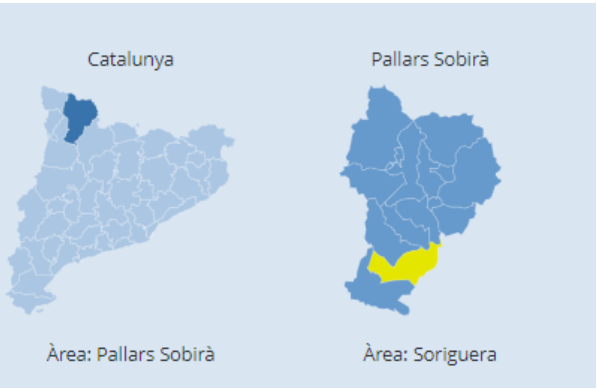


The management model and methodology

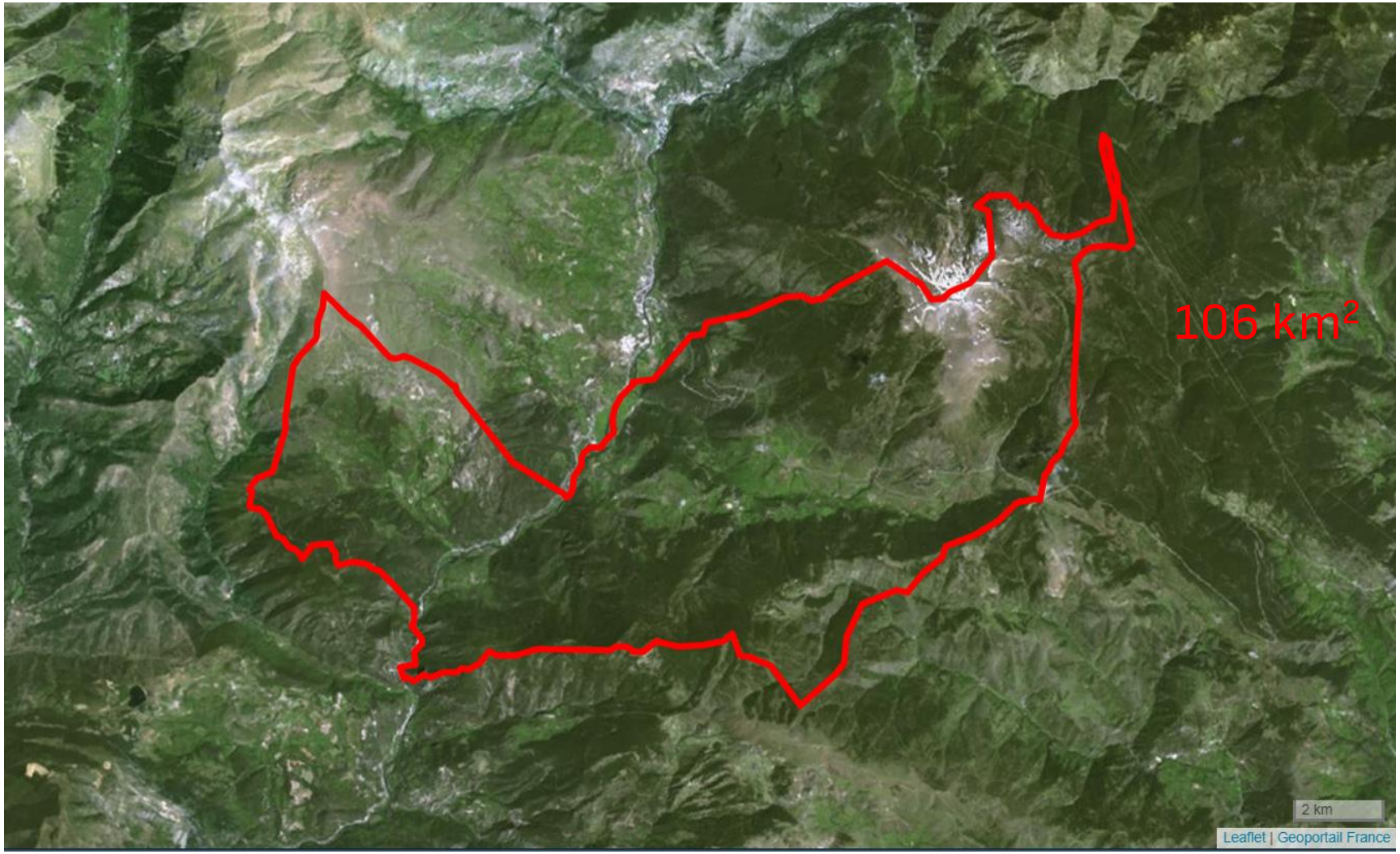


The Pilot of Soriguera

Soriguera (Pallars Sobirà)

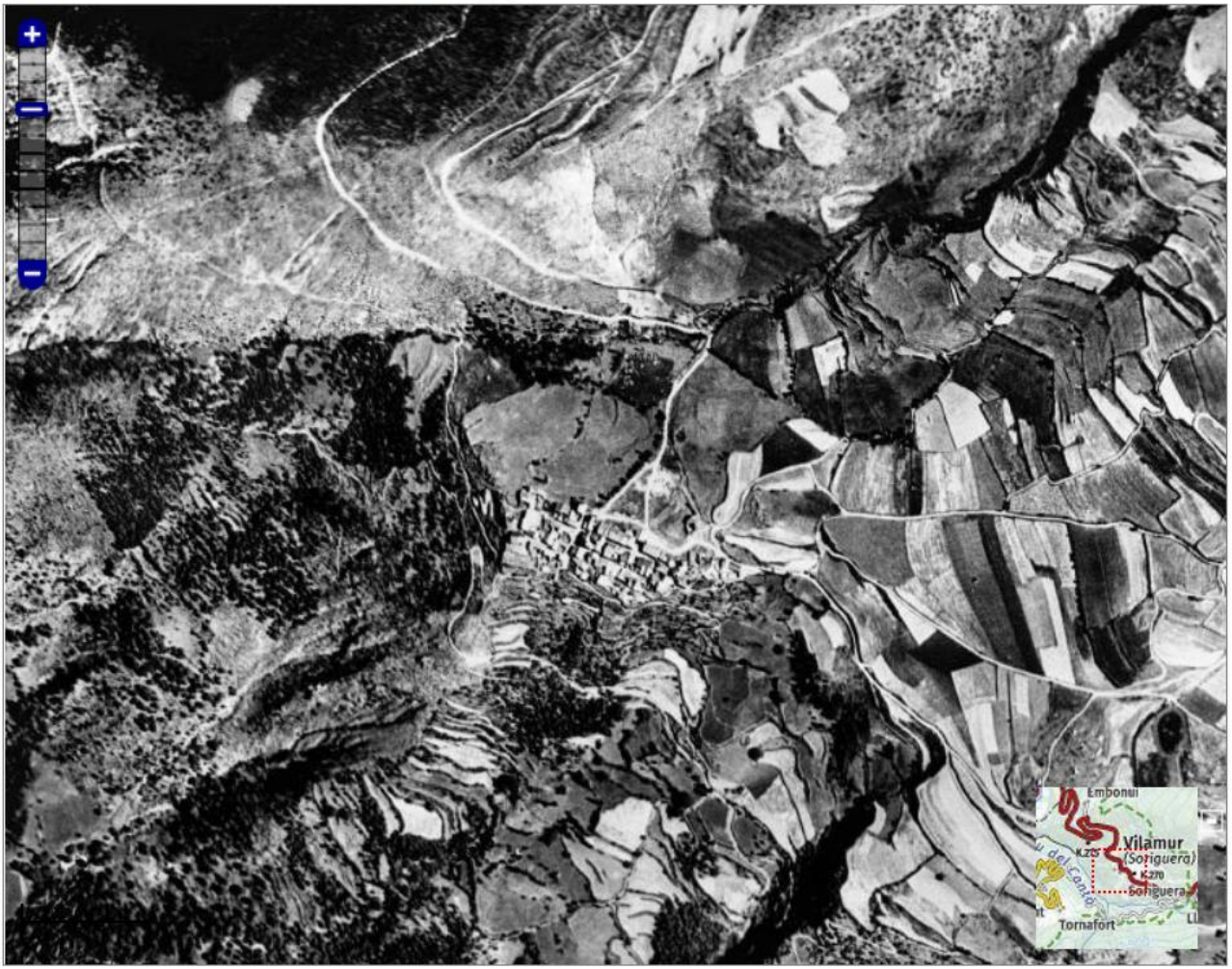


Soriguera	
Codi	252081
Comarca	Pallars Sobirà
Població (2021)	431
Superfície (km²)	106,39
Densitat (hab./km²)	4,0
Altitud (m)	1.258



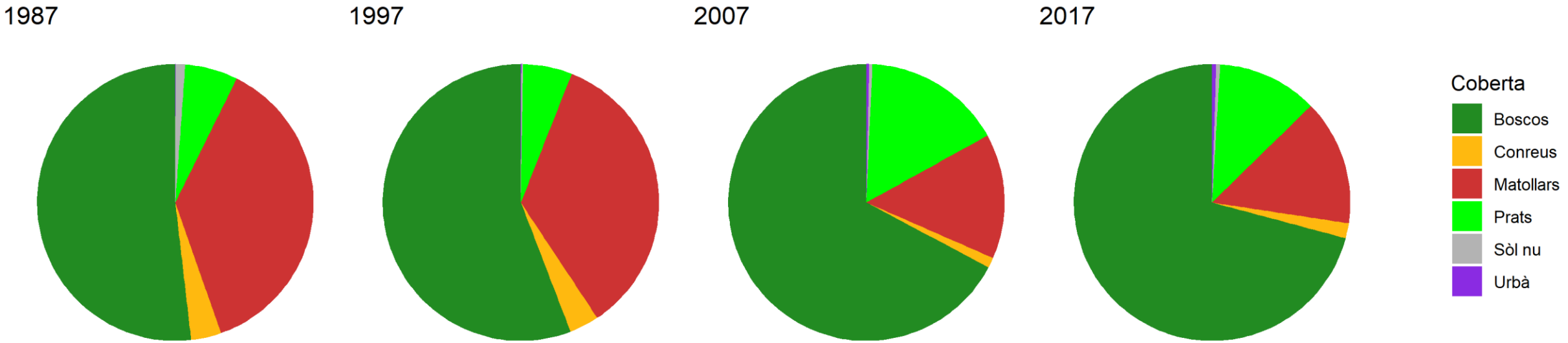
Soriguera: past and present landscape

Trieu servei: Any 1955-56



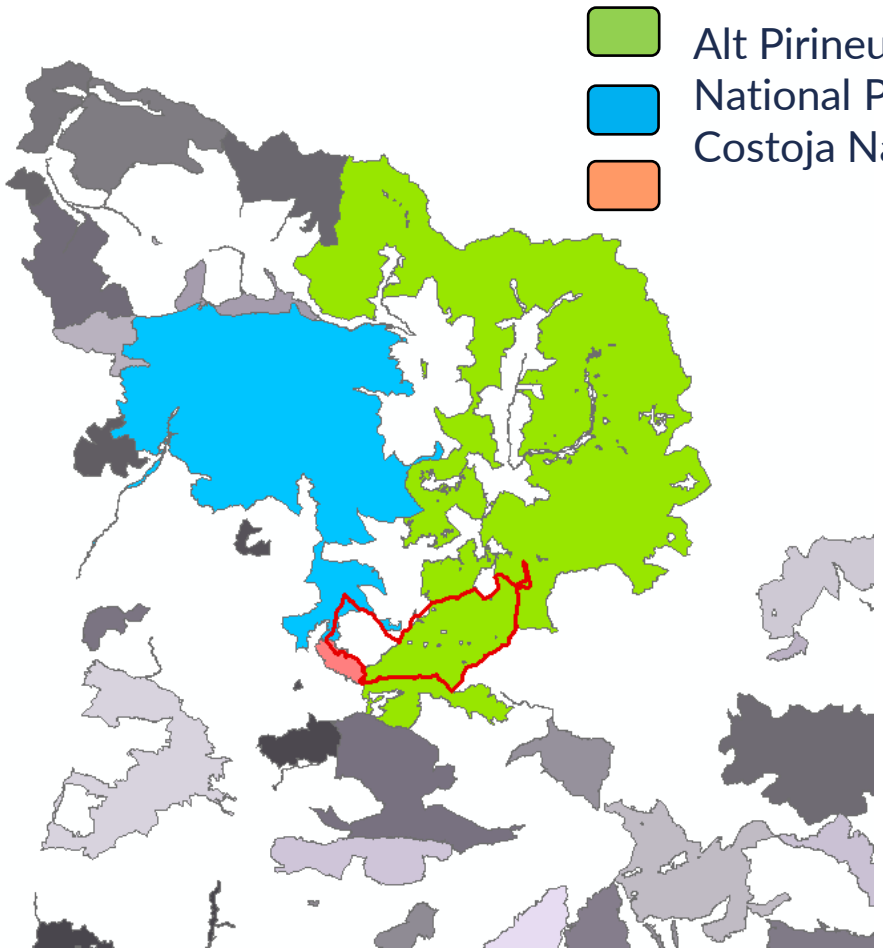
Trieu servei: Vigent

Changes in land use



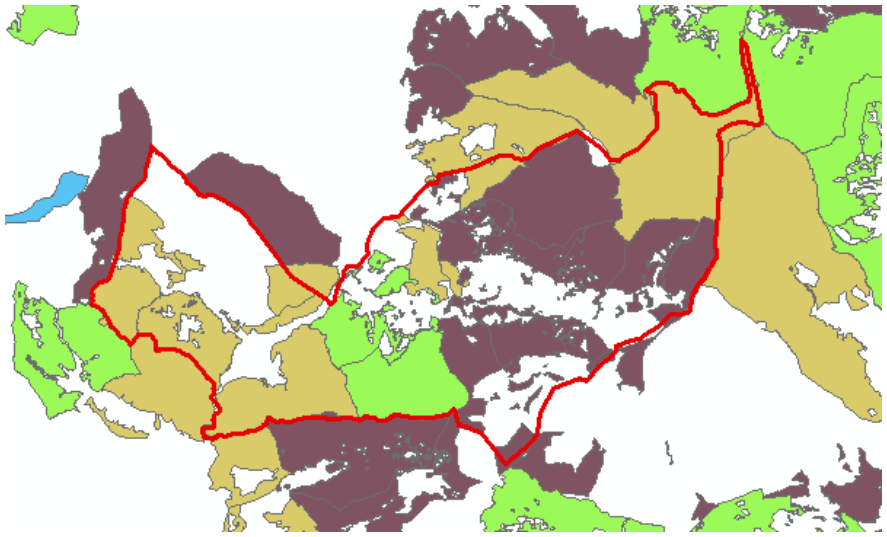
- High degree of afforestation (colonization of scrubland)
- Decrease in crops and increase in meadows

Description of protected areas and ownership



75% of the municipality in the Alt Pirineu Natural Park

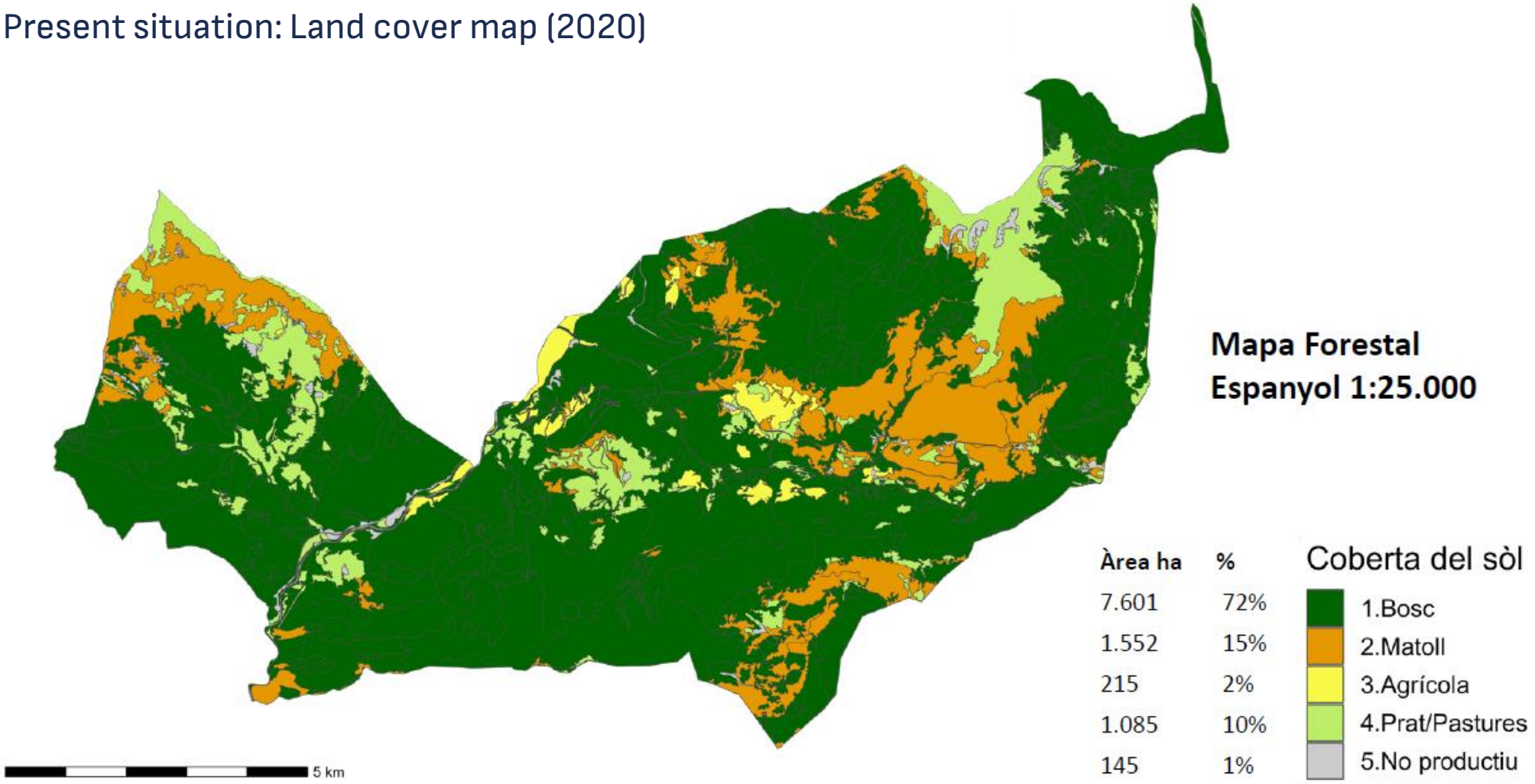
Ownership



71 km2 of publicly owned forests

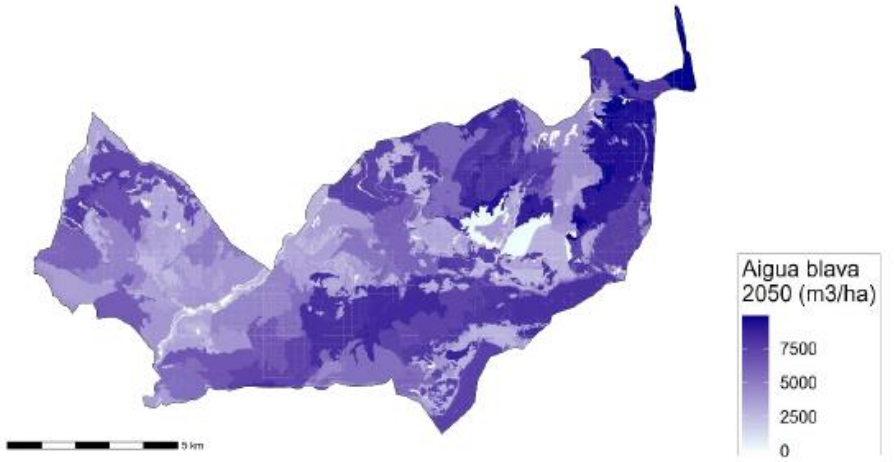
Landscape analysis

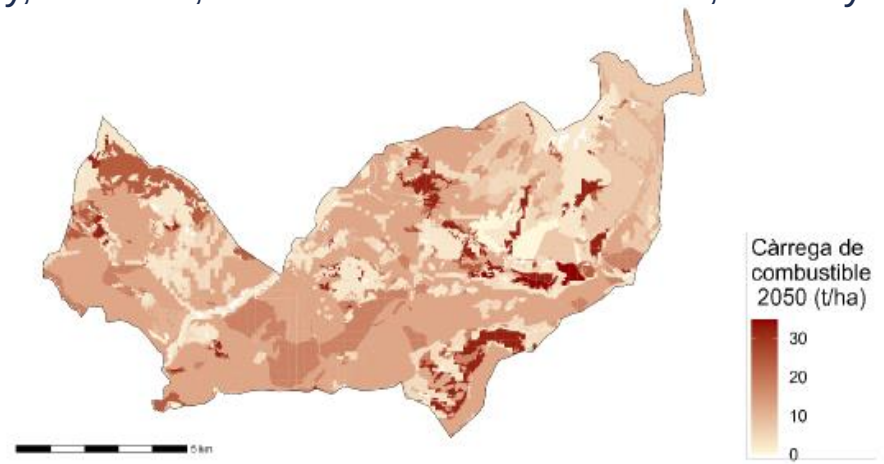
Present situation: Land cover map (2020)

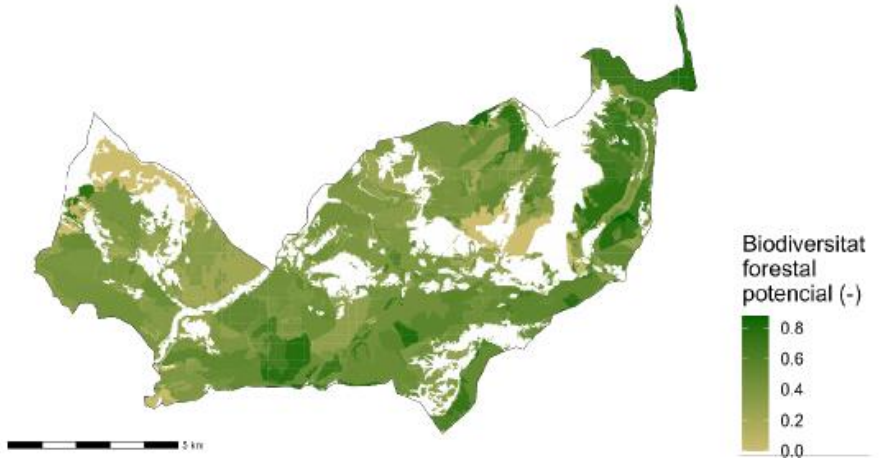


Landscape analysis

Once the physical analysis is completed, a quantification of the current ecosystem services of the landscape is carried out.
These include blue water, carbon sequestration, potential biodiversity, fuel load, livestock load it can tolerate, forestry activity, etc.

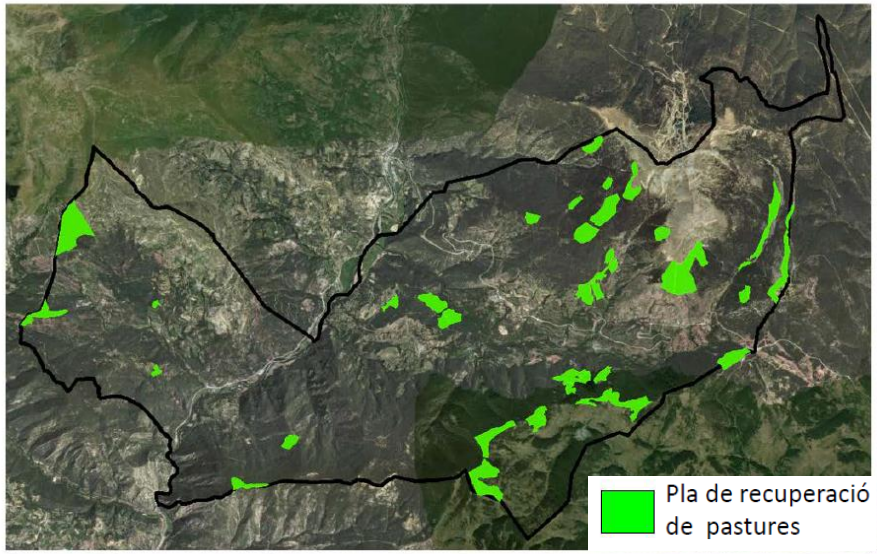


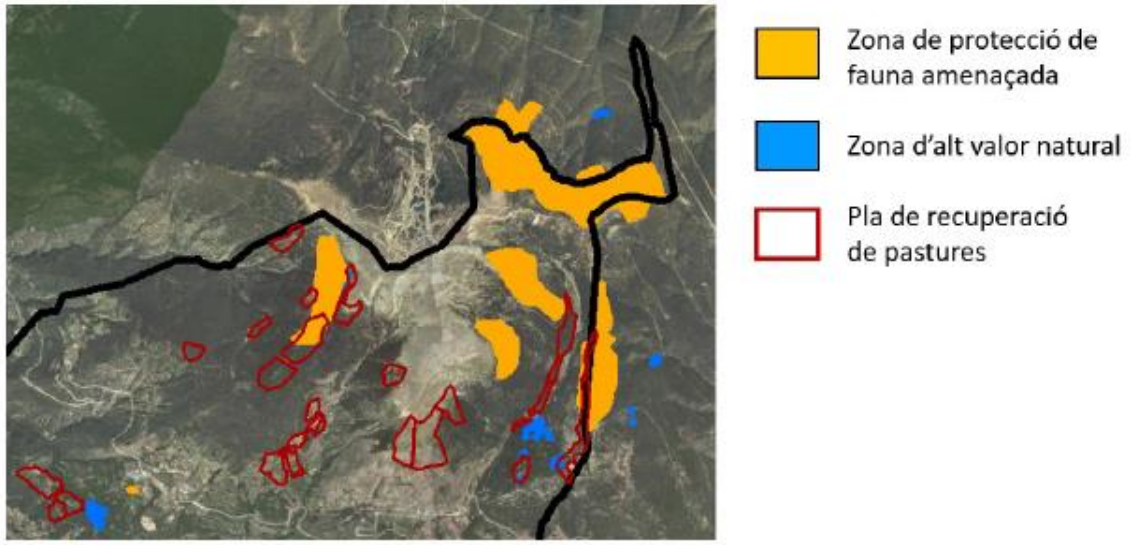




Landscape analysis

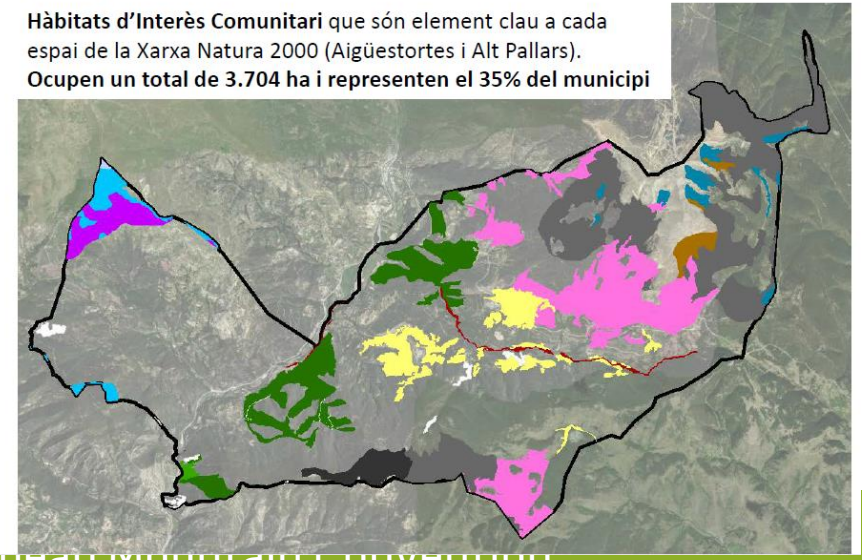
I. Prioritització de l'activitat agroramadera





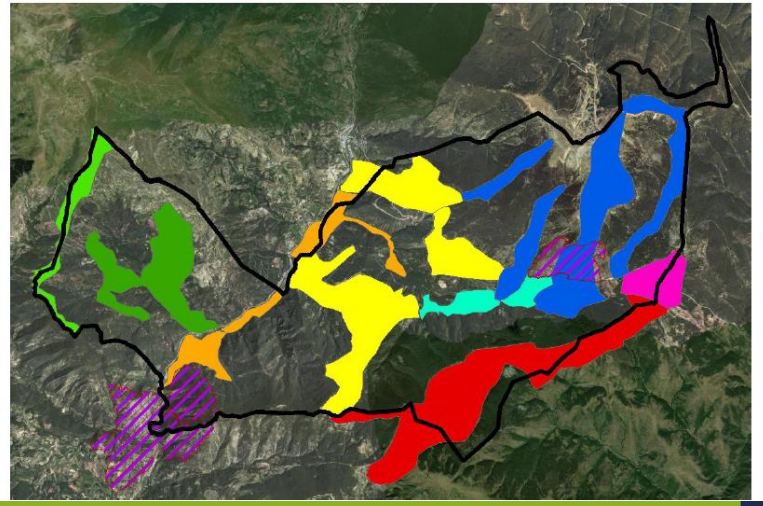
II. Conservació de la biodiversitat

Hàbitats d'Interès Comunitari que són element clau a cada espai de la Xarxa Natura 2000 (Aigüestortes i Alt Pallars).
Ocupen un total de 3.704 ha i representen el 35% del municipi



III. Prioritització zones per la prevenció d'incendis forestals

Zones estratègiques per la prevenció de grans incendis forestals proposades pels GRAF



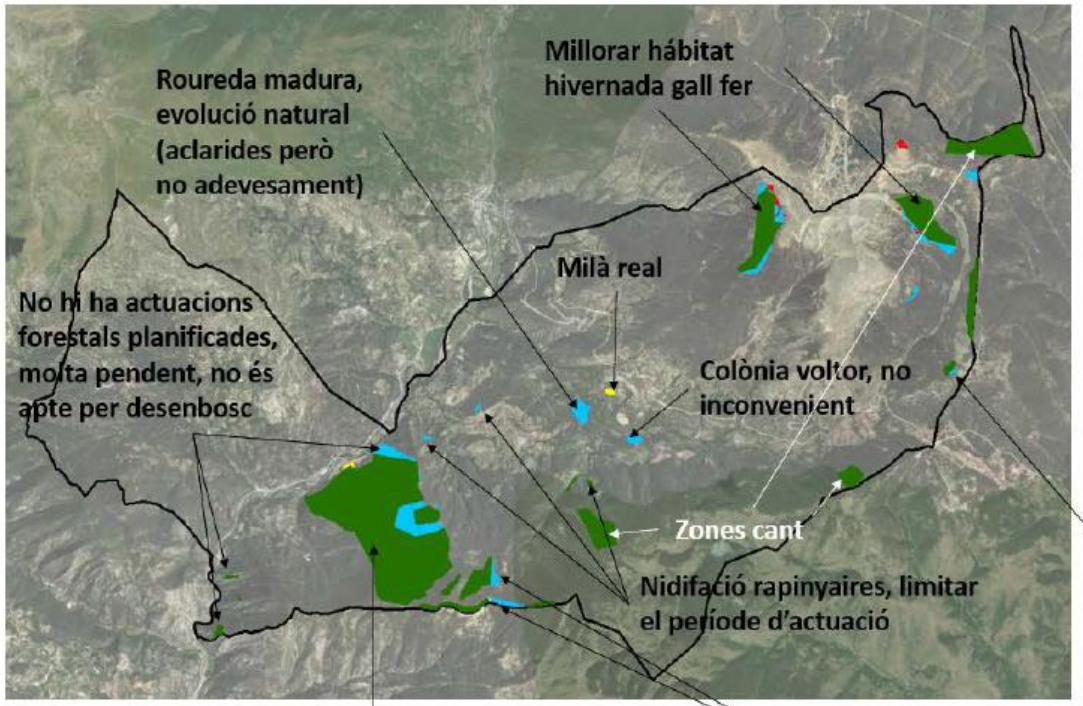
PROPOSTES GRAF

- **Solana d'Estac** → recuperació pastures
- **Cresta d'Estac** → pista per defensa d'incendis de ponent
- **Noguera Pallaresa** → bosc de ribera, cultius i prats de dall
- **Pujada a Tornafort, Arcalís i Vilamur** → cultius de secà
- **Serra de Freixa** → bosc amb vocació de pastures i reducció de la vulnerabilitat (trencar continuïtat masses forestals)
- **Fons vall Riu del Cantó** → obertures amb cultius i pastures
- **Barrancs Comes de Rubió i Coma Serrera** → discontinuïtat del bosc amb pastures

Incendis passats

Landscape analysis

Overlaping of the priority areas for biodiversity conservation and agricultural and grazing activities



Bosc

Bosc adevesat

Pastures

Cultius

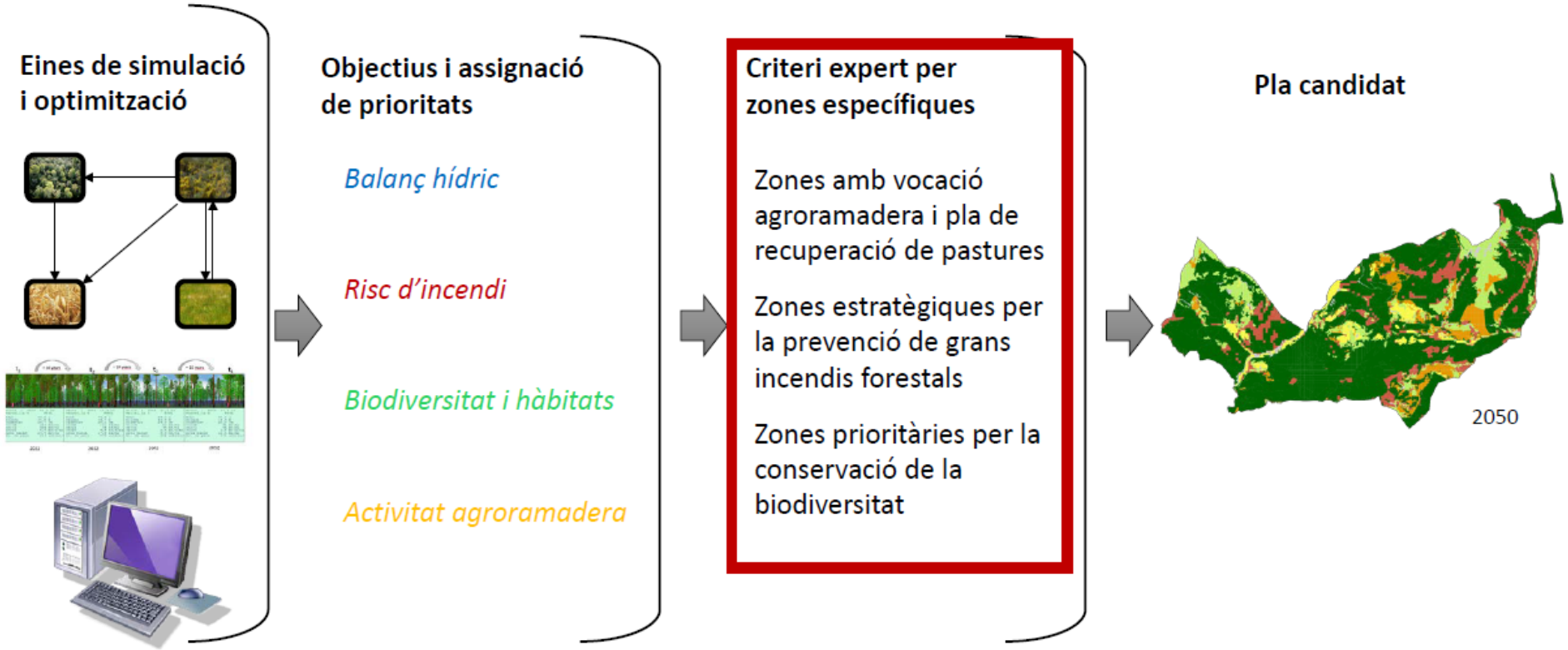
Informat com a rodal d'interès "maduresa". Però el pla normatiu de boscos madurs encara encara no aprovat. No inconvenient en intervenció naturalista

Zona estratègica de prevenció d'incendis forestals (planell de Sant Maurí i voltants), es podria reubicar la zona d'evolució natural?

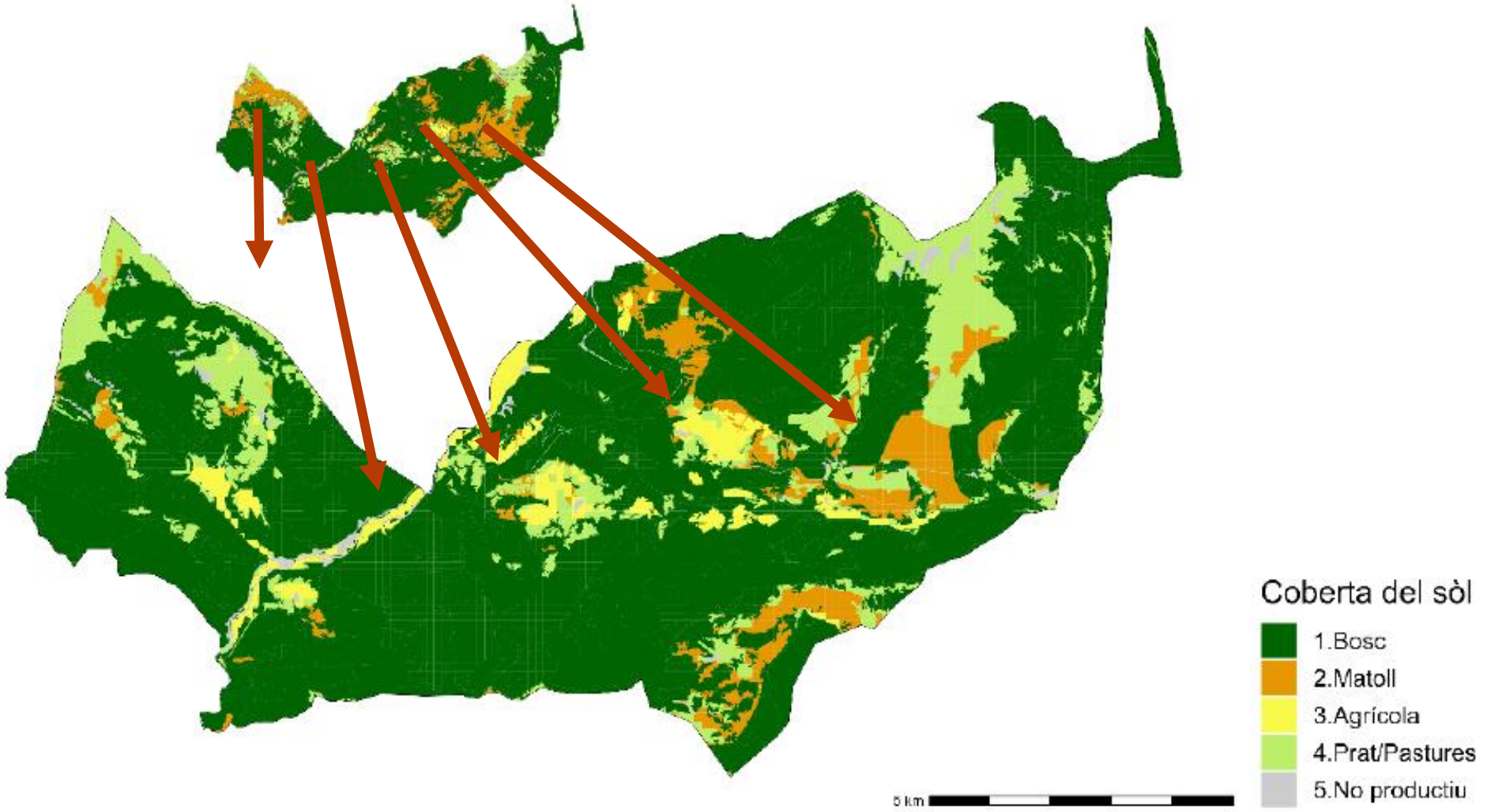
Zones de cant i hivernada confluint amb prevenció: fer intervenció acordada

Landscape analysis

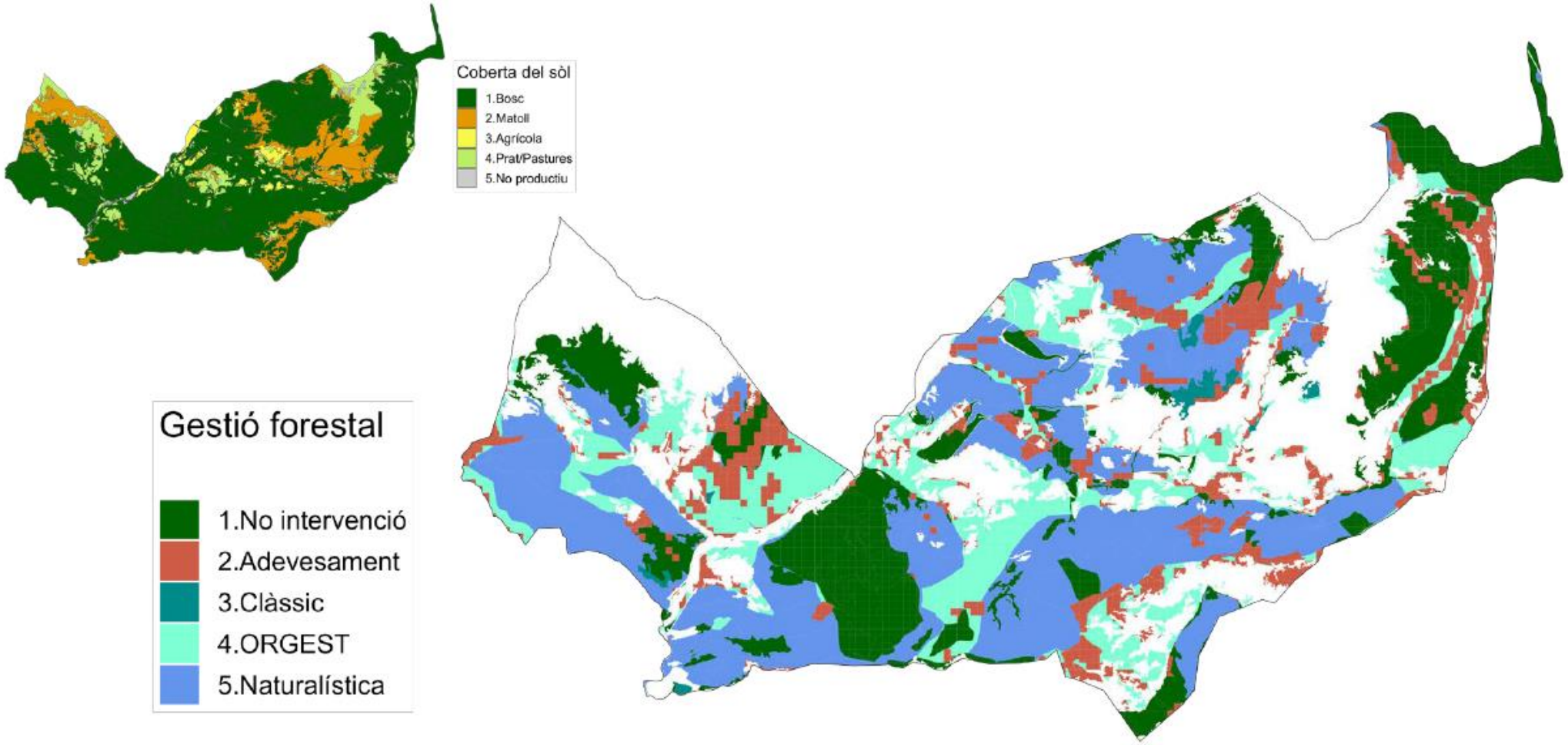
These Ecosystem services are then discussed and prioritization is made according to the management goals and priorities of each area. This is then combined with the expert knowledge, the local input and the current possibilities and management constraints to produce a **Candidate plan.**



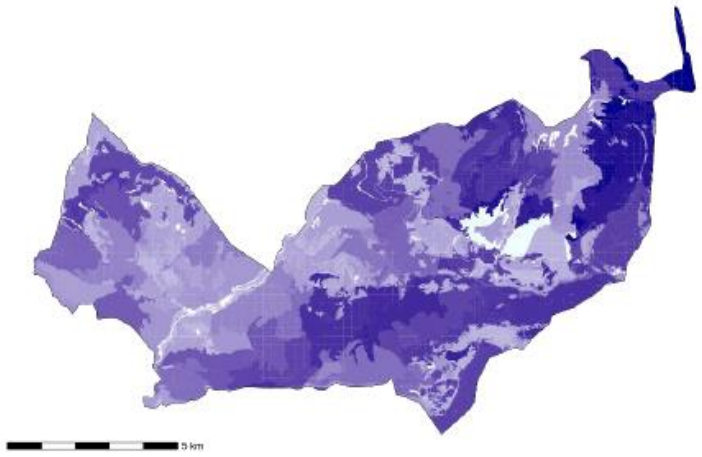
Candidate Plan: Land Cover Change year 2050

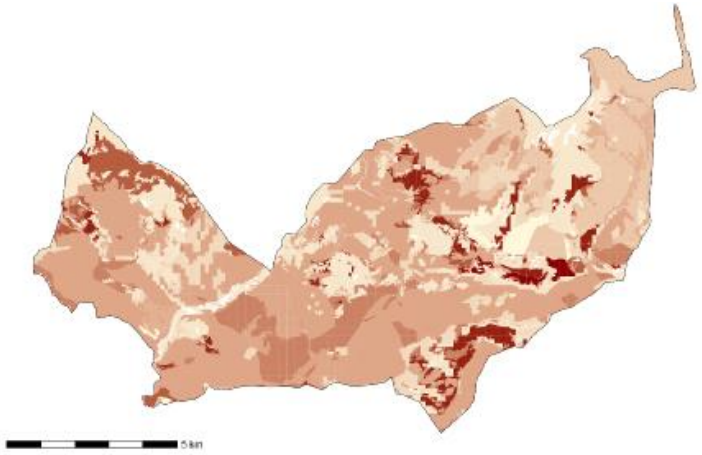


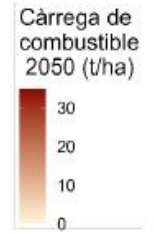
Candidate Plan: Management Proposal year 2050

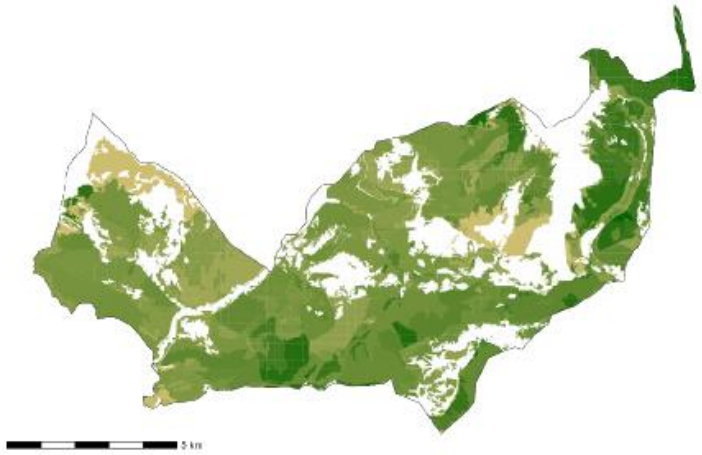


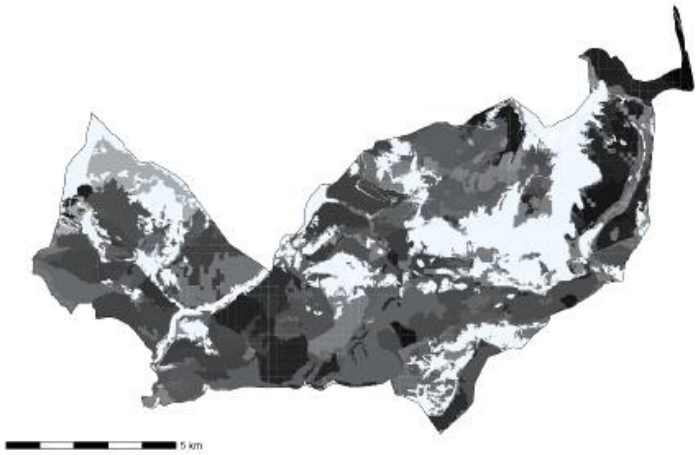
Ecosystem service quantification 2050

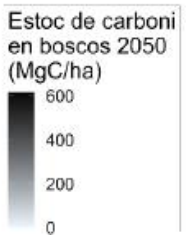












Ecosystem service quantification 2050

Comparison of the provision of ecosystem services (EESS)

Servei ecosistèmic	Variable (Unitats)	Actual	Futur mantenint tendència	Δ (%)	Futur resilient	Δ (%)
Aigua	Aigua blava (Hm3)	57.1	55.4	-3%	61.1	7%
Activitat agro-ramadera	Càrrega ramadera (UBG)	1464	1085	-26%	1783	22%
	Producció agrícola (t)	3713	2747	-26%	4851	31%
Risc incendi	Càrrega combustible en superfície (Mg/ha)	10.8	12.2	13%	9.4	-12%
	Biomassa en peu (Mg/ha)	102	153	50%	82.2	-20%
Activitat silvícola	Producció fusta (m3/any)	2517	2517	0%	14874	491%
Biodiversitat	Coeficient variació DBH (-)	0.52	0.43	-17%	0.48	-9%
	Volum arbres grans (m3/ha)	9.85	25.5	159%	32	220%
	Biomassa fusta morta (Mg/ha)	3.3	4.9	50%	4.2	33%
	Índex biodiversitat forestal potencial [0,1]	0.29	0.36	25%	0.43	48%
Mitigació canvi climàtic	Estoc de carboni / Biomassa en peu (-)	2.70	2.64	-2.0%	2.63	-2.5%

Action plan

Priority actions to be carried out in the period 2024-2026

Of the 36 actions to be implemented, 9 priority actions have been identified resulting from all the meetings at all levels:

1. Forest management actions to improve capercaillie habitats.
2. Plan for the recovery of pastures from all the municipality.
3. Livestock's drinking troughs and feeding points with biosecurity measures to prevent zoonotic diseases.
4. Include management improvements on all new projects for "xerra partridge" in highland pasture areas.
5. "Mentcui" road arrangement.
6. Creation of a network of cereal or legume plots to provide fodder to small endangered hunting species.
7. Installation of experimental troghs prevent zoonotic diseases.
8. Closures to livestock's lowland "winter pastures".
9. Conferences with farmers to explore the possibility and feasibility of crop diversification.

These actions are now under project design and writing, and are expected to be executed during 2025.

After that, more public participation with the locals and managers will be carried out to define further more actions to implement and monitoring.

Lessons learned and Key success factors

- A joint management with a shared vision has the potential to improve and increase all the EESS analyse.
  - Needs the Quadruple helix involvement from the start
  - Access to high quality data but difficult to mainstream
  - Knowledge and scientific evidence based planning is key
  - Communication and involvement of all the actors from the start
- Although we can see bottom up initiatives, ultimately political alignment and political will are necessary to foster change.
- Difficulty to mobilise resources that stimulate economic activity on the long run
  - High dependency on public funding; there's a need for private initiative.
  - There are clear difficulties to maintain and monitor the EESS beyond public investment. All actors must work with a shared vision to find innovative solutions.
  - Synergies with "climate credits" and other green and nature capital investments can be beneficial.
- Many stoppers and cross-sectional aspects that affect the planning; such as bureaucracy, timings, dynamics, etc. Need to identify them ASAP and plan with it in mind.

More information on the programme

https://ruralcat.gencat.cat/web/guest/bioeconomia/ebc2030/paisatges-agroforestals-resilients

https://ruralcat.gencat.cat/documents/20181/11921838/DT127.pdf/89ab0df0-e878-4d5b-b844-53515c22c9f4

Gràcies

Gracias

Thank you

Merci

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Ajuntament de Puigcerdà

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