Domestic rainwater harvesting in Malta

Year of issue

2025

Summary

Domestic rainwater harvesting in Malta is the long-running Alter Aqua programme. Launched in 2011 in Gozo by GWP-Med with national partners, Alter Aqua installed and reinstated RWH in public buildings - first four Gozo schools for toilet flushing, plus additional school and farm systems - and a greywater unit at Gozo Stadium; it then expanded to Malta. By late 2024 the programme restored historic cisterns (e.g., Birgu) and launched a Reservoir Trail. In 2025 the new “Alter Aqua RECAP” phase adds a focus on domestic greywater recycling. EWA reports the programme now replenishes ~20 million L/year.

Malta’s policy context is distinctive: all buildings must incorporate a rainwater cistern, with sizing/drainage rules in Technical Document F; the 2024 Green Stormwater Infrastructure Manual links building guidance to practical use. A national Domestic Cisterns Restoration Scheme administered by the regulator (REWS) supports household upgrades and has been extended to 31 Dec 2025.

Overall, Malta pairs a deep cistern heritage with modern retrofits, incentives and education ; making RWH effective for non-potable uses and strengthening water resilience on a scarce island setting.

Photo Gallery



Location

36.054459, 14.2435

Project

NWRM

National ID

Malta_02

Sector

Urban

Implementation status

Ongoing

Contact

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Overview

Location of the project

This project covers the whole Island of Malta in the Mediterranean sea.

Country

Malta

NUTS2 Code

Malta

Sponge measures implemented in the case study

Rainwater Harvesting

Objectives

Programme aim (Alter Aqua, launched 2011): help Malta combat water scarcity and raise awareness on sustainable water use, through non-conventional water resources including domestic RWH.
In Gozo island : install 4 new RWH systems in 4 public schools (for toilet flushing) and reinstate 5 existing systems in 3 schools and the Experimental Farm (flushing/irrigation). A greywater unit was also installed at Gozo Stadium (programme bundle). These quantify the initial roll-out relevant to the case's "domestic/ building" scope.

Involved partners

Authority type	Authority name	Authority role	Comments	Authority responsibility

Research institute / University	Global Water Partnership – Mediterranean	Initiation of the measure	Programme lead/implementer; coordination, demo installations, capacity building and awareness.	Responsible
Other	The Coca-Cola Foundation / Coca-Cola Malta & General Soft Drinks Co. Ltd	Financing	Primary financier (Phase I)	Supporting
National water authority	Energy & Water Agency (EWA)	Other	National partner since 2014; supports/hosts activities; communicates results and later phases.	Responsible
Other	Education partners: MIO-ECSDE / MEdIES, Nature Trust Malta, EkoSkola	Other	Educational materials, teacher training, youth engagement.	Supporting
Other	Schools	Other	Site owners/operators for school RWH; students involved in monitoring water-use impacts at school level.	Responsible

Site Information

Climate Zone

Warm temperate dry

Precipitation

600.00 mm

Temperature (°C)

18.00 °C

Elevation range

114 m

Groundwater level

Sea Level aquifer, with quantitative assessment based on water balance and issues linked to abstraction; overall groundwater management objectives remain to reach good status.

Vegetation class

Mediterranean shrubland types such as garrigue/maquis

WFD Ecological status

Good

WFD Chemical status

Good

Water quality status

National documents repeatedly flag saline intrusion and nitrate as key pressures on several groundwater bodies

Design and Implementation

Project scale

Large

Project scale specifications

The Alter Aqua project is country-wide.

Constraints

The socio-economic costs of a lack of water sources is already bearing on the domestic, industrial, agriculture and tourism sectors of the economy.

Favourable preconditions

In view of this, domestic rainwater harvesting would be a means of obtaining a secure freshwater supply

Financing

Total cost

1091014.00 €

Financing authorities

Authority name	Type of funding	Comments	Financing share
Ministry for Gozo	Sub-national funds	USD 440,000	35 % of phase I
The Coca-Cola Foundation	Private funds	USD 800,000	65 % of phase I

Compensations

No

Policy and Governance

Policy description

Malta has very limited freshwater and depends heavily on desalination; securing water availability is a national priority. The Gozo domestic RWH case sits in this context, targeting water scarcity by substituting potable supply with harvested rainwater for non-potable uses. Under the Water Framework Directive, Malta’s RBMP identifies significant pressures on groundwater, especially over-abstraction leading to seawater intrusion (quantitative pressure with qualitative consequences) and nitrate pollution. Domestic RWH is promoted as a demand-reduction and storage measure; the RBMP Measure 027 explicitly supports restoration/use of domestic rainwater systems.

Land ownership

Programme context shows RWH reinstated in public buildings

Policy targets

Increase Water Storage

Runoff control

Oher Societal Benefits

Part of a wider plan

No

Public consultation

No

Has contractual arrangements

No

Impacts and Monitoring

Maintenance

Maintenance requirements

Maintenance is handled by the site owner (e.g., the school/building) and appointed contractors under Alter Aqua/EWA oversight, with a stated 24-month warranty for the installed works.

Impact Assessment Methodology

Performance impact assessment method

Laboratory

Socio-economic Impacts

Direct benefits

Improved access to water, increased water storage

Alter Aqua benefited >70,000 people (awareness, access to non-potable water) and continues expanding; quantified ~20 million L/year savings.

National incentive (Domestic Cisterns Restoration Scheme) uptake shows thousands of household beneficiaries (e.g., 5,292 in 2015–2016), indicating broad socio-economic reach of domestic RWH beyond this single site.

Biophysical impacts: Hydrology

Information on retained water

Programme-level evidence: ~20 million L/year of water replenished/saved through Alter Aqua installations.

Biophysical impacts: Biodiversity

Improved biodiversity

No

Biophysical impacts: Water & Soil Quality

Information on water quality overall

Only water quantity is impacted

Biophysical impacts: Others

Ecosystem impact climate regulation

No specific impact

Information on ecosystem impact climate regulation

No specific action on water cycle

Lessons Learned

Key lessons

A multi-phase, public–private programme can keep small, building-scale RWH relevant and scalable. In Malta, GWP-Med with EWA and The Coca-Cola Foundation sustained works over >10 years, reporting ~19–20 million litres saved annually and tens of thousands reached.

Reviving historic infrastructure works—if you pair restoration with present-day uses and outreach. Birgu's reservoirs were rehabilitated (including heavy cleaning) and then showcased via a 12-stop Reservoir Trail, turning heritage into operational storage and public engagement.

Policy and incentives matter. A legal baseline requires cisterns in all buildings (Technical Document F), and RBMP measures and REWS grants support domestic systems—evidence that regulation plus funding accelerates uptake.

Robust site-level monitoring data are not always available. The NWRM fiche for this Gozo case reports no monitoring, limiting quantified biophysical evidence at site scale even as programme-wide numbers exist.

Scaling beyond RWH to greywater reuse still faces obstacles; the current Alter Aqua RECAP phase is explicitly designed to remove barriers and embed solutions into policy.

Barriers

Barrier type	Barrier role	Comments
Expected maintenance needs	Secondary barrier	Many reservoirs had fallen into disrepair; restoration required extensive works (e.g., removal of ~64 t of sludge).
Market failures	Main barrier	Market-entry barriers for domestic greywater systems noted in RBMP measures (need dedicated support schemes).

Drivers

Driver type	Driver role	Comments
Legal obligations	Main driver	Clear legal requirement for rainwater cisterns in buildings

Success factors

Success factor type	Success factor role	Comments
Successful coordination between authorities	Main factor	Long-term partnership (GWP-Med, EWA, Coca-Cola Foundation/GSD) with successive phases.
Financing possibilities	Main factor	Public funding incentives for household cistern restoration (REWS scheme, extended to 2025).

Success factor type	Success factor role	Comments
Communication activities	Main factor	Productive reuse of heritage reservoirs plus strong public engagement (Reservoir Trail).

Transferability

Highly transferable where building codes support/require cisterns and grants fund retrofits. Success depends on strict “second-class water” separation, simple O&M, and user engagement. Take care with water-quality safeguards, plan monitoring of actual savings, and budget for legacy-tank restoration, which can require heavy cleaning and structural repairs.

Sources

Sources

An integrated approach towards assessing the feasibility of domestic rainwater harvesting in Malta

Non Conventional Water Resources Programme in Malta (Alter Aqua)

Government Notices published in Government Gazette No. 21,370 of 3rd January 2025

2018 Domestic Cisterns Restoration Scheme

Technical Document F – Part 1: Minimum Energy Performance Requirements for buildings in Malta

Green Stormwater Infrastructure Guidance Manual

Advancing Water Resilience: EWA and GWP-Med launch the 5th phase of Alter Aqua

NCWR Activities in Malta

State of the Environment Report 2018 – Chapter 5: Marine and Fresh Waters (Reporting status 2009–2015)

Terms of Reference – Installation of the Second-Class Water System at St. Joseph Junior School, Sliema (Alter Aqua – Phase IV)