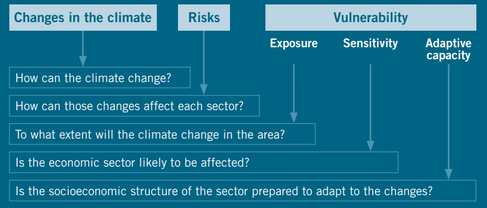
HOW HAS THE VULNERABILITY OF EACH SECTOR BEEN EVALUATED?

The vulnerability study has focused on the agricultural, livestock, forestry and tourism sectors. The identification of the principal risks that affect each sector has been carried out through the collection of technical information and interlocution with the various social and economic groups within the region.

A set of indicators has also been established for risks that are considered to be the most important for each sector, municipality and the region as a whole. The vulnerability associated with a particular risk has been calculated based on the following variables: exposure, sensitivity and adaptive capacity.



LIFE CLINOMICS
LIFE15 CCA/ES/000102
"This project has been funded with support from the European Commission"

The European LIFE CLINOMICS project **has selected three regional areas of Catalonia,** each with ecosystems representative of the country as a whole in order to analyse and evaluate the vulnerability and impacts each region faces from climate change.

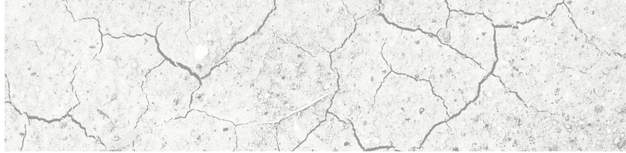
The information should allow:

- The adaption/modification of **local socio-economic policies and activities**.
- Catalonia to serve as a **replicable model** in other Mediterranean areas of southern Europe.

Access to the technical report: **http://lifeclinomics.eu/en/informes**

Diputació Barcelona · Cambra de Comerç de Barcelona · UGT Unió General de Treballadors de Catalunya · Consell Comarcal Alt Penedès · CCOO comissió obrera nacional de Catalunya · Oficina Catalana del Canvi Climàtic · COPATE · Unió de Pagesos

THE VULNERABILITY OF THE FORESTRY SECTOR TO CLIMATE CHANGE



THE LIFE CLINOMICS PROJECT OF CATALONIA AND THE ADAPTATION OF THE REGION TO CLIMATE CHANGE

Adapting to climate change is a **collective challenge**.

It calls for a **shared effort** on the part of all social and economic agents, organisations, groups, and public institutions, in all sectors and at all levels.

It is no longer enough to avoid further emissions; we must also work to reduce or mitigate the emissions that we produce now.

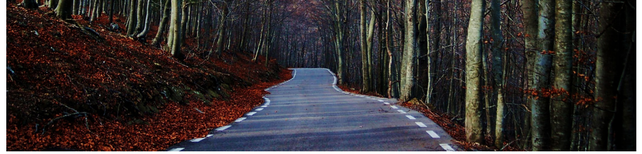
Given the seriousness of the predicted **inevitable impacts** of climate change, each geographical region must also take measures that will allow it to **adapt to the changes to come** (resilience).

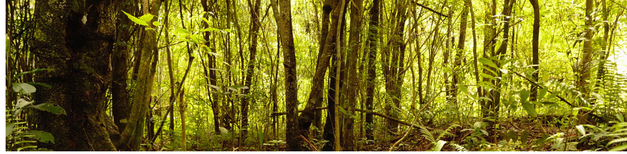
Therefore we must...

Minimize **vulnerability** to **risks and negative impacts**

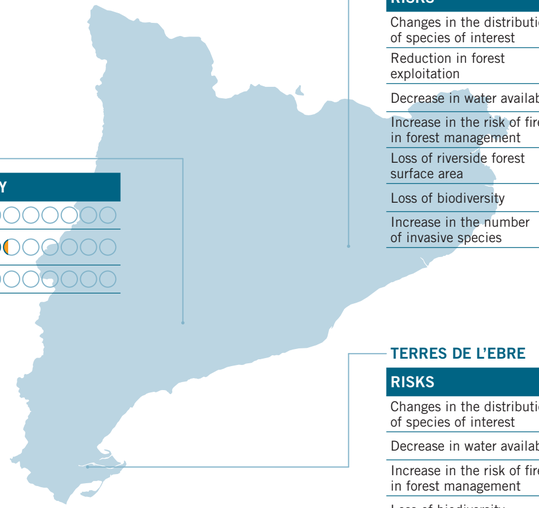
Identify **positive impacts** and transform them into **opportunities for all sectors and regions**

Therefore, we must promote adaptive measures for all economic sectors in order to guarantee their **sustainable activity in the new climate scenario.**





WHAT IS THE LEVEL OF RISK TO THE SECTOR IN EACH REGION?



ALT PENEDÈS

RISKS	VULNERABILITY
Decrease in water availability	2.2
Increased fire risk in forest management	4.3
Loss of biodiversity	3.1

MONTSENY

RISKS	VULNERABILITY
Changes in the distribution of species of interest	4.3
Reduction in forest exploitation	4.3
Decrease in water availability	5.3
Increase in the risk of fire in forest management	3.4
Loss of riverside forest surface area	1.6
Loss of biodiversity	4.7
Increase in the number of invasive species	1.3

TERRES DE L'EBRE

RISKS	VULNERABILITY
Changes in the distribution of species of interest	2.0
Decrease in water availability	4.0
Increase in the risk of fire in forest management	6.0
Loss of biodiversity	6.0

0 = low vulnerability 10 = high vulnerability

WHAT IS THE OVERALL VULNERABILITY OF THE SECTOR?

The forestry sector exhibits high vulnerability to climate change. The principal reasons being that rising temperatures and reduced precipitation result in an increased risk of fire, a reduction in the availability of water and the proliferation of pests and diseases.

These risks can be further increased by the abandonment of forest management because of low economic profitability and a lack of recognition of the value of forestry products and services.

In the **MONTSENY** a modification of management practices in favour of drought-resistant species, and the fact that oak and cork will be able to thrive at increased altitudes opens up the possibility of maintaining the cultivation of both species. In addition, certain secondary forest products (such as cork, pastoral exploitation and pine nuts) can continue to contribute significantly to the economy in rural areas where such species thrive. Forest managers also point out that, depending on how they manage the forests, they can even improve the water cycle and as a consequence increase water availability.

The forestry sector of the **l'ALT PENEDÈS** is considered to be highly vulnerable, particularly with regard to the risk of fire and reduced flow in watercourses. It will be necessary to put into place a management plan with the long-term objective of facilitating the regeneration of forests and reducing the sector's vulnerability to fire and periods of drought. The cleaning of the forest undergrowth for use in the biomass industry, combined with other forest products and dried vine branches would also contribute to the achievement of these objectives.

Forestry in the **TERRES DE L'EBRE**, on the other hand, presents a low vulnerability to climate change as it is not regarded as an important economic activity within the region. However, the region is considered to be at medium to high risk from forest fires and the loss of biodiversity, especially with regard to species that are more sensitive to temperature increases and the effects of a reduction in, and the distribution of precipitation, such as beech, holm oak, the red and black pine forests and riverbank vegetation. An improvement in the management of these habitats and more extensive development of forest management plans can help to mitigate the risk of fires.

Highlighting the potential of biomass as an energy resource would reduce the risk of fire and contribute to the mitigation of climate change.