

NON CONVENTIONAL WATER RESOURCES  
PROGRAMME IN THE MEDITERRANEAN

# 10 YEARS OF IMPACT

2008 — 2018

NCWR

NON CONVENTIONAL WATER RESOURCES  
- PROGRAMME IN THE MEDITERRANEAN -

# CONTENTS

6 —	<b>EDITORIAL</b>	28 —	<b>OPTIMISING EXISTING INFRASTRUCTURE AND ACHIEVING WATER EFFICIENCY</b>
9 —	<b>THE CONTEXT</b>	30 —	Improving water efficiency on Astypalea Island, Greece
10 —	<b>THE HISTORY</b>	30 —	Saving water in the Municipal Swimming Pool of Nicosia, Cyprus
12 —	<b>THE GEOGRAPHY &amp; THE PARTNERS</b>	31 —	Optimising infrastructure for local water security on Lipsi Island, Greece
14 —	<b>THE METHODOLOGY</b>	31 —	Optimising the water supply network on Tilos Island, Greece
15 —	<b>THE FUNDING</b>	32 —	<b>ADVANCING INTEGRATED SOLUTIONS FOR URBAN GREEN</b>
16 —	<b>THE VALUE</b>	34 —	A green-blue application for Thessaloniki's resilience, Greece
18 —	<b>THE IMPACT</b>	34 —	Reviving a park on Syros Island, Greece
20 —	<b>REVIVING TRADITIONAL WATER MANAGEMENT PRACTICES</b>	35 —	Greening university roofs in Malta and Italy
22 —	From Knights' wisdom to contemporary water solutions in Malta	35 —	From drains to Nicosia parks, Cyprus
22 —	Revitalising traditional water structures on Santorini Island, Greece	36 —	<b>NURTURING A NEW WATER CULTURE</b>
23 —	Capturing rain for local food production in Ramla Valley, Malta	38 —	Investing in Education
23 —	Collecting stormwater to support the local economy on Sikinos Island, Greece	39 —	Raising awareness, engaging and empowering stakeholders
24 —	<b>PROMOTING INNOVATIVE NON CONVENTIONAL WATER RESOURCE MANAGEMENT TECHNOLOGIES</b>	40 —	<b>FOSTERING JOB CREATION AND KNOWLEDGE SHARING</b>
26 —	Installing an innovative rainwater harvesting system in a 100-year old school, Kercem, Gozo, Malta	42 —	Creating opportunities for green employability
26 —	Recycling greywater in the National Swimming Pool of Malta	42 —	Building capacities on managing NCWR
27 —	Improving water quality through desalination on Kos Island, Greece	43 —	Sharing knowledge in the Mediterranean and beyond
27 —	Optimising irrigation of citrus fruits in Sicily, Italy	43 —	Investing in Youth
		44 —	<b>THE DISTINCTIONS</b>
		44 —	<b>THE WAY FORWARD</b>





**Vangelis Constantianos**  
Executive Secretary, GWP-Med

*"Water, water, everywhere; nor any drop to drink"* writes Samuel Taylor Coleridge, in the Rime of the Ancient Mariner (1798). That being true in most islands of the Mediterranean Sea, the Non Conventional Water Resources Programme set sail in 2008 to promote solutions towards local water security. This publication highlights some of its achievements and shares lessons learned over its 10 years of operations. Join us in unfolding the Programme's story.

# OUT OF THE BLUE





# EDITORIAL



**Konstantina Toli**  
Senior Programme Officer,  
GWP-Med  
NCWR Programme Coordinator

## **26 January 2010, Iraklia Island, Cyclades, Greece**

07:00 — *I woke up in a freezing guest house room in Iraklia, a Cycladic island of 80 residents, in the middle of the Aegean Sea. A 7-hour ferry ride brought us here to identify the water challenges and potential to work on this island. The power was cut off at midnight, when we tried to turn on the heating panels in the rooms. Winter can be harsh on the islands.*

09:00, Meeting with the locals — *"We are blessed with a fresh water spring" said the President of the Municipal Community, Mr. Gavalas. "But unfortunately, our reservoir is losing water through the cracks. Can you please fix it?" "We will look into that", I responded. "How many students are there on the island?" "Nine", he said proudly! "Is there a rainwater harvesting cistern in the school?" "Unfortunately, not. Can you build one?", he asked.*

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This was my beginning of a fascinating journey through the *Non Conventional Water Resources (NCWR) Programme in the Mediterranean*. A little over a year before the mission to Iraklia, the pilot initiative designed by the Global Water Partnership - Mediterranean (GWP-Med) had kicked off in Cyclades Islands in Greece, aiming to revive rainwater harvesting, a traditional practice and concoction of local prudence to secure water. If you are surrounded by sea and you don't have any freshwater resources, you still have a source falling from the sky, rain. All you must do is harvest it and (re)use it.

The Cyclades were no surprise as a starting point. Water scarce by creation, with small catchments, challenging geology and poor precipitation, harvesting rain was a lot more than a life sustaining practice. It evolved to craftsmanship, a local art. However, it was gradually abandoned when water was no longer fetched by a bucket from the cistern but would run from the taps — what a convenience!

As islands became more and more touristic, more water was needed. And as lifestyle changed, even more water was needed. Similar is the case of the Maltese Islands and Cyprus, the two water poorest countries in Europe, while Sicily strives with another water thirsty, yet main, economic activity: agriculture.

GWP-Med, one of the thirteen regional partnerships of the intergovernmental organisation Global Water Partnership (GWP), is firmly committed to contributing to local water security by promoting action, demo applications and knowledge exchange on Integrated Water Resources Management (IWRM) and sustainable use of water resources in the Mediterranean region, as a means towards sustainable development. In the request of the Coca-Cola System

in Greece to adopt a water project under their environmental programme, *Mission Water*, GWP-Med saw the opportunity to design a pilot initiative with a holistic approach to achieve tangible results. Novice in its concept, it aspired to build multi-stakeholder partnerships at local level. The local authorities on each island, a regional water organisation, GWP-Med, and the private sector, the Coca-Cola System, would join their forces to practically contribute to local water security and climate change adaptation through augmenting their water budget with alternative water resources.

The project already showed its replication potential from the very beginning. Driven by the demand of local authorities and supported by The Coca-Cola Foundation, it quickly evolved to a multi-country and eventually to a regional programme, adapted to the local needs and priorities, encompassing new challenges and opportunities. It highlighted the potential for greywater recycling and other non conventional water resources for secondary purposes, addressed the pressing need to improve water efficiency and optimise existing infrastructure, and demonstrated innovation and new ways of designing urban water systems with multiple purposes and benefits. It employed different technologies, from mainstream to innovative, demonstrating various options to address different needs. And eventually, it provided more water for the islands.

Furthermore, the NCWR Programme invested in people. From local technicians to farmers and from water resource managers to young professionals, all were engaged in trainings, opening up the potential for more water related jobs, with equal opportunities also to women. Educational activities engaged students from kindergarten to late secondary school and their educators and left a legacy in the educational community with material now incorporated in the school curricula in Cyprus and Malta. Local communities were informed, engaged and empowered to practically save every drop. Knowledge and experiences were shared at every opportunity, through regional dialogue and knowledge products, as well as in international conferences, fora and platforms.

The global distinction for its value and potential to provide tangible, replicable and scalable impact, came through the second award as a World Water Showcase, at the 7<sup>th</sup> World Water Forum (April 2015, South Korea), by a jury and audience of distinguished water experts.

In this publication, we are proud to present how we achieved 10 years of impact on the local water security and sustainability of 38 islands and a coastal city, across 4 Mediterranean countries, affecting the lives of 280,000 people. While this impact is remarkable, achieving the Sustainable Development Goals and *"leaving no one behind"* requires more effort to secure water for a better living and sustainable growth. The NCWR Programme is a paradigm towards this direction.

We, at GWP-Med, reiterate our commitment to continue working with our partners for a water secure world, promoting actions with tangible impact on people's lives.





# THE CONTEXT

## The water scarcity challenge

The majority of the Mediterranean islands have limited freshwater resources, which are further depleted due to climate change, anthropogenic pressures and consequent environmental degradation. Tourism and agriculture are among their main economic activities; both water intensive, they also create a seasonal demand, often multifold the regular one. These put local water and food security at risk, with social and economic implications for the local populations and their high-value ecosystems. Furthermore, most of the Mediterranean urban and peri-urban coastal cities suffer from chronic droughts and they are endangered by extreme flash floods due to climate change impacts and poor urban design.

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**Water efficiency could be improved by 40% through technological improvements alone**

[Source: EU 2020 Strategy]

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## Why non conventional water resources?

Non Conventional Water Resources (NCWR) include the reuse of treated greywater and wastewater, rainwater harvesting and stormwater collection, as well as desalination. Apart from desalination which can produce drinking water, all other NCWR are mainly used for secondary non-drinking purposes, such as landscaping, irrigation, toilet flushing, cleaning, watering, and industrial non-productive uses. NCWR are increasingly utilised in the Mediterranean, offering opportunities to secure additional water sources.

## Why water efficiency?

Water efficiency measures include the optimisation of the water supply network and leakage control, optimisation of irrigation and productivity — “more crop per drop” — as well as water saving. These can significantly decrease the water demand.



# THE HISTORY

## THE NON CONVENTIONAL WATER RESOURCES PROGRAMME IN THE MEDITERRANEAN

The *Non Conventional Water Resources Programme in the Mediterranean (NCWR Programme)* was developed by the Global Water Partnership (GWP-Med) in 2008, in partnership with the *Mission Water Environmental Programme* of the Coca-Cola System in Greece (Coca-Cola Hellenic and The Coca-Cola Hellas), focusing on rainwater harvesting in the Cycladic Islands. Educational activities were designed by MIO-ECSDE.

In 2010, a grant from The Coca-Cola Foundation enabled the expansion of the Programme to more islands, to larger technical interventions and bigger impact on local societies. Activities continue in Greece with recurrent grants from the Coca-Cola System and The Coca-Cola Foundation.

In 2011, GWP-Med, following the same approach and extending its focus to more NCWR, developed a 2-year programme for Gozo, Malta, in partnership with Eco-Gozo, the regional initiative to make Gozo sustainable by 2020, and the Coca-Cola System in Malta (GSD Marketing Ltd. and The Coca-Cola Company), with the support of The Coca-Cola Foundation.

In 2013, GWP-Med joined forces with the Cyprus Ministry of Education and Pedagogic Institute and the Coca-Cola System (Lanitis Bros and the Coca-Cola Company) on a replication programme supported by a Coca-Cola Foundation grant.

In 2014, a 5-year (2014-2018) grant allowed the continuation of the Programme in the three countries, Cyprus, Greece and Malta, engaging new partners, the Ministry of Energy and Water Resources and the Energy and Water Agency. It also enabled the expansion to Italy in partnership with Coca-Cola Italia.



**Sofia Kilifi**  
Sustainability and  
Community Manager,  
Coca-Cola Central  
and Eastern Europe

### INTERVIEW

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#### **The Coca-Cola System in Greece first initiated the Programme in 2008. What prompted this initiative from your end?**

We are committed as a System to replenish 100% of the water we use to nature. Our belief is that the prosperity of our business is closely linked to the prosperity of the communities we live in. In Greece, many of the islands in the Aegean Sea face significant water scarcity issues. The need for increased quantities of water is aggravated during summer, as those islands welcome millions of tourists every year. Through the NCWR Programme, we are proud of helping the everyday life of more than 50,000 of residents and visitors of these beautiful islands, in a sustainable way.

#### **Ten years later, the Programme has positively impacted 33 islands in Greece. What are the challenges to be addressed in the years to come?**

Climate change impacts and increasing demand are expected to exacerbate pressure on water resources, in our countries which are already stressed. More practical action locally will be needed to secure that enough water is available, while a change in mindset is pivotal for individuals, professionals and decision makers. As tourism becomes an increasingly important economic activity for the local communities, innovative solutions need to be applied in the tourism industry to utilise resources efficiently and be sustainable. While addressing these challenges, opportunities are also created for youth to engage in jobs, applying modern water technologies or developing markets to cover these.





# THE GEOGRAPHY & THE PARTNERS

## THE PARTNERS

- **Global Water Partnership - Mediterranean (GWP-Med)**
- **The Coca-Cola Foundation**

- The Coca-Cola Company (Greece, Malta, Cyprus)
- Coca-Cola Hellenic Bottling Company
- Lanitis Bros
- GSD Marketing Ltd.
- Coca-Cola Italia

## Educational partners

- Mediterranean Information Office for Environment Culture and Sustainable Development (MIO-ECSDE)
- Mediterranean Education Initiative for Environment & Sustainability (MEdIES)

## GREECE

- Agathonisi Municipality
- Amorgos Municipality
- Anafi Municipality
- Andros Municipality
- Antikythera Municipal Unit
- Antiparos Municipality
- Astipalea Municipality
- Chalki Municipality
- Folegandros Municipality
- Ios Municipality
- Iraklia Municipal Unit
- Kalymnos Municipality
- Kalymnos Municipal Enterprise of Water Supply & Sanitation
- Kea Municipality
- Kos Municipality
- Kos Municipal Enterprise of Water Supply & Sanitation
- Koufonissia Municipal Unit
- Kythera Municipality
- Kythnos Municipality
- Leros Municipality
- Lipsi Municipality
- Megisti Municipality
- Milos Municipality
- Naxos and Lesser Cyclades Municipality
- Paros Municipality
- Paros Municipal Enterprise of Water Supply & Sanitation
- Patmos Municipality
- Rodos Municipality
- Rodos Municipal Enterprise of Water Supply & Sanitation
- Serifos Municipality
- Sifnos Municipality
- Sikinos Municipality
- Symi Municipality

- Symi Municipal Enterprise of Water Supply & Sanitation
- Syros Municipality
- City of Thessaloniki
- Thira (Santorini) Municipality
- Thira Municipal Enterprise of Water Supply & Sanitation
- Tilos Municipality
- Tilos Municipal Enterprise of Water Supply & Sanitation
- Tinos Municipality

## CYPRUS

- Ministry of Education and Culture
- Pedagogical Institute of Cyprus
- Cyprus Sports Organization
- Ethnikos Achnas FC
- Kolossi Community Council
- Nicosia Municipality

## MALTA

- Ministry for Energy and Water Resources
- Energy & Water Agency
- Ministry for Gozo
- Eco-Gozo
- Nature Trust Malta
- EkoSkola Programme

## ITALY

- Citrus Production District of Sicily (Distretto Agrumi di Sicilia, DAS)
- University of Catania (Department of Civil Engineering and Architecture) (UNICT)
- Euro-Mediterranean Centre for Climate Change (Centro Euro-Mediterraneo sui Cambiamenti Climatici, CMCC)

MALTA

ITALY

GREECE

CYPRUS



# THE METHODOLOGY

The *Non Conventional Water Resources Programme in the Mediterranean* applies a holistic approach towards non conventional water resources management and water efficiency aiming to:

- Promote the use of NCWR, especially rainwater harvesting and greywater recycling through demonstration applications, and improve water efficiency, as sustainable and cost-effective practices for water security and climate change adaptation at local level.
- Cultivate a new water culture on sustainable water use through NCWR among targeted stakeholders and general public, through education, training, capacity building and awareness raising.
- Share knowledge and experiences on NCWR management, as a good practice with replication potential in water scarce areas in the Mediterranean and beyond.



## Activities

1. **Technical applications on NCWR and water efficiency**, including installation or reinstatement rainwater harvesting, stormwater retention and greywater reuse systems, in selected public buildings and areas; refurbishment of local water supply systems and water efficiency; application of green-blue infrastructure.
2. **Educational activities on NCWR and sustainable water use**, through hands-on activities for students and teacher training workshops.
3. **Capacity Building** for authorities on integrating and managing NCWR and other innovative blue-green solutions & **Technical Training** for local technicians and professionals on NCWR technologies and water efficiency applications.
4. **Awareness Raising and Stakeholder Engagement** on sustainable water management and the use of NCWR to address the current and future water scarcity challenges.

# THE FUNDING

The total funding of the NCWR Programme exceeds 5 million USD, mainly through grants from The Coca-Cola Foundation and the Coca-Cola System in Greece and in-kind contributions by the local authorities.



**Carlos Pagoaga**  
Group Director of Partnerships  
at The Coca-Cola Foundation

## INTERVIEW

**The Coca-Cola Foundation has consistently supported the NCWR Programme since 2010. How does it align with the Company's sustainability priorities and what is the value of long term support?**

The Non Conventional Water Resources Programme funded by The Coca-Cola Foundation since 2010 in partnership with Global Water Partnership - Mediterranean seeks to pilot and demonstrate innovative approaches to water sustainability efforts across the Mediterranean. These efforts include rainwater harvesting systems, greywater recycling and green infrastructure. Together, we hope to inspire municipalities and other sectors (private and civil society) to consider various solutions to managing water. The Coca-Cola Foundation's funding over time has allowed GWP-Med the opportunity to promote a variety of solutions across a diverse geography, educate the general public and stakeholders on sustainable water use and share best practices across the Mediterranean.

**What is the role of the private sector sustainability and achieving the SDGs?**

It is clear that achieving the SDGs will require collaboration and contributions from all sectors — business, government and civil society. The private sector can bring innovation, agility and speed to addressing the SDGs. It can also support awareness raising efforts so that more people better understand the SDGs and what part they as individuals can play. Also, by operating more sustainably, the private sector can reduce its impact on the planet. Programmes like the NCWR Programme showcase innovative solutions which can be implemented relatively quickly by local governments, private sector and civil society to better manage local water resources.



# THE VALUE



The Programme's value lies in its holistic approach. While it demonstrates various practices and technologies through the technical interventions, it builds the capacities of the generation in lead to improve water management. It enables not only the operation and maintenance of its applications, but also the replication and upscaling of these by developing technical know-how at a local level. It also develops the capacity of local authorities to manage their water resources more sustainably and address water scarcity challenges by augmenting their water budget with NCWR.

While this would be already a good strategy, the Programme goes beyond to invest in the future generations. It develops open-source educational material and implements related activities, aiming at behavioral change. It also raises awareness of the general public and of targeted audiences on the critical water challenges and the risks lying ahead. It informs and empowers them to act on their own for conscious water use. Measurable impacts in the local societies are counted over the 10 years of implementation, offering a paradigm for replication in the Mediterranean and beyond.

A multi-stakeholder partnership is in the heart of the Programme. A regional water organisation, GWP-Med, partners with the local authorities in the islands and cities and national authorities in the countries to identify the challenges, prioritise areas of intervention and support action implementation together with the private sector, the Coca-Cola Company. Through these, the local authorities own action and secure the sustainability of the interventions. Each partner's challenges, priorities and viewpoints constitute departure points for action, while private sector's role as a user but also as an enabler towards sustainability is acknowledged.



**Prof. Michael Scoullos**  
Chairman, GWP-Med

## INTERVIEW

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### **The NCWR Programme boasts of its holistic approach. Why is this approach necessary?**

Holistic, fundamentally, translates to interconnected and integrated. This approach is necessary for an endeavor to succeed more than the sum of its parts. The Programme was built on and strived to apply these principles, having a strong drive towards making impact. It delivered tangibly, including through value for money. The tripartite partnership of public-private-stakeholders has proven its potential and left its mark. Even more, it triggered replication beyond anticipation, proving ownership of its results. It constituted a valid agent of change, demonstrated by the impulsive requests for more action by its beneficiaries. The Programme can continue adding value to local societies in the Mediterranean, contributing towards a much-needed paradigm shift. Our societies need such continuity of action, particularly at an era of economic and social crisis on all shores of the Mediterranean, and while central governments may be facing substantial challenges in providing support for advancing local sustainability targets.

### **The Programme has implemented more than 100 technical works. Why does GWP-Med, an advocacy organisation, opt to demonstrate technical solutions?**

*Quod erat demonstrandum* was the latinised phrase used by the great mathematician Euclid (4th-3rd century BC, Hellenistic Alexandria) when solving a geometric equation, meaning 'that was what is to be shown'. This is the only way to prove essence in the why, what and how of water efficiency solutions, that can be applied by modern societies, conscious individuals and willing businesses. Advocacy without supporting practice can fill useful policy briefs and guidebooks, but may also remain on paper. The Programme's partnership believes that the power of example can motivate, inspire and trigger further action, acting as a multiplier. And, so far, was proven right. May 100 soon become double and more. It will only be a plus for our region.



# THE IMPACT

**108**  
SITE SPECIFIC  
APPLICATIONS

**38**  
WATER SCARCE  
INSULAR AND  
COASTAL  
COMMUNITIES

**4**  
COUNTRIES

**630,000,000**  
LITRES OF WATER  
SAVED ANNUALLY

**280,000**  
BENEFICIARIES

**35,000**  
STUDENTS

**5,200**  
TEACHERS

**320**  
TECHNICIANS

**20**  
FARMERS



**Mr. Manuel Sapiano**  
Chief Executive Officer,  
Energy and Water Agency,  
Malta

## INTERVIEW

### What was the tangible and intangible impact of the Programme in the Maltese Islands?

Non Conventional Water Resources play a significant role in the national water cycle of the Maltese islands. Water management tools such as the harvesting of rainwater in small cisterns form part of Malta's water culture, whilst Malta's 2nd River Basin Management Plan (RBMP) extensively promotes wastewater reuse on a national scale. The NCWR Programme, in alignment with Malta's 2nd RBMP, acted on two fronts — firstly through activities which promoted innovative practices and technologies — such as modular reservoirs and greywater recycling; and secondly through a wide ranging educational and awareness raising programme. The Programme promoted innovation in user scale applications, hence supporting Malta to increase awareness on the broad applicability of such techniques.

### The Mediterranean is a water scarce region. How can we tackle the water deficit and cater for increased water demand in a sustainable way?

The Mediterranean is a water scarce region, but is also a hub of innovation in the water sector. Looking at the Mediterranean today, one can see significant initiatives aimed at the optimisation of water use, such as network leakage management, smart irrigation and educational programmes; as well as for the augmentation of water supply, such as desalination and water reuse. This said, however, most of the time such initiatives are undertaken in isolation in the different countries, and hence increased regional cooperation to enable the cross-sharing of experiences is needed. Such initiatives would enable the Mediterranean countries to better share good and poor experiences, learn from each other and hence support the further development of the region's water sector.





# REVIVING TRADITIONAL WATER MANAGEMENT PRACTICES

## CHALLENGE

In the water scarce Mediterranean, ancient wisdom led to solutions for securing water to sustain life. With evidence dating back to the Minoan Civilisation (ca. 3,500 BC), remarkable local craftsmanship to harvest rainwater was developed in the islands. However, this was abandoned over the new water supply networks. While climate change affects precipitation and water demand increases, reviving rainwater harvesting can provide a reliable source of water for secondary uses.

## FACTS

More than  
**2,500**  
rainwater harvesting cisterns  
exist only on Folegandros  
Island, Greece

More than  
**85%**  
of water at home is used  
for secondary purposes

## LESSONS

1. Modern means can  
revive traditional water  
management practices

2. Our heritage points  
to cost-efficient and  
sustainable water solutions  
for our future



## From Knights' wisdom to contemporary water solutions in Malta



**1,800,000 LITRES  
OF WATER  
COLLECTED  
ANNUALLY**

**400 YEARS  
OF OPERATION  
OF THE RWH  
RESERVOIR**

Over 400 years ago, the Knights of Malta recognised the need to harvest rainwater and they planned by building reservoirs — capable of storing as much as 1.8 million litres of water — like in the case of the San Anton Palace, which since 1974 serves as Malta's Presidential Palace. Nowadays, while freshwater resources are limited and climate change intensifies rainfall events, the need to capture rainwater and store it for longer periods to cover secondary uses is evident. In this regard, H.E. The President of Malta, Maria Luise Coleiro-Preca (2014-present), conscious of sustainability challenges, volunteered to set an example by bringing to life this traditional water structure and highlight the intrinsic value of water solutions for sustaining life on the Maltese islands.

In partnership with the Energy and Water Agency, the Programme undertook the reinstatement of this historic rainwater harvesting reservoir and its supply system to water the orange grove of the Palace and its Gardens. The oranges produced there are used by the Malta Community Chestfund, a charitable foundation which helps the Maltese in need of medical assistance and provides food to the poor and scholarships for students. This landmark intervention presents historic, cultural and water management significance and serves also a noble cause.

## Capturing rain for local food production in Ramla Valley, Malta



**6,000,000  
LITRES WATER  
CAPTURED  
ANNUALLY**

**MORE THAN  
18,000 GRAPE  
VINES IRRIGATED**

Gozo is the second largest island of the Maltese archipelago, home to 30,000 inhabitants. Valleys are an integral part of its countryside landscape and significant food producing areas. These are fed by water running in the watercourses, which, with time, were degraded by waste dumping, pollution and lack of maintenance. Eco-Gozo, an initiative led by the Ministry for Gozo in the framework of its sustainability vision for 2020, initiated the cleaning of the watercourses and dams, removing silt and debris along the valleys, to increase the water catchment capacity.

The NCWR Programme partnering with Eco-Gozo, selected the Ramla Valley for an intervention to capture stormwater and protect its invaluable soil, as it is the richest and most important agricultural land on the island. Following the cleaning of its watercourse, the NCWR Programme undertook the reconstruction of the collapsed rubble walls across the valley, as well as the shaping of the valley bed. This allows the retention of stormwater in the valley, also with the help of several small dams, and enables aquifer replenishment. Meanwhile, local farmers utilise stormwater captured in the valley and its underground aquifer for irrigation, cultivating vines for the island's wine production and the delicious local vegetables.

Find out more:

[www.gozowater.com](http://www.gozowater.com)

## Revitalising traditional water structures on Santorini Island, Greece



**1,500,000 LITERS  
ADDITIONAL  
CAPACITY**

**5,000 LOCALS  
AND THOUSANDS  
OF TOURISTS  
SERVED ANNUALLY**

The idyllic scenery of Santorini is attracting a steadily increasing inflow of tourists that enjoy the Cycladic amenities. Counting almost 2 million visitors just in 2017, Santorini is challenged with extreme water scarcity and the local authorities are working hard to secure sufficient water supply in the local network, mainly through desalination. However, rainwater harvesting remains an integral part of the island's culture. The cisterns of Santorini are considered artefacts of supreme craftsmanship, due to their unique way of construction and materials used.

The Programme was first implemented on the island in 2010, reinstating an old rainwater harvesting system, installing a modern one and delivering hands-on activities for students, training teachers and raising local awareness on sustainable water use. With challenges jeopardising local water security, the Programme returned in 2017 to reinstate an impressive stone-built cistern in Megalochori. Built in the 1900's, it served several purposes — first to host monks, then served as a factory and later, during the island's occupation, as the Italian headquarters — before turning into a rainwater harvesting reservoir, the largest on the island. Through the Programme's intervention, it gained a new life as a storage reservoir for potable water connected to the new water supply network, increasing the system's capacity and securing water supply in neighbouring settlements.

## Collecting stormwater to support the local economy on Sikinos Island, Greece



**600,000 LITRES OF  
WATER CAPTURED  
ANNUALLY**

**MORE THAN  
1,200 BEEHIVES  
WATERED**

The small Cycladic island of Sikinos has less than 300 residents but still faces serious water scarcity due to its limited freshwater resources. Moreover, when it rains, runoff is wasted to the sea. Traditionally, as in all water scarce Cycladic islands, its inhabitants harvested rainwater in their home cisterns, to drink and cover their daily needs. Nevertheless, this practice was overlooked over time, when the water supply network brought water to their taps and their cisterns were eventually abandoned. As increasing demand requires more water, the need to tap into this sky-fed resource was evident.

Using the morphology of the main village, Chorio, built atop a hill, the Programme designed a stormwater management system which collects runoff water from the narrow streets of the settlement and directs it to a large reservoir installed for storage. With multiple outlets installed in the reservoir, locals can use this water to irrigate their small orchards where they grow vegetables and water their livestock and beehives. The island is famous for its high-quality honey, which is also a main source of income for many of its residents. The intervention has had such a significant impact on people's lives, that they refer to it as "a gift of life".

Find out more:

[www.youtube.com/watch?v=EKAyAur5a3s](https://www.youtube.com/watch?v=EKAyAur5a3s)





# PROMOTING INNOVATIVE CONVENTIONAL WATER RESOURCE MANAGEMENT TECHNOLOGIES

## CHALLENGE

While technology advances and innovation generates new solutions, these have not yet reached the wider public, including the often remote local communities in the islands. Increasing in volume NCWR, such as greywater and treated wastewater, remain at large untapped. Desalination, on the other hand, is the main source of water in most islands. Moreover, agriculture ranks at the top of water consumption.

## FACTS

Almost  
**50%**  
of water supply on several Mediterranean islands comes from desalination

**10-50%**  
water and energy can be saved through optimised irrigation

## LESSONS

1. Showcasing innovative water technologies promotes use, replication and scaling up of solutions to bridge the water deficit

2. ICT based solutions can optimise irrigation, with water, energy and food production gains



## Installing an innovative rainwater harvesting system in a 100-year old school, Kercem, Gozo, Malta



**240,000 LITRES OF FRESHWATER IS SAVED ANNUALLY**

**85 STUDENTS SERVED ANNUALLY**

Kercem is a historic school built in 1923 in the homonymous village on the Maltese island of Gozo. The school has three wings and a big front yard in between, where an innovative rainwater harvesting system was placed underground. The system consists of a modular underground tank, which collects rainwater that is reused for toilet flushing and irrigation. The technology of modular tanks was first introduced to the Maltese islands through this intervention by the Programme. It is an innovative technology, which can be used to harvest rain- and stormwater, adaptable to any available area and size, is quick to install and requires no maintenance. Rainwater collected is used for toilet flushing in the school, resulting in substantial freshwater saving.

Selecting a 100-year old school to demonstrate this innovative technology was not random, as it highlights the diversity of options to retrofit a rainwater harvesting system. Moreover, as all works in the Programme are complemented by educational activities, Kercem students learned through this installation about the multiple uses of rainwater, the options of innovative technologies and were encouraged to spread the message of water saving to their surrounding social environment for sustainable living.

## Improving water quality through desalination on Kos Island, Greece

Kos island is the third in size island of the Dodecanese complex, also known as the Island of Hippocrates, the “Father of Medicine”. On its southwest side and more than 40 km far from the main town, lies its second largest village, Kefalos, with 3,000 inhabitants. Built on a rocky hill, its fresh water resources, affected by the geological substrate, have high arsenic concentrations, unsuitable for human consumption. Recognising the urgent need to provide potable water to its residents, the local authorities made it a priority to explore options to address this water quality challenge.

The appropriate solution to improve water quality was identified by the Programme in the desalination technology. A water kiosk fitted with a reverse osmosis system was installed, which treats and successfully removes arsenic from raw water, producing top quality water. This custom-made system was placed next to the Municipal building in the heart of the village, allowing access to all locals, as well as tourists. For a nominal cost, which is collected by the local authorities to cover the system’s operation costs and consumables, everyone has access to fill their bottles and water containers to bring safe potable water back home.



**3,000 LOCALS GAINED ACCESS TO SAFE DRINKING WATER**

**2,000,000 LITRES OF WATER PRODUCED ANNUALLY**

## Recycling greywater in the National Swimming Pool of Malta



**5,500,000 LITRES OF GREYWATER TREATED AND RECYCLED**

**5,000 ATHLETES SERVED ANNUALLY**

The National Swimming pool of Malta is the main venue for competitive aquatic sports in the country. The National Water polo leagues, several international tournaments and important swimming meetings are regularly held at the complex. Hosting approximately 800 athletes per day, the need to shower twice — before and after training — skyrockets freshwater consumption in the facility. However, greywater generated from the showers is a valuable source, as it can be treated and reused for non-potable uses.

For the purpose, an innovative compact greywater recycling system using ultra-filtration technology was installed to treat water from the showers. The system’s advanced technology produces treated water of high quality, free from pathogens and any other hazardous substances, which is then reused for toilet flushing in the premises and landscape irrigation, saving drinking water on a water scarce island. This cutting-edge technology was first introduced in Malta by the Programme, demonstrating the potential of greywater reuse in large scale facilities which generate high volumes of greywater, such as sports complexes, hotels, etc., to generate a new source of water, fit for secondary purposes.

## Optimising irrigation of citrus fruits in Sicily, Italy

Sicily, the largest Mediterranean island, is famous for its history, culture, natural beauty, as well as for its delicious cuisine and local products. In fact, over 60% of Italian citrus fruits are produced in Sicily, consisting a vital component of the local economy. Yet, their production is water intensive, stressing the local resources. To optimise the citrus fruits cultivation, the Programme in partnership with the Citrus Fruit District and the technological support of the Euro-Mediterranean Centre for Climate Change, developed a pilot application for farmers, based on the Internet of Things technology, for sustainable irrigation. Farmers are receiving personalised information on the actual irrigation needs of their orchards, through a web platform that collects live data from sensors installed in their orchards. Following guidance on how thirsty their trees are, they can optimise the use of water, safeguard the quality of their products and maximise their productivity, while also cutting down on their energy costs for irrigation.



**15-40% LESS WATER FOR IRRIGATION**

**15-40% LESS ENERGY FOR IRRIGATION**



A photograph of a water treatment plant interior, showing a complex network of white PVC pipes, valves with red handles, and large circular pressure gauges. The background shows more industrial equipment and a tiled floor.

# OPTIMISING EXISTING INFRASTRUCTURE AND ACHIEVING WATER EFFICIENCY

## CHALLENGE

Aged water infrastructure causes extensive losses and results in waste of valuable resources, water and energy. Moreover, old system design and existing capacities cannot cater for extended needs and increasing demand, especially during summer. High water consumption fixtures in buildings and facilities and wasteful behavior compromise water efficiency, generating high water and energy bills.

## FACTS

**23%**

mean water losses  
in networks in Europe  
(source: EurEau)

**10-50%**

of water can be saved  
by installing a water  
saving device

## LESSONS

1. Optimisation of infrastructure requires less capital investment and yields multifold environmental and economic gains

2. The combination of water saving devices and mindful use significantly improves efficiency of resources



## Improving water efficiency on Astypalea Island, Greece



**1,500**  
BENEFICIARIES

**128,000,000**  
LITRES OF  
WATER SECURED  
ANNUALLY

Astypalea lies in the middle of the Aegean Sea. Endowed with picturesque landscapes and Natura 2000 protected areas, traditional red roofed whitewashed windmills and a few islets in its vicinity, it is home to 17,000 residents in two main settlements, and attracts thousands of tourists. Water in the main village is supplied through its dam in Chora, also covering farming needs. The rest of the island is served through a small desalination unit, as well as boreholes for agricultural use. Even though the island is richer in water resources than other insular areas in the region, local authorities struggle with aging infrastructure, aquifer degradation and increased demand in summer months.

To address the challenge, the Programme undertook a variety of interventions over 3 years to improve the water supply network's efficiency and capacity. It refurbished the electrical and pumping system with new high-end ones, built a new water storage reservoir, refurbished the desalination plant to increase its production capacity and efficiency, and reinstated a second reservoir to minimise losses from leakages. These multiple technical interventions, combined with educational and awareness raising activities, improved water efficiency on the island, safeguarding a continuous supply of potable water for its residents and visitors, while protecting the aquifers from salinisation.

## Optimising infrastructure for local water security on Lipsi Island, Greece



**36,000,000**  
LITRES OF  
RAINWATER  
COLLECTED

**15,000**  
OLIVE TREES  
IRRIGATED

The sustainability vision of Lipsi was long set by its people: investment in local economy and products, mild touristic growth and improvement of infrastructure and services for a better living. Despite its small size and remoteness from the mainland, Lipsi was a pioneer island to fully manage their waste and recycle materials, setting a paradigm for other islands. While its freshwater resources were limited, yet carefully managed, these were not sufficient in summer months; supply needed to be augmented by water transferred by tankers to the island — a costly and unsustainable practice. With local water security in jeopardy, the Programme responded to the challenge by installing two rainwater harvesting systems in the local schools to capture water and reuse it for toilet flushing. However, our flagship intervention aimed at something bigger: to increase the harvesting capacity of the island's water pond. Constructed in 1999, with a poor collection system, the pond could only fill up to 30%. Following a technical study conducted by the Programme, hydraulic interventions were designed to allow reaching 100% of its harvesting capacity. As the island is located within a Natura 2000 protected area, works were designed under the principles of low impact development, using natural, local material. The increased capacity can now cater for the agricultural needs of the island, while the connection to the water supply network is also planned.

## Saving water in the Municipal Swimming Pool of Nicosia, Cyprus



**23,000**  
BENEFICIARIES

**1,943,000** LITRES  
OF WATER SAVED  
ANNUALLY

At the heart of Nicosia, the municipal swimming pool complex offers more than training facilities. Aside the two training pools, a third one, a recreational pool open to the public, constitutes an urban oasis in the hot summer months for thousands of locals and tourists. Water consumption on the premises is particularly high, as guests and athletes shower at least twice during their stay. In a water scarce country like Cyprus, managing water demand, also though improving efficiency, has been at the core of the national water management strategy for almost three decades. To achieve water efficiency at the pool, the Programme installed modern water saving fixtures in toilets, showers and wash basins. To complement the work, a tailored awareness raising campaign was launched at the public areas of the sports complex to instill a responsible water behaviour. Signs, banners and posters were exhibited throughout the premises to highlight the value of saving water for a sustainable future and water saving devices were distributed to guests on a dedicated event on World Environment Day 2017.

## Optimising the water supply network on Tilos Island, Greece



**1,800**  
BENEFICIARIES

**85,600,000**  
LITRES OF  
WATER SECURED  
ANNUALLY

The vision of Tilos, the small Greek island of less than 800 inhabitants, is to become the first energy sustainable isle in the Mediterranean by running only on renewables. Home to many endemic species, a Natura 2000 protected area with natural water springs and an underground aquifer in pristine condition, Tilos attracts environmentally aware visitors. Despite its natural resources, supplying sufficient water to residents and visitors remained a challenge, especially in the summer. Aging infrastructure resulted in losses, inefficient operation and irreparable damages. Therefore, optimising the water infrastructure and increasing the system's capacity was prioritised by the Programme. To this regard, four pumping systems were replaced to ensure efficient use of available spring- and groundwater. Furthermore, a new reservoir was installed close to the island's port to increase the network's capacity to respond to increased demand. As part of the water management strategy, a water saving campaign raised awareness on mindful water use, while residents and hoteliers were given the means to reduce water consumption: water saving devices were distributed and installed onto their private water taps. The island's water resilience was increased, the risk of aquifer salinisation was decreased, and, equally important, residents and tourists were mobilised to use less water for a sustainable future.



A close-up photograph of a hand planting a small green seedling into a black plastic seedling tray. The tray contains several other similar seedlings in individual compartments filled with dark brown soil. The background is slightly blurred, showing more of the same tray.

# ADVANCING INTEGRATED SOLUTIONS FOR URBAN GREEN

## CHALLENGE

Population growth and increasing urbanisation lead to densely populated cities, with less urban green and more pollution. Moreover, climate change intensifies urban water vulnerabilities, such as flooding, heat stress and water scarcity. Conventional urban design considered rain as a nuisance and not as a source to be further utilised.

## FACTS

Urban population will reach  
**70%**  
by 2050

Green roofs can  
reduce temperature by  
**0.1-3 °C**

## LESSONS

1. Green-blue infrastructure prevents flooding and increases urban green

2. Green roofs and vertical gardens can improve the microclimate and living conditions in cities



## A green-blue application for Thessaloniki's resilience, Greece



**1ST GREEN WALL  
IN A GREEK PUBLIC  
BUILDING**

**25,000 LITRES  
OF RAIN REUSED  
ANNUALLY**

Thessaloniki, Greece's second largest city and port, is an important economic and cultural centre for Southeastern Europe. Youthful, lively and multicultural, the city presents a densely built urban environment, with a growing population. Driven by the global resilience standards to ensure the well-being of its people, while strengthening its urban economy and respecting its natural resources, the City joined in 2016 the network of 100 Resilient Cities and developed its Resilience Strategy. Among the Strategy focus areas is to create a safe (from floods) and better (greener) living environment for its residents. Consistent with this scope, the creation of a green wall irrigated by harvested rainwater was selected to serve both purposes: to prevent flooding by capturing stormwater and increase urban green. Aiming to become a paradigm for replication, the building selected was the Municipal department of Urban Environment Management. A rainwater harvesting system collects runoff from the roof, which is stored in a tank to irrigate the innovative green wall. Using a cutting-edge vertical garden technology with modular units, the green wall is the first of its kind in a public building in Greece, increasing also its energy efficiency. The neighbourhood enjoys the multiple benefits of the green wall, with an upgraded urban landscape and improved microclimate, which also prevents flooding.

## Greening university roofs in Malta and Italy

Green roofs are gaining popularity due to the multiple benefits they present. Namely, they can reduce stormwater runoff contributing to urban flood protection, increase the energy efficiency of buildings, mitigate the urban heat island effect and improve urban air quality, thus providing an overall urban life upgrade.

The Programme undertook the installation of two green roofs, at the Malta College of Applied Science and Technology (MCAST) and the University of Catania (UNICT) in Italy. The selection of premises was anything but random. Demonstrating green-blue applications in educational institutions, increases their visibility among young professionals and gives a learning opportunity for students and researchers that may translate in future employability. The MCAST green roof is coupled with a greywater recycling system, a technology transferred by the Programme from Cyprus to Malta; while the UNICT green roof is rainfed. Both installations include Mediterranean native plant species that are monitored through research projects, in terms of their watering needs and tolerance to drought conditions. The systems promote options to increase urban green without adding pressure to the limited water resources of arid Mediterranean cities, while also preventing urban floods.



**950 SQUARE  
METRES GREEN  
ROOF AREAS**

**2,800 STUDENTS  
LEARN ABOUT  
MODERN  
URBAN GREEN  
TECHNOLOGIES**

## Reviving a park on Syros Island, Greece



**280 LOCALS ENJOY  
THE PARK DAILY**

**400,000 LITRES OF  
WATER CAPTURED  
ANNUALLY**

Syros island is the legal and administrative centre of the entire Southern Greek archipelago. With the highest population in the Cycladic complex, water demand is high and peaks in summer. For the Programme, Syros is a landmark as the very first activities, were piloted there in 2008-09: the reinstatement of a traditional rainwater harvesting cistern and the installation of the first water kiosk for potable water. As population grows, needs for housing make the town of Ermoupolis and villages expand. Urban planning though often fails to provide enough green spaces for the residents. Aiming to promote green-blue infrastructure at the central square of a large village in the centre of the island, the Programme returned in 2011 to install a stormwater retention system and reuse water to revive an almost abandoned park. An innovative rainwater harvesting modular tank was installed underneath a mini football field in the park, storing water to irrigate the court and the garden. New plants were added to increase green and benches were placed to accommodate visitors. The system collects water runoff from the settlement's streets, preventing also the square from flooding. The local authorities further improved accessibility to this revived park by building ramps for disabled people and prams.

## From drains to Nicosia parks, Cyprus

Cyprus is one of the most arid Mediterranean countries. Due to its dry climate, its capital, Nicosia, has limited green spaces. In some parts of the city, the underground aquifer is at high elevation, threatening underground constructions with humidity and flooding. Authorities, aiming to protect the building foundations, have resorted to frequent groundwater pumping in the endangered areas, which is then wasted to the drains.

Identifying a problem and an opportunity, a new water source is now used to irrigate the city's green areas. At the Famagusta Gate, the largest gate of the city's Venetian walls, the water pumped out of the building foundations, was flowing unutilised along the small canal in the area. Through the Programme's intervention, this water is now harvested in a reservoir built for the purpose, filtered and distributed for irrigation of nearby green spaces. As urban green increases, it improves the quality of urban life in Nicosia. The project is an excellent example of how integrated thinking in urban water management can contribute to a sustainable future for cities.



**8 PARKS  
IRRIGATED**

**20,000 CITIZENS  
ENJOY MORE  
URBAN GREEN**





## CHALLENGE

Achieving water security requires far-reaching changes in our values, governance, as well as our production and consumption patterns. It requires a New Water Culture. Education, awareness raising, stakeholder engagement and empowerment, including for Youth, are integral elements to build it.

## FACTS

Only **10%** of teacher education covers sustainable development

**7-10%** reduction in household water consumption only through awareness campaigns

## LESSONS

1. Education for Sustainable Development empowers learners to transform their attitudes towards mindful water use

2. Awareness raising can create the acceptance of NCWR at local level and facilitate the expansion of such cost-effective practices



## Investing in Education



**35,000  
STUDENTS  
EDUCATED**

**5,200  
TEACHERS  
TRAINED**

The educational component is a primary Programme pillar aiming to sensitise the young community and shape up a future generation of water conscious citizens and leaders. Early on, customised educational material was developed by the Mediterranean Education Initiative for Environment & Sustainability (MEDIES) based on the principles of Education for Sustainable Development (ESD), whilst integrating hands-on activities and experiential learning. Given the diversity of countries participating in the Programme, the content was country-specific, reflecting the respective local water situation and culture. The educational material developed involved a full Teacher's Resource Pack with activities, methodological tips, worksheets, references, information and practical activities. They are learner-centred and follow an experiential approach to stimulate learners to question, work together and reach conclusions. All activities require very simple materials and equipment. Hundreds of educators participated in teacher training workshops on the NCWR educational material to acquire in depth knowledge on how to use it in their classes, according to their needs, objectives and available time.

The Ministries for Education of Cyprus, Greece and Malta approved the educational programme, which was delivered in schools by the MEDIES team, school teachers and other partners. Thousands of primary and secondary level students participated in the hands-on activities, discovering the water cycle, NCWR and the value of water, and committing to their own water saving practices at school and at home. An educational video game was developed in all languages to complement the educational activities.

Acknowledging the value of the NCWR Educational Programme, Cyprus and Malta integrated it in their school curricula. To this end, in Cyprus four Environmental Educational Centres have included a dedicated water session based on the NCWR material and props, while in Malta students visit the Xrobb l-Għaġin Environmental park to participate in the NCWR hands-on activities.

In 2014, students of Greek insular communities had the opportunity to enter a Water Contest, working in teams to create a water-themed video, posters and paintings. The response was impressive, with more than 600 participants. The winning teams won an educational trip to Athens—for many, their first trip to the country's capital—to exhibit their artworks and receive their awards during the annual Athens Science Festival.

The 10-year education interventions are capitalised in a new web application to be left as project legacy for the educational community of all countries.

Discover more:

The Alter Aqua Video game:

<https://www.gwp.org/en/NCWR/Resources/water-saving-tools/videoGame/>

The NCWR Educational Material:

<http://www.medies.net/staticpages.asp?aID=657>

## Raising awareness, engaging and empowering stakeholders

Working towards a water secure future would be meaningless if people were not involved in the effort. Over the 10 years of the Programme's implementation, several stakeholder engagement and awareness raising initiatives were realised across the Mediterranean. Each activity was carefully designed to respond to the specific local needs, as well as to create a clear picture of the regional and global water challenge. From stakeholder consultations to public awareness events, from households to institutions, through mainstream and digital means, the purpose was to engage people and prompt them to act upon managing water resources sustainably, using water wisely and utilising NCWR to save freshwater sources, secure our future and protect the environment.

A list of easy to follow daily routines was translated to campaigns and shared via various channels including social media, press and direct communication to instill behavioural change and create a new water culture. Each medium selected is suitable to address a different audience group; diversification matters when seeking to achieve social awareness. Moreover, the most important task of our mission is to empower citizens to actively save water, so in addition to providing tips, the Programme focused on distributing individual water saving devices that can be easily applied to any tap. This way, it teaches people that saving water is in their hands and their daily choices.

Discover more:

[www.gwpmed.org/NCWR](http://www.gwpmed.org/NCWR)

[www.facebook.com/NCWRProgramme](https://www.facebook.com/NCWRProgramme)



**OVER 100,000  
PEOPLE REACHED  
VIA ONLINE  
CAMPAIGNS**

**3,500 WATER  
SAVING DEVICES  
DISTRIBUTED**







# FOSTERING JOB CREATION AND KNOWLEDGE SHARING

## CHALLENGE

Advancing the use of non conventional water resources requires trained technical people to design, install, operate and maintain the systems. Managing NCWR entails, among others, good water governance and appropriate capacities. With increasing youth unemployment rates, skills mismatch prevent them from tapping into existing and upcoming employment opportunities. Technology advances and the knowledge generated must be shared among peers who face similar water challenges.

## FACTS

**3 out  
of 4**

jobs worldwide are  
water-dependent  
[Source: UN Water 2016]

**3.2**

billion people is  
the global active  
workforce

## LESSONS

**1. Knowledge sharing has  
a multiplier effect towards  
improved management of  
water resources**

**2. NCWR can provide  
new employment and  
entrepreneurial  
opportunities**



## Creating opportunities for green employability



**320  
TECHNICIANS  
TRAINED**

**PROFESSIONALS  
FROM 20  
SPECIALTIES  
INVOLVED IN  
WORKSHOPS  
AND ON-SITE  
TRAININGS**

Local technicians in Cyprus, Greece, Italy, Malta contributed to the implementation of every single demo application of the Programme. This ensured that locals acquire the technical know-how of NCWR applications and can maintain and properly operate the new and existing infrastructure. Seminars and on-site trainings delivered by experts, as well as on-the-job training by specialised contractors and providers, gave the opportunity to local professionals to advance their skillset and become acquainted with innovative technologies and materials. Engineers, architects and professionals in the construction industry were trained on integrating NCWR systems and incorporating water efficiency options in their building and refurbishment designs. This way, the Programme helped advance their employability and professional development prospects. Market uptake of small scale applications to improve water management across the Mediterranean, leads to job creation, particularly for those already engaged in the sector, and creates the opportunity to generate new income. In this framework, the Programme issued a technical guide compiling a selection of NCWR technologies, aiming to inform and educate practitioners, planners, and engineers on commonly available technologies for rainwater harvesting and greywater recycling.

Discover more:

[https://www.gwp.org/globalassets/global/ncwr/gwp-technical-guide\\_2017\\_u-withsite.pdf](https://www.gwp.org/globalassets/global/ncwr/gwp-technical-guide_2017_u-withsite.pdf)

## Building capacities on managing NCWR



**102 PARTICIPANTS  
IN CAPACITY  
BUILDING  
WORKSHOPS**

**CONTRIBUTED  
TO 1 NATIONAL  
WATER  
MANAGEMENT  
PLAN**

Improving water management can only have positive effects: it can reduce water waste, increase water efficiency, improve water services and reduce conflicts among water users and uses. Building the capacity of authorities to manage water resources is undeniably a winning strategy towards sustainability. In the water scarce environment of the Programme countries, capacity building focused on integrating NCWR in the national and local water resource mix. Understanding the potential of NCWR as a supplementary source to augment the available water budget and exploring the options on how to advance their use was in the focus of the respective activities held in various sites in Greece and in Malta, engaging water utilities, institutional stakeholders and decision makers. Furthermore, the Programme supported the development of the National Water Management Plan for the Maltese Islands, by organising and facilitating the thematic consultation on NCWR in 2014. This Plan considers the introduction of water supply augmentation and water demand management measures to ensure that the national water demand is met whilst ensuring the necessary protection to the islands' threatened natural water resources. Invariably, the development of NCWR is an important tool which can further support the achievement of the wider objectives of the National Water Management Plan.

## Sharing knowledge in the Mediterranean and beyond

In the 10-year course of the NCWR Programme, a wealth of knowledge was created among the team and the partners. With common water challenges encountered across the Mediterranean, exchanging knowledge and sharing experiences is essential to improve water management. Best practices can be replicated elsewhere, while successes and failures teach valuable lessons. To this end, the Programme organised and facilitated two Regional Conferences on Advancing Non Conventional Water Resources Management in the Mediterranean, in Greece (2011) and in Malta (2018). Gathering representatives from governments, local authorities, water utilities, private sector, water user associations, civil society, academia and media from more than 20 countries in the Mediterranean and beyond, the Conferences aimed at identifying and addressing the bottlenecks, sharing experiences and best practices on NCWR management, discussed ways to enhance awareness raising and stakeholders' involvement, and brainstormed on priorities, opportunities and needed synergies to promote the use of NCWR at regional, sub-regional or trans-national level. Special focus was put on the direct and indirect socio-economic benefits of creating employment and entrepreneurship opportunities in the water sector for youth. Furthermore, the Programme's outcomes and lessons were shared among organisations, water experts and practitioners in water conferences, fora, workshops and webinars across the world.



**2 REGIONAL  
CONFERENCES  
ORGANISED**

**MORE THAN 100  
PRESENTATIONS  
DELIVERED  
ACROSS THE  
WORLD**

## Investing in Youth

While the Programme invested intensively in the young generations through the educational activities, emphasis was also given to Youth, aged 18+. By investing in youth, the prospect of more water professionals and a water conscious society increases and creates a base for sustainable living in insular and urban environments. In 2016, students from Cornell University participated in a tailor-made research project to study rainwater harvesting in Santorini Island, Greece. They discovered the local art of hand carved underground cisterns, studied the social and cultural aspects of water management on a water scarce island and designed an awareness raising strategy targeting Generation Z. The students at MCAST and UNICT were actively engaged in studying the green roofs installed at their universities. Many students participated in research activities monitoring specific parameters to optimise the system's functions and performance. New lectures on NCWR technologies and green-blue were introduced to build their capacities and motivate them to follow a water specialised career trajectory. In addition, youth representatives were engaged in all workshops and policy dialogues, bringing in their aspects and fresh ideas on how to improve water management to safeguard the future of the world they will inherit.



**50 UNIVERSITY  
STUDENTS  
INVOLVED IN  
MONITORING  
NCWR  
APPLICATIONS**

**100 YOUTH  
MEMBERS  
INVOLVED  
IN NCWR  
ACTIVITIES**



# THE DISTINCTIONS

The NCWR Programme's success can also be counted through the distinctions it received for its overall contribution to sustainability in the islands, as well as for its specific components, namely the educational programme. Its partners also received a number of awards over time in the frame of corporate social responsibility and environmental sustainability.

The most important distinction, however, came through the second global award received in the 7th World Water Forum in 2015, in South Korea. At the world's largest and most influential water event, gathering thousands of experts, decision makers and stakeholders, a competition for the best Water Showcase was held. The verdict of a jury of distinguished experts combined with online and onsite voting, ranked the NCWR Programme in second global place for its holistic approach, tangible impact and replication potential beyond the Mediterranean.

# THE WAY FORWARD

Over the past decade, the NCWR Programme completed 108 technical applications. These, under the respective local authorities' supervision of operation and maintenance, will continue yielding considerable amounts of water for the local communities and will serve as demonstration of diverse technologies to address specific needs, to be taken up by individuals, communities and businesses.

Responding to increasing demand from the beneficiary and new countries to expand activities beyond the Programme's lifespan, GWP-Med explores fundraising, including by The Coca-Cola Foundation, to secure its dynamic continuation based on lessons learned.

For the new decade, the NCWR Programme aspires to capitalise on its legacy and expand to address emerging challenges. While NCWR interventions applied so far will continue being in focus using their technology updates in insular communities, the NCWR Programme will strive to expand further into urban areas, utilise new innovative techniques with potential of wide application, empowering youth and creating employment opportunities in a gender balanced approach, raising awareness, educating, and assisting local NCWR planning, linked with the overall local development strategies.



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