



Towards an integrated, coherent and inclusive implementation of climate change adaptation policy in a region: Navarre

NADAPTA THE CLIMA PROJECT

Navarre Climate Strategy: Soil Integrated Management

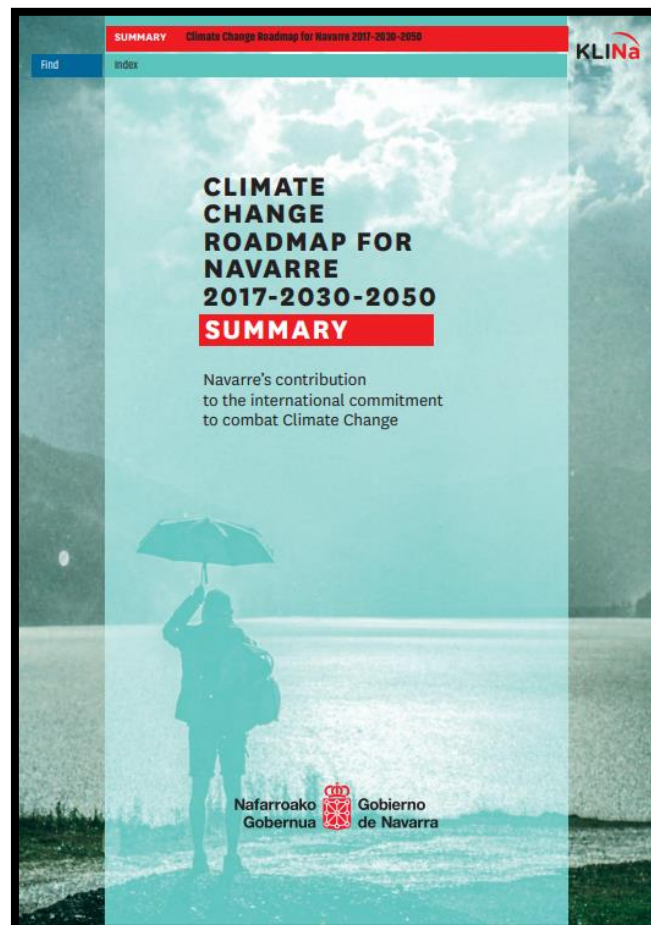
Fernando Señas Bea
Service Director of the Navarre Climate Change Office

In Pamplona, on April 10, 2024

LIFE Platform Meeting on Soils



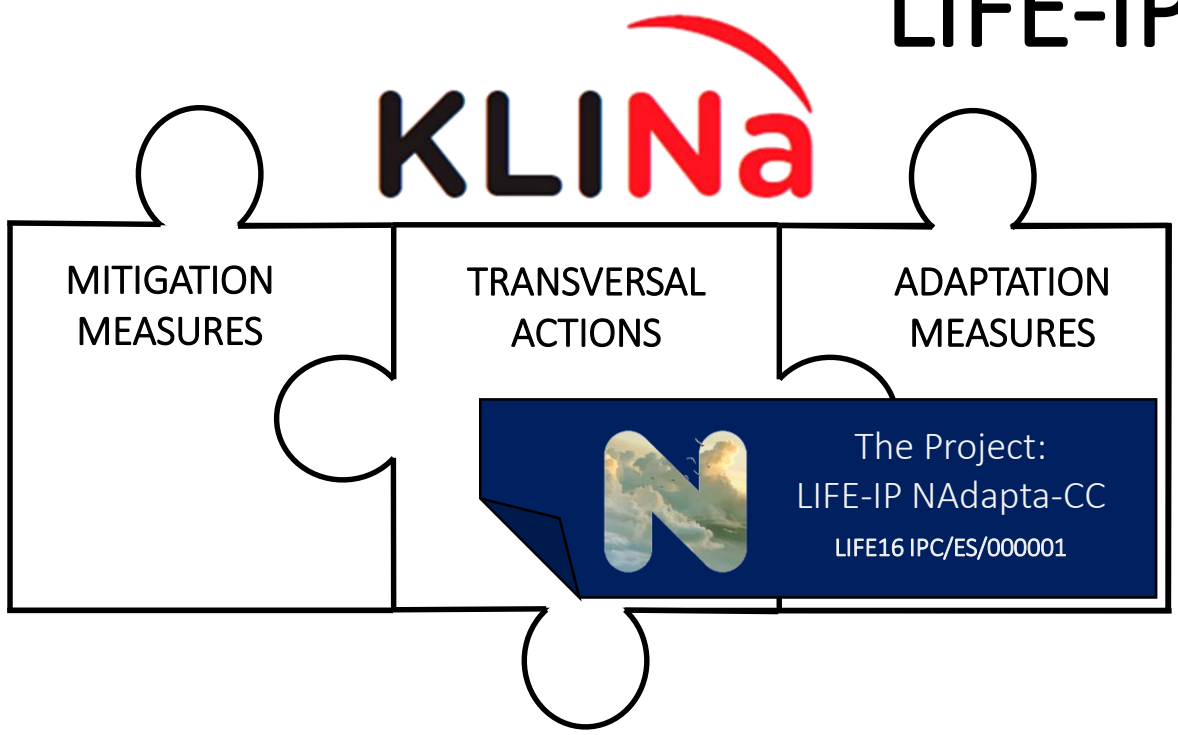
2018: the Government of Navarre approved the Climate Change Roadmap for Navarre: **KLINa**



- Comprehensive and cross-cutting strategy.
- Adaptation and mitigation.
 - Transition to a low-emission economy.
 - Towards a sustainable and resilient territory.
- Contribution to:
 - EU Strategy.
 - Paris Agreement.
 - SDGs.

<https://klina.navarra.es/>

LIFE-IP NAdapta-CC Project:



Objective:

Increase resilience to climate change in Navarre:

- N Intersectoriality.
- N Long-term sustainability.
- N Participation and networking.
- N Implementation of the actions included in Navarre's Climate Change Roadmap, **KLINa**.

53 ACTIONS

8 years
[4 phases]

2017-2025

	9.3M€
	6.3M€

Government of Navarre

LIFE-IP NAdapta-CC Project: Technical areas



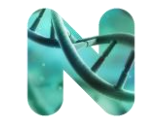
Monitoring and local level



Agriculture and livestock



Water



Health



Forestry



Infrastructures and territorial planning

LIFE16 IPC/ES/000001 CONSORTIUM





Gobierno de Navarra Nafarroako Gobernua
 Departamento de Desarrollo Rural y Medio Ambiente Landa Garapeneko eta Ingurumeneko Departamentua
 Instituto de Salud Pública y Laboral de Navarra Nafarroako Osasun Publikoaren eta Lan Osasunaren Institutua
 GAN-NIK Gestión Ambiental de Navarra Nafarroako Ingurumen Kudeaketa
 Nasuvinsa Navarra de Suelo y Vivienda, S.A.
 NILSA
 INTIA
 upna Universidad Pública de Navarra Nafarroako Unibertsitate Publikoa

LIFE-IP NAdapta-CC Project:

Objective:

Incorporate the fight against climate change into the different sectoral policies.

To this end, horizontal and cross-cutting actions give it the character of an integrated project:

-  Relations with cross-sectoral policies.
-  Communication.
-  Awareness-raising
-  Identification and mobilization of funds to carry out our climate strategy.

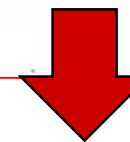
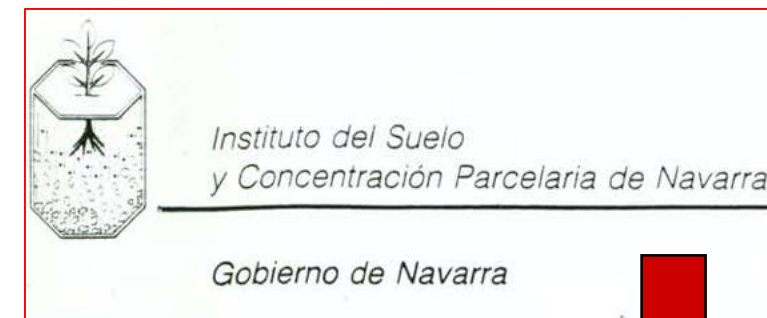


Transversal and horizontal actions

Soils:

Beginning of the 80's → **Soil Institute of Navarre**

Soil knowledge and mapping.






 Departamento de Desarrollo Rural y Medio Ambiente

 Landa Garapeneko eta Ingurumeneko Departamentua

Today: **Soil and Climatology Area** of the General Directorate of Agriculture and Livestock of the Government of Navarre:

Inventory and study of natural resources and studies related to the knowledge and protection of soils against their degradation.

Preparation of the **Soil Map of Navarre** at a scale of 1:25,000 and its derived maps (Map of Agrological Classes and Map of Suitability for Irrigation).

Soils:

INTIA and TRACASA → Various studies on soils issues from different thematic areas:

- INTIA Erosion or salinity.
- INTIA Land planning and management.
- INTIA Soil management in irrigated *versus* dry land.
- INTIA Productive improvements.
- INTIA Conventional and alternative productions comparison.
- INTIA Carbon 'sequestration' or carbon farming.

LIFE RegaDIOX project:

- 2013 – 2016.
- Atmospheric CO₂ fixation and greenhouse gas emission reductions during sustainable management of irrigated agriculture were studied.



LIFE12 ENV/ES/000426

LIFE-IP NAdapta-CC and soils:

- Integrated strategy for adaptation to climate change in several areas or sectors, including soil as an element of special interest.
- Optimizing the adaptability of agrosystems to climate change through soil, organic matter and crop management strategies.
- Promote a *Resilient Soil Management Plan* for such optimization through soil management strategies adapted to our region: Navarre.

LIFE-IP NAdapta-CC and soils:




ACTION C.4 → AGRICULTURE AND LIVESTOCK







LIFE-IP NAdapta-CC and soils:

PHASES:



 1. Vulnerability study of the region's agricultural soils, and the effect of different strategic agricultural management strategies has been assessed:

-  Conservation agriculture.
-  Rotations.
-  Use of organic amendments
-  Improved range land management.


Zoning system to divide the region into 12 zones with homogeneous behavior for agricultural development.

LIFE-IP NAdapta-CC and soils:

PHASES:

-  2. Based on the main climatic impacts detected for the coming years and the intrinsic edaphic properties related to them.

Resilience indicators were identified: aspects related to organic matter and soil physical condition.







-  3. A network of plots was defined to characterize the agricultural use of the region:

-  Conventional management plots *versus* "adaptive" management plots.

Tomorrow INTIA, which leads the soil action in LIFE-IP NAdapta-CC project will present a soil resilience test based on the use of organic fertilizers in one of these plots.

LIFE-IP NAdapta-CC and soils:

RESULTS:

-  Establish a baseline (corresponding to the levels observed in conventionally managed plots) for the different zones and soil types.
-  Determine, for each strategy considered, the net effect on the indicators of interest in actual production plots.
-  The effect of adaptive management in the different areas is variable depending on the type of management, the area and the indicators considered.
-  It is necessary to take into account the characteristics of agrosystems on a regional scale, in order to advance towards a diagnosis and advice for each type of farm.
-  Specific **guidance** on adaptive management in Navarre.
-  Resilient Soil **Management Plan** for Navarre

LIFE-IP NAdapta-CC and soils:

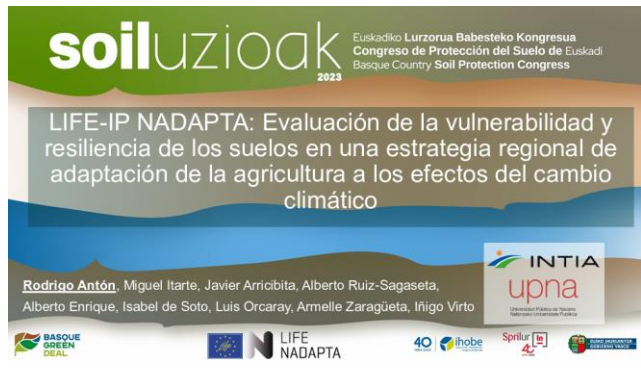
Results:

- Determine the influence of soil diversity on the vulnerability of Navarre agrosystems to climate change.
- Know quantitatively the reference level of agricultural soils under conventional management, and the impact of the LIFE-IP NAdapta-CC project strategies on soil organic carbon and water retention capacity.
- Know the potential for improvement depending on practices and soil and climatic zone.
- Be able to incorporate this information in the decision support tools and in the elaboration of a proposed Resilient Soil Management Plan at the level of the region.



“One Health”:

Soil Congress in Euskadi **SOILUZIOAK 2023**, as part of *LIFE-IP Urban Klima 2050* project.



A comprehensive and unifying approach that aims to balance and optimize the health of people, animals and ecosystems, and must include soil.

Eskerrik asko!
¡Muchas gracias!
Thank you!