



# WATERinCORE Kick off meeting

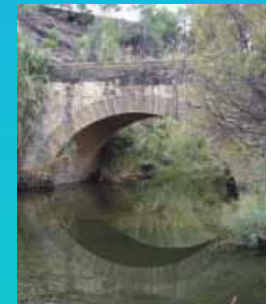
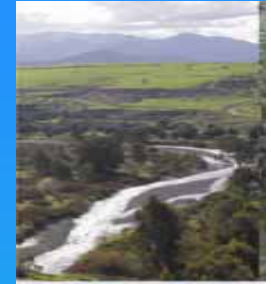


## Water Resources Management & Public Participation Cyprus Experience

Panayiota Hadjigeorgiou  
Water Development Department

15-16 June 2009  
Creece

WATERinCORE kick off meeting



# Outline of Presentation

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- Basic Data
- Water Development Department
- Implementation of the WFD
- Outcomes from consultation campaign
- Lessons Learnt

# Cyprus Map-Basic Data



- Area: 9500 km<sup>2</sup>
- Semi arid climate
- Numerous small catchments
- No perennial rivers
- No natural fresh water lakes
- Rainfall 1970-2008 470mm
- 1900-1969 540mm
- Drop of 40% in river runoff

## Specific Challenges

**Long, repetitive drought periods**  
**Increasing demand for water**



**Serious water shortages**



Climate change  
is expected to  
aggravated  
these problems

**Quality and Quantity problems**

# The Water Development Department

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## The Water Development Department (WDD)

*A major governmental organization within the Ministry of Agriculture, Natural Resources and Environment of the Republic of Cyprus*

*Responsible of implementing water policy*

*Established in 1960*

*Staff: 80 Engineers, 350 Technicians, 700 Labourers*

## Main Objective

*The rational development and management of the water resources of Cyprus*

## Responsibilities

- collection, processing and classification of hydrological and other data necessary for the study, maintenance and safety of the water development works*
- study, design, construction, operation and maintenance of works, such as dams, ponds, irrigation, domestic water supply and sewerage schemes, water treatment works, sewage treatment and desalination plants*
- protection of water resources from pollution*

# Water Development - Policy

Policy has been developed over time)

## Water Supply Management - (1960-1989)

Exploitation of surface water, Construction of Major Dams, Conveyance Systems and Large Irrigation Schemes

Lower the impact of short-term droughts on agriculture and domestic usage BUT decrease in rainfall combined with overexploitation of ground waters and large dams have led to a reduction in the replenishment of aquifers and the degradation of both surface and groundwaters



## Water Demand Management – (1990-2000)

Water conservation measures, exploitation of non-conventional water resources (desalination, sewage reuse)

Improvements in water use conservation, independence from rainfall for cities' water supply, creation of water consciousness (media campaigns) BUT increasing demand and climate change have led to increase of the water supply and demand deficit

«Water, use it don't waste it»

## Integrated Water Resources Management –(as from 2000)

WFD currently in progress Articles 8, 9, 11,13 and 14

BUT still great gap between supply and demand for water exists and water is not considered adequately as an ecological resource of natural ecosystems

«Mind Water and the Environment»

# What are the key issues we have to deal with?



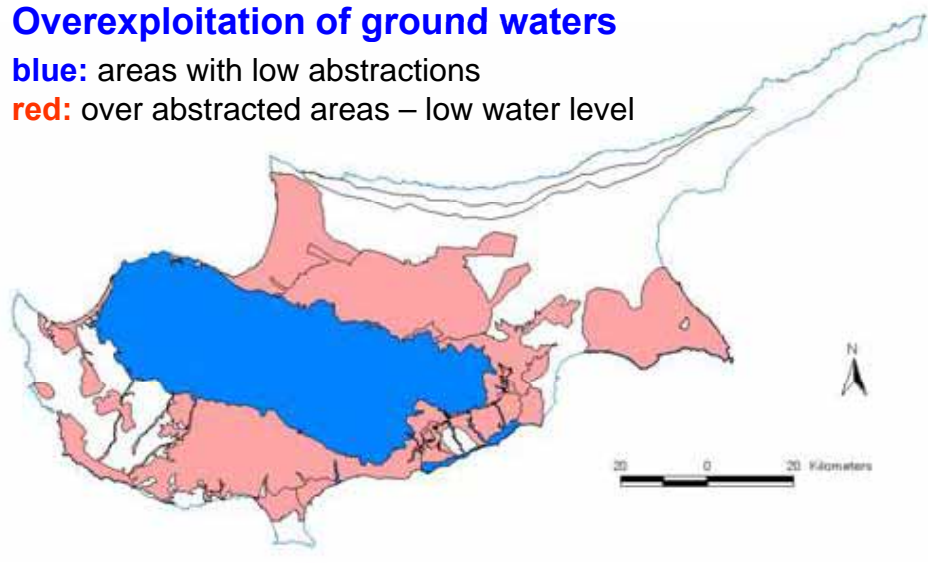
- Overexploitation of ground waters (15 out of 19 water systems AT RISK)**
- Hydromorphological pressures (downstream of dams) and quantity-flow of surface water (49 streams out of 216 are heavily modified and 20% AT RISK)**
- Pollution**
  - **Agricultural (Pesticides and Fertilizers - Nitrates & Phosphorous)**
  - **Urban**
  - **Other sources (industry, mining, rainwater run-off)**
- Conservation of protected areas and significant hydrophilous ecosystems (bathing waters, drinking water sources, Natura areas)**
- Water scarcity and Drought (both for potable and irrigation water)**
- Other issues**
  - **Administrative issues**
  - **Water pricing**
  - **Pressure on coastal water bodies**

# Schematic presentation of our problems

## Overexploitation of ground waters

**blue:** areas with low abstractions

**red:** over abstracted areas – low water level

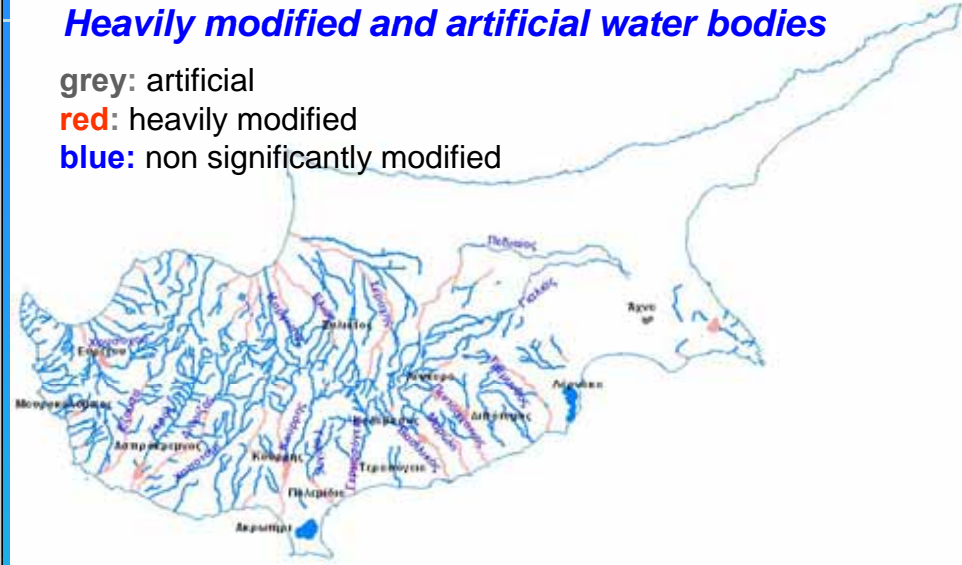


## Heavily modified and artificial water bodies

**grey:** artificial

**red:** heavily modified

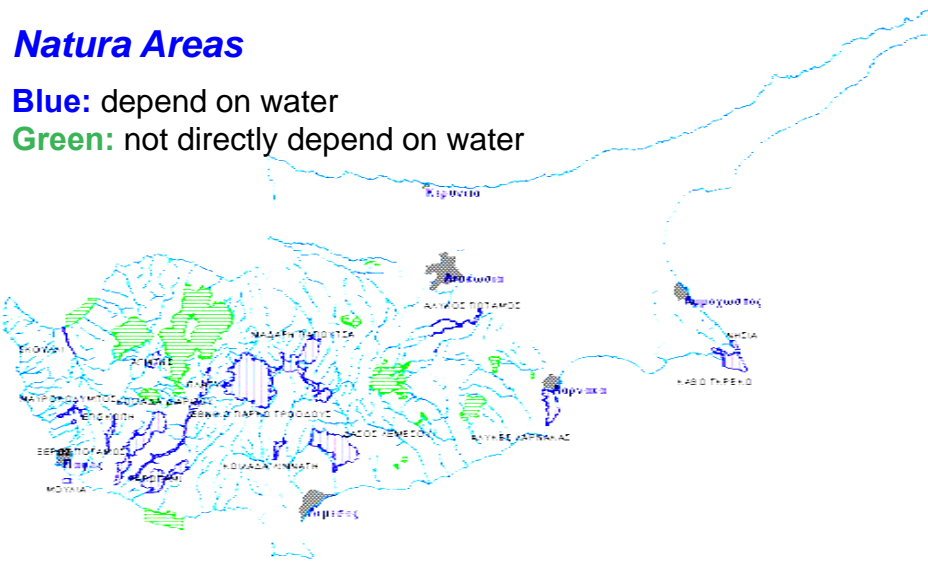
**blue:** non significantly modified



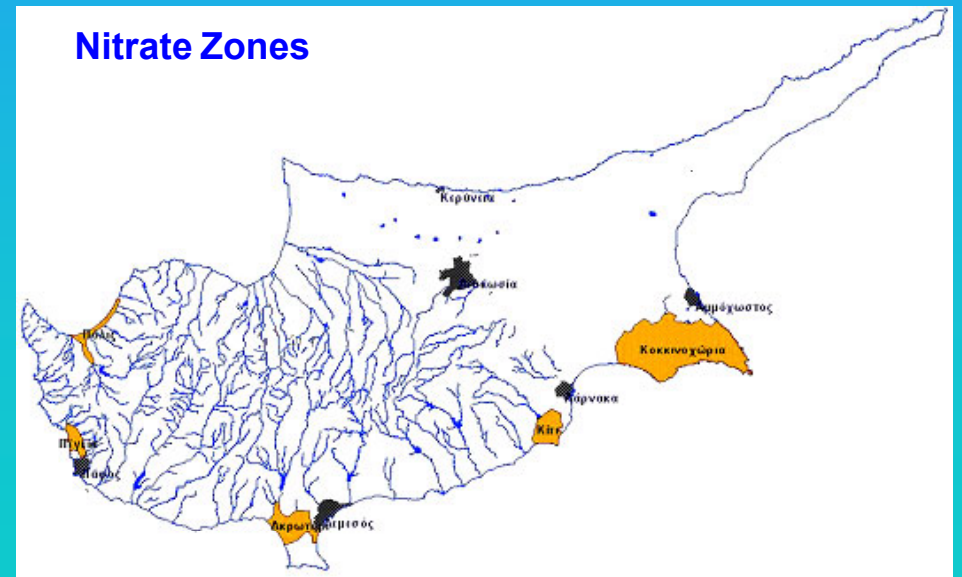
## Natura Areas

**Blue:** depend on water

**Green:** not directly depend on water



## Nitrate Zones



# Public Consultation – Article 14

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Campaign Design, Stakeholder Mapping, Selection of Tools and methods

- ✓ **Phase A : April – October 2007**
  - ✓ **Timetable**
  - ✓ **Work programme**
  - ✓ **Consultation measures**
  
- ✓ **Phase B : December 2007– June 2008**
  - ✓ **Significant water management issues**
  
- **Phase C : Start in October 2009**
  - **Draft River Basin Plan**
  - **Programme of Measures**
  - **Drought Management Plan**
  - **Review of Water Strategy**



# Managing stakeholders expectations

Dissemination – Information – Encouragement – Reaction – Discussion

•Announcements, TV, Radio

[www.wfd.wdd.moa.gov.cy](http://www.wfd.wdd.moa.gov.cy)



Transparency/  
Public Involvement

Working Groups

17 meetings with various stakeholders



- Main issues of concern:
  - water sufficiency
  - assurance of water quality
  - water pricing
  - proper public management

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# Outcomes of public participation campaign

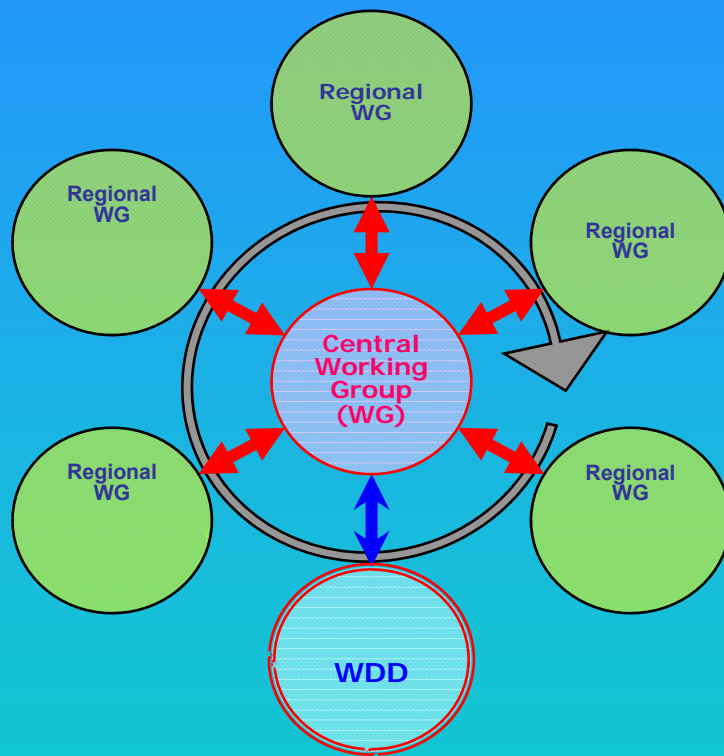
## Close ended question

Please state your opinion on how the following measures may improve the status of the significant water management issues in Cyprus	Yes %
Increase the use of sewage reuse in irrigation	90,5
Change of every day habits/water consciousness	87,8
Increase the use of desalinated water	81,9
Take more water conservation measures	60,7
Change professional practices with regard to pollution control	62,5
Increase water price	44,1
Else	13,2

statistically independent at  $p=0,05$  significance level

# Working Groups

All the working groups were consulted on the technical report evaluation on the SWMI



- **Constructive contribution**
  - Improvements /corrections on certain sections of technical report
  - Proposed possible measures for Phase C
- **Conflicts /oppositions were detected** between various groups, for
  - our scarce water rational allocation
  - the island wide area management plan, which is affected by water resources
  - the water price
- **All the working groups should continue their valuable contribution to identify the most appropriate measures**

# Examples of measures proposed by working groups

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## •Legislative/Administrative

- Establish an Independent Water Entity

## • Demand Management

- Register and audit all private boreholes to control abstractions
- Develop incentives for changing the cropping pattern
- Replace domestic water supply networks to decrease water losses
- Cease permits for new swimming pools
- Implement preventive measures to safeguard potable water sources

## •Supply Management

- Use effluent water for irrigation and recharge
- Reassess all water intensive development plans (i.e. golf courses)
- Harvest rainwater runoff

## •Economic and fiscal instruments

- Apply same water price all over the island
- Apply quota for overuse
- Develop fiscal incentives to promote water efficient devices

## •Educational projects

- Intensify awareness campaign and public communication

# Lessons Learned

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## Public Consultation is necessary at national, district and local level

- ✓ Media involvement is valuable to disseminate info, educate the public
- ✓ Involvement and participation at local level is critical not only for the development of Measures but also for their implementation
- ✓ Bottom-up information with more local meetings and district seminars

## Direct involvement of Stakeholders

- ✓ Simple questionnaire, not to the general public but target representatives of various groups, in order to get more qualitative response
- ✓ Working Groups consultation is better in approaching effectively specific and critical issues, based on experience, knowledge and consensus
- ✓ Written comments after the meetings are useful and valuable

## Make clear the role of various groups during

- ✓ The development of the Programme of Measures
- ✓ The implementation of the RBMP
- ✓ Concentrate on what is feasible (what can be done)
- ✓ Various techniques/tools are necessary, each one gives different but useful information

## Political commitment

- ✓ Involve politicians

# Conclusions

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**The Water Framework Directive implementation is an innovative approach for water resources management**

**A basic prerequisite of its success is public participation and active involvement of all major stakeholders**  
**Effective participation will help us in the selection of the most appropriate and affordable Measures**



**Minimize the gap between supply and demand for water**  
**Stop the deterioration of our scarce water resources**

**One step forward .....**

**Sustainable Water Management in our River Basin**

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Thank you

[phadjigeorgiou@wdd.moa.gov.cy](mailto:phadjigeorgiou@wdd.moa.gov.cy)