



**WaDImena:
Thinking **Blue**
Today for
A **Greener** Tomorrow**

WaDImena at a Glance

WaDImena	
What?	Regional Water Demand Initiative for the Middle East and North Africa (WaDImena)
Who?	The International Development Research Centre (IDRC) The Canadian International Development Agency (CIDA) The International Fund for Agricultural Development (IFAD) together with research partners, policy makers, civil society and water users in the Middle East and North Africa Region.
When?	2004-2009
Objective	The overall goal of WaDImena is to facilitate the adoption and implementation of water demand management (WDM) strategies, policies and tools in the MENA region.
Where?	Algeria, Morocco, Tunisia, Egypt, Palestine, Lebanon, Syria, Jordan, Yemen, Kuwait, Bahrain, Oman, Qatar, Saudi Arabia, United Arab Emirates (UAE).
Target Beneficiaries	Policy makers, researchers, private sector and civil society organizations working on water management.



WaDImena

Putting Science into Practice



The research team in Algeria studies water quality before treatment for crop irrigation.

The Regional Water Demand Initiative for the Middle East and North Africa (MENA) -WaDImena- is a five-year project that addresses the challenge of water scarcity in this region. The initiative, launched in 2004, is a partnership between the International Fund for Agricultural Development (IFAD), the Canadian International Development Agency (CIDA), the International Development Research Centre (IDRC) and a network of national and regional research institutions. It builds on IDRC's previous efforts to promote the efficient, equitable and sustainable use of water in the MENA region since the early 1990s.

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The overall goal of WaDImena is to promote effective water governance in fifteen MENA countries: Algeria, Egypt, Morocco, Tunisia, Jordan, Lebanon, Palestine, Syria, Oman, Qatar, Kuwait, Bahrain, UAE, Saudi Arabia and Yemen. This is through facilitating the adoption and implementation of water demand management (WDM) strategies, policies and tools.

The initiative aims:

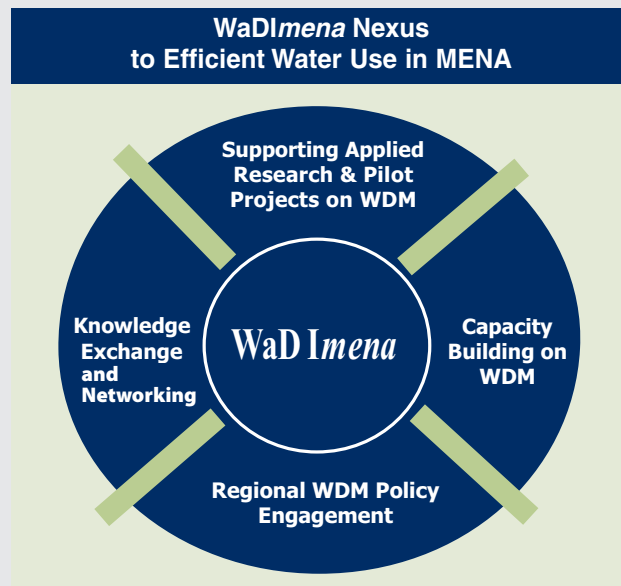
- To deepen the knowledge of the challenges and opportunities of WDM from a multisectoral and multidisciplinary perspective.
- To develop the capacities of policy and research communities, institutions, water practitioners, water users and civil society.
- To provide an inclusive forum to foster dialogue, strengthen partnerships, share experiences and enhance networking.
- To influence policy processes and to strengthen and complement national, regional and global initiatives in water management and poverty reduction.

“WaDImena,” or the Regional Water Demand Initiative for the Middle East and North Africa (MENA), is inspired by the Arabic word “wadi” which means “stream” or “riverbed.” The acronym captures the essence of the project: helping MENA countries have a greener tomorrow, by thinking of efficient, equitable and sustainable ways to manage their water resources.

WaDI *mena* was designed through a participatory process involving key MENA stakeholders, including the policy community, researchers, NGOs and international agencies.

It follows on Four Water Demand Management forums attended by over 500 policy makers from governments in eleven countries which provided

the comprehensive grounding for future work needed in the area of WDM. The consultations affirmed that while WDM is indeed progressing at different levels within MENA countries, the depth and scope of progress are not enough. This is where WaDI *mena* fills the gaps and widens the scope by offering new and practical perspectives to address water scarcity.



WaDI *mena* aims:

- To deepen the understanding WDM benefits and challenges through scientific research and knowledge networking;
- To develop the capacities of policy and research communities, institutions, water practitioners, water users and NGOs;
- To provide an inclusive forum to foster dialogue, strengthen partnerships and share experiences;
- To influence policy processes; and to strengthen and complement national, regional and global initiatives in water management and poverty reduction.



Overcoming the Challenge of Water Scarcity

Managing the Demand Side



Without innovative ways to manage water demand, MENA countries will suffer severe water scarcity.

The MENA countries are dominated by vast, arid and semi-arid environments with the overall water availability rated lowest in the world. Pressures on the limited water resources in this region are enormous. Water demand is increasing, due to rising populations, economic growth, urbanization, industrialization, climate change and the expansion of agricultural land. This is particularly true in the agricultural sector which, alone, consumes over 75% of the water in the region.

Unless different approaches to the use and management of water emerge, particularly in the agricultural sector, the MENA region risks severe water shortages that will impose serious constraints on people's livelihoods, and affect their economic and social progress.

WaDImena promotes a complementary approach: managing the demand side of water. Together with its partners, WaDImena provides the scientific evidence to show that by improving water demand management, MENA countries have a better chance for addressing, not only water scarcity, but also poverty and social inequity.

The region of the Middle East and North Africa (MENA) has the lowest volume of renewable water resources in the world. Today, the per capita renewable water resources in the region are 1,100 m³ per year, compared to a global average of 8,900 m³. Projections indicate that this volume will even drop by half reaching 550 m³ per person per year in 2050.

Fifteen out of twenty countries worldwide with the lowest internal renewable freshwater availability (below water stress threshold of 1000 m³) are in the MENA region.

A Multidisciplinary Approach to a Multifaceted Problem

To address the complex nature of water scarcity in MENA, WaDI *mena* adopts a multidisciplinary and multisectoral approach. Together with its partners, WaDI *mena* works on WDM strategies that are not only regional in scope, but relevant to local conditions.

The work of WaDI *mena* is directed by three guiding principles:

- **Adaptive learning**, whereby the implementation of research is iterative, flexible and integrated.
- **Inclusiveness**, whereby the effects on opportunities for the poor and marginalized groups are explored at all stages.
- **Participatory**, whereby stakeholders are consulted and involved at all stages.

Sprinkling irrigation is among the efficient ways to manage water resources.



What is Water Demand Management?

Water demand management (WDM) is any method -- whether technical, economic, institutional, financial or social -- that can accomplish one (or more) of the following:

- 1. Reduce the quantity or quality of water required to accomplish a specific task;*
- 2. Adjust the nature of the task or the way it is undertaken so that it can be accomplished with less water or with lower quality water;*
- 3. Reduce the loss in quantity or quality of water as it flows from source through use to disposal;*
- 4. Shift the timing of use from peak to off-peak periods;*
- 5. Increase the ability of the water system to continue to serve society during times when water is in short supply.*

Building Capacities in WDM

Empowering the Stakeholders

Building the capacities of researchers and policy makers is key to effective WDM. WaDImena, in collaboration with its partners, provides training and cross-learning opportunities to research institutions and senior government officials in order to better address water problems. WaDImena's capacity building efforts occur at three levels:

1. **Institutional capacity** is being built through the use of practical and state-of-the-art training materials, developed by WaDImena and delivered in short courses. These courses are designed to help senior managers in government and NGOs to appreciate the relevance of research in WDM, to use scientific evidence in the design and formulation of policy and to facilitate dialogue between researchers, on the one hand, and policy makers on the other.

2. **Individual capacity** development is occurring through cross learning activities within MENA countries. Eight bilateral exchange visits among researchers, policy makers and NGOs from Algeria, Tunisia, Morocco, Jordan, Palestine and Syria have been organized. Stakeholders, including farmers, share the learning on issues ranging from efficient irrigation systems, wastewater treatment, water and soil analysis to establishing and managing water users associations. Moreover, promising young researchers have received support to participate in key regional and global WDM events, including the World Water Forum in Mexico (March 2006).

3. The **capacity of research teams** is being enhanced through the provision of technical backstopping and tailored assistance to research teams on specific WDM components. Previously, capacity development workshops organized in French and English have encouraged researchers to conduct more holistic, rigorous and transformative research by sharing methodologies such as social and gender analysis, participatory approaches and providing monitoring and evaluation tools. As one participant put it "we acquired important [research] tools during our workshop that helped us better understand how to reach our [WDM research] goals."

The research capacity development efforts are, in turn, strengthening the institutional capacities in research management. Research institutions are able to perform proper sequencing and coordination of all research activities, better designate and manage their research teams and improve time and task management. Institutions capacity to collect, analyse and interpret data to scientific standards, as well as, present research results, is also enhanced.

"We acquired important [research] tools during our workshop that helped us better understand how to reach our [WDM research] goals," says one participant researcher.

Advancing WDM Research

Bringing New Knowledge in WDM



Analyzing treated wastewater to irrigate cereal crops in Khemisti, Algeria.

One of the principal objectives of WaDImena is to contribute to a better understanding of the benefits and challenges of WDM through supporting applied research activities and implementing field level pilot projects.

Eight applied research and pilot activity projects conducted by multidisciplinary teams from the research, policy and NGO communities are currently underway. These projects are seeking innovative ways in which WDM tools and strategies can be applied to improve the efficiency of water use in their specific contexts.

In *Ouled-Bessem*, *Algeria*, treated wastewater from a local treatment plant is being used for supplemental irrigation of cereal crops, increasing crop yields and

incomes. In Farafra Oasis, *Egypt*, traditional practices in managing groundwater are being documented and assessed to help local communities develop an integrated, participatory water management plan. In *Jordan*, treated greywater - or water collected from laundry tubs, sinks, and showers - from dorms at Mu'tah University is being reused for local agriculture. In *Tannoura village*, *Lebanon*, greywater treatment kits are being installed in 74 households to demonstrate the benefits and safety of irrigating crops with greywater. In the Governorate of *Zaghuan* in *Tunisia*, researchers are assessing the financial viability of water user associations, developing their capacity for better water management and contributing to formulating policies that encourage sustainable irrigation practices.

In *Tafilalet*, *Morocco*, reservoir-based drip irrigation—a system using saline water instead of fresh water—is being tested to validate equipment performance, uniformity of irrigation, effect on soil salinity, crop tolerance, and crop yields. In *Palestine*, researchers are studying the socio-economic factors affecting the use of treated water in *Al-Bireh*. In *Yemen*, researchers are testing refinements to the traditional practice of using mosque greywater in San'a to improve crop yields and conserve groundwater, with the goal of influencing national water policies.

In the Gulf countries of *Bahrain*, *Kuwait*, *Oman*, *Qatar*, *Saudi Arabia*, the *United Arab Emirates* and *Yemen*, WaDImena is promoting WDM practices based on socio-economic surveys carried out in each of these seven countries. The information will feed into a media campaign to encourage good practices in water use in response to water scarcity.

In addition to these country level projects, WaDImena recognizes that there are also important gaps in knowledge that are relevant and important to the MENA region as a whole. To address these gaps, WaDImena has commissioned several research papers on:

- The institutional challenges related to effective WDM.
- The gender dimension of WDM.
- Implications of WDM on poverty and equity issues.
- Assessing the benefits of WDM policies in MENA.
- Treated greywater reuse as a WDM technology: current status and prospects.

These papers are on the WaDImena website www.idrc.ca/wadimena.

WaDImena Research Partners

- *Desert Development Center, American University in Cairo (DDC/AUC), Egypt.*
- *Environmental Research Center, Royal Scientific Society (ERC/RSS), Jordan.*
- *Middle East Center for the Transfer of Appropriate Technology (MECTAT), Lebanon.*
- *Institute of Environmental and Water Studies (IEWS), Birzeit University, Palestine.*
- *Arab Organization for Agricultural Development (AOAD), Gulf countries.*
- *Ministry of Agriculture and Rural Development, Morocco.*
- *Water and Environment Center (WEC), Sana'a University, Yemen.*
- *National Institute for Agricultural Research (INRA), Algeria.*
- *National Center for Agricultural Studies (CNEA), Ministry of Agricultural and Hydraulic Resources, Tunisia.*

Farmers and researchers in Farafra Oasis, Egypt, assess groundwater management practices.



Sharing the Learning

WaDImena: A Hub for WDM Knowledge

WaDImena is acknowledged as a hub for water demand management knowledge in MENA. New WDM knowledge, research results and actions are shared timely and, as widely as, possible.

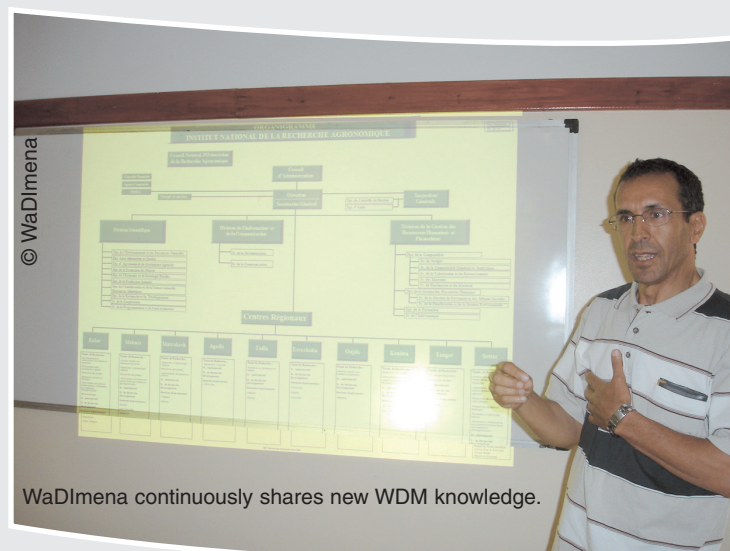
In addition to an interactive, updated and innovative website in Arabic, French and English, WaDImena has also developed a trilingual WDM glossary in the three languages. This too is frequently updated.

WaDImena also sends out to an increasingly growing community of policymakers and researchers a bi-weekly weekly communiqué that contains a compilation of recent water issues and research from different sources.

WaDImena is engaged in a number of partnerships, such as the Arab Water Council (AWC), the Centre for Environment and Development for the Arab Region and Europe (CEDARE), Center for Arab Women Training and Research (CAWTAR) and the Gender and Water Alliance (GWA). WaDImena and its partners work together to further advance practices, action and policies that contribute to both poverty alleviation and sustainable water management. During the 5th World Water Forum, in March 2009 in Istanbul, Turkey, WaDImena aims to develop a common and active agenda with all partners in this global forum, using this platform to share accomplishments and further propel action in WDM.

Reports for Dissemination

All WaDImena reports, and materials on WDM are available on the trilingual WaDImena website: www.idrc.ca/wadimena



Through WaDImena activities, stakeholders from MENA countries deepen their knowledge of water issues, engage in active learning apply new knowledge in their own contexts, and gain the capacity to practice WDM more effectively.

Influencing Policy

Addressing the Challenges of Change

WaDI *mena* and its partners face a considerable challenge: the need for greater political support for WDM. While progress is taking place, it is certainly not advancing at the rate it should be, given the increasing water scarcity in the region.

To that end, WaDI *mena* is currently countering the policy gap by focusing on identifying strategic approaches for policy influence. Political economy studies are exploring agents and processes that help or hinder decentralizing water management in Yemen. A similar study is exploring these questions on the issue of greywater and wastewater reuse in Jordan. The studies will help researchers answer why, how and by whom is water policy made. They will identify which groups and individuals have the power to institute change and, in so doing, provide the needed direction for WDM research-policy influence with sustainable impacts.

To further advance this approach, two regional workshops will help partners integrate political economy considerations in their work to maximize policy influence.

Future directions

As WaDI *mena* moves forward, it is becoming more and more evident that regional efforts now need to focus on three main priorities:

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WaDI *mena* partners participate in Mexico's World Water Forum, March 2006.

1. Furthering policy engagement in WDM approaches,
2. Synthesizing, documenting, communicating and disseminating the knowledge produced on and about WDM, in order to better capture the results of collective achievement and influence policy processes and,
3. Sustaining and enhancing the momentum by reflecting on ways to further advance the WDM agenda and place it on solid grounds to confront both remaining and newly emerging challenges.

WaDI *mena* aims to influence WDM policy so that severe water scarcities do not hamper development or increase poverty.

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