

# Alter Aqua Programme

In Malta, just like in most Mediterranean countries natural freshwater resources are scarce and under pressure. Thus, alternative or Non Conventional Water Resources (NCWR) are of utmost importance. Malta and other countries of the Mediterranean region depend on them as they lack sufficient freshwater resources.

Non Conventional Water Resources mainly include:

- \* **Rainwater Harvesting:** a millennial tradition in Malta and other islands of the Mediterranean Sea.
- \* **Greywater Recycling:** water resulting from showers, baths, washing machines, once properly treated can be used for flushing toilets and to irrigate the garden.
- \* **Desalination:** through the use of reverse osmosis, salts from saline or brackish water are removed. Currently, in Malta about 50% of the needed water is produced this way.
- \* **Urban and Agricultural Wastewater Recycling:** this water, once properly treated can be used again mainly for irrigation in agriculture.

All these techniques present various degrees of efficiency, sustainability and potential for further development.

## WHO we are

*Alter Aqua* is a programme on Non Conventional Water Resources (NCWR) in Malta. It is implemented by the Global Water Partnership - Mediterranean (GWP-Med), in partnership with the Ministry for Energy and Health, the Ministry for Gozo and the Eco-Gozo Project, and in collaboration with the Mediterranean Information Office for Environment, Culture & Sustainable Development and the Mediterranean Education Initiative for Environment & Sustainability (MIO-ECSDE/MEdIES), as well as Nature Trust Malta (NTM) and the EkoSkola Programme.

*Alter Aqua* aims to advance the utilisation of Non Conventional water resources, such as rainwater harvesting, stormwater management, as well as greywater and treated wastewater reuse, as a sustainable way for water availability and climate change adaptation in the water scarce communities of the Maltese Islands, by demonstrating innovative applications. It also aims to raise awareness among students and teachers on NCWR and sustainable water use, to enhance the capacity of local and regional Councils on Non Conventional water resources management and to promote a new water culture.

*Alter Aqua* commenced its activities in 2011, focusing on rainwater harvesting, stormwater management and greywater reuse in the Island of Gozo, by applying innovative as well as traditional NCWR systems in public buildings and areas, and enhancing local know-how on new techniques and materials available. In the second phase of the Programme, 2014-2015, activities will expand in Malta.

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Ministry for Gozo  
Global Water Partnership-Mediterranean (GWP-Med)  
Mediterranean Information Office for Environment, Culture & Sustainable Development (MIO-ECSDE)  
Mediterranean Education Initiative for Environment & Sustainability (MEdIES)  
Nature Trust Malta / EkoSkola Programme

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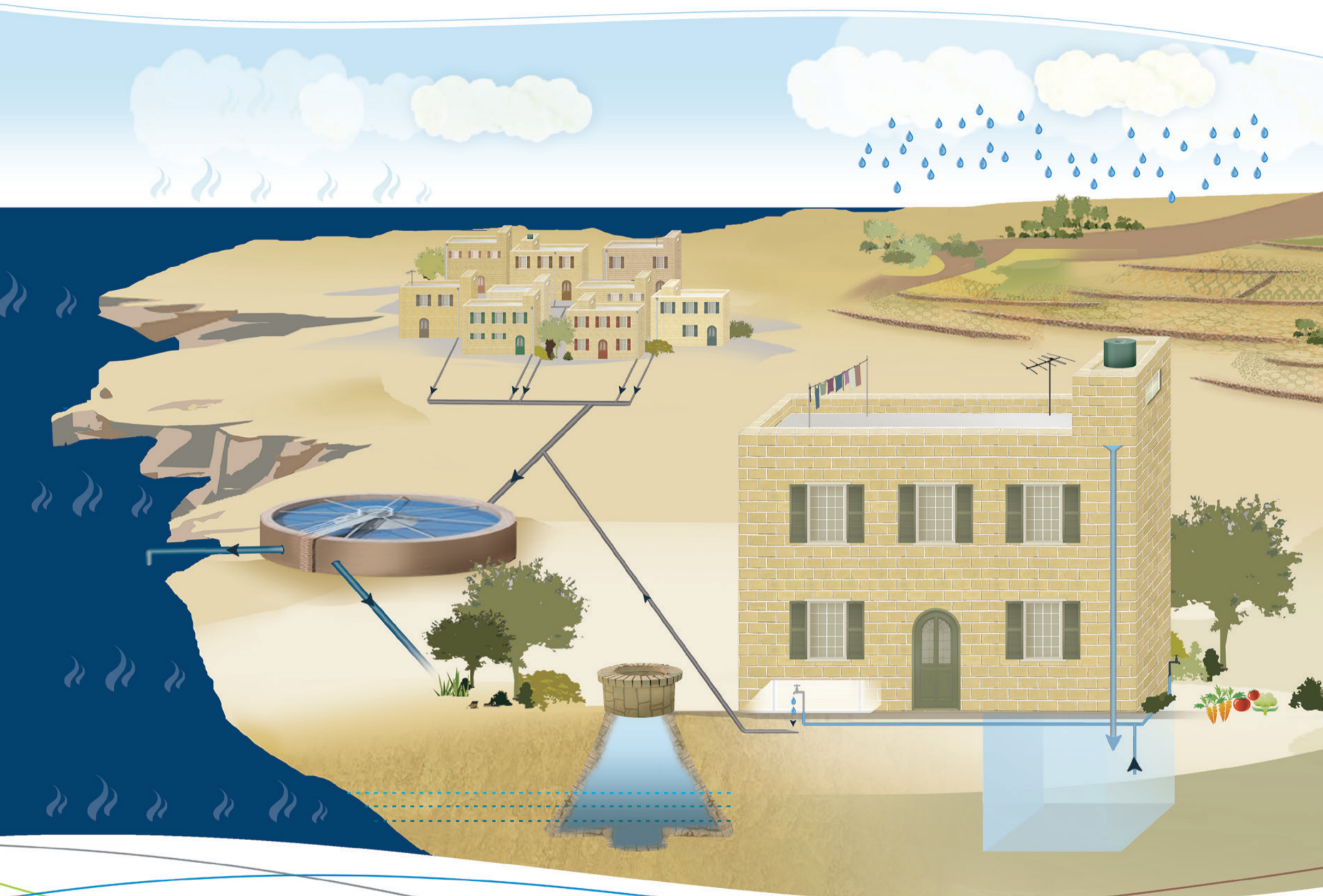
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Use this poster to trace the water cycle in the area where you live.  
Apply the water saving tips at home and at school!

# the diagram of WATER CYCLE

## the WATER CYCLE in your island: key words

- Mark on the picture the following terms that relate to the water cycle: *precipitation, aquifer, aquifer recharge, saltwater intrusion, collection surface, water supply network, wastewater treatment plant.*
- Can you indicate these phenomena? *evaporation, condensation, transpiration*
- Discuss with your classmates and teacher if you have difficulties.



## WATER SAVING tips

### Saving water at home

- Turn the tap off when washing hands, brushing teeth, doing the dishes, etc.
- Wash fruits and vegetables in a half-filled sink instead of letting the tap water run.
- Opt for a short shower instead of a bath.
- Use the washing machine and dishwasher only when full.
- Use a bucket instead of a hose when washing a car or bicycle.
- Check for leaking taps in the house and garden: if the main water meter is counting when all taps are turned off, you probably have a leak somewhere.
- Check for a runny toilet by adding a few drops of ink in the flushing tank: if the toilet is leaking, coloured water will appear in the toilet bowl after a few minutes.
- When possible, install water saving devices, i.e. aerators, low flow taps, dual flush toilets, "water hippos", etc.

#### Did you know that...?

- The toilet flush consumes most of the water used at home, followed by showers and baths.
- A leaking toilet tank can waste hundreds of litres of water in just one day.
- Using a fully loaded washing machine saves us about 13 m<sup>3</sup> of water in a year.
- A low water consuming washing machine saves up to 4m<sup>3</sup> of water in a year.
- A brick/filled plastic bottle in the toilet tank is an efficient and no cost option to save water.

### Saving water in the garden

- Plant indigenous plants that don't need a lot of water in your home and school garden.
- Water your plants early in the morning or in the evening.
- If you only have a few flowerpots avoid using the hose. Use a watering can instead.
- Contour soil around each plant so that water is retained and directed to its roots.
- If you have a drip irrigation system make sure it is correctly aligned with the plant roots, doesn't over-drip and is not blocked.
- Persuade your parents and neighbours to avoid using the garden hose to clean balconies, yards and sidewalks; they should use a broom instead.

#### Did you know that...?

- Indigenous plants of a region are accustomed to local weather conditions e.g. water scarcity.
- A generous watering once or twice a week is better than a daily sprinkle which does not allow the soil to dry up in between.
- A controlled drip irrigation system can be designed for any size/shape of garden and provides water once or twice a week at a rate that can be absorbed by the soil.
- The main advantage of drip irrigation is the reduction in evaporation losses.

### Harvesting rainwater in a cistern

- Collect the rainwater and use it for the toilet, in the garden, for washing the yard, etc.
- Before the first autumn rains, clean the roof, the gutters, the filters, etc. Also remove any remaining silt in the cistern.
- Every time it rains, let the first downpour wash out the roof and then start filling the tank.
- Ask your grandparents about the ways they collected and used water in the past. Visit [www.hydraproject.net](http://www.hydraproject.net) to explore past techniques for water collection and management in various Mediterranean countries.

#### Did you know that...?

- Even today some people keep eels in their cisterns to eat the moss off the walls and keep the water oxygenated (through swimming around).
- In the past, cleaning a cistern was a task for small sized men or children that could fit through the opening.
- Drinking rain water without any treatment with disinfectants entails health risks as it may contain microorganisms. Moreover, it is poor in minerals.

### Recycling greywater

- Collect wastewater when washing hands or taking a shower and reuse it in the toilet, the garden, etc.
- If you have a greywater system installed maintain it properly by keeping pipes, filters and the tank clean.
- If you switch to plant-based, phosphate-free cleansers in the household you don't have to worry about chemicals in the greywater harming your plants.

#### Did you know that...?

- Around half of the water we use at home does not have to be potable. Water treated at a high cost to become potable is used to flush toilets, wash floors and for gardening.
- Greywater is wastewater resulting from "mild" domestic uses such as bathing, showering, rinsing water, etc.
- Treated greywater is suitable for garden irrigation and the flushing of WC's.
- Using greywater in toilets can decrease daily consumption in a household's by 1/4.
- For the average household in Malta the amount of greywater generated from showers and hand washing is enough for flushings on a daily basis.

### Saving water at school

- Don't leave taps running in the yard and in the toilet washrooms.
- Monitor the school water system: taps, tanks, pipes, cisterns, etc. Check for leaks and damages, and inform the school management for any repairs needed.
- Try to recycle any unused potable water.
- If there is a cistern at school keep the collection surface (roof, yard) clean and use a rainwater gauge to estimate the amount of water collected per year.
- Try and involve all the students in the school's water saving efforts.