

NEWS

PROJECT

UPPER - Urban
Productive Parks for the
development of NBS
related technologies
and services

📍 Latina, Italy

TOPIC

Sustainable use of land
and nature based
solutions

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EXPERT

Synergies for a sustainable and resilient territory

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The UPPER project focusing on the development of urban areas and the control of climatic emergencies with NBS (Nature-Based Solutions) come together in a wider territorial framework, that of the Agro Pontino, where other interventions can be appreciated for about a decade of European projects' activities dealing with a sustainable development of the territory, also in relation to the climate changes effects, in accordance with the European policies of the Green Deal and the UN Agenda 2030.

In these projects, financed by several EU programs addressing environmental issues, a common thread can be traced, rethinking the Agro Pontino territory from a completely new perspective which, throughout its history, has been repeatedly subject to heavy structural modifications by man, due to its geomorphological characteristics above all related to water.

Precisely these wetland characteristics, which over time have represented a problem, can today be seen in a context of strong and sudden climate change, as a resource to be partially reconstituted, protected and in all cases managed through shared policies of multilevel governance.

Let's see in more detail which projects have been implemented with the European contributions and how they intertwine and interact with the UPPER experience.

REWETLAND, the filter ecosystem and the WebGIS and GEOBLOG platforms

"Rewetland - Widespread Introduction of Built Wetlands for a Wastewater Treatment of Agro Pontino" (<http://www.rewetland.eu/life/>) was a project funded by the European LIFE program and took place in the area of the province of Latina between 2010 and 2014.

The program involved the entire network of reclamation canals, aiming to reduce surface water pollution through widespread phytoremediation techniques, with the creation of buffer strips along watercourses, filter ecosystems and artificial wetlands.

In particular, UPPER has collected the experience of the pilot intervention carried out within the Circeo National Park (partner of both projects), i.e. the creation of a filter ecosystem.

Through the planting of herbaceous and shrubby plant species of a marshy environment, i.e. capable of withstanding soils saturated with water for several months a year, the water phytoremediation process has been put in place, i.e. the chemical- physical one which already occurs in the nature in marshy areas and which allows the rebalancing of the natural cycles of nutrients (carbon, nitrogen, phosphorus, etc.) through the action of plants.

In this way, the new plantings supported a strip of reeds already present on the shore of Lake Fogliano, allowing the polluted waters from the Rio Martino - Foce Verde canal to regenerate, to enter the partially purified area of Fogliano Lake.



All the data collected during and at the conclusion of the REWETLAND project have been useful for UPPER in monitoring the effectiveness of constructed wetlands and the costs they entail, as well as in their long-term management. Purification activities are in fact envisaged for UPPER activities relating to city channels.

Another point of contact was the experience of REWETLAND with databases for the collection and organization of all monitoring data in the areas of territory subject to the interventions. For this purpose, WebGIS, a geographic information system that allows people to georeference and interpret the data collected, and GEOBLOG, an interactive platform to allow users to enter comments and proposals, were created.

The created geo-database was the basis for the development in UPPER of WHiP, the open source platform elaborated by the Territorial Planning Laboratory of Ce.R.S.I.Te.S (Sapienza University of Rome) with the aim of favoring the user interaction both in the co-design of the UPPER areas and in the information and implementation of the project results.

A further experience borrowed from the REWETLAND project was certainly the shared management of interventions on the territory.

As reported on the reference [site](#), "the project tackled the problems by adopting participatory management of the water system. The sharing of choices with all the actors involved in territorial management (institutions, bodies, farmers and citizens) and the inter-institutional collaboration between the bodies responsible for programming, planning and implementing the interventions have been essential to ensure their effectiveness and achieve sustainability goals."

A configuration of good practice also found in other completed projects or still in progress.

GREENCHANGE, Green Infrastructures and the Biodiversity Pact

In continuity with the results obtained by LIFE REWETLAND on the action plan for green infrastructures, the project LIFE GREENCHANGE financed by the European LIFE program started in July 2018 and is being completed in June.

LIFE GREENCHANGE (<https://lifegreenchange.eu/en/>) was created with the aim of protecting biodiversity and consolidating the ecological value of the ecosystems of the Agro Pontino and some rural areas of the island of Malta, through the creation of green infrastructures and the development of local governance with the involvement of public subjects, management bodies and agricultural entrepreneurs, in decision-making processes.

The starting point that gave way to the GREENCHANGE project is that the habitats in the Agro Pontino area have undergone progressive marginalization over time due to reclamation operations, widespread urbanization and the massive presence of productive and agricultural activities. The intensive exploitation of natural resources has led to the permanence of very few residual natural areas, which are unconnected to each other and largely in a poor state of conservation, causing a loss of habitat.

Furthermore, some areas of interest in GREENCHANGE have a significant ecological importance and are located near and within the Natura 2000 network sites (the largest coordinated network of protected areas in the world), for a total of 794 hectares: the National Park del Circeo, the Natural Monument of the Garden of Ninfa project, the disused canals of the Pontina Reclamation, the wetlands along the Ufente River and near the Gricilli Lakes.

The intent of GREENCHANGE is to reconnect these sites in various ways by creating ecological corridors of green infrastructure. With the creation of windbreaks, wetlands, basking islands and restoration of riparian vegetation, the aim was to create an environmental mosaic capable of increasing biodiversity in rural environments.

However, the importance of green infrastructures in enhancing the Pontine ecosystems cannot ignore the actions and impacts of agricultural activities, highly specialized and intensive in this area. For this reason, one of the main objectives of GREENCHANGE was to set up the "Pact for Biodiversity", a management tool shared by all the players in the area, which especially involves farmers and agricultural businesses and makes them part of this process of community and rural territory resilience for the protection of agro-ecosystems.

In this regard, the Pact promotes the stipulation of "Voluntary Territorial Custody Agreements" by farmers, who undertake to protect a portion of the territory they own by encouraging the regeneration of biodiversity through access to funding from the CAP (Common Agricultural Policy), which promotes the synergy between agriculture and environmental protection.



The experiences of GREENCHANGE and UPPER highlight how the lack of coordination between public and private actors in the resilience of rural and city ecosystems and the long-term management of green and blue infrastructures are among the most relevant challenges to be addressed.

UPPER has benefited from the results of GREENCHANGE because the methodologies put in place, which pass via Pacts with the community or governance models codified in the People-Private-Public-Partnership formula. They express a willingness to act in a synergistic and concerted way compared to a territory perceived as disconnected in the management of all its emergencies, even more now with the climate crisis, in which all good practices can become mutually useful in tackling environmental challenges quickly and sustainably.

The same desire to codify good governance practices can also be found in other European projects that extend the field of action to more partner countries.

COASTING, multilevel governance and the Coastingwiki

Just as the REWETLAND project was the basis for the development of the River Contracts within the perimeter of the Agro Pontino, COASTING was the pilot project that led to the launch and systemization of the Coast Contracts in the province of Latina.

“COASTING - Coastal INtegrated Governance for Sustainable Tourism” (<https://coasting.interreg-med.eu/>) was a capitalization project funded by the European INTERREG MED program in the “Sustainable tourism” sub-program and took place from February 2018 to July 2019.

By adhering to the ICZM (Integrated Coastal Zone Management) protocol ratified by the European Commission in 2010, which establishes the principles of cooperation in the Mediterranean for integrated management of coastal zones, COASTING has favored the birth in various pilot sites on the Mediterranean Coast, of multilevel governance tools for the protection of the coastal environment and the development of sustainable tourism.

Within the province of Latina, the Agro Pontino Coast Contract was structured in the pilot area which lies from Latina to Terracina and which sees the Circeo National Park and the beaches of Sabaudia as the places of greatest attraction for the flows tourism in the summer.

Its objective was to establish a methodology for the involvement of local actors for the elaboration of the Manifesto of intents and the Action Plan of the Coast Contract to improve the efficient use of natural resources.



Its synergy with the UPPER Project is based on the participatory process: the creation of a shared methodology focused on the active involvement of stakeholders to create a social responsibility of the environmental heritage, in this case in the field of sustainable tourism.

An interactive database updated over time has also been created for the COASTING project to monitor all the Costa Contracts that are established in the MED area: the Coastingwiki.

This tool allows not only to collect all the good practices of integrated coastal management, but above all to accelerate the process of transferring these practices and strategies for the protection of the fragile coastal ecosystem in relation to its use for tourism and climate change.

CO-EVOLVE 4BG, Blue Economy and UPPER Jobs

The CO-EVOLVE 4BG project is also aiming at supporting sustainable tourism and the protection of the natural ecosystems of coastal areas.

“CO-EVOLVE 4BG - Co-evolution of coastal human activities & Med natural systems for sustainable tourism & Blue Growth in the Mediterranean” (<https://www.enicbcmmed.eu/projects/co-evolve4bg>) is an ongoing project, which started in September 2019 and should be concluded in August 2023, it has been funded by the European program

ENI CBC MED.

As it can be read from the above-mentioned reference site, “Co-Evolve4BG will take advantage of the methodology of the CO-EVOLVE project which has been funded by the Interreg MED Program and will extend its main actions towards the South-Eastern Mediterranean through the integration of new pilot areas. Finally, Co-Evolve4BG is part of a larger project, “Med Coast for Blue Growth” labeled by the 43 countries of the Union for the Mediterranean.”

Its goal is to foster “the sustainable development of coastal and maritime tourism by fully exploiting the potential of the Blue Economy, promoting the creation of business and job opportunities in the field of ecosystem services, coastal and maritime tourism, coastal management and adaptation to climate change”.



The synergies with the UPPER project, therefore, fall into relating the actions aimed at the development of work activities within a system of protection and sustainable growth of the territory.

In CO-EVOLVE 4BG the pilot site for the Lazio Region, project partner, is identified in the area of the Circeo National Park and Unesco-Mab Biosphere Reserve which extends along the southern coast of Lazio and involves the municipalities of Latina, Ponza, Sabaudia and San Felice Circeo, and therefore also includes the action areas of the UPPER project.

The area, despite being an important tourist destination, is affected by human activities deriving from industrial agriculture, with numerous greenhouses and farms, from two tourist and fishing ports, which host respectively 300 and 50 boats, from aquaculture, from fishing and from industrial activities.

All these activities, combined with the effects of climate change, undermine the fragile coastal ecosystem by acting on dune erosion, water pollution and the balance between the ecosystem and intensive agriculture.

The challenge is to develop a shared action plan, compliant with the MSP-ICZM principles (Marine Spatial Planning-Integrated Coastal Zone Management), which achieves a co-evolution of economic and non-economic coastal human activities, in synergy with natural systems for the promotion of ecotourism and blue growth in the Mediterranean .

With the same intention of reconciling work activities and environmental protection, UPPER JOBS arises the training and work program envisaged by UPPER to redevelop the green areas of Latina and establish urban production parks.

For further information on UPPER JOBS, please refer to the following [article](#). Also in this case it is possible to hypothesize a sharing of strategies between the two projects, involving civil society and productive activities in the co-management and maintenance of green and blue infrastructures, also with the aim of economic development.

NAWAMED and the NBS at the service of the city

Concerning the development of urban areas through Nature Based Solutions (NBS), a new pilot project for the treatment and reuse of rainwater will be established on the site of the Exhibition Center of the Municipality of Latina by 2023 as part of the European project NAWAMED. “NAWAMED - Nature Based Solutions for Domestic

Water Reuse in Mediterranean Countries” (<https://www.enicbcmcd.eu/projects/nawamed>) is an ongoing project (September 2019 - September 2023), funded by the European program ENI CBC MED. Its goal is to “change urban water management practice through innovative, sustainable and low-cost treatment technologies, applicable in a decentralized way, to replace the use of potable water with good quality NCW” (non-conventional water). Domestic water consumption has increased in recent years in urban areas in Mediterranean countries, where the population grows hand in hand with the demand for a higher quality of life. However, the use of drinking water for all domestic uses harms the ecosystem not only in terms of consumption, but also in terms of the pollution of rivers and aquifers. NAWAMED proposes to lower this water requirement by reusing part of the domestic waste water, the so-called grey water, which is not very polluted and could be treated locally to become unconventional water resources, i.e. reusable for non-potable purposes (flushing the toilet, gardening car wash, etc.).



The system for treating grey water and making it reusable passes through NBS, on which the UPPER project focuses, or technologies based on nature; in this case phytoremediation systems to treat waste water by reproducing all the natural processes in which plants, bacteria and soil provide the conditions for obtaining effective self-purification of the water.

Green walls, green roofs and artificial wetlands will be installed in the 8 pilot plants in Italy, Tunisia, Lebanon, Jordan and Malta to aim for savings of 9,000 m³ of drinking water in a year, demonstrating that city buildings can be not only consumers, but also producers of (unconventional) water.

The province of Latina, which is the main beneficiary of the project, has chosen to recover the rainwater by installing the NBS at the site of the Exhibition Center of the Municipality of Latina.

In this regard, the experience gained by UPPER with the creation of the NBS Urban Productive Parks can provide a basis for comparison and support to the NAWAMED project, providing all the data on the technical and economic feasibility of low-cost nature-based solutions, as well as providing the plant species for phytoremediation useful for the practical development of the idea.

The public administration of Latina is interested in possible collaborations with the NAWAMED project to increase awareness among citizens and technicians on the new solutions for water management and regeneration of the local water resources.

On the basis of the results of NAWAMED, the UPPER project will implement water and soil phytoremediation techniques, in addition to the planting of native trees to combat the heat island effect and air pollution, filtration and reinforcement systems for engineering works on canal banks and coastal dunes.

Conclusions

The synergies between the UPPER project and the others funded by European programmes in the same geographical area of intervention, show the dimension of how the territory is changing its perception through the actions that are put in place and allow us to think in a systemic way also in function of the climate change impacts we are facing.

These synergistic actions promote a new idea of sustainable development, to act as a basis for all those pieces that will be

built in the future and which will allow us to understand how much it is necessary to act in synergy for a sustainable development of human activities on the territory, projecting it in a broader and finally European political dimension. But the synergies do not stop here, in fact it is already foreseen that the activities of the UPPER project will be continued and scaled through initiatives financed by other European funds (ERDF, Recovery and Resilience Plan, etc) and other projects in the environmental and climate sector are being planned and will be submitted to the next LIFE and European Urban Initiative calls.

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