

**MedWater Policy**  
**Policy Initiative to Overcome Water Competition between the**  
**Vital Economic Sectors of Agriculture and Tourism in**  
**the Mediterranean**

**EC Contract No. ICA3 – CT2000 – 30002**



**Deliverable for WP1**

**Water Resources, Supply, Discharge Infrastructure and**  
**Energy Related Needs**

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## Introduction

The project "MedWater Policy" (Contract No ICA3 – CT2000 – 30002) will formulate a transboundary water policy initiative for overcoming water competition between the vital economic sectors of agricultural and tourism in the countries of the Eastern Mediterranean Basin. The policy initiative will be elaborated on the basis of a comprehensive analysis of the water situation in five selected target regions that is scheduled in WP1 and WP2. These two work-packages lay the ground for the strategic analysis in the next working steps, comprising technical solutions for overcoming the water conflicts (WP3) and political concepts (WP4). WP5 will then compile the results of the previous steps in an innovative model for integrated water planning.

This approach of combining empirical target region data with the profound water management knowledge of the consortium will lead to the formulation of a comprehensive transboundary water policy initiative, an instrument useful for administrative and political decision makers on local, regional and national level all over the Eastern Mediterranean Basin.

Major objective of WP1 elaborated during the first project period was to provide a comprehensive picture of the water supply and discharge infrastructure in the target regions, the water prices and the related energy needs with special focus on the sectors of agriculture and tourism. Consequently, the criteria for the selection of the target regions have been:

- Agricultural activity has been traditionally intense and still is the most important economic basis of the inhabitants
- Cultural and climatic peculiarities are attracting vast tourist activities with strong development potentials in the near future
- A competition for water is either on going or expected soon between the vital sectors of agriculture and tourism.

### **The five representative regions are<sup>1</sup>:**

- a. The island of Naxos in Greece
- b. The Southern part of the Jordan Valley in Jordan (Dead Sea Area)
- c. The Jericho district in Palestine
- d. The Cap Bon region in Tunisia
- e. The Fethiye region in Turkey

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<sup>1</sup> These regions are referred to as target regions in the report.

WP1 which has taken place till 31 January 2002 was elaborated by

- *Agricultural University of Athens for the target region in Greece*
- *Royal Scientific Society and Consolidated Consultants for the target region in Jordan*
- *Palestinian Hydrology Group for the target region in the Palestine*
- *INGREF for the target region in Tunisia*
- *SEYAS international for the target region in Turkey.*

The co-ordination of this working process has been done by WIP, Germany, who defined and facilitated the work. RSS, Jordan has assisted in these objectives.

Every partner has prepared a report for his target region, which is to be found in the Appendix 6 to 10. WIP has reviewed these reports, discussed and harmonised the results and compiled the essence. The report was given the following structure:

Chapter 1: General presentation of the target regions with special emphasis on the climatic conditions

Chapter 2: Assessment of the supply infrastructure in every target region

Chapter 3: Analysis of the water prices and expenses for water supply

Chapter 4: Documentation of the individual water supply situation in every target region

Chapter 5: Assessment on the water related energy demand.

The report ends with a comprehensive summary. This summary is the basis for the on-going analysis of intersectorial water competition between the sectors of agriculture and tourism and for formulating concrete policy action in the later project work.

## Summary

The analysis of the water supply and discharge infrastructure in the five target regions is the basis for the on-going analysis of intersectorial water competition between the sectors of agriculture and tourism and for formulating concrete policy action in the later project work.

**All target regions reports on insufficient water supply in quantity and especially in quality. The current supply framework, which is primarily based on conventional sources, is overexploiting and deteriorating the natural resources. Particularly the drastically increased water demand in the dry season cannot be covered with the target regions' renewable water sources. The growing scarcity and the recent shift in taxation policy nowadays allow economically feasible exploitation of non-conventional sources. The large-scale implementation of water treatment and desalination sites is still hindered by lack of funding and expertise.**

The chapter related results are:

- a) All target regions contribute significantly to the **agricultural production** of their respective countries. At the same time their natural and historic peculiarities have stimulated vast **tourism** activities and contain the potential for strong future growth.
- b) The **climatic conditions** in the target regions with hot and dry summers and irregular precipitation in winter lay the ground for very scarce natural water resources, which are below the already low average water availability of the region.
- c) The **water supply infrastructure** of the target regions contain advanced implementations of water storage, conveyors and canals allowing efficient surface water exploitation. The region aquifers and springs are tapped with numerous dwellings. Water supply in certain cases is more expensive than large-scale water desalination and wastewater recycling because of its expensive infrastructure surface. The supply from non-conventional sources however is still marginal in all target regions. Current planning and conception work will bring a respective increase in the near future; full exploitation however is hindered by the lack of finances and expertise.
- d) All target regions report political **prices** for the public water supply, which have been increased dramatically in recent years. In most target regions progressive taxation methods are used in the different water sectors. Large consumers in most of the cases pay prices that reflect the real supply expenses. The highest public subsidies

- can be found in the irrigation sector for supporting their own products on the world market. The amounts of subsidies however strongly vary between the target regions.
- e) In spite of the enhanced deployment of modern irrigation techniques the overall water efficiency in the distribution systems is low. All target regions report **water losses** especially in rural areas. The lack of control systems hinders the efficient allocation of irrigation water.
  - f) The total **water supply per capita** in the target regions is below 1500 m<sup>3</sup> the general borderline for water scarcity. The target region data does not include the widely spread illegal dwellings used for irrigating water intense world market products like citrus or bananas. The threats from the insufficient water supply for the economic development and social prosperity of the target regions are underlined by the fact that only minor shares of the supply is of drinking water quality. The water supply quality is continuously decreasing due to pollution caused by insufficient discharge infrastructure. Moreover, the current overexploitation diminishes the total amount of fresh water resources and stimulates seawater intrusion into the aquifers.
  - g) The water supply components in most of the target regions show strong **seasonal variations** between dry and wet season. In the dry season the irrigation activities and the tourist accommodation, make necessary a drastic increase of water supply, which stands in contrast to the limited water resources in this time of the year. The target regions strive to bridge the summer gap with enlarging storage and conveyor capacities. The major share of the additional water need however is still taken from the groundwater resources causing overexploitation and deterioration there. Some target countries use shares of their treated wastewater for augmenting the water supply in summer.
  - h) The ground water supply and the long distance water transport are **energy** intense. In spite of the very favourable conditions for wind and solar energy in the target regions, the water related energy demand is completely covered by fossil fuels. Particularly the comprehensive water storage facilities such as dams are not used for electric energy generation. The prospected plans for water supply from brackish and wastewater will require a radical increase of the energy supply in the water sector. For these additional capacities the implementation of water or wind power is under consideration.

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