



Federal Ministry
for the Environment, Climate Action,
Nature Conservation and Nuclear Safety



European
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EDAPHIC BLOOM DANUBE – Greenhouse Gas Mitigation in the Danube Delta

This project is completed. Its objective was to mitigate greenhouse gas emissions in Romania's Danube Delta by two main approaches: conserving organic soils and improving the energy efficiency of buildings.

Buildings

Carbon Removals and Sinks

Energy Efficiency

Soils



Project info

Countries:

Romania

Project duration:

11/20 - 07/23

Target groups:

Local governments, Non-governmental organisations, Educational institutions, National governments, Regional governments, Private sector, General public

Funding:

863,832.68 €

Contact info

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Implementing organisation

Danube Delta National Institute for Research and Development (DDNI)

Partner:

Dep. of Wetland Ecology, Institute for Geography and Geoecology, Karlsruhe Institute of Technology - KIT

General Secretariat of the Government - Department of Sustainable Development

Ministry of Environment, Waters and Forests

National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial Development "URBAN-INCERC"

National Research and Development Institute for Soil Science, Agrochemistry and Environment Bucharest (ICPA)

Steinbeis Innovation gGmbH

Tulcea Municipality

University of Applied Sciences Karlsruhe - Geo Information - Management

Background

The project focuses on two areas that are essential to greenhouse gas (GHG) mitigation: organic soils and the built environment. Both in the European Union and worldwide, drained organic soils contribute substantially to anthropogenic GHG emissions. In the long term, a complete halt to the drainage of peatlands is required to achieve net-zero emissions by 2050. On the other hand, buildings are responsible for approximately 40 per cent of energy consumption and 36 per cent of CO₂ emissions in the EU. Deep retrofit of buildings can save more than 50 per cent of the energy demand.



Traditional house in the Romanian Danube delta. Photo: (c) DDNI

Project

EDAPHIC-BLOOM Danube developed several tools that supported informed, sustainable decision-making in the areas of land use and energy efficiency.

Regarding organic soils, the project enabled local climate action through the following activities: first, it offered guidance, workshops, and trainings. These provided environmental authorities and local communities with the necessary skills and knowledge to increase the capacity of organic soils and to respond to climate change effects. Second, the project developed a Master Plan (MP) and good practices guide for reducing the GHG emissions, proposing solutions for sustainable land management. Third, to disseminate the MP and good practices guide, the project set up the “Cluster for Sustainable Development of the Lower Danube Plain and Danube Delta”. Members included project partners, local authorities, universities and research institutes from Romania and Germany, private landowners and administrators, and NGOs. The cluster created space for efficient dialogue, exchange of good practices, awareness raising, and knowledge transfer between members. Furthermore, a dissemination plan including conferences, workshops, trainings, roundtables, and a documentary film laid out the necessary communication infrastructure to involve a wide range of stakeholders.

Regarding energy efficiency in buildings, the project ensured capacity building and knowledge exchange through various means: first, it created a regional energy efficiency map. This provided public authorities and professionals with valuable information on the existing building stock as well as the basis for public buildings’ energy audits. Second, at least 20 professionals from the built environment sector received training and examination for Certified Passive House Tradesperson (PHTP), according to the “Passivhaus Standard” developed in Germany. Third, the project created an online platform to enable access to knowledge and support the development of future retrofit projects. Finally, in order to raise public awareness and include local

communities, the project organised two “urban living labs” to discuss and promote sustainable energy practices and behaviours.

Results

EDAPHIC-Part

- **Assessing the climate change impact on the Lower Danube Floodplain & Danube Delta:** The project created a robust, integrated knowledge and data base by collecting, harmonizing, and analyzing soil, vegetation, and geospatial information and developing a shared WebGIS system, thereby enabling a well-founded assessment and projection of carbon storage and emissions in the ecosystems of the Lower Danube region.
- **Development of Master Plan:** Through the development of 2 good-practice guides and a master plan, close coordination with relevant authorities, and the formulation of concrete legal and financial recommendations, the project has effectively helped to firmly anchor sustainable land use and the CO₂-sequestration potential of organic soils in policy, planning, and long-term land-management practices in the Lower Danube region.
- **Setting up a Sustainable Development Cluster:** Through the successful establishment of the Sustainable Development Cluster (SDC) with 37 committed members, targeted training and networking activities, and the involvement of local authorities, the project has created a permanent regional platform that ensures the lasting impact of its measures.

BLOOM-Part

- **Sustainable Energy Transitions:** By developing a comprehensive GIS-based energy efficiency map, conducting 10 energy audits for public buildings, and preparing an integrated action plan, the project has created a solid evidence base that enables public administrations, experts, and policy makers to plan and implement energy-efficiency measures in the building sector in a targeted and informed way.
- **Strengthened Capacities for Energy-Efficient Built Environment in the Region:** Through extensive training, knowledge-exchange formats, and the active involvement of regional stakeholders, capacities in the field of energy-efficient construction were significantly strengthened, mobilizing a broad network of public administration, professionals, and civil society for the energy transition. In total, 81 professionals and public officers were trained in energy-efficient design, practice, and legislation, and 60 building professionals were certified as Passive House Tradespersons according to the Passive House Standard. Moreover, a continuously engaged Regional Stakeholder Group and two Urban Living Labs created a forum that consolidates knowledge, fosters collaboration, and advances effective energy-efficiency measures in the region.

Last update: February 2026

Success Stories

Shaping a Climate-Resilient Danube

EUKI project EDAPHIC-BLOOM Danube has laid the foundation for climate adaptation and ecological restoration guidelines benefit local authorities, regional planners, and scientific institutions. Community groups and farmers through workshops and demonstration sites. The active partnership network and an online energy platform provide and the public. This way, EDAPHIC-BLOOM Danube inspired follow-up initiatives under Horizon Europe and ongoing work. Together, these achievements ensure lasting innovation, collaboration, and impact in climate-resilient states.

More about this project

Blog posts



28 July 2023



30 June 2023



15 June 2023

[Edaphic-Bloom Danube - Final Meeting](#)

[Promoting Energy Efficiency and Sustainable Urban Development in Tulcea](#)

[All Stakeholders Meeting: Sustainability Actions in the L Danube Floodplain and the Da Delta](#)



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Project Funding 

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