

USAID's IWRM Program in Morocco

THE purpose of this case study series is to familiarize Missions and Regional Bureaus with practical approaches to integrated water resources management (IWRM) that have proven to be successful in USAID field programs.

Acknowledgments

This report was produced by the USAID Water Team with information provided by Michele Zador, John Thomas, and Alan Hurdus of USAID. Photographs were taken by R. Choukr-Allah and F. Rachidi.

Keywords

Integrated water resources management; Morocco; river basin authorities; "Water" Strategic Objective

Introduction

One of the major development challenges facing Morocco is the sustainable management of its water resources. Already classified as water-poor, Morocco's rapid population growth, combined with increased urbanization and industrialization, will make water an ever-more contentious issue in the future unless a fundamentally new way of managing water is adopted. The lack of water is already a major development challenge for most rural communities. The UN estimates that 58 percent of the rural population lacked access to adequate sanitation in 2000, and 42 percent lacked access to potable drinking water. Experts warn that water pollution from agriculture, industry, and households is worsening, while strategies to combat the problem are only beginning to be developed. Overlaying the waterscape is the fact that two-thirds of the country's agricultural exports, a major economic sector, are produced by irrigated agriculture, which uses 92 percent of



Erosion in the Nakhla watershed was significantly reduced by planting olive tree seedlings on steep hillsides, such as those pictured above.

the nation's dwindling freshwater resources. Farmers, however, have been slow to adopt new techniques and equipment that economize on irrigation water. In the meantime, the country is getting drier, with the frequency and severity of droughts increasing dramatically since the 1980s. With current projections indicating a doubling in population over the next 30 years, massive decreases in per capita water availability are expected.

To prevent a water crisis that threatens the country's well-being, sweeping changes in the way water is managed are essential. Fortunately, the Government of Morocco has taken several steps to improve water management in recent years, including a major water reform program that decentralizes financial and planning authority for water resources to nine river basin agencies (RBAs), to be created incrementally.

Approach

USAID's assistance to the people of Morocco to confront their water challenge dates back to 1992, when the Mission launched the 6-year Tadraoud Resources Management Project, which primarily sought to increase the efficiency, economic yield, and environmental sustainability of water use in the Tadraoud Irrigation Perimeter. Since then, the Mission has embarked on several innovative activities to address the country's pressing water problems.

In 1995, USAID expanded its water activities, when it adopted its first standalone strategic objective to promote integrated water resources management (IWRM), SO2 Improved



Construction of Dokrarat wastewater treatment facility for tannery effluent: the chromium recycling plant.

Water Resources Management in the Agricultural, Urban, and Industrial Sectors. Completed in 2001, SO2 sought to improve water quality and quantity and to increase access to potable water, sewerage, and treatment systems. Achieving integration was the cornerstone of the program through support for institutional strengthening of water management and environmental agencies, the dissemination of technologies, and the promotion of public participation in decision making and management activities. The Mission also funded three pilot projects: a watershed management program involving farmers and local communities to improve land management in the country's northern mountainous region, which is subject to severe soil erosion; an activity to reduce water pollution by recycling chromium discharged by leather tanneries in the World Heritage city of Fez, whose historic treasures attract millions of tourists annually; and a program to introduce a highly innovative approach to treat domestic wastewater that involved mobilizing local citizens to design and construct a facility that does not use harmful chemicals.

In 2000, building on the success and lessons learned from SO2, USAID

launched a new strategic objective, SO6 Improved Water Resources Management in the Souss-Massa River Basin. This new SO supports the government's move toward decentralized management of water resources from the national level to regional authorities. Under the new strategic objective, USAID works with many partners to help establish an effective RBA in the Souss-Massa watershed. Plans call for granting management responsibility for the RBA to a council representing regional and local government agencies, private sector agricultural and industrial interests, and NGOs. USAID selected the Souss-Massa watershed because the area is a microcosm for water issues in Morocco, experiencing water scarcity, pollution, and competing demands between agricultural and urban uses. If the Souss-Massa could solve its water shortage and avert a crisis, lessons could be learned for the entire country.

To achieve its current water objective, USAID/Morocco supports three mutually reinforcing intermediate results.

- IR6.1 Institutions and Policies for Water Resources Management Improved. USAID is helping develop new mechanisms for better coordination and stakeholder

participation, and assisting in establishing new policies on key water issues. The expected results will be an RBA, inter-agency technical working groups, and policy advancements.

- IR6.2 Best Practices in Water Resources Management Developed and Disseminated. USAID is encouraging the adoption of better technologies, management practices, and decision-making approaches by funding pilot projects. The project team relies on identifying and disseminating best practices developed in Morocco and in other countries.
- IR6.3 Nongovernmental Participation in Water Resources Management Increased. USAID plans to help NGOs and community-based organizations (CBOs) increase their capacity to participate in decision making on water resources management. This intermediate result calls for working with a selected group of collaborating organizations to strengthen their technical and managerial capacity to participate in IWRM. In addition, a public awareness and outreach campaign is expected to disseminate information on IWRM to the general public.

USAID's primary activities concentrate on improving inter-institutional cooperation, involving national, regional, local, and private sector partners. The aim is to get these partners to work together for water planning, distribution, allocation, and quality management. To assist the RBA, the program is scheduled to offer technical assistance and financial support in such sectors as water resources monitoring, irrigation guidance and warning, inventory of water withdrawals and aquifer management, water-saving techniques, protection of water quality, and decision-making tools. A data harmonization pilot project already has been launched to encourage the sharing of water resource databases and information among the project partners. The

pilot projects reflect the priorities of the USAID partners.

Results

Under USAID's first water objective, SO2 Improved Water Resources Management in the Agricultural, Urban, and Industrial Sectors, all targets were achieved. New regulatory and institutional frameworks were widely accepted at local and national levels. Improved technologies were spread formally through demonstration projects and training, as well as informally through farmers' associations. Public awareness of, and participation in, the resolution of environmental issues increased. Furthermore, the role of public-private partnerships and of local governments working with national agencies were strengthened.

Several results are particularly noteworthy:

- In Fez, declared by UNESCO as a World Heritage City, USAID brought together tanners' association, municipal authorities, and pollution experts to address the toxic discharge of chemical and solid wastes, particularly chromium, emitted by 16 tanneries. Following a highly consultative and participatory process that combined Moroccan construction and management with U.S. technology, a new chromium recovery plant became a model in public-private cooperation. The plant is demonstrating that local people can do something about industrial water pollution.
- As part of efforts to decentralize water management authorities, the community of Al Attaouia developed a wastewater treatment system through multi-agency consultation involving a water user's association, the National Shelter Upgrading Agency, and the Municipal Development Bank. As a result, the community has a first-rate wastewater treatment facility. Furthermore, Morocco has a model for multi-agency collaboration for small and medium-sized cities

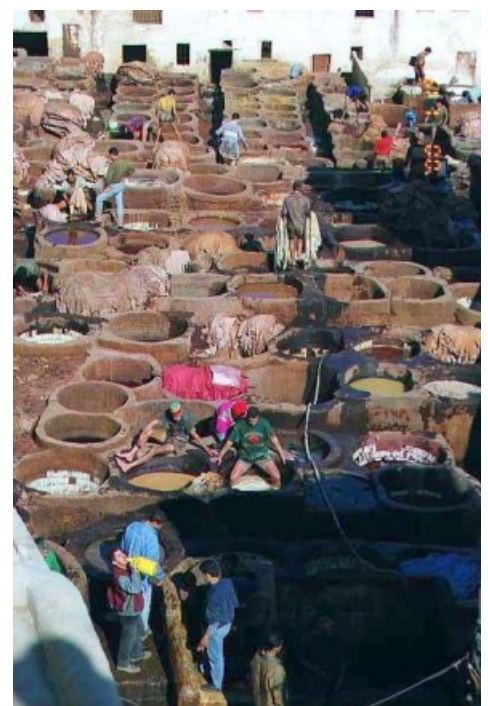
seeking innovative sanitation solutions.

- Residents and local officials of Draga in Morocco's Souss-Massa region worked together with the Ministry of the Environment and USAID to design a wastewater treatment system for their community. The ingenious chemical-free system, with a daily treatment capacity of 1,000m³, uses appropriate technology and demonstrates several cost-recovery mechanisms. It also has become a national model of how a community can address its wastewater treatment needs using cutting-edge, environmentally friendly technologies.
- With USAID assistance, soil loss in the Nakhla watershed was significantly reduced. USAID helped plant more than 80,000 olive trees, install catch basins around 60% of the trees, stabilize 1.5 kilometers of ravines with check dams and gabions, and plant acacia trees along the banks of the ravines. In addition, through this pilot activity in participatory development, farmers have developed stronger associations, and the country has a successful approach in water and soil conservation that can be used elsewhere in Morocco.

Since April 2000, under SO6 Improved Water Resources Management in the Souss-Massa River Basin, USAID and its partners have focused on setting up mechanisms to encourage cooperation among the different water agencies and local organizations. A regional committee, which is viewed as a precursor to the RBA and consists of 12 organizations, including key ministries, NGOs, and municipalities, is already facilitating communication among various water agencies and stakeholders. Furthermore, SO6 has helped define the roles and responsibilities of national and regional water committees. The principle vehicle for achieving sectoral integration has been the establishment of inter-agency technical

committees, comprised of line agencies responsible for water, which have worked together to identify SO6's pilot projects. Although SO6 is still relatively new, it already has achieved several important results:

- A key component of the project, the legal establishment of the Souss-Massa River Basin Agency, was achieved ahead of schedule. The RBA was approved during a ministerial cabinet meeting in October 2000, chaired by the King of Morocco, indicating the government's strong commitment to IWRM.
- For the first time, at least seven agencies, including the ministries of Equipment, Health, Agriculture, Environment, Local Government, and Housing, as well as private water users' associations, participate regularly in integrated water management exercises. Partners are now working collaboratively and consulting more frequently among themselves than before SO6's inception. Agencies are sharing data on highly sensitive issues, including water sources and use. They also are standardizing data collection measures to ensure the information is compatible for analysis.



Dyeing vats used in a traditional tannery.

- Key policy areas have been advanced. Targets were achieved ahead of schedule to establish procedures for reducing and/or reallocating water, building technical capacity to allocate and monitor water quantity and quality, establishing mechanisms for communication between sectors and agencies, and fostering the sharing of information for decision making.

Outstanding Issues

The challenges to strengthen and sustain momentum generated to date by USAID's assistance are still considerable. Decentralization is still a new

and untested concept in Moroccan administrations. Interagency collaboration in the water sector is fragile, due to long-standing differences between the major water users and the water suppliers, combined with the lack of a strong Environment Ministry. Getting the RBA up and running as an impartial and transparent coordinating and decision-making agency is key to USAID's success under this SO. On the positive side, USAID has an excellent track record for achieving results in Morocco's water sector, which bodes well for the future of its new IWRM initiative and beyond to Morocco's economic development.

Additional Information

Internet Web Sites

<http://usembassy-morocco.org/ma/services/usaidd/usaidd.htm>

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Lessons Learned

USAID/Morocco is in a unique position in that its current IWRM program follows an earlier water program. The Mission was able to benefit from its previous activities and has drawn several lessons with respect to the design and implementation of its new IWRM program.

- USAID/Morocco was successful in achieving results when the need for improved water management and financing was identified by local, regional, and national stakeholders.
- The Mission's activities in data collection, information flow, and internal management systems paid off in greater coordination among stakeholders.
- Study tours, workshops, and formal and informal training helped build trust among stakeholders. Although these types of team-building exercises can be undervalued in USAID reporting, they have been very useful in Morocco.
- Coordination and replication of successes have been enhanced by the presence of long-term FSNs in the mission.
- Due to their strengthened technical and financial management capacity, local NGOs and CBOs are now seen as credible institutions able to contribute meaningfully to the country's decentralization and privatization of the water sector.
- Planned results and sustainability were achieved when partners' roles and responsibilities were defined and agreed to in advance, and formalized under collective agreements.
- USAID/Morocco's water program should be viewed as a long-term initiative that cannot be implemented in six years, or even in a decade, with the expectation that they will be continued by the Moroccan government.