



IDRC: P. Bennett

Making the most of minimal water

The IDRC-supported *WaDI mena* project is helping countries in the parched MENA region share lessons on how demand management can avert a looming water crisis.

“Water conservation requires behavioural change at the societal level, which in turn needs careful, long-term plans of action.”

Naser I. Faruqui, in *Water Management in Islam*

The Development Challenge: Overcoming an acute and worsening water shortage

Low annual rainfalls and a low per capita volume of renewable water resources make the Middle East and North Africa (MENA) region the most water-scarce area in the world. Experts say that countries with less than an annual 500 cubic metres of water per person have reached the “water barrier” — a critical line below which it becomes difficult to survive. Several MENA countries have already fallen below the water barrier, while others hover close to the line.

Population growth and development trends in the area make it likely that this dire situation will worsen. High population growth rates, increased urban migration, and the high proportion of youth within national populations all point to an explosion in the demand for water. Economic players — such as industry, a growing tourism sector, and irrigation-dependent agriculture — will also contribute to rising pressure on water resources. When this escalating demand meets a fixed and meager water supply, which becomes further depleted with increased use, it will almost certainly dampen the prospects for economic development and increase poverty in the region.

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The Idea: Water saved equals water increased

There is a growing sense that dealing with the region's water crisis must involve more than increasing water supply through megaprojects such as seawater desalination. There is also a pressing need for water demand management (WDM) programs to ensure that less water is used with greater impact. Preventing water waste is, in effect, a cheaper and sensible way of increasing the available water supply.

WDM programs take many forms. It often involves using poorer quality water for particular uses, or changing the timing of water use to avoid losses. For example, treated “greywater,” (lower-quality water from sinks and bathtubs), may be used to water plants and irrigate crops, thus reducing demand for freshwater. Altering water use schedules — so that supplemental irrigation is done at night when there is less evaporation — will also save water. Using new, smart, and appropriate technologies such as drip irrigation and low-flow faucets and toilets is another way of reducing water use.

Reforming the pricing and valuation of water delivery is another aspect of water demand management. Raising water tariffs to bring them closer to the actual cost of delivering water may bring several benefits — for example, higher fees may ensure consumers rationalize their water consumption patterns. Increasing tariffs may also generate more revenue to fund improvements of the water system. Maintaining infrastructure, such as old and leaky water pipes, may have a dramatic impact on increasing the water supply.



The Middle East and North Africa are the most water-scarce areas in the world.

There are some difficulties for MENA countries regarding water pricing and tariffs. Some believe that paying for water disregards a religious edict that decrees water as a divine gift. It is important to differentiate between paying for water itself, and paying for the delivery of water services.

The Research: Networking for broader impact

Canada's International Development Research Centre (IDRC) has been promoting WDM as a centerpiece of water policy in the MENA region since the early 1990s, partly through funding a series of forums that have attracted the participation of regional water experts, directors-general of government ministries, and government ministers. There's a growing awareness of WDM in the MENA region, but this has not been occurring widely enough, or strongly enough to avert the looming water crisis.

The Water Demand Initiative, or *WaDImena*, is a five-year (2004–2009) intra-regional, multidonor program designed to address this problem. Coordinated and funded by IDRC, with financial support from the Canadian International Development Agency and the International Fund for Agricultural Development, *WaDImena's* goals are to transfer knowledge and communicate comparative experiences between countries, to influence policy processes with targeted research, and to

build capacity to strengthen and expand WDM programs in the region. Members include Algeria, Morocco, Tunisia, Egypt, Jordan, Lebanon, West Bank and Gaza, Syria, and Yemen.

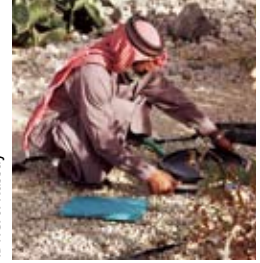
The transfer of knowledge and lessons from previous successes needs to take into account the different climatic, socioeconomic, political, and religious contexts of each country. The aim is to give governments, research institutes, and nongovernmental organizations (NGOs) within *WaDImena's* nine members the tools they need to create and implement WDM programs that fit within context-specific situations.

Capacity-development efforts are geared toward experience exchange, knowledge networking, and regional missions and study tours. *WaDImena* also provides opportunities for young professionals to attend conferences, training and workshop events, and to prepare papers on WDM topics.

On the Ground: Learning from experience

WaDImena builds on previous IDRC research projects in WDM and the lessons learned from four regional forums, conducted between 2001 and 2003. *WaDImena* aims to translate awareness into action with tangible impacts and policy level results.

Applied research in *WaDImena* takes a multistakeholder approach that includes participation by members of government, research organizations, and civil society. Research grants, in eight of the *WaDImena* participating countries, demonstrate water demand management strategies or tools, supported by a cost-benefit analysis and integrated with traditional knowledge. Produced at the community level, this research is intended to be scaled up to the policy level, with the results shared regionally. *WaDImena*



Treated greywater may be used to water plants and irrigate crops.

also incorporates a gender strategy to promote women's participation in water-management discussions, and decision-making processes.

Regional exchanges have, for example, offered lessons to Syrian partners on how Water Users Associations (WUAs) have been used to make water allocation more equitable, dissipate communal tensions over water use, and help manage canal systems. These facilitated missions have communicated lessons from the Egyptian experience with wastewater use, which included different scenarios such as the use of reclaimed water from natural and mechanical treatment plants, as well as the use of mixed water (reclaimed water combined with freshwater). Another mission demonstrated to the Syrians how WUAs in Tunisia have distributed irrigation and drinking water, levied water charges, and helped promote water conservation.

The Impact: Transferring knowledge and building capacity

WaDI*mena* is building a research and knowledge base to improve the practical application of WDM strategies in specific rural contexts, with a special focus on women and the rural poor. It is also supporting skills development, building individual and institutional capacity, promoting networking and partnerships, and encouraging collaborative arrangements between national, regional, and international water governance programs. Resources available on WaDI*mena's* Web site (www.idrc.ca/WaDImena) include a trilingual (English, French, and Arabic) glossary of more than 400 water demand management terms and a virtual library that includes highlights of lessons learned from previous activities.

In late 2005 and early 2006, WaDI*mena* organized a series of Developing Research Capacity workshops for the eight research teams. These workshops aimed to further strengthen applied research proposals submitted to WaDI*mena* on key themes of social and gender analysis, participatory research, monitoring and evaluation, and dissemination of research results. The workshops assisted the teams in designing better quality research projects that will ultimately bring about improvements in water-use efficiency, equity, and sustainability without negatively affecting the poor or marginalized groups.

Future Challenges: Understanding gender and traditional knowledge approaches

One area for future work in WaDI*mena* is to gain a greater knowledge of gender and water issues and to adopt more gender-appropriate research methodologies and analyses in water resources management. Another area for intervention is a more thorough understanding of traditional and indigenous knowledge that women and men have in water-scarce situations, and how this knowledge can be adapted to modern times.

Canada's International Development Research Centre (IDRC) is one of the world's leading institutions in the generation and application of new knowledge to meet the challenges of international development. For more than 35 years, IDRC has worked in close collaboration with researchers from the developing world in their search for the means to build healthier, more equitable, and more prosperous societies.

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