

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



Results of WP2

WATER USE AND COMPETITION BETWEEN THE
AGRICULTURAL AND TOURIST SECTORS

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APPENDICES 1 – 5: TARGET REGION REPORTS

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 are 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 which is useful for administrative and political decision makers on local, regional and national level all over the Eastern Mediterranean Basin.

Major objective of WP2 was to provide a comprehensive picture of the water consumption in the agricultural and in the tourist sector in selected target regions. WP2 also examine the competition for water between these two sectors.

WP2 was detailed 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 process has been done by WIP, Germany, who defined and facilitated the work. AUA, Greece has assisted in these objectives. The research work was finalised by 31.1.2002

Every partner has prepared a report for his target region, which is marked as Appendices 1 to 5. WIP has reviewed these reports, discussed and harmonised the results and compiled the essence.

The report has the following structure:

- Chapter 1: Assessment of the water use in the agricultural sector in every target region
- Chapter 2: Assessment of the water use in the tourist sector in every target region
- Chapter 3: Water competition between agriculture and tourism in the target regions

The report ends with a comprehensive conclusion. This conclusion is an important milestone for formulating concrete policy in the later phase of the project.

Complementary information for the subjects of this report can be found in Report 1 of the project "Medwater Policy", namely

- On the cultural, geographic and climate peculiarities of the target regions,
- On the water infrastructure in the target regions,
- On water prices and wastewater tariffs.

The five representative regions are:

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

Conclusions

The analysis for water competition between the vital economic sectors of agriculture and tourism is the basic tool for the research work to be elaborated in the later project phases. WP 3 uses the data collected in WP 1 and WP 2 for scrutinising the technical options of water treatment and water purification and laying the ground for the formulation of the integrated water module in WP 5.

The research in the five target regions has shown severe water competition between agricultural and tourist activities. Both sectors have their consumption peaks in the summer months. In this period many crops are having their highest water demand and at the same time most tourists are accommodated. The limited natural resources in the dry summer months only allow an insufficient water supply for both sectors. This insufficiency leads to overexploitation of the natural resource and endangers development and prosperity in both agriculture and tourist sector. The agricultural sector suffers from the reallocation of their water sources to tourist projects. The tourist development has to cope with the declining qualities of water resources that require expensive water transport and treatment infrastructure. Finally, the on-going overexploitation is endangering regional eco-systems like the Dead Sea which prosperity is of vital importance for both sectors.

Detailed results of the research in WP 2 are:

- a) In all target regions agriculture is the predominant economic factor. Most of the agricultural crops – particularly profitable world market products - depend on **water intense irrigation techniques**. The strong majority of the irrigation water - in Jordan up to 75 % - is used for banana and citrus plantations.
- b) Thanks to the reform efforts of the recent years, **water efficient irrigation technologies** like drip and furrow irrigation are predominant in agriculture in many target regions. A significant rise of water effectiveness however is hindered by the bad condition of the distribution systems. Leakage and lack of storage and control devices result in large losses in the water distribution, which go up to 50 %.
- c) All target regions report **rapid growth in the tourist sector** in the recent years. Previews predict that this development will continue in future with a slight decline in the yearly growth. The **water intensity in the tourist sector** varies strongly between the target regions. Tourist sites with vast green land for leisure activities like golf courses consume up to 800 litres per tourist overnight while accommoda-

tion in the urban settlements consume 150 – 200 litres. To this water consumption the losses in the distribution networks are to be added which go up to 30 %. Water saving technologies and wastewater reuse have strong development potentials.

- d) Both agriculture and tourism show significant peaks in their **water consumption patterns** during the year. The agricultural irrigation in all target regions begins in April and hits first peak in July followed by a second peak in September. All target regions report the highest water demand in the same period for the tourist sector, since this is the time with the highest tourist accommodation and need for green land irrigation. Only in the Dead Sea Area significant winter tourism is to be found.
- e) **Severe water competition** has been analysed between agriculture and tourism that is hindering the economic development in both sectors. This competition is based on the sharp water scarcity in the region. The demand peaks of both tourism and agriculture are found in the summer months and so correspond unfavourably with the reduced supply of natural water at this time of the year. So in spite of the comparatively small share of tourist projects in the overall water consume, irrigation and tourist projects often compete for the same insufficient water sources or are depending on the unsteady supply of the public distribution networks.
- f) The water conflict between tourism and agriculture is to be seen in the **broader context** of tourist projects occupying fertile land and distracting the labour force from the agricultural sector. Furthermore, tourist development enforces cultural changes in the agricultural rural societies.
- g) In all target regions the **intentions** of the political decision makers become visible to solve the competition in favour of the tourist development on cost of agricultural water contingents, since tourism is seen as a more effective tool to ensure the economic prosperity of the region. These intentions can be proved in various examples in the water allocation schemes:
- Water sources, which so far have been used to irrigation purposes, are **allocated to tourist projects**. This is particularly the case for new storage reservoirs, which have been constructed to overcome water shortages in agriculture. For remote tourist sites water sources are exploited which so far have served the rural water supply.
 - **Water irrigation prices** have been raised significantly. This is endangering the economic profitability of agricultural production.

- **Governmental guidelines** force farmers to grow water efficient and less profitable crops.
- h) These measures together with the growing water scarcity are accompanied by **side effects** such as unauthorised wells and illegal grid connections of farming entities and farmers who grow profitable and water intense products against the governmental guidelines.
- i) The vast water contingents of agricultural irrigation at the same time are **a severe threat for the developments of the tourist sector** in the region. The overexploitation of natural resources brings with it a decline of water supply both in quality and quantity that forces the tourist sites to invest in expensive desalination and purification technologies. Furthermore, the overuse endangers regional ecosystems like the Dead Sea, which are very important for the tourist attractiveness of the region.

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