

MedWater Policy

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

Adaptation of Policy Modules to the MEDWATER Target Regions

Case Study Jericho District

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Introduction

Each MedWater target region has a particular profile and is facing individual problems. In consequence the water conflict in each region has a different character and therefore requires an individual sustainable water policy initiative. Consequently, the elaborated policy modules of the Transboundary Water Policy Initiative are to be adapted to the specific conditions of each target region. In an exemplary way water policy initiatives are formulated for each of the MedWater target regions which are:

- a) Cap Bon region in Tunisia
- b) Dead Sea Area in Jordan
- c) Fethiye Region in Turkey
- d) Jericho District in Palestine**
- e) Naxos Island in Greece

Policy Targets for Sustainable Water Supply for the Jericho District

Every water policy initiative aims to generate a strong conflict solving potential between the vital economic sectors of agriculture and tourism. **Policy targets** are defined which promise a very efficient ratio between efforts and effects. The definition of policy targets is based on a careful analysis of the current water situation in the target region and the respective technical and socio-economic reform potential. Based on this analysis the most promising **policy modules** are selected which are necessary for achieving the reform targets. With this methodology three highly important policy targets for sustainable water supply for Jericho District in Palestine have been developed. The policy targets and the appropriate policy modules are summarized in the following table:

Policy Module	More Efficient Water Supply Schemes	Improvement of Sewage and Sanitary Level	Improvement of General Living Quality
Legislative Framework	Environmentally Sound Inland Brackish Water Desalination	Legislation on Waste Water Recycling for Irrigation Purposes	
Water Pricing Scheme		Direct Governmental Subventions	
Institutional Framework	Centralised administration for water supply coordination		Creation of an Effective Administration
	Well Designed Stakeholder and Private Sector Participation		
Water Infrastructure	Improvement of Water Supply Infrastructures	Waste Water Treatment for Larger Villages and Towns	Disaster Prevention Infrastructure
Mobilising of Financial Resources		Co-operation with Donor and International Development Organisations	Poverty Eradication Programs with Development Organizations
			Creation of Favorable Conditions for Private Investment

Public Actions and Capacity Building	Training of Decision Makers	Enhanced R&D Efforts	
Interregional co-operation	Just Agreements on Fresh Water Allocation		Suitable Framework Conditions for International Trade

Policy Target “More Efficient Water Supply Schemes”

Situation in the Jericho Region

The district of Jericho is one of the world’s regions with the biggest water stress. The quickly expanding population is confronted with a very arid climate. How critical the situation will become soon can be seen in the following table¹:

Type of water use	Water Use in Million Cubic Meter		
	2000	2010	2020
Domestic	2,25	4,13	5,6
Agriculture	34,6	45,3	67
Industrial	0,3	0,6	1
Total	37,15	50	73,6

The political instability and economic crises makes it very difficult to solve the pressing water problems. In this respect the current inefficiency of the water supply infrastructure is very painful and counterbalances the ample efforts of the water consumers to use the scarce water resources with high efficiency. In the agricultural sector for example nearly all farmers are using the highly effective drip irrigation, while the irrigation water distribution system is based on open channels with high losses from evaporation and percolation. Thus, it is a main political target to enhance the efficiency in the water supply structures.

Technical Options for More Efficient Water Supply

There are ample possibilities to enhance the efficiency for water supply. In the distribution systems the open canals should be covered. Plastic lining will prevent percolation. Moreover, the regions brackish water sources should be incorporated in the water supply schemes.

Policy Modules Supporting this Policy Task

Policy Module: “Environmentally Sound Inland Brackish Water Desalination”

A significant share of the regions water resources is brackish water. However, the size and quality of the brackish portion needs further investigation. In the future this percentage is expected to increase due to seawater intrusion. The quickly expanding water prices and the insufficiency of governmental water supply structure has brought new private water supply services. Private entrepreneurs are exploiting brackish water resources of the region by small scale desalination units. This new business helps to ease the population’s water supply situation. However, this new phenomenon also creates very harmful effects. Careless drilling into groundwater tables holds the danger of chemical and organic pollution of water sources. Moreover, desalination brine often is discharged improperly which causes additional deterioration of soil and groundwater.

Policy Module: “Centralised Administration for Water Supply Co-ordination”

The target region research has brought a very heterogeneous picture of the water supply: The quality and quantity of water supply, the tariffs and supply structure vary significantly.

¹ MedWater Report 2, p. 31.

This wide spectrum is able to flexibly respond to local peculiarities and needs. However, it requires a strong national agency that monitors and facilitates all domestic activities. Such a body does not exist so far. Therefore, the creation of a Palestinian Water Authority, responsible for the regulation of the sector and the co-ordination of bodies working in the water supply management, is an important policy tool for the improvement of the water supply efficiency.

Policy Module: “Well Designed Stakeholder and Private Sector Participation”

Officially all water supply is public domain. The weakness of public administration and the pressing water problems however have created a wide spectrum of private activities that are often based on old water supply traditions. In the rural area there are historic water use rights for all the land surrounding private springs. It therefore is an important policy module to integrate the active civil society directly into the governmental water supply schemes. They should have a say in the municipal water supply utilities and in the national co-ordination authority.

Policy Module: “Improvement of Water Supply Infrastructure”

The status of the distribution systems are very heterogeneous: Some springs have distribution systems of high efficiency, while others show a very poor status and in cases distribution infrastructure is missing completely. In all the target regions the main irrigation canals are open and therefore cause high losses due to evaporation and percolation. The entire supply infrastructure is public domain. The networks are owned either by municipalities or by semi public water supply utilities. The municipalities are the main actors in the target region. Therefore, the initiative to improve the water supply infrastructure has to be taken by them.

Policy Module: “Training of Decision Makers”

A broad improvement of water supply efficiency asks for a sound training of all decision makers involved into the water supply schemes. Political leaders, as well as administration or staff of private services are to be informed about the improvements necessary and about the possibilities they have. Specific training has to be provided to all the institutions holding responsibilities in this issue.

Policy Module: “Just Agreement on Freshwater Allocation”

The Jordan River is the most important surface water source in the region. Upstream water take-outs and the deterioration of the water quality by untreated wastewater discharge endangers the living basis of Jericho district and destroys the local ecosystems as in the case of the Dead Sea. Therefore, additional international agreements are required for allocating the Jordan river with better recognition of all residents of water basin and the requirements of the regional ecosystems.

Policy Target “Improvement of Sewage Systems”

Situation in the Jericho Region

The unsustainable water infrastructure has led to a dramatic deterioration of the remaining ground- and surface water resources. One major reason for the pollution is the insufficient sewage and wastewater treatment installation. The residential sector is only equipped with poorly constructed cesspits, septic tanks and percolation pits. All industrial and food processing plants discharge their wastewater without any treatment facilities. Finally, brackish water desalination sites do not have proper discharge facilities. This deficit is not only problematic because of pollution; it also hinders recycling of the wastewater, particularly for irrigation purposes. The construction of additional sewage systems and wastewater treatment facilities are therefore a major political task for the region.

Technical Options for Improvement of Sewage Systems

Mature and cost efficient sewage systems are under operation in many arid regions of the world. The most suitable technologies for the treatment itself are constructed wetlands and anaerobe digestions, which both function very well with the hot temperatures of Palestine. Their purification effect is limited, but can be sufficient for irrigation purposes, if combined with wastewater management systems such as the separation of so called "blackwater" and the careful separation of heavy chemicals.

The installation of this important infrastructure can be supported by the following policy modules:

Policy Modules Supporting the Policy Task

Policy Module: "Legislation on Waste Water Treatment for Irrigation Purposes"

Due to the fast population growth the region faces strong actions for new housing constructions. It is very important that these are equipped with environmentally sound sewage networks. These should in turn be connected to irrigation schemes. It has to be evaluated, if the installation of this important infrastructure can be enforced by legislation that is connected to the administrative permission for a new construction.

Policy Module: "Direct Governmental Subventions"

The small economic strength in the Palestine will only allow the installation of environmental sound sewage systems in the domestic sector when connected to significant public support. Programs for cheap small-scale loans and subsidies have to be set-up and governed in a transparent and effective way. The financial sources for these programs should be mobilised in co-operation with development institutions like the World Bank or the European Union, which have strong interests in the fragile regions of the Middle East.

Policy Module: "Creation of Waste Water Treatment Facilities for Larger Villages and Towns"

There is no waste water treatment system in the target region. Particularly in Jericho and the neighboring towns the effluents from domestic, tourist and industrial sector are very contaminated and urgently need technical treatment before being discharged. Prerequisite is a comprehensive and well kept sewage system that transports the effluents to a centralized wastewater treatment plant. These wastewater treatment facilities have to be constructed and operated by the public water supply authorities. Options for public-private partnership should be carefully analysed.

Policy Module: "Co-operation with Donor and International Development Organisations"

The financial sources of the regional administration are very limited and requested for various social and political tasks. Therefore, the financial needs for a significant improvement of the water supply infrastructure can only be accomplished in close co-operation with the strong development organizations like the EBRD or the World Bank. Furthermore, exist ample possibilities for bilateral co-operation with industrialized countries. The initiation of these co-operations can base on the vivid interest existing in the international community for both issues "the water supply" and the "Middle East". Well designed program proposals have therefore very good chances to find support.

Policy Module: "Enhanced R&D Efforts"

Research on water supply issues is done all over the world. It is very important to build-up and strengthen own R&D capacities in the target region and link them to the international research community. Own institutes will be able to adopt the interna-

tional research knowledge to particular necessities of the region and facilitate the transfer of knowledge to domestic stakeholders in agriculture and tourism. Important fields for domestic research are the low-cost options for organic wastewater treatment devices and the effects of low-quality irrigation waters on agricultural yield and health issues. Further investigation should be done on energy effects of wastewater treatment (energy requirements and energy generation).

Policy Target: "Improvement of General Living Quality"

Situation in the Region

The hostile climate conditions and the political catastrophes of the last decades have had very negative impacts on the living standard in the target region. In spite of strong international support, the Palestinian West Bank is still having one of the lowest living standards of the Middle East. The rapid population growth and the deterioration of the natural resources raises fears that the living standard will additionally even more decline in the near future. Recent scientific and political debate has brought the understanding that the water crisis is not only a big obstacle for the economic development of a region. Almost more important is the fact that the region's poverty is hindering the implementation of sustainable water supply structures. Therefore, the major political task must be to raise the general living standard in the region as a prerequisite for enhanced water supply structures.

Important policy modules for improving the living standard in Fethiye Region are:

Policy Options for the Improvement of General Living Quality

Policy Module: "Creation of an Effective Administration"

The Palestinian target region is suffering from an insufficient administration. Among the various reform actions are a redesign of responsibilities, a better knowledge basis for the decision makers and enhanced financial and administrative resources very important. The singular governmental steps for closing these large gaps will not be possible in short term perspective. Therefore, the administrative reform should base on the existing situation of the private sector handling important fields of water supply themselves. All administrative redesign therefore should target to strengthen and regulate this "self-organisation" and integrate elements of "stakeholder participation" and "public - private partnership".

Policy Module "Disaster Prevention Infrastructure"

The Jericho region has no comprehensive water storage system for compensating the instability of natural precipitation which traditionally has been scarce and will even decrease in future due to climate change. To prevent hardship of the population it therefore is very important to elaborate a disaster-prevention plan for coping with long droughts as well as with floods. The infrastructure that is foreseen in this plan – storage and conveyor systems – has to be implemented by governmental bodies.

Policy Module: "Poverty Eradication Programs with Development Organisations"

Unemployment and insufficient infrastructure are major contributors to the current poverty gap of the Palestinian target region. Together with development institutions poverty eradication plans have to be elaborated and implemented which tackle these problems and bring new infrastructure, additional employment and thus sufficient economic yield into the region. An important focus in these poverty eradication plans should lie on the tourism projects around the cultural heritage and geographical highlights of the region. Furthermore, emphasis has to be put on education of the residents, both for general qualifications like English or informatics but also for the eco-

conomic sectors that carry the hope for progress like for example cultural orientated tourism.

Policy Module: "Creation of Favorable Conditions for Private Investments"

It was seen that the administration of the Palestinian West Bank is not strong enough for carrying out all necessary infrastructure projects. Also the public money out of the development funds can only stimulate projects with a catalyst function. A real change can only be accomplished by promoting private investment. There are comparatively good prerequisites for direct foreign investment due to the large communities of Palestinian emigrants in industrialized countries like USA or EU. These groups as well as other international investors will initiate project only when they can be secure that their financial interests are recognized for the entire project lifecycle. This includes transparent administrative processes as well as a strong and independent jurisdiction. The long and difficult path towards creating favorable conditions for private investors should be gone together with the supporting development agencies like IMF.

Policy Module: "Suitable Framework Conditions for International Trade"

The international terms of trade have a strong impact on the economic success of developing regions. Particularly, the trade barriers of EU and USA against agricultural and manufacturer products is often weakening the positive effects of all development aid. Therefore, the Palestinian government has to unite its forces with other developing and arid regions of the world such as Tunis or Morocco for reaching terms of trade in the GATT and WTO negotiations which support the two: Their general economic development and their strive for the creation of sustainable water supply schemes.