



Co-creating strategic action to adapt territories and the local economy to climate change

THE CONTEXT

Climate change is a **global phenomenon that affects us at all territorial levels.**

The impacts that alter the dynamics of various ecosystems and landscapes also affect the activities of the most vulnerable economic sectors, such as agriculture and livestock, forestry, tourism and fishing.

Therefore, implementing **adaptation measures** to enhance **resilience** is one of the main challenges we face today.



Pictures: Marta Juan. UGT

THE PROJECT

- 1 – The challenges
- 2 – Starting instruments
- 3 – The geographical scope
- 4 – Project partners
- 5 – Internal governance
- 6 – Areas of action
- 7 – Vulnerability studies
- 8 – The participatory process
- 9 – Adaptation actions
- 10 – Funding sources



01. The Challenges

Improving the **adaptability and resilience** of territories in the face of the impacts of climate change.

Engaging economic and social agents in the territories through **information, awareness, training and action**.

Reducing the **vulnerabilities of the main local economic sectors**: agriculture and livestock, forestry, tourism and fishing.

Creating **stable spaces for debate, participation and governance** to promote and co-create adaptation solutions.

How do we do it?

- By identifying the **impacts, vulnerabilities and adaptability** of the territories.
- By providing **knowledge, tools and data** to propose sector-specific actions.
- By involving economic and social agents **in the territories in defining the actions.**
- By creating **stable local and network governance structures.**
- By mobilising **sources and economic resources** to finance the actions.
- By **monitoring the project** and collecting data to evaluate progress.
- By promoting **local adaptation actions and strategies.**

01. The Challenges



01. The Challenges

It is a **transformative project** that has the aim of consolidating itself in the territory and expanding in the future.

An opportunity to...

- consolidate adaptation strategies and actions through **stable governance structures**,
- engage and ensure the active participation of **over 450 stakeholders or territorial agents**,
- and generate **dynamics and solutions** that extend beyond the duration and scope of this project.



The experience of the **Life Clinomics project** (2016-2020) has served as a starting point to guide actions.

02. Starting Instruments

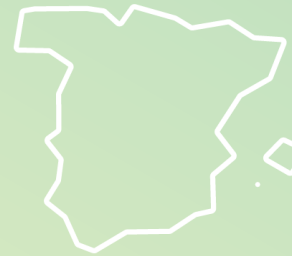
The project responds locally to the **agreements and policies of Europe, Spain, and Catalonia**. It addresses the challenges posed and is dedicated to finding solutions.

It proposes the implementation of **the Local Climate Change Adaptation Strategy** (ELACC), promoted in Life Clinomics and takes the adaptation actions from various levels of government as a reference.



Law 16/2017 on Climate Change and the Catalan Strategy for Adaptation to Climate Change 2021-2030

Law 7/2021 on Climate Change and Energy Transition and National Plan for Adaptation to Climate Change



European Union

United Nations

Laws and Reference Documents

02. Starting Instruments

Action Plans of Life Clinomics

3 APACC: Alt Penedès, Montseny Natural Park, Terres de l'Ebre.

Demonstrative Pilot Actions of the Life Clinomics Project.

Platforms and Tables created for the governance of territories.



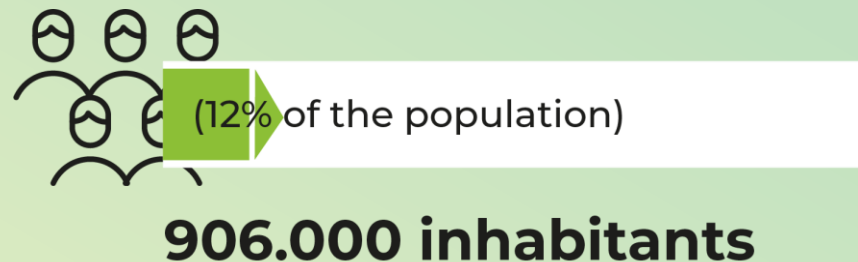
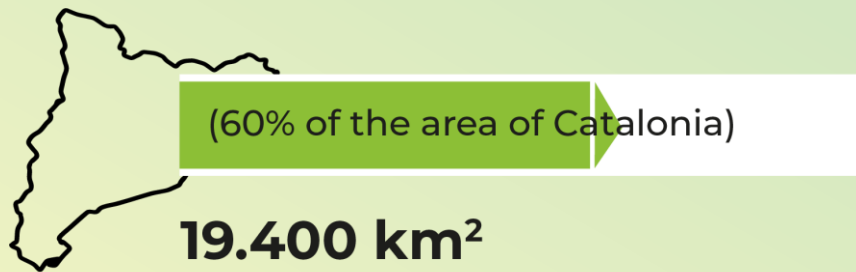
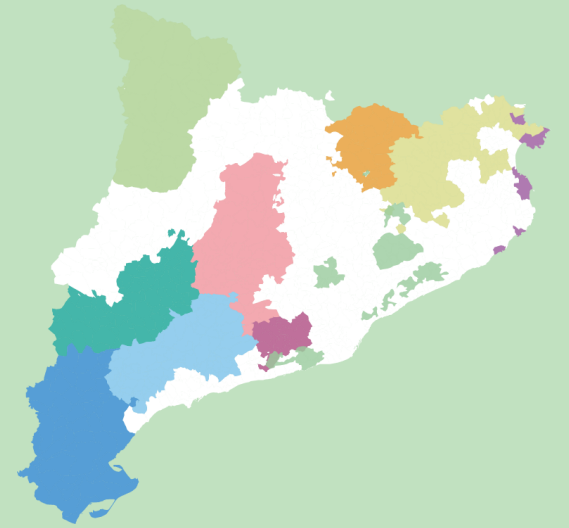
Pact for Climate Change Adaptation
(network of committed administrations, companies, entities and organisations).

<https://lifeclinomics.eu>

03. The Geographical Scope

19 Territorial and regional areas

Although only 12% of the population live in these areas, they represent 60% of the territory, and have diverse orographic, bioclimatic and economic characteristics and realities (mountain, inland areas, coastal locations, urban areas, rural areas, forest spaces, etc.).



03. The Geographical Scope

The **natural parks** of the Barcelona Provincial Council:

Natural Park and Biosphere Reserve of El Montseny.

Natural Park of Sant Llorenç del Munt i l'Obac.

Parks of Garraf, Foix, and Olèrdola.

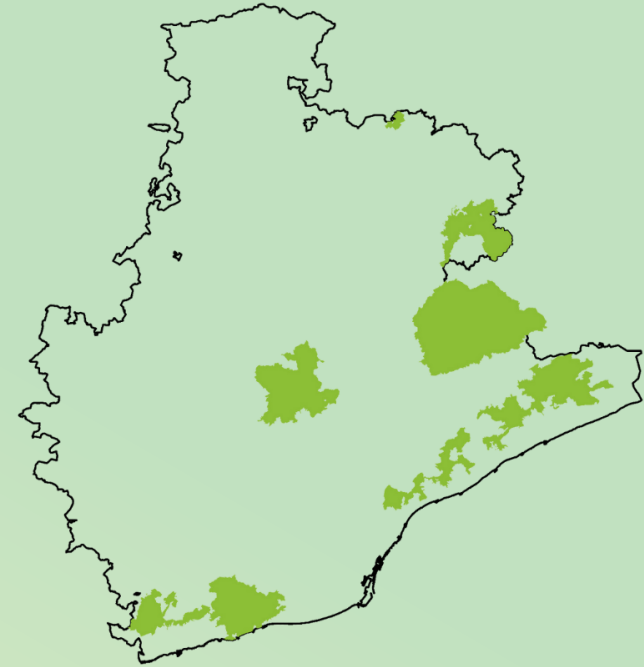
Park of El Montnegre i el Corredor.

Park of the Serralada de Marina.

Park of the Serralada Litoral.

Park of the Castle of Montesquiu.

Natural Space of Les Guilleries-Savassona.

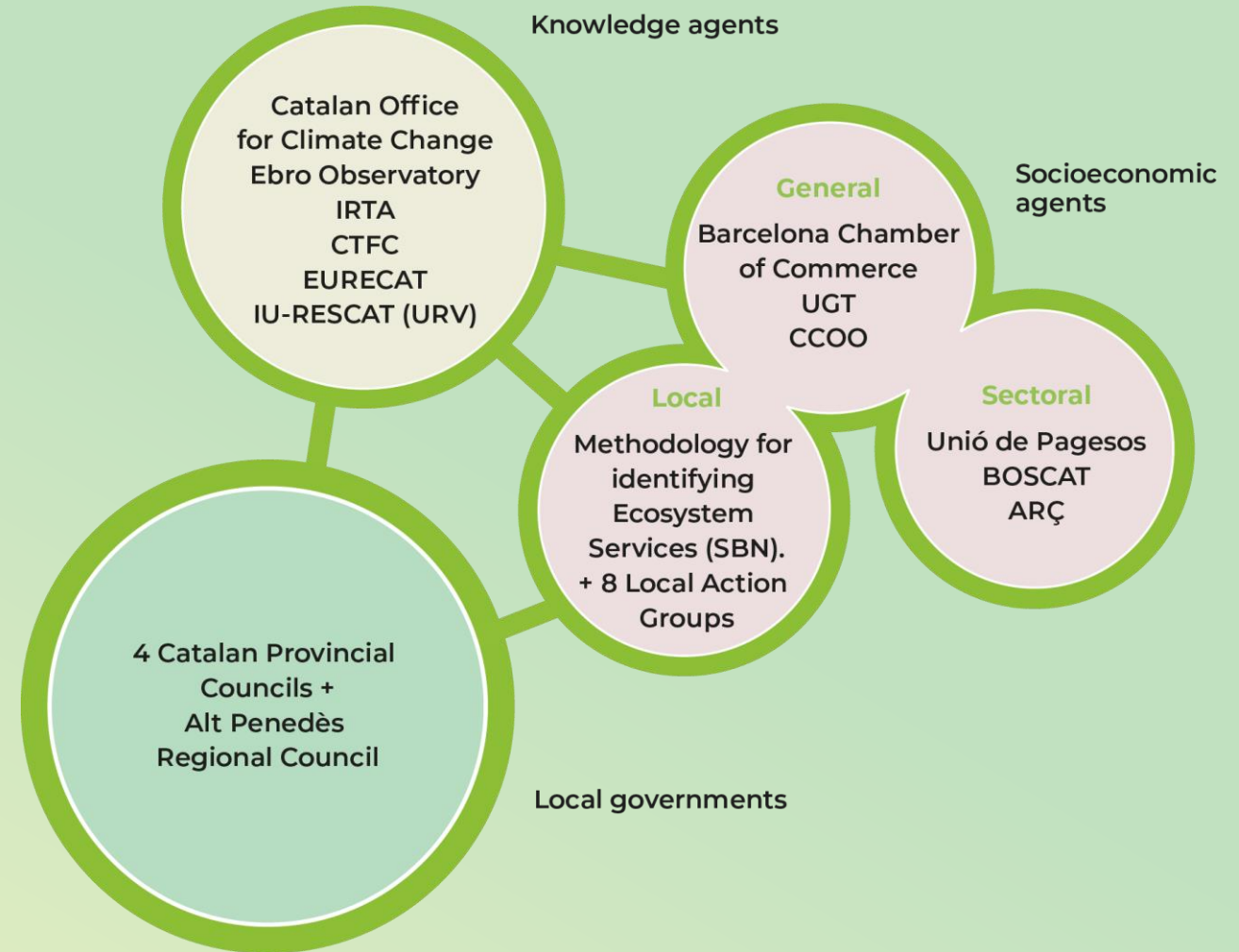


04. Project Partners

Leadership
Barcelona Provincial Council

25 public and private partners
from all territories and sectors

> 450 stakeholders
or territorial agents
identified and/or involved



04. Project Partners

6 Local/supralocal administrations

The four Catalan provincial councils and the Alt Penedès Regional Council.

5 Knowledge agents

Catalan Office for Climate Change, Institute of Agrifood Research and Technology, Forest Technology Centre of Catalonia, Ebro Observatory, Eurecat, IU-Rescat (URV).

14 Socioeconomic agents

Local: Catalonia Association of Rural and Maritime Initiatives (ARCA) and 8 local action groups.

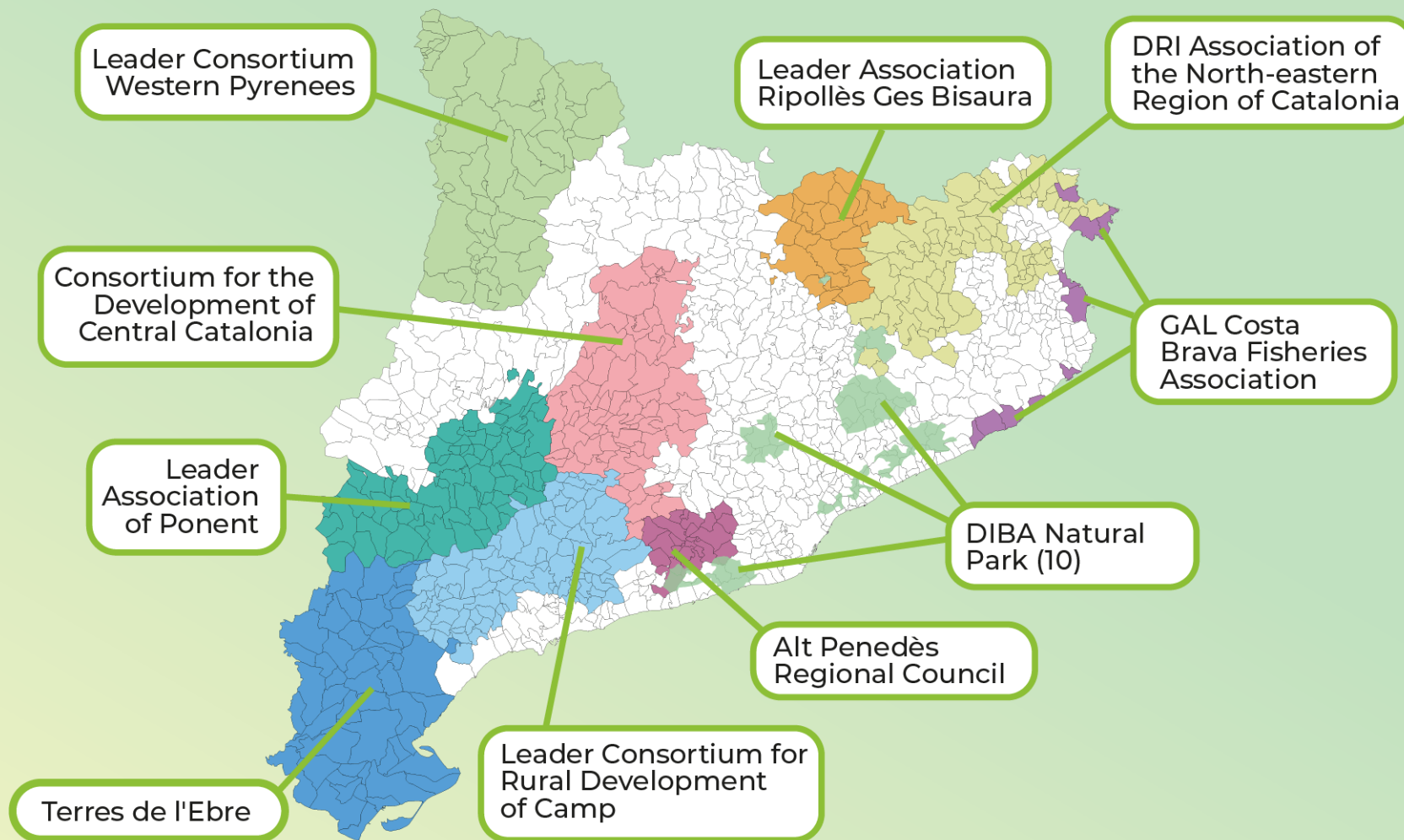
General scope: Barcelona Chamber of Commerce, Arç Cooperative, Trade Union Confederation of the National Workers' Commission of Catalonia and the General Union of Workers.

Sectoral: Unió de Pagesos - BOSCAT - Arç Cooperative.

2 Associated Entities:

Catalan National Federation of Fishermen's Guilds, Fishermen's Guild of Palamós.

04. Project Partners



05. Internal Governance

Steering Committee

Technical Management Office

Technical and Financial Coordination
Committee

Communication Committee

Technical Expert Group

Financial Advisory Group

05. Internal Governance

Financial Advisory Group

Provincial councils of Barcelona, Girona, Lleida, and Tarragona

Catalan Office for Climate Change

Catalan Institute of Finance

Catalan Water Agency

Catalan Institute of Energy

Institute for Energy Diversification and Saving

Spanish Office for Climate Change

Arç Cooperative

Triodos Bank, Caixa d'Enginyers, FIARE Ethical Banking

...

06. Areas of Action



Knowledge **Generation**



Impact **Monitoring**



Promotion of **Actions**



Communication and
Dissemination



Knowledge Generation

- Vulnerability studies of territories.
- Updating the socioeconomic fabric.
- Methodology for identification of the SBN (Nature-Based Solutions).
- Identification of external funding.
- Analysis and proposal of insurance options.



Promotion of actions

- Creation of governance structures for LL4CC.
- Implementation of adaptation actions.
- Training and education
- Replicability and transferability.
- Mobilisation of complementary funds.



06. Areas of Action



Impact Monitoring

- Calculation and tracking of indicators.
- Perception barometer.



Communication and Dissemination

- Strategy and tools for dissemination.
- Production of informative materials.
- Organisation and participation in workshops, conferences, etc.

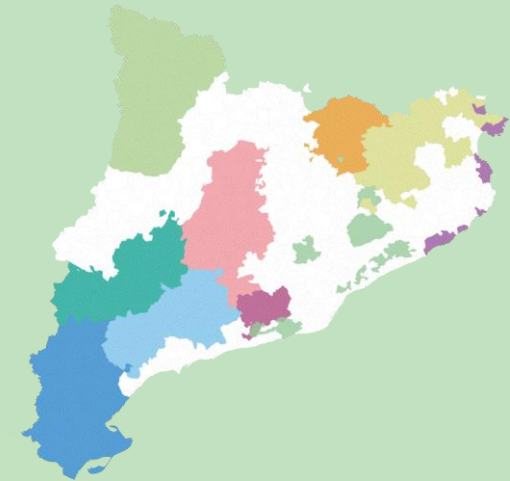


7. Vulnerability Studies

To promote adaptation actions, it is essential to have solid technical knowledge about the risks each territory faces from the impacts of climate change.

Vulnerability assessments have been conducted considering **three main areas**, which encompass the project territories: the Pyrenean area, the inland area, and the coastal and pre-coastal area.

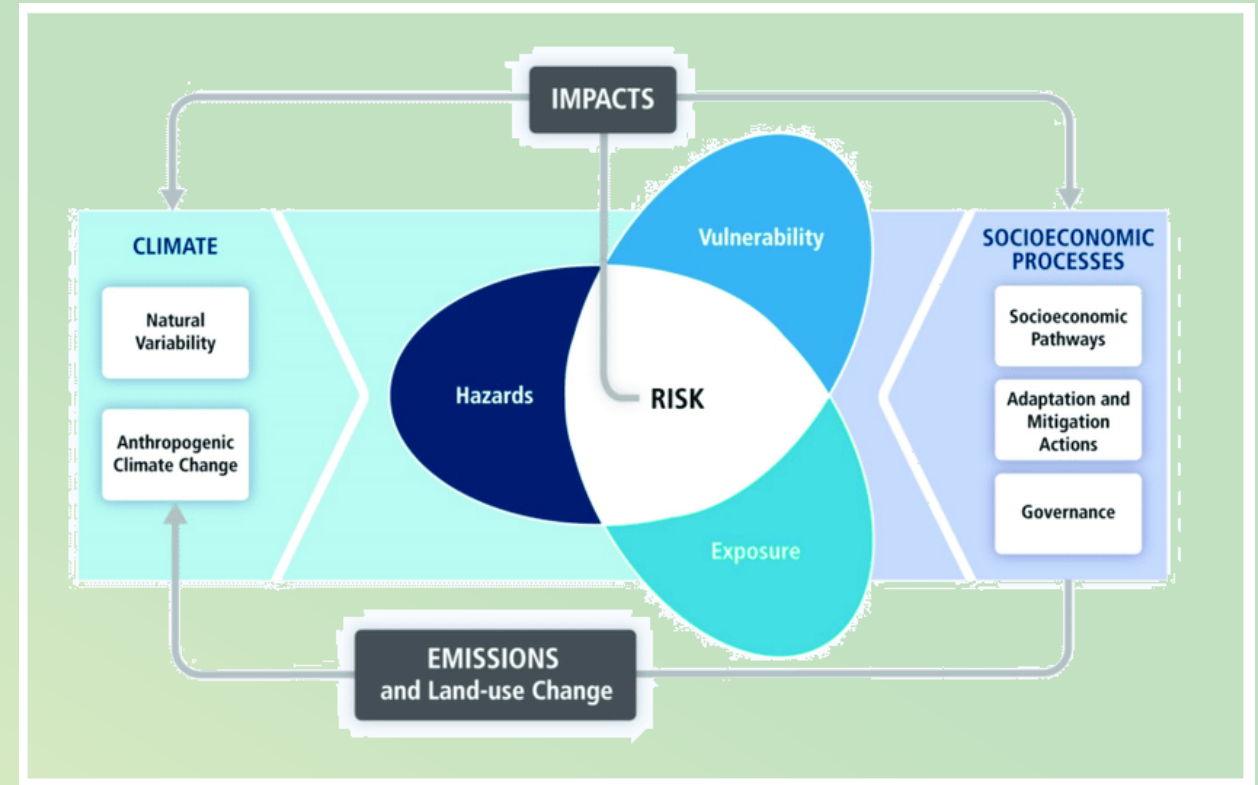
<https://ecoadapt50.eu/en/analitzem>



7. Vulnerability Studies

According to the criteria set by the IPCC (Intergovernmental Panel on Climate Change), **the level of risk** is determined by **three factors**:

- **Hazard**: potential occurrence of a phenomenon that can cause other impacts on health, and damage and loss of property, infrastructure, natural resources...
- **Exposure**: presence of people, livelihoods, ecosystems, economic, social or cultural assets..., in places that may be negatively affected.
- **Vulnerability**: the predisposition to be negatively affected by a specific hazard. It is assessed based on **adaptive capacity** and **sensitivity** or susceptibility to damage.

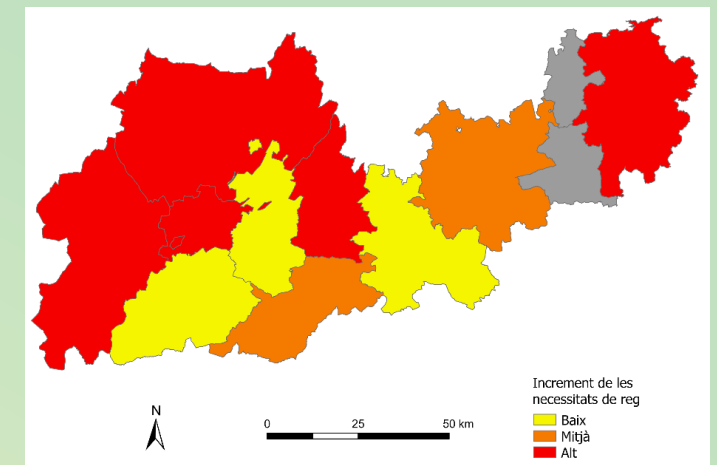
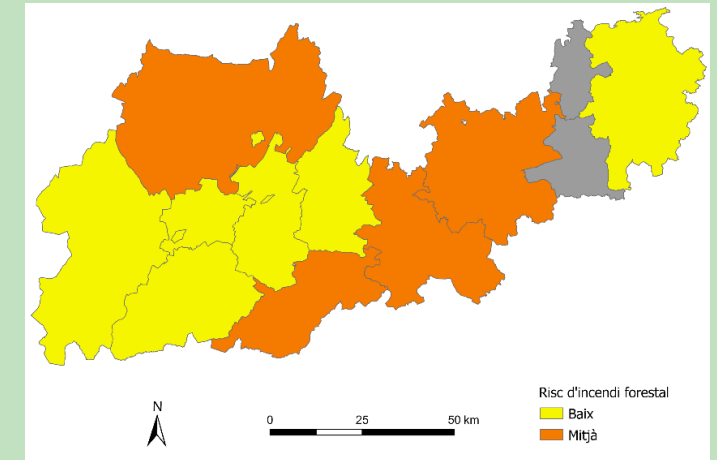


7. Vulnerability Studies

Conclusions of the assessments

VULNERABILITY OF INLAND AREAS

- Increase in temperature, particularly in summer, with a negative impact on crops.
- Reduction of agricultural and livestock areas due to abandonment; gradual conversion to scrubland and forests, loss of open spaces (agro-forestry mosaic), and impacts on biodiversity and landscape.
- Increase in semi-arid areas, especially in the northeastern counties.
- Forecasts related to the evolution of precipitations do not indicate a clear trend. Simulations suggest an increase in the frequency of heavy rainfall events during winter or autumn throughout Catalonia.

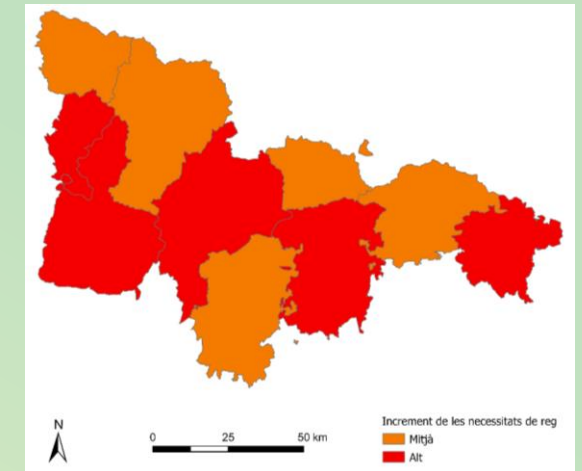
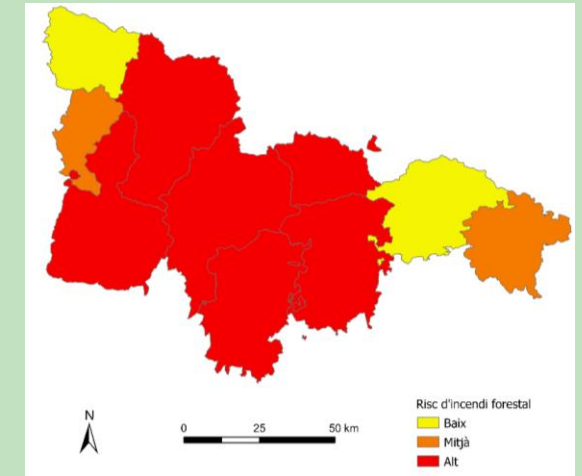


7. Vulnerability Studies

Conclusions of the assessments

VULNERABILITY OF THE PYRENEAN AREAS

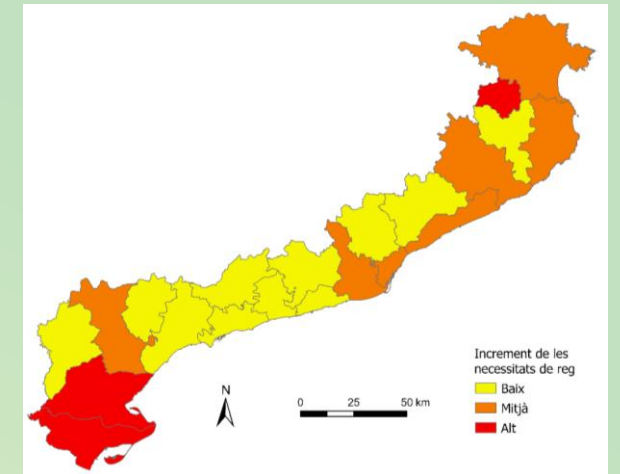
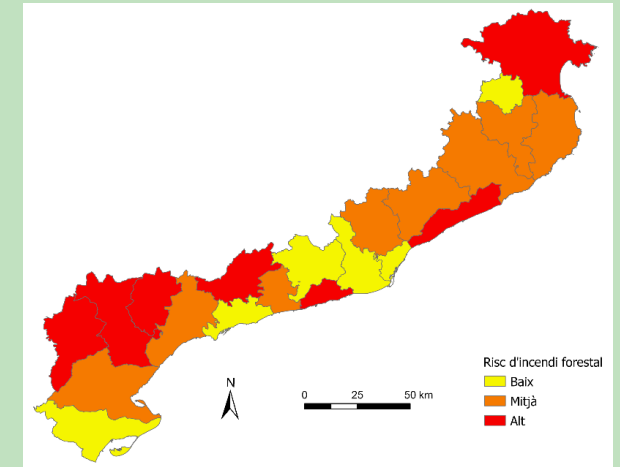
- Temperature increases are higher than in the rest of Catalonia.
- Accelerated disappearance of sensitive ecosystems and iconic landscape elements; alteration of the life cycle of various plant and animal species; impact on tourism-related activities; changes in the hydrological cycle...
- Other problems such as depopulation, land-use changes, and lack of generational renewal in the primary sector are exacerbated.
- Forecasts related to the evolution of precipitations do not indicate a clear trend. Simulations suggest an increase in the frequency of heavy rainfall events during winter or autumn throughout Catalonia.



Conclusions of the assessments

VULNERABILITY OF COASTAL AND PRE-COASTAL AREAS

- Rising sea levels and changes in wave behaviour that may affect beach erosion and the stability of promenades and other infrastructure located along the coastline, which are more exposed to maritime storms and the risk of flooding.
- Increased intensity and duration of heatwaves, and decreased episodes of cold weather.
- Increased frequency of rainstorms during winter or autumn across Catalonia.



08. The Participatory Process

The **involvement of institutions and social and economic stakeholders** allows for the generation of new dynamics and solutions, putting this knowledge at the service of other territories and sectors wishing to replicate it.



Building on the momentum of Life Clinomics, **spaces for reflection, participation, and debate** are created with social and economic agents and public administrations in each territory.

The Living Labs or LL4CC
(*Living Lab for Climate Change*).

08. The Participatory Process

The LL4CC are spaces to **identify the challenges faced by each territory and sector, and to co-create the most suitable solutions.**

At an inter-territorial level, the **LL4CC network** enables the sharing of knowledge and experiences, the establishment of synergies, and the optimisation of resources to carry out climate change adaptation actions.

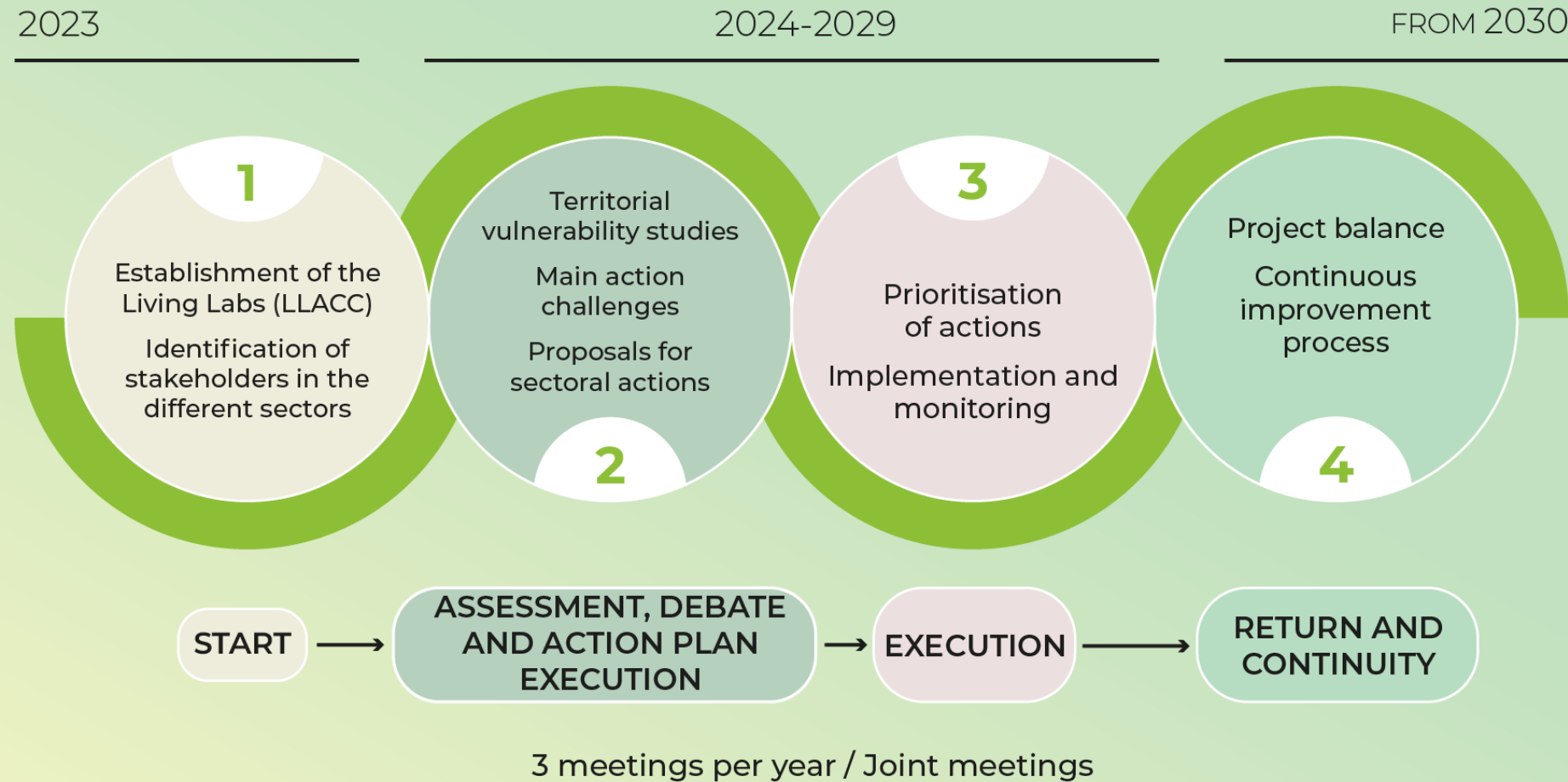


Living Lab of the Serralada Litoral Park



Guilleries-Savassona Living Lab

07. The Participatory Process



09. Adaptation Actions

A minimum of **76 adaptation actions** are planned to be implemented.

It is intended to increase this figure **to around one thousand**, as the project progresses and new funding sources are mobilised.



09. Adaptation Actions

To begin with, some guiding **lines of action are proposed** for all the territories and sectors involved in the project.

Each participant adapts these to their specific characteristics and needs, defining the most suitable actions to adapt to the new climate scenario.



Agri-livestock



Forestry



Fisheries



Tourism

09. Adaptation Actions

AGRI-LIVESTOCK

Innovative agricultural adaptation techniques, technical and scientific advice

Local or more resilient agricultural and livestock varieties

Market for local and sustainable agri-food products

FISHING AND AQUACULTURE

Impact of morphological changes on the coast

Innovative fishing adaptation techniques, technical and scientific advice

Market for local, sustainable, and resilient fish products

SILVICULTURE

Forest management and grazing for resilience and wildfire prevention

Sustainable forest management

Local market for sustainable forest products

TOURISM

Sustainability and adaptation in the tourism sector

Tourism diversification

Local tourism management brands

09. Adaptation Actions



Agri-livestock

Actions to reduce the loss of quality in agricultural products, the increasing water requirements of crops and herds, and the heightened risk of losses in livestock production:

- Promotion of more resilient local agricultural or livestock varieties.
- Adoption of new agricultural techniques.
- Promotion of local and sustainable agri-food markets.



Vineyards. Pere Quintana



Herds Montseny. DiBA

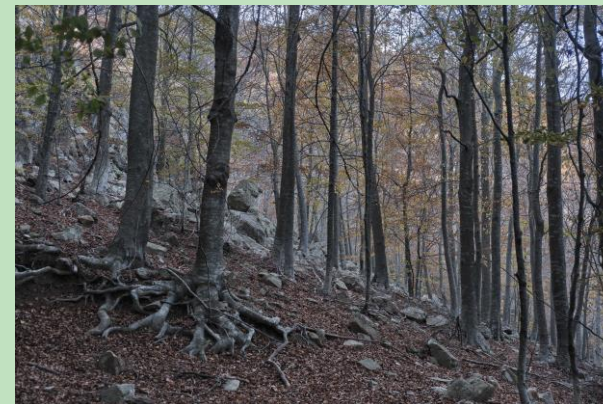
09. Adaptation Actions



Forestry

Actions to reduce the increased risk of forest fires, the weakening of forests, and the mortality of tree species, as well as the decline in productivity and the fragmentation of habitats:

- Promotion of sustainable forest management.
- Support for local forest product markets.



Montseny Forest DIBA. Oriol Clavera



Montesquiu Park. DIBA. Oriol Clavera



Fishing and aquaculture

Actions to mitigate the overexploitation of natural resources and the loss of beaches:

- Reduction of the impact of changes in coastal morphology.
- Adoption of new fishing techniques.
- Promotion of local and sustainable seafood markets.



Fishing net. Marta Juan. UGT



Unloading fish. GALPCB_JP

09. Adaptation Actions



Tourism

Actions to reduce the loss of climate comfort, the erosion of the coastline or the decrease in snow availability at ski resorts:

- Promotion of sustainability and adaptation in the sector.
- Encouragement of tourism diversification.
- Establishment of locally managed tourism brands.



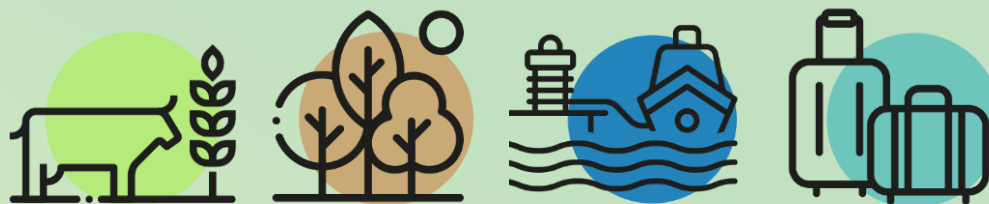
Walks in the Guilleries. DIBA. Oriol Clavera



Birdwatching tourism. Enric Morera

09. Adaptation Actions

Cross-cutting



Actions that address diverse objectives, such as:

- Improving the efficient use of water.
- Restoring ecosystems.
- Integrating the principles of the circular economy and nature-based solutions into management models.
- Promoting sustainable mobility and energy sovereignty.



Sau Reservoir. Marta Juan. UGT

09. Adaptation Actions

An example of a demonstrative action:
**Extensive livestock management with GPS
Virtual Fencing collars.**

Using geolocation systems and virtual fencing
for the monitoring and management of animals
in extensive livestock systems.

Objectives:

- Enhance the competitiveness of livestock farms
- Create jobs in sparsely populated areas.
- Reduce the risk of wildfires in grazing areas.



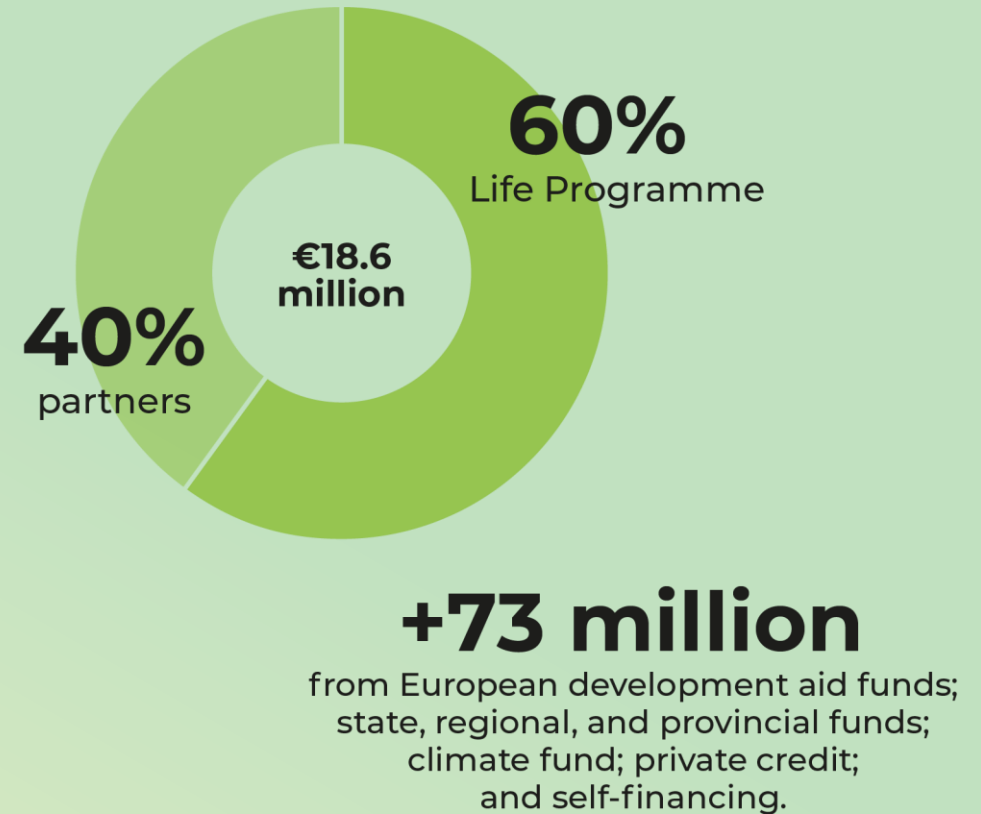
Action promoted by
Unió de Pagesos de Catalunya

10. Funding Sources

Direct budget:
€18.6 million
co-financed by:

60% LIFE programme of the European Commission.
40% public and private partners of the project.

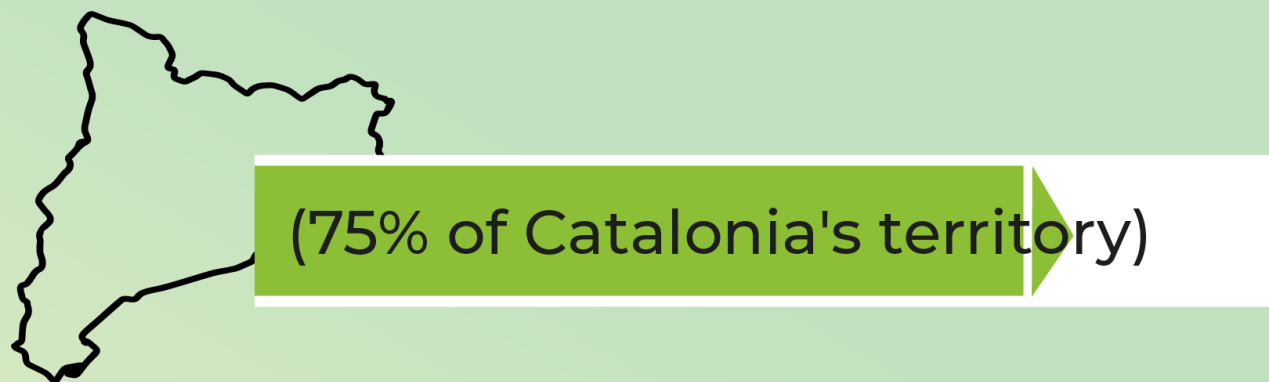
There is a commitment to mobilise **an additional €73 million** from other sources.



10. Funding Sources

With these supplementary financial resources it is anticipated that **75% of the territory of Catalonia will be reached.**

They will allow for the replication of actions and the promotion of new ones in coastal areas, high mountain forests, and agricultural plains.



EXPECTED RESULTS

Raising awareness among the population and stakeholders.

Training for local communities and territorial agents (2,800).

KNOWLEDGE AND TRAINING



Establishment of the 19 LLACC.

Involvement of stakeholders.

Empowerment for action.

ADAPTIVE GOVERNANCE



70 demonstrative actions.

Integration of climate change adaptation into public and private policies, planning, and insurance.

Creation of new jobs.

Technical and financial support.

ACTION



Implementation of best practices.

"Agreement for the adaptation to climate change": 50 signatories.

Involvement of 5 new territories.

COMMITMENT AND MOBILISATION





2023-2030



**19 TERRITORIES
(60% OF THE AREA OF CATALONIA)**



> 906.000 INHABITANTS (12% OF THE POPULATION)



**€18,6M BUDGET
(COMMITMENT TO MOBILISE OVER €73M)**



<76 ADAPTATION ACTIONS



Pictures: Various authors
(audiovisual material for the project)

Thank you!

Life_eCO
adapt50



Co-funded by the
European Union

Coordinating partner



Beneficiary partners

