Chadwick Lakes Trail (Ecological Rehabilitation of Wied il-Qlejgħa)

Descriptive Summary

The project focuses on the ecological rehabilitation of Wied il-Qlejgħa, a dry valley system in Malta, which during the winter months sustains a lacustrine environment due to a series of small historical dams built across the valley. The project aims to tackle the difficult task of achieving a balanced water management framework, which gives due consideration to the water demands of the agricultural sector, whilst ensuring the sustainability of the valley ecosystems. The objective of the project is that of creating a sustainable water management ecosystem where agriculture, nature and leisure activities co-exist, maximising the value of the water catchments in the valley system.

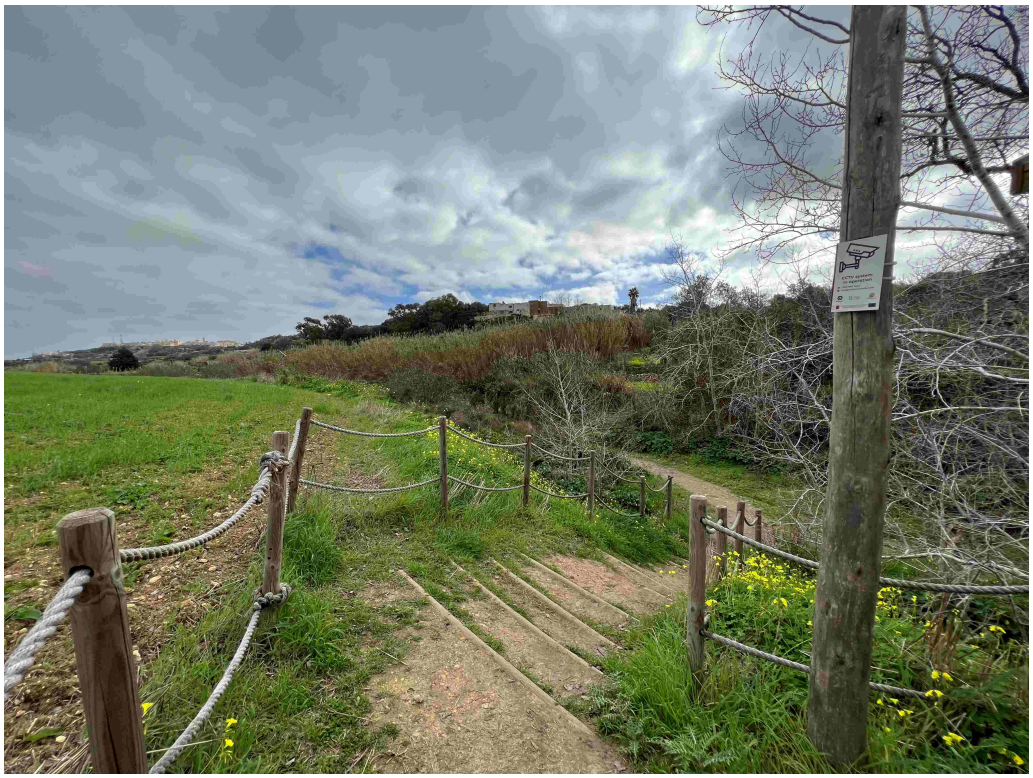
Background

The Qlejgħa Valley is located in the western region in Malta, a region where the historical availability of water has resulted in the development of an intensive agricultural sector. In order to augment the water resources available for agricultural irrigation, a series of dams were constructed in the early 20th century which created a lacustrine environment – a unique habitat in the Maltese islands.

The project focuses on the ecological rehabilitation of Wied il-Qlejgħa, a dry valley system in Malta, which during the winter months sustains a lacustrine environment due to a series of small historical dams built across the valley. The project aims to tackle the difficult task of achieving a balanced water management framework, which gives due consideration to the water demands of the agricultural sector, whilst ensuring the sustainability of the valley ecosystems. The objective of the project is that of creating a sustainable water management ecosystem where agriculture, nature and leisure activities co-exist, maximising the value of the water catchments in the valley system.

Due to its unique environment, the Qlejgħa Valley is an important recreational area in the

Maltese islands. The management of visitors to the area presents also an important challenge, since it introduces another user of the aquatic environment. From an infrastructural perspective, therefore, railings were installed to limit tramping on agricultural fields and in the valley system, whilst educational activities are continually undertaken to raise awareness in visitors on how to respect the natural environment.



Aims and Goals

The project aims to develop a Water Management Framework for dry Mediterranean valley systems which comprehensively considers the application of the nexus to ensure the generation of externalities (external benefits) in the energy, food and ecosystem dimensions. The short term objectives of the project included the undertaking of infrastructural works and the main interventions for ensuring the ecological restoration of valley system. The long-term objectives include the continued management of the valley and the development of a sustainable water management ecosystem. The key foreseen impacts of the project are:

(i) Water – the catchment areas behind the dams were cleared of silt accumulated over the years, recreating the water storage capacity of the water catchment system and the lacustrine environment

(ii) Energy – water stored in the valley system can be used by the agricultural sector instead of groundwater limiting the energy requirements for pumping water from depth, or water transferred by tanker which requires the use of fossil fuels and associated emissions

(iii) Food – agricultural activities on the side of the valley have access to a good quality water resource for irrigation purposes, increasing the water security of the sector during the winter and spring cropping seasons

(iv) Ecosystems – the project removed overgrowth of invasive species creating space for local ecosystems to develop and thrive, hence sustaining the local natural environment

Actions taken

The project was originally conceived as a two-pillar initiative, focusing on the rehabilitation of water storage catchments and the ecological restoration of the valley system. Watershed infrastructure was built to provide an alternative source of irrigation water, thereby ensuring ecological baseflows and supporting surrounding agricultural activities. As water availability increased, the integration of agriculture became a key consideration to ensure the effective use and management of harvested water within the catchment area. This, in turn, created synergies with energy savings by promoting the use of a sustainable water resource.

Beyond its technical components, the project placed significant emphasis on "softer" measures, particularly broad stakeholder engagement. This included working closely with farmers to optimize water resource management, collaborating with NGOs to co-develop a shared water management framework for the agricultural sector, and engaging the general public to raise awareness about the value of ecosystems and the importance of their protection.

A central feature of the project was its inclusive approach, involving a wide range of stakeholders—from direct actors such as farmers and environmental NGOs to indirect stakeholders like the broader public. The stakeholder consultation process was designed to surface and address differing perceptions and potential conflicts, ensuring that the resulting

water management framework was both robust and widely supported.

Nature Trust Malta, an environmental NGO, plays an active role in the project’s implementation, maintaining a strong and ongoing connection with stakeholders throughout the process.

Main Achievement to date

Key tangible results of the project include:

(i) **Rehabilitation of 20 hectares of valley ecosystem**, creating a thriving habitat for local flora and fauna within a unique Mediterranean dry valley environment.

(ii) **Reinstatement of the water catchment behind three historic dams**, with a physical storage capacity of 35,000 cubic meters and an effective storage value of approximately 70,000 cubic meters, due to the ongoing use and refilling of the storage areas. By substituting this harvested water for deep groundwater resources, the project saves around 50,000 kWh in energy that would otherwise be used for groundwater abstraction. These energy savings are expected to increase further if water previously transported by tanker is replaced by water harvested within the valley system.

(iii) **Support for approximately 40 hectares of agricultural land**, with harvested rainwater sustaining crops during the winter and spring seasons along the valley banks.

The project's objectives can be considered fully achieved. The primary remaining challenge lies in developing a water management ecosystem that effectively balances the competing water demands within the valley, while minimizing stakeholder conflict. Policy-level engagement is scheduled to begin in 2025, involving collaboration with various regulatory and implementing agencies at the national level. This next phase will focus on sharing lessons learned and demonstrating how valley systems can be rehabilitated and managed to generate tangible environmental and economic benefits, thereby informing the design of future valley management initiatives in Malta.

Partners
Nature Trust Malta Environment and Resources Authority (Malta) Rabat Local Council

Lessons, replicability and scalability potential

The project has a high potential for replication, particularly given the presence of similar dry valley systems that face challenges related to water scarcity, ecosystem protection, and stakeholder conflict over water resources. In Malta, replication opportunities are already being explored. The Energy and Water Agency plans to build on the project's outcomes by sharing them with other public entities involved in the management of valley systems across the country. Beyond Malta, the project also holds strong replication potential in other Mediterranean regions grappling with the challenge of sustaining small-scale agriculture in natural settings such as dry valley systems.

Key lessons from this demonstrator highlight the critical importance of involving stakeholder representatives from different sectors early in the planning process. Engaging stakeholders helps surface their perceptions, concerns, and needs, while also fostering a shared understanding of how the project will address these and deliver broader benefits. For instance, while the project may appear to be solely focused on water management within a valley system, it delivers significant co-benefits across the energy, food, and ecosystem domains. This underscores the value of integrated **Water-Energy-Food-Ecosystems (WEFE)** policy approaches to fully capture and articulate the true value of such initiatives.

Affiliation
Energy and Water Agency (EWA)

Keywords
Water Catchment Water Demand Agriculture Water Dependent Ecosystems Dry Valley Systems

Country
Malta

Start year
Sun, 01/01/2017 - 12:00

Acknowledgement of funding source
Co-financed by the European Regional Development Fund (2014-2020) & National Funds

Total funding
1M - 5M €

Environmental
High

Social
High

Technological
Medium

Financial
Medium

Institutional
Medium

SDGs

Website
https://chadwicklakes.mt/

E-mail address
aaron.cutajar@gov.mt

Nexus Dimensions
Ecosystems
Energy
Food
Water

City
Rabat

Source URL: https://wefe4med.eu/demo/chadwick-lakes-trail-ecological-rehabilitation-wied-il-qlejgha