

WATER DEMAND MANAGEMENT:

A NO-REGRETS ADAPTIVE STRATEGY TO CLIMATE CHANGE IN THE MIDDLE EAST AND NORTH AFRICA REGION

THE CHALLENGE

In the Middle East and North Africa region, water supply options (e.g. building more and larger dams, digging deeper wells, expanding irrigated areas) is no longer possible. There is simply **no more fresh water to tap**, the costs are too high and ecosystem services are threatened by water depletion and degradation.



LIKELY IMPACTS OF CLIMATE CHANGE ON WATER RESOURCES

Degradation in water quality and quantity is further expected with population increase and economic growth. **Aggravating the situation is climate change.**

This table summarizes the expected impacts of climate change on water resources in a few countries:

Socioeconomic Impact	Iraq	Jordan	West Bank and Gaza	Syria	Lebanon
Increased industrial & domestic water demand	Medium	Insignificant	Insignificant	Medium	Medium
Increased agricultural water demand	High	Insignificant	High	High	High
Water resource equity decline	High	High	High	High	Medium
Food damage	High	Insignificant	Insignificant	Insignificant	Medium
Water quality damage	High	High	High	High	High
Hydropower loss	Insignificant	Insignificant	Insignificant	Insignificant	Medium
Ecosystem damage	Medium	Insignificant	Medium	Medium	High
GDP reduction in %	3-6	1-2	2-5	4-7	2-5

Source: The World Bank (2007) Making the Most of Scarcity: Accountability for Better Water Management in the Middle East and North Africa (p.75).

15 years of policy relevant research supported by IDRC, its partners and others is providing the evidence that **Water Demand Management (WDM)** promotes the efficient, sustainable and equitable use of water.

WDM: A TOP-PRIORITY- NO-REGRETS STRATEGY

WDM should be a top-priority- no-regrets strategy, especially in the current context of climate change uncertainties and should be a strong driving force behind all water management policy reforms in MENA.

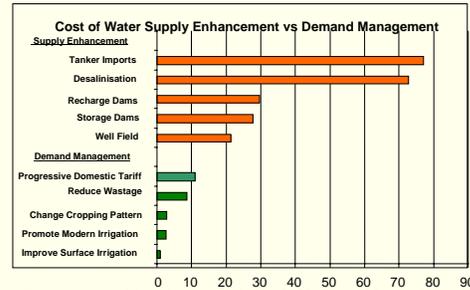
Water Demand Management is about making the most of the available water through:

- Reducing the quantity or quality of water required to accomplish a specific task
- Adjusting the nature of the task or the way it is undertaken so that it can be accomplished with less water or with less quality water;
- Reducing the loss in quantity or quality of water as it flows from source through use to disposal;
- Shifting the timing of use from peak to off-peak periods;
- Increasing the ability of the water system to continue to serve society during times when water is in short supply;
- Ensuring equity in costs associated to, and benefits resulting from, WDM adoption (David Brooks, 2004)

Beyond economic and technological tools such as water valuation, leakage reduction and non-conventional water use,

WDM is about physical freshwater savings that contribute to human health, food security, healthy environments and economic growth.

WDM is a cheaper and a more sustainable option than water supply options.

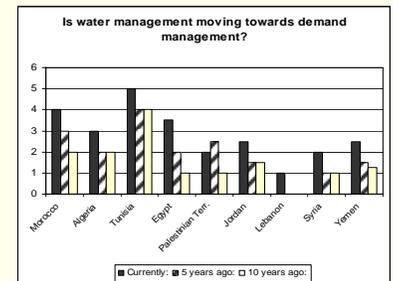


Source: computed from data provided from the Ministry of Municipalities, Environment and Water Resources, Sultanate of Oman (Note: 1\$US = ...)



Most WDM tools, approaches and practices can be adapted to different local water management contexts. In all cases, these are adaptive strategies that are both responsive and preparative for risks associated with climate change.

WDM is currently gaining ground in small but significant steps in MENA. A qualitative assessment over the last ten years reflected a steady increase in the adoption of WDM in MENA, but much more needs to be done to push forward this approach, especially in light of climate change impacts on water resources in the region.



Source: (Schwerpunktanalyse Wasser / Umwelt für die Region Nah-Ost / Nord-Afrika, Draft February 2006). 'Regional Focal Point Analysis Water (GTZ-KfW)

SOME REMAINING KNOWLEDGE GAPS

More trans-disciplinary research is needed on WDM as a response to scarcity and in preparation to the challenges posed by climate change uncertainties. These may focus on:

- Understanding the costs/benefits of inter-sectoral water allocation.
- Understanding what constitutes an effective governance platform to promote local management.
- Develop and customize indicators of WDM progress and policy benchmarking.
- Using principles of social equity in designing mechanisms for water valuation
- The political economy of WDM which involves a systematic analysis the drivers of change in water policy making and explores power.



