

ROLE OF WATER DEVELOPMENT DEPARTMENT IN WATER MANAGEMENT AND PROTECTION IN CYPRUS



Xyliatos dam

ResAlliance Project

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MAIN DUTIES AND RESPONSIBILITIES OF WDD

The Water Development Department is responsible:

- ✓ for the protection and sustainable development
- ✓ the rational management of the water resources of Cyprus

in accordance with European and National legislation and within the framework of the Government water policy in force from time to time.

In this context WDD is responsible for the Implementation of following European Directives/Responsibilities:

- Water Framework Directive (2000/60/EC)
- Floods Directive (2007/60/EC)
- Waste water Directive (91/271/EEC)

Objectives:

- ✓ ensure the greatest possible coverage of water needs for all uses
- ✓ encourage the effective use of water resources
- ✓ safeguard water quality of all water sources and protect the water environment

Water supply in Cyprus

- A. Water Reservoirs
- B. Groundwater (boreholes and springs)

To address the shortage of water because of climate change, two unconventional sources of water are used:

- C. Desalination of sea water
- D. Recycled water



In line with landscape resilience context

In order to secure that the water requirements for various uses are fulfilled, Water Development Department has invested a lot in the construction of Government Water Works (GWW)

- Southern Conveyor Germasogeia-Polemidia and Vassilikos-Pentaschinos Government Water Works
(They are interconnected and operate as a single unit)
- Paphos GWW
- Chrysochous GWW
- Nicosia GWW (Xyliatos-Vyzakia- Lympia)
- Government networks for the distribution of recycled water

GOVERNMENTAL WATER PROJECTS



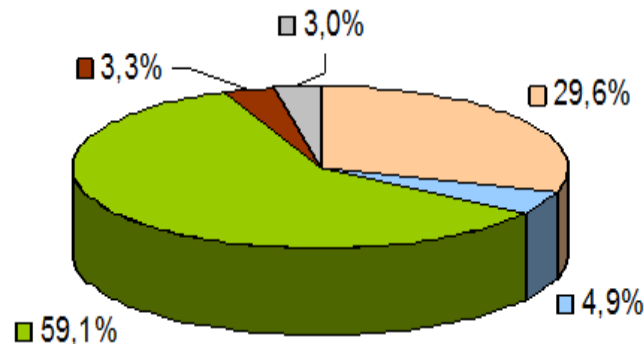
LEGEND

- Dam.....
- River.....
- Existing Water Supply pipelines.....
- Under Construction Water Supply pipelines.....
- Existing Irrigation pipelines.....
- Desalination Plant.....
- Water Treatment Plant.....
- Pumping Station.....
- Break Pressure Tank (BPT).....
- Reservoir.....
- Mobil Unit.....
- Irrigation Area.....
- District boundaries.....

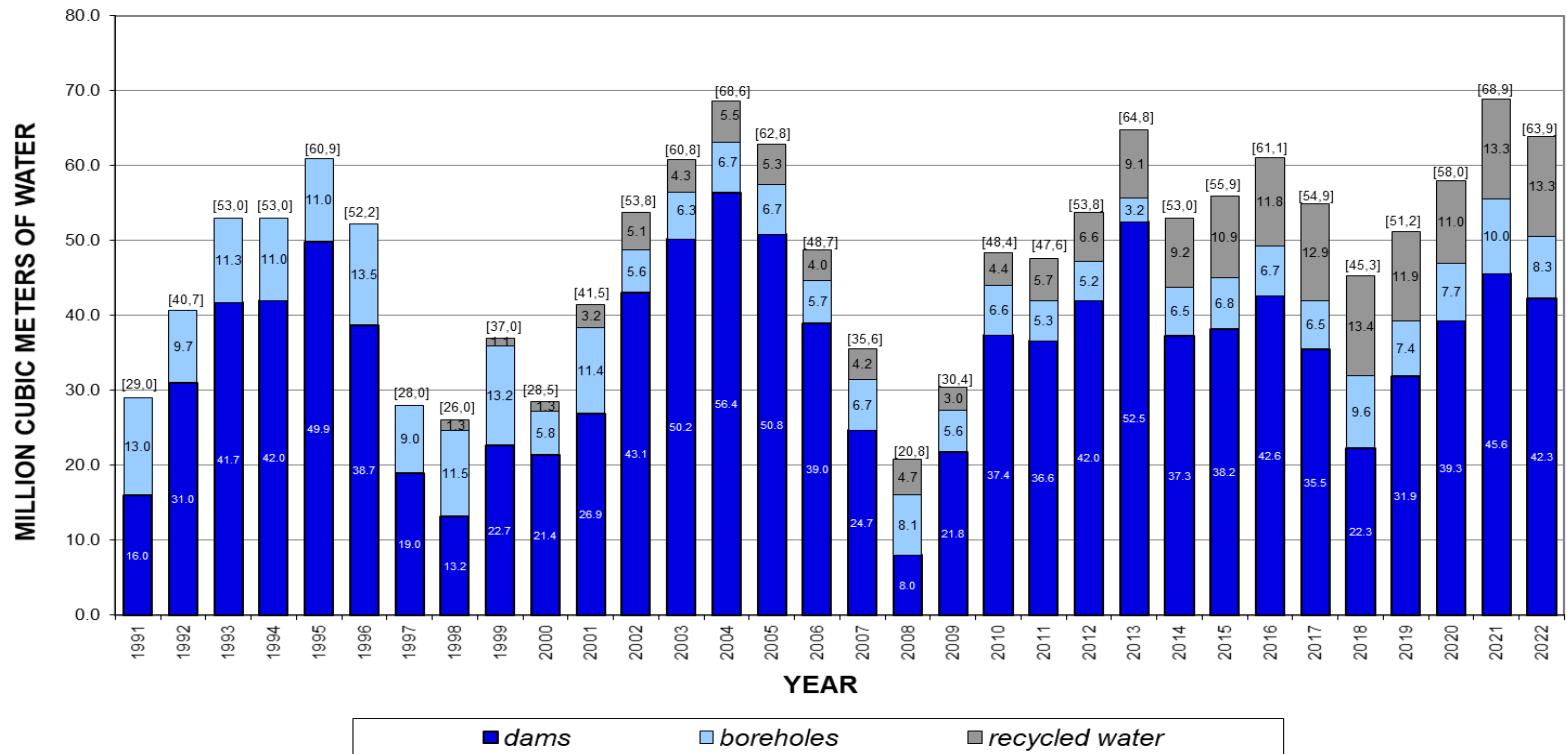
Main uses of water in Cyprus

Estimated annual water demand is around 270 million square meters of which **more than half (59.1%) used for agriculture/irrigation**

Around 30 % used for domestic water supply *



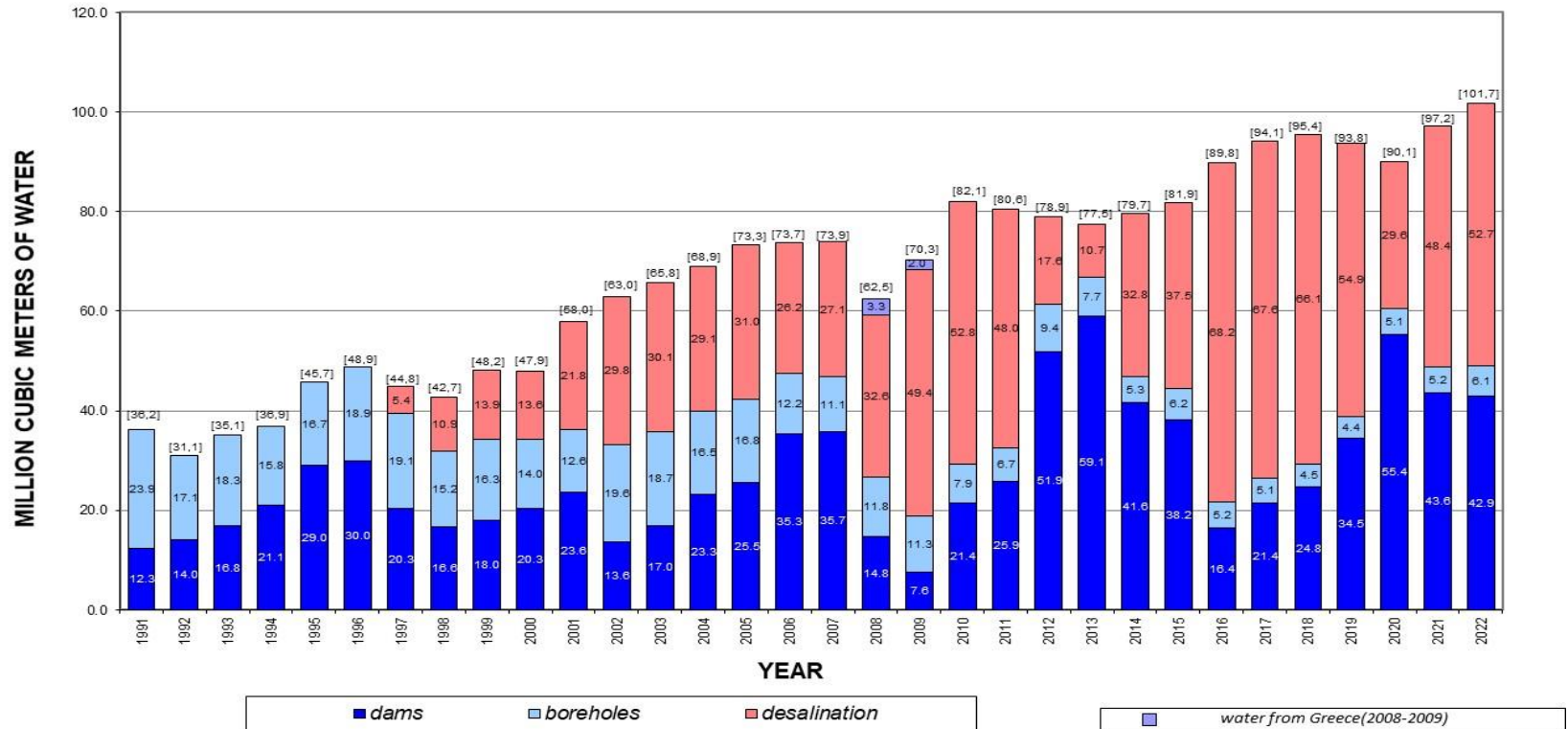
GOVERNMENT WATER WORKS- IRRIGATION SUPPLY WATER (1991 - 2022)



Water used for irrigation comes from:

- Private boreholes
- Irrigation networks
- **Recycled water - important source of irrigation** since last years is covering an important percentage of the requirements – used as direct irrigation or indirect irrigation (aquifer recharge and discharge to irrigation dams)

GOVERNMENT WATER WORKS- DOMESTIC SUPPLY WATER (1991 - 2022)



Water used for domestic supply comes from:

- Mainly from GWW
- Water supply boreholes

Due to long drought periods and the lowering of boreholes water level more communities are connected to government water supply systems (as is shown in the above graph)

WATER ALLOCATION

Water allocation scenarios from Government Water Projects are prepared and implemented each year in order to achieve the best possible fulfilment of water requirement for various uses

In order to implement the scenarios for water allocation the following are taken into account:

- During the year both ground and surface water resources are systematically monitored and assessed
- The water inflow to the dams as well as the quantities of water supplied for various uses are daily monitored.
- The basic principle is the full satisfaction of the domestic water supply requirements
- The rest of the quantities are allocated for irrigation.

The scenarios for water allocation are submitted by the Minister of Agriculture, Rural Development and the Environment to the competent Water Management Advisory Committee and then to the Council of Ministers for approval.

IMPLEMENTATION OF EUROPEAN DIRECTIVES

WATER FRAMEWORK DIRECTIVE 2000/60/EK

- Determines the framework for the water management at European level
- It is a comprehensive approach to the sustainable management of water resources with the aim of the protection of human health, water supply and biodiversity.

The Directive requires the preparation of a River Basin Management Plan which is drawn up through six-year management circles. It also requires appropriate measures to be taken to promote the sustainable use of water, as well as to protect and/or improve the condition of surface (rivers, lakes and coastal) and groundwater.



3RD RIVER BASIN MANAGEMENT PLAN

The WDD is in the final stages of publishing the 3rd RBMP and the accompanying Program of measures.

The planning of the program of measures is done taking into account various parameters which include:

- ✓ The status of the water bodies
- ✓ Significant pressures that the water bodies face
- ✓ Actions implemented until today to deal with the pressures
- ✓ Available financial tools and resources
- ✓ Other policies and related actions (Adaptation to Climate Change, Environmental Protection) e.t.c.

After discussion with all involved stakeholders we include 43 measures in the current Program of measures



After discussion with the ResAlliance Project consortium we identified 13 measures that are in line with ResAlliance Project.

<u>Main areas of action (of each measure)</u>	<u>Water quantity (5)</u>	<u>Water quality (2)</u>	<u>Vegetation cover/habitats (4)</u>	<u>Promotion of best practices (2)</u>
BM-c-02 Limitation of withdrawals in selected WBS with the aim of protecting important ecological features and habitats	√			
BM-c-03 Planning of the rational exploitation and protection of the CY-19 Troodos groundwater system with the preparation of a complete and integrated hydrogeological study, analysis of supply-exploitation conditions and preparation of a documented groundwater balance	√			
BM-c-04 Water Resources Management Sector Reform to promote best practices for rational and sustainable water management				√
BM-h-01 Preparation of a special action program for the treatment of rainwater runoff from residential areas and industrial facilities in order to protect water		√		
BM-h-03 Pasture Management		√		
BM-h-05 Application of crop rotation in potato and grain crops			√	
SM-vii-04 Tree planting with native species to improve the hydromorphological characteristics of selected WBS that support important ecological elements			√	
SM-vii-08 Removal of alien/invasive plant species in selected areas with the aim of improving important ecological features			√	
SM-vii-09 Interventions to improve hydromorphological characteristics in selected HMWBS rivers.			√	
SM-vii-10 Implementation of a special program to assess the effectiveness of environmental benefits	√			
SM-x-01 Implementation of projects to increase the use of recycled water in agriculture which may include the construction of winter storage tanks as well as projects for the distribution and disposal of water.	√			
SM-x-02 Continuation of awareness for saving and protecting water resources				√
SM-xiv-01 Inclusion of the perspective of groundwater enrichment in the design of anti-flood projects and other related natural water retention projects	√			

<u>Water management area / Area of action</u>	<u>Activities of measures</u>
Water quantity (5 measures)	<ul style="list-style-type: none"> • limitation of withdrawals • rational exploitation of groundwater • release of environmental flows • increase the use of recycled water • groundwater recharge through water retention projects
Water quality (2 measures)	<ul style="list-style-type: none"> • treatment of rainwater runoff from residential areas and industrial facilities • utilization/management of manure for soil improvement and vegetation growth.
Vegetation cover/habitats (4 measures)	<ul style="list-style-type: none"> • crop rotation • planting of native species • removal of alien/invasive plant species • improve hydro morphological characteristics
Promotion of best practices (2 measures)	<ul style="list-style-type: none"> • best practices for rational and sustainable water management • awareness for saving and protecting water resources

DROUGHT MANAGEMENT PLAN

- The 1st drought management plan was prepared together with the 1st RBMP
- The drought management plan is revised (if needed) together with the RBMP
- Drought Management Plans aim to quantify and diagnose drought early as well as to manage it effectively and to limit its adverse effects.
- Based on the values of the drought indicators, Drought Management Plan activates specific and predefined actions that aim at early management and/or minimizing the effects of an upcoming drought in order to cover water needs.
- Drought Management Plans used together with other parameters (earlier mentioned) to prepare water allocation scenarios each year in order to **achieve the best possible fulfilment of water requirement for various uses**

FLOODS DIRECTIVE 2007/60/EC

The directive establishes a framework for the assessment and management of flood risks with the aim of reducing the negative consequences of floods on human health, the environment, cultural heritage and economic activities.

The Directive requires the preparation of Flood Risk Management Plan (FRMP) and the accompanying Program of measures which is drawn up through six-year management circles and aims at the effective management of flood risks both in the Areas of Potentially Severe Flood Risk and throughout the country.

Te WDD is now in the final stages of publishing the 2nd FRMP and the accompanying Program of measures.



Send to the ResAlliance consortium the measures that have already proposed for 2nd FRMP to identify those which are in line with ResAlliance Project

A photograph of a stone arch bridge spanning a river in a lush, wooded area. The bridge is made of dark, weathered stone and features a single prominent arch. The river flows through the center of the frame, reflecting the surrounding greenery. The banks are lined with tall, mature trees with dense foliage, creating a canopy of light and shadow. The ground is covered in fallen leaves and small rocks. The overall atmosphere is peaceful and natural.

THANK YOU FOR YOUR ATTENTION

Acknowledgements:

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