

RESEARCH CHALLENGES

GROUP MEETINGS



JULY 14TH

R&D1 – NATURAL RESOURCES, BIODIVERSITY & CLIMATE CHALLENGES

Operational groups:



1. Projects and CITAB Research Lines: Short-term priorities and development of applications

Key Initiatives

Key initiatives include ongoing projects such as **WaterQB** (FCT) and **VineAdapt2Climate** (PRR – Recovery and Resilience Project), as well as just-initiated projects like **TerraFarmers (Life)** and planned **FutureCrops**.

Applications are being prepared for **POCTEP** and **Horizon** calls related to ecosystem services, NbS and climate change.

CRUSOE Network

Working Group Water and Sustainable Development and Working Group Ecological Transition and Global Change.

Theme in development

Natural regeneration in cork oak forests: characterisation, modelling and multidisciplinary adaptive management.

The available data relate to information collected from **cork oak** stands in the **municipality of Mogadouro during** periodic monitoring carried out over a **three-year period**. In methodological terms, the aim is to **characterise the climate of the study area and identify the main factors influencing the dynamics of natural regeneration**, as well as **stochastic and dynamic modelling to assess risk and define adaptation and sustainability strategies**.



Technology Boost

Future research will emphasize **AI-driven mapping of forest species health and climate suitability assessments for agricultural and forestry species.**

Life TerraFarmers

This project will introduce a significant **technological innovation**, including a **drone-released seeding capsule** designed to enhance **afforestation and ecosystem restoration efforts.**

The technological transfer is also being made through web platforms, such as “**MySense**” and other similar platforms.

Smartphone application for **acquiring, understanding and applying basic histology concepts in life sciences.**

SmartHisto

DNAqualMG

The **Biodiversa** project “**DNAqualMG**” focuses on **molecular and image-based identification of invertebrates and diatoms**, enabling effective monitoring of **watercourse ecological quality** and supporting **sustainable management and ecological restoration practices.**

2. Dissemination Strategies

Workshops

Thematic workshops for workers and business owners in the agri-forest sector could be organized in the future to continue the increased awareness of climate change impacts.

Workshops for local community capacity-building:

- **a)** Training sessions on the sustainable management and conservation of natural resources, reinforcing active community participation in ecosystem protection.
- **b)** Promotion of regenerative practices that balance environmental preservation with local development, ensuring the responsible use of landscapes and their resources.

Workshop relating climate/weather change and its interaction with invasive species (from viruses and bacteria to plants and animals) and the synergies of impacts (in order to design control/mitigation and adaptation measures) and impacts on different areas, such as natural systems (e.g. rivers) but also productive systems (agriculture, livestock, animal health, etc.).

Workshop on “Friendly Approach on Climate Concepts”, as well as short courses on climate data and tools.

Workshops/training schools organised by **ISOPLEXIS** (Isup_Agro project) to be held in the third and fourth quarters of the year (UMadeira).

Other workshops organised by CITAB such as **WaterQB - Irrigation Water; APROMIS Maize Producers** (2 September 2025).

Training

IUCN Summer School on NbS 2025

The IUCN's NbS (Nature-based Solutions) Summer School for 2025 was held in Shanghai, China, from June 22 to July 2. This event, organised by the IUCN NbS Asia Hub and Peking University, had the participation of Edna Cabecinha as Co-Lead of the IUCN CEM NbS TG, and focused on deepening participants' expertise in NbS. The summer school covered core theories, cutting-edge technologies, innovative financing models, and practical applications of NbS.

Beekeeping Course 2025 – Training for Sustainable Beekeeping

- a)** Theoretical and practical training on responsible hive management, beekeeping production, and the impact of bees on biodiversity.
 - b)** Emphasis on the crucial role of bees in pollination and ecosystem regeneration, reinforcing their importance in sustainable landscape management.
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Training in Data Science

Focused on the application of Machine Learning models to classification and regression problems.

Training in Remote Sensing

With application in the area of Precision Agriculture.

Congresses

Water Congress

(Biennial, promoted by APRH)

Iberian Congress on Water Management and Planning

(Biennial)

Watershed Management in the Northern Region

(Annual, promoted by APRH)

National Seminar on Sustainability in Water Resources

(Promoted by Polus)

Eco-forum

(in Guiyang, China)

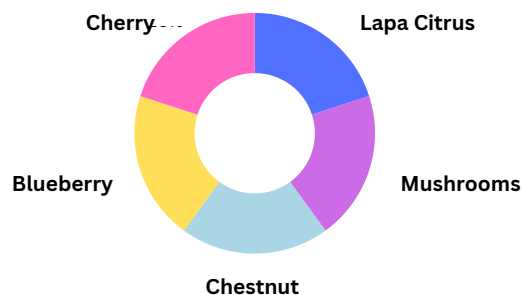
6th ESP Europe Conference

18 - 22 May, 2026
Prague

Raising awareness through participation in international seminars, including the IUFRO Kenya World Congress, and organizing thematic workshops for stakeholders in the agri-forest sector will further knowledge exchange and collaboration.

R&D2 – RESILIENCY VALORISATION OF AGRARIAN VALUE CHAINS

Operational groups:



1. Projects and CITAB Research Lines: Short-term priorities and development of applications

Goals

These initiatives focus on valorising strategic crops, promoting agricultural innovation, rural development and resilience to climate change.

Horizon Europe Project - Dried Fruit

International project dedicated to studying the adaptability of seven species of dried fruit to the European climate, with special emphasis on the Mediterranean regions. The aim is to identify more resilient genotypes, promote sustainable agricultural practices and develop value chains that favour biodiversity, the local economy and the mitigation of climate effects.

An initiative to revitalise the northern interior of Portugal through the recovery of traditional crops, the promotion of walking routes associated with agricultural and natural heritage, mountain tourism, and the creation of bridges between science, local authorities and political decision-makers. The project includes proposals to encourage young people to settle and the diversification of sustainable economic activities.

**Project to
enhance the
interior and
combat
depopulation**



Cross-cutting lines of technological and biotechnological development

Development of **natural biostimulants** based on essential oils, extracts of indigenous aromatic plants, extracts of algae from the Portuguese coast and beneficial microorganisms, with **application in agricultural crops to increase resilience to abiotic and biotic stresses**.

Formulation of elicitors capable of **inducing defence mechanisms in plants, strengthening protection against pests and diseases in a sustainable way**.

Projects to estimate the potential for **carbon sequestration in agricultural crops**, contributing to regenerative practices and climate neutrality.

Application for **funding** for structures, lack of suitable spaces for ongoing and planned work.

Applications for the **recovery of agroforestry (or other) waste** for application to the agricultural sector.

2. Dissemination Strategies

Activities

Organisation of the **1st International CITAB Congress** - Resiliency and Valorisation of Agrarian Value Chains, to be held in the week between the two semesters.

Organising **workshops in the producing regions** to disseminate knowledge to producers.

Lecture series to **present research work to CITAB colleagues and stakeholders**.

Promoting **technology transfer and strengthening** the territorial impact of CITAB's scientific activities.

Continued **participation in outreach activities** (OCJF, Researchers' Night, Science and Technology Week).

Commemoration of **World Soil Day**.

Congresses

**Congress of the Portuguese Soil
Society**

(2026)

Congress of the Iberian Soil Society

(2027)

FINAL MEETING





Centre for the Research and Technology of Agro-Environmental and Biological Sciences

