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WATER EFFICIENCY AND PUBLIC INFORMATION FOR ACTION (WEPIA) PROGRAM, 2000–2005

FINAL REPORT

MAY 2005

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Water Efficiency and Public Information for Action Program 2000–2005

Final Report

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Executive Summary

The Academy for Educational Development would like to specifically thank the U.S. Agency for International Development and Jordanian Ministry of Water & Irrigation for their support and assistance in seeing through the activities developed under the Water Efficiency and Public Information for Action Program (WEPIA). Through this collaborative effort, Jordan is now positioned and viewed as a leader in the field of water demand management throughout the world.

The management of scarce water resources is among the most significant challenges faced by the Jordanian government. Already one of the most water-poor countries in the world, Jordan was grappling with rapid population growth, an aging water infrastructure, and a lack of public awareness regarding the severity of the problem and corrective measures that might be taken to ameliorate it. Because there were few opportunities to develop new supplies of fresh water, most experts and officials agreed that the key to a sustainable future lay in managing demand.

"The Water Authority is the main source of water in this village. It pumps water for households for 12 hours weekly. Often, we lose much of the water pumped due to lack of tanks and pipes. We use a hose connected to the main house pipe. Usually I fill water in buckets, then I leave the hose on the ground until pumping stops. I can do nothing about this.

"When the water is pumped during nighttime, it is left running down the roads for hours and hours; we pay high bills for this lost water and we have no choice, since there are no tanks in which to store water."

"Water doesn't last more than two days, after which I buy water, if I can afford it, or get water from the river, which is not suitable for drinking at all. We have a low financial income."

— A 50-year-old Jordanian woman from the village of Faddiya describes typical conditions for rural residents prior to the intervention of WEPIA, which supplied the tanks the woman needed.

To address the growing demand for water, the Government of Jordan and the U.S. Agency for International Development (USAID) agreed upon a course of action to effect concrete changes in water consumption. In 2000, USAID awarded the Academy for Educational Development (AED) the five-year (2000–2005) Water Efficiency and Public Information for Action Program (WEPIA). WEPIA was a strategic social marketing program that focused on immediate and long-term water issues in Jordan. Over the life of the program, WEPIA worked cooperatively with the Government of Jordan to build popular commitment to conserve water, promote the use of water-saving technologies, and institutionalize strategic communication methods. The overall goals and results of the program are summarized in this report and specific results have been described in detail in the appendices, which include:

- NGO Capacity Building;
- Community Grants;
- Water Audits and Building Retrofits;
- Media Campaigns; and
- Training Workshops.

NGO Capacity Building

WEPIA worked closely with Jordanian non-governmental organizations (NGOs) to build their capacity to effectively conduct core activities in areas such as fundraising. WEPIA and its NGO partners successfully met all core objectives of the capacity-building component despite significant challenges. The activities undertaken by the program benefited a wide range of NGOs; however, WEPIA's focus was to ensure that groups working towards improving water-use efficiency acquired the skills to continue their work when WEPIA ended.

As part of its planning efforts, WEPIA carried out a nationwide study of the non-profit sector in Jordan and an assessment of NGO partners' strengths and weaknesses. This research effort included both qualitative and quantitative analysis and targeted individuals, corporations, and NGOs. Based on the results of this study, WEPIA and its partners designed a series of action steps to build the capacity of NGOs to meet challenges. These steps focused on building the skills of NGO employees and establishing a network of WEPIA partner organizations.

"After WEPIA helped me to get a tank and a pool, I started to plant more trees and I got more cattle. Now I have no problem in irrigating crops and giving water to my sheep and goats. I started to sell the veggies and fruits grown in my garden and the milk from the goats as well. My financial situation is so much better that it ever was. It couldn't have happened without the program.

"I used to get water in containers from the river and carry it over my shoulders and walk back home for miles, or I would buy high-cost water from tanks. Now the water lasts for the whole week without me needing to bring or buy extra, even though I have expanded the planting area."

— A mother of five, previously living on a salary of 60 JD/month, describes the benefits of WEPIA community grants in her village home.

One of the most prominent activities implemented under the NGO capacity building component was the Zad Al Kheir Fundraising Day activity. Her Majesty Queen Rania was patron of the event held on October 1, 2004. This activity mobilized 64 NGOs and community-based organizations (CBOs), was attended by 120,000 people, and recruited 300 volunteers who assisted with activities throughout the day. Also, the event had 23 corporate sponsors. Due to the success of the event, the Zad Al Kheir Steering Committee obtained official approval from the Ministry of Trade and Industry to register as a non-profit foundation under the name Zad Al Kheir Humanitarian Foundation.

Community Grants

WEPIA developed a plan to engage Jordanians in public education, infrastructure improvement, and communication efforts through a series of small grants for projects related to water conservation and water use efficiency at the community level. The objective of the community grants program was twofold. Under AED/WEPIA's agreement with USAID, one program goal was for WEPIA to work with CBOs engaged in grassroots community action related to water. Over the life of the program, 27 grants

were awarded. Building on the success of this work, WEPIA, under a subcontract to the Ministry of Planning, worked in collaboration with the Farmer's Association Jordan Valley District Branch (FAJVDB) to award an additional 69 grants. This collaborative effort built the capacity of FAJVDB to manage and implement large grants. Through this agreement, WEPIA generated considerable cost-share for the program.

Grants awarded under these programs went only to CBOs and not individuals. CBOs that received grants included voluntary societies, cooperative societies, and NGOs. A key goal of the program was to build the capacity of CBOs by working with them through each step of the grant application, award, and implementation process. The CBO staff were trained in grant proposal writing and financial management, and WEPIA monitored post-implementation procedures, changes, and results.

Grants were typically provided to address immediate needs; thus, the duration of each grant activity tended to be short (six months or less). Because the grants were not large, collaboration with other donors was important. Grants were often provided to communities where other donors might help play a supervisory role or where other donor funds could be solicited to complete the work, making the community grant process a truly participatory one.

Under the program, grantees realized immediate benefits through a decrease in water-related expenditures and an increase in water availability. On average, the direct number of beneficiaries per grant was 54 and the number of indirect beneficiaries was 350.

Water Audits and Building Retrofits

WEPIA focused on immediate steps required to support the adoption of water-efficient technologies, such as rapid installation of water-saving devices (WSDs) in the buildings of large water consumers and implementation of policies to ensure that future building construction would conform to international water conservation standards.

At the outset of the program, AED, in collaboration with Development Alternatives Inc., Jordan University of Science and Technology, Queen Rania Al-Abdullah Center for Environmental Science and Technology, Best Management Partners, Professional Women's Club, and Cartelle Associates, conducted a national assessment of WSDs. The assessment identified three key pieces of information: the largest consumers of water in both the public and private sectors, suppliers of WSDs and their recent sales histories, and laws and regulations that might support or discourage water conservation.

The assessment found that a complete retrofit of large water consumers in the universe identified by AED would cost approximately $4 million dollars, which would realize water savings of approximately 10 million cubic meters per year in 10 years. The estimated cost was high because: 1) Toilets were included in the assessment; 2) materials had to be purchased and shipped from the United States; and 3) rebates and incentive programs did not exist in Jordan. Due to the high cost for the retrofit program, USAID

and the MWI did not have available funds for WEPIA to move forward with the retrofit program as had been previously envisioned.

Because large consumers were a key target group, WEPIA realized that their water consumption practices needed to be addressed and that the program would need to rely on several local partners to achieve results. To address multiple groups, and thus the broader population, WEPIA developed an action plan to build awareness of WSDs among the general public, audit and retrofit large water consumers with WSDs, and revise building codes related to water fixtures.

Media Campaigns

Building on an initial baseline study of media and public awareness about the water sector, WEPIA developed a media strategy that used different messages to target various audience segments. The messages were delivered through eight media campaigns. The campaigns impacted people across all walks of Jordanian life, increasing the general public's awareness of the water shortage problem by more than 80%. Moreover, considerable increases were realized in awareness levels about the factors contributing to water shortage problems. For example, a 30% increase was recorded in the number of Jordanians linking population growth to the water shortage problem.

Throughout implementation, WEPIA maintained consistency in all communication materials. Brand messages were controlled using the same starting and ending phrase, *"The solution starts with you."*

Supplementing the media campaigns, WEPIA conducted a series of training workshops and "brown bag" lunches to improve Jordanian journalists' understanding of water issues and to strengthen their relationship with government sources from the Ministry of Water & Irrigation (MWI). This resulted in more accurate and insightful water-related media coverage.

Training Workshops

Throughout the life of the program, WEPIA made considerable efforts to improve the water-conservation skill base in Jordan, through both guided practice and formal training workshops. At the beginning of the program, WEPIA conducted a training needs assessment and found that NGOs needed hands-on workshops geared towards proposal writing, financial management reporting, media campaigns, and fundraising for sustainability. Because the program was the first of its kind, focusing on both water demand management and social marketing, the implementation of each task was a learning experience not only for NGO partners, but also for individual contractors, government counterparts, and consultants.

Water Demand Management Certification Program

During 2004, WEPIA, in collaboration with the MWI and Jordan University of Science & Technology (JUST), developed a series of three-credit-hour courses in water demand management. This set of courses was the first effort in the Middle East to initiate the development of a master's degree program in that subject area. Each course was co-taught by a JUST faculty member and a faculty member from an American university such as University of Arizona, Texas A&M University, Southern Illinois University Carbondale, and University of California Davis. The courses taught included: 1) Introduction to Best Management Practices; 2) Demand Forecasting and Analysis; 3) Strategic Planning for Water Demand Management; 4) Planning Urban Demand Management Programs; 5) Alternative Water Supply; and 6) Water Demand Management in Agriculture.

International Water Demand Management Conference

Under the patronage of His Majesty King Abdullah II, WEPIA, in collaboration with the MWI and with funding from USAID, hosted the first International Water Demand Management Conference at the Dead Sea, Jordan, from May 30 to June 3, 2004.

More than 700 participants attended, representing 38 countries, with high-level official delegations from 12 countries in the region. Four of the delegations were led by ministers of state, and the others by secretaries general. The opening ceremony was attended by King Abdullah and members of his cabinet, including the prime minister and members of the Jordanian parliament and senate. Members of the international diplomatic corps also took part in the conference, including U.S. Ambassador Edward Gnehm.

Perhaps the most important outcome of the conference was a declaration of 10 principles, drafted and approved by the regional delegations in attendance that stressed the importance of water demand management for the region and the world. These principles were sent to national agencies and donors with the hope that they would become a starting point for implementation of water demand management policies in the region. This was the first time the Arab world had drafted such a declaration. The historic nature of the conference was recognized by the publicity generated and the official delegations that attended.

National Gallery Model Park

The National Gallery Park/Royal Society for Fine Arts was selected as one of WEPIA's water conservation model parks in Jordan because it contained several drought-tolerant plants capable of surviving harsh conditions. The park is located between the two buildings of the National Gallery of Fine Arts, an area well known for drawing crowds, which made this location a perfect site for a demonstration garden.

WEPIA redesigned the park as a demonstration site to promote and educate people on xeriscaping (landscaping that requires minimal water resources) and water and energy conservation. The redesign took into consideration local residents' needs: parking, safety,

and entertainment. Large stones were used to display the beauty of hardscape (non-plant landscaping), while ensuring the collection of rain water in a new water reservoir. Stone was also used to build a center stage for the museum to use as an entertainment facility. In addition, a new drip irrigation system was installed. To educate park visitors on the drought-tolerant plants, interpretation signage was installed, and to ensure safety at night, energy-saving lamps were installed.

The park gained the attention of King Abdullah and Queen Rania as the first xeriscaped garden in the Middle East. As a result, the park opening ceremony took place in 2005 under royal patronage.

Improving Livelihoods

WEPIA's approach was not designed to educate people about using less water but about using water efficiently. With a population of more than five million people, WEPIA mobilized several NGOs and collaborated with several ministries to touch every corner of Jordanian society.

During the program, media campaigns were used as a forum to get the message out about water efficiency. The message *"The solution starts with you"* linked water efficiency to saving money and time. Viewers learned that through the installation of an aerator (water-saving device), water consumption would decrease thereby lowering their water bills.

Working in the non-urban sector, WEPIA awarded more than 90 grants to community-based organizations. Projects included, but were not limited to, lining or constructing canals, constructing and drilling reservoirs, water harvesting, and rehabilitating springs and plastic pipes. These projects improved the livelihoods of more than 4,000 people and generated additional income for families.

Results-oriented Communications

Under the program activities described above, AED's proven method of results-oriented, strategic social marketing was employed to help WEPIA work with the Government of Jordan and private sector counterparts to identify needs and action priorities, build the capacity of Jordanian agencies and institutions to play their part in conserving water, demonstrate successful conservation techniques, train officials and non-profit representatives, and develop a pro-conservation ethic among the Jordanian public.

This report describes some of the many successes achieved and challenges faced by the WEPIA team. It is organized into a main body and series of appendices that provide in-depth descriptions of selected activities implemented under the program.

WEPIA Program

Introduction

The USAID-funded Water Efficiency and Public Information for Action Program (WEPIA) was a five-year program (2000–2005) that sought the creation of a water conservation ethic in the general population of Jordan, implemented water-saving technologies to achieve significant savings, and institutionalized the processes it used. This final report analyzes several features of the program but does not seek to describe all of the activities undertaken by WEPIA. (A complete summary of the program's goals and results achieved may be found starting on page 15.)

WEPIA had many successes and some "challenges." Both will be described in this report so that readers may understand the full range of issues involved in implementation of such a complex program.

From its inception, WEPIA established itself as a trusted source of information. Reaching out to both urban and rural areas of Jordan, WEPIA successes include, but are not limited to, the development of a community grants program that improved the livelihoods of Jordanians, development of the first women's plumbing training program in the Middle East, creation of a water curriculum for kindergarten through the 12th grade, and implementation of the first International Water Demand Management Conference in Jordan.

Photo courtesy of the WEPIA Program

A WEPIA advisor delivers a demonstration on water-saving devices.

Water Efficiency Programs—Setting the Context

In recent years, water management utilities worldwide have made great efforts to reduce potable water usage by implementing cost-effective, life-cycle water efficiency programs. Traditionally, management of freshwater resources to accommodate growing communities has focused on supply-side projects such as building dams and reservoirs. These large-scale projects, however, often generated negative impacts, including diversion of water from wildlife habitats and other problems, and fostered dependence on wasteful management practices. Additionally, the costs of obtaining and developing new sources of water have steadily risen, making demand-side options economically attractive.

In the same way that rising fuel prices during the energy crisis of the 1970s led to the development of more energy-efficient appliances and vehicles, recent improvements in water-conserving technologies for toilets, showerheads, irrigation equipment, and faucets have been designed to ensure that consumers' lifestyles are maintained while helping them use less water. Water efficiency strategies aim to employ these technologies along with innovative management practices to use less water while delivering an unchanged or improved level of service to consumers. There are numerous strategies or best management practices (BMPs) for communities and local governments to utilize in striving for water efficiency. Some examples of BMPs include: conservation/efficiency rate structures, reduction of supply system leaks, wastewater ordinances, landscape water-use audits, water-efficient landscaping (xeriscaping), home and business audits and retrofits, water reclamation, and public education programs.

WEPIA sought to improve the knowledge, attitudes, and behaviors of Jordanians regarding water issues. The program used social marketing tools and practices that had been used successfully in behavior change programs in other sectors (health, family planning, and environment) and applied them to the field of water conservation. The first task requested by USAID was for WEPIA to review the water conservation situation in Jordan.

"I was sitting with a group of friends one morning as usual, sipping coffee and talking about improving our lives. One of my friends mentioned that the Red Crescent[in partnership with WEPIA is looking for active young women to help in doing a survey among households about general knowledge of water. I signed up and was provided with intensive training in water issues and water conservation, after which I went to the field and filled in the questionnaire as requested. Two months later, a plumber joined our team and we started our door-to-door visits to repair leaks, install tanks and faucets, and build water networks"

"In our community, no one would allow a plumber 'stranger' to come in and do work for free because of lack of trust, so I had to accompany him and introduce him to the family who already knew me from previous visits. The next visit, he went himself.

"Since I was one of them, they adjusted with time and now we're like family. They trust me and that makes a lot of difference."

— A woman from Aqaba describes her experience taking part in a survey and retrofitting activities supported by WEPIA.

The results of this review can be summarized as follows:

- Individual consumers believed that they were already saving as much as they could. Given the prevailing water rationing system, Jordanians already used among the lowest daily levels of water in the world. However, inefficient water systems and fixtures as well as poor plumbing in homes and commercial buildings left room for improving efficiency.

- Jordanians, like people everywhere, do not want to spend money unnecessarily, and they perceived the cost of installing water-saving devices (WSDs) as a routine part of building construction to be prohibitive.

- Jordanians, on the whole, tended to not believe that their country had an endemic water shortage. When water supply ran particularly low in a district or neighborhood and there was public dissatisfaction, the government opened new wells. Thus, the population tended to feel that water supply was in fact sufficient.

- Water was a political issue on the minds of many Jordanians. It was closely tied to their feelings about their neighbors and government. At the time WEPIA started, there was some unfounded belief that Israel was siphoning off Jordan's water or polluting the Jordan River so Jordanians could not use it. Syrian-Jordanian relations were also cool. Many Jordanians felt that if a water shortage existed, it was most likely due to neighboring countries using Jordan's share. Thus, they felt there was little they could do about the issue. They also felt that it was the government's responsibility—not theirs—to address water issues.

> *"During my work in the WEPIA program, one of the most interesting stories took place. One day I went to check on a water tank only to find a dead pigeon inside it! The owners of that house told me they didn't know they had to check their water tank or clean it twice a year until the program taught them so. Some people even put wooden blocks on top of the water tank to keep the water cool in summer."*
>
> —A plumber who took part in the WEPIA program

- Wastage in water supply, known as unaccounted-for water, was extremely high in Jordan. At the time the program started, unaccounted-for water was as high as 60%. Leaks were common as an old and corroded infrastructure failed under the stress of increased demand. Citizens felt that if the government could waste all this water in the streets that there was no real water shortage. Repairs to individual leaks could take several days, weeks, or even months because management of the water works services was so poor. Government credibility was a major concern.

- In 1998, an outbreak of *E. coli* bacteria sickened only a few people but caused a national panic when the public perceived it to be widespread. The government took the required steps of closing and flushing pipes; however, the public continued to believe that water quality was poor. At the time, education programs were not in place to properly inform the public about the situation. As a result, people started to purchase water filters and bottled water, and today bottled water has become the social norm for all strata of society. To ensure that the public was informed on such issues, WEPIA trained journalists on environmental reporting through a series of workshops, "brown bag" lunches, and study tours.

- Water efficiency in Jordan was very low. Several factors contributed to this:

    - Pipe leakage in residences and buildings was common because there was no plumbing code or standards. Consequently, water loss inside residences was estimated at around 30–50%. Training of plumbers was not consistent throughout the country and the quality of plumbing work was poor.

- Knowledge of WSDs and related technologies was very low—around 17%. Some of the suppliers who sold water-efficient sanitary ware such as faucets and showerheads did not even know that they had these items in their stores and did not realize that WSDs could be advertised as a money-saving marketing tool.
- Several suppliers who had sold items such as aerators before 2000 had stopped selling them due to lack of demand. The total number of aerator sales, the cheapest water-saving device in Jordan priced at 2.5 JD, was 100 in 1999, even though the items had been made tax-exempt by the MWI and customs offices.
- Water was made available only one time per week; therefore, the pipes were empty six days of the week. As a result, the water meters in place were not fully reliable because they measured air in the system as well as water. This was public knowledge and recognized by the water utility company engineers.
- It was difficult to determine actual water use because if subscribers ran out of municipal water, they could purchase water from private tankers. The water bills a homeowner received only showed municipal water supply and did not account for privately supplied water. At the time WEPIA started, only half of the private wells had been metered, and there were no records of tanker customers. The wells contributed to the depletion of the aquifer, but private ownership and water rights were jealously guarded and it was difficult for the government to regulate this business.

Photo courtesy of the WEPIA Program

Water-saving devices such as showerheads and aerators promoted under the WEPIA Program

- The construction laws and policies of the Ministry of Public Works and Housing did not favor water conservation. The principal code dealing with water consumption, the National Jordanian Construction Code, specified a minimum faucet water pressure and flow of 9 liters per minute, rather than the 6-liters-per-minute maximum flow adopted by the rest of the world many years before. The minimum toilet flush had been established at 12 liters per flush, whereas the rest of the world had already switched to 6 liters per flush. The principal code monitoring outdoor use of water, known as the Beautification Code, was similarly out of date. Each year these codes remained out of date, Jordan experienced unnecessarily high levels of consumption.

- At the time WEPIA started, there was no elected parliament in place. Thus, any proposed changes to laws and policies were routed through committees generally composed of cabinet members. Although this made it easier to get draft policy

amendments approved, it also meant that certain key policies would need to be ratified later by the parliament once it was elected. Thus, a dual campaign was necessary to ensure that changes to policies remained in place through the two steps.

- WEPIA estimated that the cost of a total retrofit of all the buildings in the large universe established by the program would be $4 million dollars for a savings of approximately 10 million cubic meters per year in 10 years—the equivalent of water stored by one of Jordan's medium-size dams. In other countries, incentives such as rebates are provided to consumers as an inducement to retrofit. Retrofit programs are expensive to implement, and the MWI did not have the funding mechanism in place to create this type of program.

These results were presented to USAID and the MWI, but the two agencies were not able to commit any additional funds for an incentive-based retrofit program. At that point WEPIA had a choice to drop the large consumer program. However, WEPIA recognized that by not addressing the large consumer, in social marketing terms, it would pose a major barrier for smaller users to commit to retrofitting. WEPIA staff believed that the AED model for large-scale behavior change would overcome the handicap of not offering incentives. Thus, the onus of persuading large consumers to retrofit rested on the skills of the program staff. WEPIA realized that if small water users, such as households, saw large water users retrofitting their facilities, they would be convinced to do the same. Thus, WEPIA focused on the largest consumers as the primary target, leaving individual household behavior change as a secondary target.

"The beautification codes already existed but needed updating. The leading entity was the Ministry of Public Works and Housing, which was responsible for any Jordanian codes. Water conservation was added to the codes, especially water harvesting; prior to this, there were no codes related to water conservation. Once completed, the code became a mandatory law. All buildings follow this code and are fined if they violate them.

"One of the major changes that took place after we worked with WEPIA was the main park [in Aqaba]. Before we started working on the park it was more like a forest full of drugs, illegal and unethical activities; it was overall very unclean. The park was not a place where families can take their children and spend a Friday.

"We had in mind to make a family-safe park, so [we] designed it as a water-conserving park with drought-tolerant plants and a playing area for the children. We installed irrigation systems, drinking fountains and automatic heavy duty taps. To encourage the community to install water-saving devices (WSDs) we set up a promotional area in the park itself to teach about WSDs and to sell them.

"Seeing the positive impact the new park had on the families in Aqaba, we did the same for other park areas. Now we have at least three parks that are family safe with drought-tolerant plants and a playing area for the children."

— Director of Municipal Affairs and Public Works
Aqaba Special Economic Zone Authority (ASEZA)

Addressing Challenges

WEPIA sought to tackle the barriers previously mentioned to the adoption of water-conserving behaviors for the following reasons:

The Economic Situation

In 2000 the legacy of the Gulf War of 1991 could still be felt in Jordan. The economy was depressed and many businesses had failed. The promise of increased tourism after the peace treaty was signed between Jordan and Israel failed to materialize, and hotels, which had been over built, were rapidly closing. In subsequent years, after the start of the Palestinian *intifada*, the economy declined even further, which resulted in most businesses looking for short-term rather than long-term gains, a mentality that affected the program. The suppliers of water-efficient technologies balked at making investments, and the program could not directly purchase the needed technology.

When WEPIA started, no porcelain factories making sanitary ware or manufacturers of water-saving devices existed in Jordan, although two years earlier both had been functioning.

Poverty was widespread, with approximately 30% of the population officially below the poverty line (set at 450 JD per year or US $635). Donor support was minimal, and foreign aid support was small at the time. Under Mission Director Lewis Lucke, USAID/Jordan had only recently increased its annual budget from $7 million to $23 million. Although subsequent events such as a large influx of Palestinian refugees and the March 2003 Iraqi war resulted in aid increases, they also placed increasing pressure on the Jordanian water system.

Furthermore, Jordan was in the grip of a cyclical drought, which meant rationing water to neighborhoods one day per week. The water supply in summer months was constrained even further. The drought persisted until the winter of 2003, when sufficient rains replenished the dams and catchments. The drought ensured that for much of the period WEPIA was in operation, the focus of the MWI was on ensuring an adequate water supply.

> *"The WEPIA Program has greatly enhanced [our NGO's] efforts to help secondary and primary schools throughout the Kingdom with their curriculum. This includes teaching children to conserve water through interesting ways. Also, WEPIA has improved our staff skills in many areas of our work. WEPIA's impact on me was that I learned to make right choices when I applied what I learned from the program. I found WEPIA's staff to be very professional. They listened, observed and understood. Thank you for your support."*
>
> —A representative of an NGO that worked closely with WEPIA

Furthermore, it was a period of governmental transition. His Majesty King Hussein, revered by the nation, had recently passed away. Successive prime ministers and changes in the cabinet also meant that political stability, a precursor to economic and social development, was not yet assured; therefore, economic and political anxiety prevailed.

Ministry of Water & Irrigation

The situation in the MWI was also challenging. At the time the WEPIA cooperative agreement was awarded, new leadership was in place in the MWI, and they were unfamiliar with the program and mandates of WEPIA. In the first years of WEPIA program implementation, a succession of new ministers took over at the MWI, although the secretary general, responsible for day-to-day management of the ministry and the liaison for WEPIA, remained the same. In 2002, this secretary general, Dr. Hazem Al Naser, was named Minister of Water and Irrigation and held that post throughout the remaining three years of WEPIA, thus ensuring continuity in leadership for the first time.

Water Demand Strategies Already in Place by the Government

WEPIA activities were intended to build upon initiatives and programs that were already in place. Previous USAID efforts such as the Water Quality Project had attempted to establish demonstration sites for water savings by retrofitting buildings. However, of the nine buildings retrofitted by WEPIA's predecessor project, only one, the King Abdullah Mosque, still retained its water-saving devices two years later. During this time, the government continued to face difficult issues related to water conservation, such as pricing, groundwater policy reform, and rationing. Studies had been commissioned and funded by USAID to examine consumer willingness to pay higher prices for water. During WEPIA's tenure, water prices did rise slightly but not to the levels necessary to induce serious behavior change. The pricing structure played a key role in encouraging larger consumers to retrofit.

Previous programs administered by the MWI, USAID, the Canadian International Development Agency, and the Royal Society for the Conservation of Nature (for example, USAID's Water Quality Project with the Jordan Environment Society) had resulted in some activities and even a series of media spots intended to get the public to change individual behavior regarding water consumption. However, the promotion coming from the ministry tended to be generic with nationalistic and somewhat controversial messages that were eventually taken off the air. These activities had some effect on the population, as base knowledge levels of the general public were at 17% at the time WEPIA began.

In addition, the MWI's public relations department had been actively engaged in trilateral discussions taking place with Egypt, Israel, and the West Bank on implementing mutual water conservation activities funded under the Water Committee for the official Middle East Peace Process. Although these activities had been sporadic in nature and dictated by varying rates of progress in the peace process, they had nevertheless created a cadre of concerned NGOs and individuals in Jordan. At times, this work proved somewhat problematic for WEPIA. As a USAID-funded program outside the direct management of the MWI, the public relations department and even MWI staff sometimes saw WEPIA as a competitor in the effort to gain recognition for conservation activities. Initially, the MWI refused to permit WEPIA access to its free air time and press space. Moreover, changes in the national broadcast information policies meant that all advertising, non-

profit or not, had to be paid. This necessitated an amendment to AED's cooperative agreement to add money for media placement because none had been previously anticipated.

Broader Influence of National Policy Activities

During the period of WEPIA implementation, from 2000 to 2005, Jordan underwent a transformation of historic importance. King Abdullah instituted a broad range of reform efforts intended to bring the country rapidly into the modern age. These efforts brought opportunities that WEPIA could use by affiliating its interventions with policies and changes even if they were not explicitly in the water sector. Democracy efforts and the promotion of civil society allowed WEPIA to engage substantively with NGOs, CBOs, and other civil society organizations. Policies related to poverty alleviation allowed WEPIA's grant program to make significant improvements in the lives of the poor and eventually led to an expansion of the grant program funding. Education reform and the emphasis on information technology allowed WEPIA to work with the Ministry of Education to develop a water education curriculum for students in kindergarten through the 12th grade. The first task was to prepare an educational curriculum that would be made available in CD format using graphical illustrations. His Majesty was so impressed with this effort, conducted by the Royal Society for the Conservation of Nature, that it was promoted for inclusion at the World Economic Forum and other conferences worldwide.

Photo courtesy of the WEPIA Program

Queen Rania Abdullah visits the Haya Cultural Center, a WEPIA partner NGO, during a water week campaign activity.

The governmental reform efforts, although beneficial for Jordan's economy, were both a blessing and a challenge for WEPIA. Efforts to reform the media meant that journalists had greater freedom to select what and how they would write. WEPIA efforts to educate journalists on water issues were extremely successful, and the coverage and quality of water articles increased and dramatically improved. However, with the freedom to write also came the freedom to criticize the MWI, and WEPIA occasionally received negative feedback from the ministry when such articles were written. Nevertheless, WEPIA was instrumental in substantially improving the relationship between the MWI and the media and creating an atmosphere of collegiality through regular meetings between senior MWI officials and the country's premier journalists.

As noted, the emancipation of the media and their emergence as a market-based sector no longer reliant on government subsidies meant that the costs for advertising escalated substantially. In addition, the liberalization of laws relating to satellite dish ownership,

Internet access, and other media allowed the population access to competing channels of information deemed more credible than the official government stations. Much of the audience for the Government of Jordan television station, JTV, migrated to satellite channels. WEPIA's first national campaign exploited this new access by placing some messages on popular programs on the best-known satellite channel, MBC, broadcasting from Dubai. Although considerably more expensive than JTV, the large audience for this channel ensured that high knowledge levels about water conservation and water efficiency would result. Regretfully, subsequent efforts to use these channels were prohibited by the MWI and USAID, which resisted spending USAID funds outside the country. The use of JTV in turn affected the ability of the program to maintain public interest and increased costs as the program sought other ways to reach out to the public.

Systems Approach

With so many systems and sectors affecting the mandate that WEPIA had been given—to reduce water demand in Jordan through specific interventions—it was determined that only a systems approach could capture the interests and concerns noted in WEPIA's assessment of awareness of water issues in the country. To ensure that these same interests and concerns were appropriately dealt with, the program used an organizational development tool known as Future Search, a strategic planning process that brings all actors in a system into the same room to plan a course of action together.

The Future Search conference, only the second of its kind held in Jordan, brought together 85 leaders from diverse fields (education, water, women's issues, universities, donors, and local government) to consider the implications of the assessment. Participants made the following observations and recommendations:

1. **Despite the perceived low consumption rates of water by Jordanian citizens, there were still opportunities to introduce greater efficiency in water use**. Therefore, the program needed to focus on efficiency in water delivery methods, rather than direct water consumption behavior. The focus would be building owners, water suppliers, and the distributors of water efficiency technologies, as well as plumbers and plumbing education resources.

2. **Policy change would be crucial to lead to long-term water savings.** Policies that fell under the responsibility of the Ministry of Public Works and Housing required a thorough review and revision with the assistance of experts with credibility and with experience in policy reform.

3. **Dealing with large consumers before the smaller ones was likely to increase the public's trust in the water sector.** In response, WEPIA developed cadres of individuals who could perform water audits and the needed economic analyses to convince building owners to change water-use behaviors. Although it was initially envisioned that these water auditors would come from the MWI, the 45 staff engineers trained had other demands within the MWI with the audits being a secondary task. Therefore, the cadre of trained auditors was developed essentially

in the private sector (private engineering and consulting firms, as well as staff in key NGOs).

4. **Focusing on small changes with large results, such as installing inexpensive aerators on faucets, could bring considerable savings and reassure the public that water conservation measures do not have to be costly.** To educate the larger population about the impact that small changes could have on water consumption, WEPIA used the media, specifically focusing on journalists, to spread this message. To build the capacity of journalists, WEPIA developed training programs and reference manuals and organized field trips. In return, journalists started to write articles and editorials on water demand management, which came at no additional cost to WEPIA.

> *"I started working with water-saving devices (WSDs) in 1997, but working with the public was difficult because they did not know what these devices were for, so I had to work only with engineers who had some idea about the benefits of WSDs. But when WEPIA started to market and educate the public about the benefits of the devices and direct them to where they can find these devices, my sales increased.*
>
> *"For me, that meant instead of me spending time to educating my client about the devices and spending time to convince him to buy them, all I needed to do was sell. The general public started calling my company to ask for the devices; they would ask specifically for the type that suits their fixtures.*
>
> *"The audit training program that was developed by WEPIA for the different sectors also opened the door for my company to win several bids."*
>
> — Owner of a company that supplies WSDs

5. **Women hold the primary responsibility for household water consumption.** Although Jordan is a modern country, women are primarily responsible for the household. Therefore, it was important to reach women with messages about water demand management in the home, while emphasizing the need for men to personalize conservation behavior. Due to King Abdullah's interest in involving women in the economic improvement of the country, several programs emerged to reach out to women.

6. **Given young people's lack of knowledge on the causes of water scarcity in Jordan, it would be important to develop a strategy that reached out to them in ways they could understand.** Youth must be part of any long-term strategy to reduce water demand. The result of this discussion saw the development of both formal and non-formal programs for children and youth. Diverse activities were developed with universities, high schools, and elementary schools. Children's "edu-tainment" materials were developed showcasing children's responses to the water crisis, such as art shows and competitive plays. Youth were trained as water auditors and measured and tracked their communities' water consumption. The school curriculum for Jordan was amended to include water as an intensively

taught subject. Teachers, as well as students and the Ministry of Education, were drawn into the various educational activities.

7. **For the activities implemented under WEPIA to be sustainable, an entity within Jordan would need the capacity to continue them.** As a result, the MWI developed the Water Demand Management Unit (WDMU) that worked closely with the WEPIA Program in its last two years. Before and after the development of this relationship, WEPIA was uniquely positioned to introduce a diverse set of activities that were innovative and new to Jordan. With the support of USAID, WEPIA and the Jordan University of Science and Technology developed a master's level program in water demand management to institutionalize the profession of water demand management and enable universities to train future generations.

Methodology

One of the most interesting aspects of WEPIA was the model used for program implementation. The cooperative agreement with USAID specified that WEPIA would be a social marketing program. Social marketing is a methodology that most water specialists are not familiar with. There is a tendency to equate social marketing with only communication and media activities. And it should be noted that most social marketers have little experience applying the methodology in the water sector. The success of WEPIA, however, shows that experience is not the only factor required to develop successful programs. The social marketing approach can function well if the needed technical strategies are already known. In the case of WEPIA, the water conservation technologies already in use in the US and other countries were appropriate to promote in Jordan. Their adaptation to the Jordanian context was the challenge and WEPIA hired technical specialists such as civil engineers over the life of the program to help with this adaptation.

The strategies WEPIA used to promote water conservation technologies and behaviors came directly from social marketing and its integration with another development model based on systems theory. These same concepts have been adopted by other agencies in the water sector over time, such as the UNESCO Learning Alliance. The concepts were developed after behavior change programs dealing with water had tried without success to achieve widespread effects by scaling up from small demonstration activities. Based on literature from the Learning Alliance and AED's own experience in starting at scale, small demonstration projects are not replicable because the intensity of resources, commitment of working teams, and subsidies associated with small-scale activities often cannot be replicated in larger-scale settings.

The WEPIA model, which sought to focus attention on the need for water conservation in Jordan, was based on several simple assumptions drawn from systems theory:

1. The entire system (possibly even multiple systems) needs to be engaged in the change process.

2. Systems tend to self-organize if they are permitted to do so.

3. Patterns in systems should be monitored, but total control over outcomes is not possible because multiple, uncontrollable forces are always at work in a system.

4. Small individual innovations or minor adjustments to a system may bring about large aggregate changes leading to desired outcomes.

5. Linking water conservation issues to stated strategic concerns of the government or other agencies (opportunism) can provide greater sustainability than stand-alone programs. However, such an approach requires tremendous flexibility on the part of the program and its contractual mechanism.

In Jordan, WEPIA identified several parts of the system to engage: the MWI and all of its satellite agencies; the Ministry of Education; universities; vocational technical institutions; all educational institutions including the public and private formal school system, where water issues and concerns are discussed and talked about; regulatory or policymaking agencies, where legal and regulatory decisions are framed and acted upon; municipalities that implement the rules and regulations; NGOs with front-line access to the population and other private sector institutions such as advertising agencies, media outlets, press, journalists, and other information-supplying agencies; and suppliers of sanitary ware, water-saving devices, and other plumbing equipment whose products are integral to water conservation. Leadership from these many organizations determined where and how water issues affected their particular part of the system and determined the resources that each agency or system representative could use to advance the "cause." As a result, an advocacy group formed that continued to support programs and activities throughout the five years of WEPIA.

The importance of a large advocacy group cannot be overstated. This approach allowed WEPIA to address water conservation and water efficiency on a scale that had not been previously attempted in Jordan and with minimal resources controlled by the program itself. By leveraging other agency resources, creating a sense of purpose and a feeling of commitment on a large scale, participating organizations and individuals felt they were contributing to the national good. At the same time, this approach expanded WEPIA's reach and the frequency of the conservation and efficiency messages. In the end, two strategic principles emerged:

1. It would be necessary to build towards a large-scale intervention to improve the credibility of the MWI. This meant that Jordanians needed to receive information from a variety of credible sources about the reasons for water shortages in Jordan, believe the information they received, and only then be targeted with messages about taking personal responsibility for behavior change. This was as true for managers of buildings that consumed large amounts of water as for individual homeowners.

2. Every Jordanian should be exposed these messages at multiple points—at school, in the office, from television or the press, from relatives, from speeches by influential

figures, from NGOs, while on vacation at hotels, or sitting at home. The multiple points were key to creating the perception that water conservation and water efficiency were already social norms.

Major Lessons Learned and Resultant Actions Taken

Three principal themes shaped WEPIA activities throughout the program:

1. ***Long-term strategies can ensure that water conservation and water efficiency measures continue into the future.*** To ensure long-term impact and sustainability, the strategy included policy change among other approaches. Changes were made to the Construction Code and the Beautification Code to ensure that future construction would be code-compliant. Supplementary activities included informing engineers, construction firms, and architects about the revised codes; public relations activities so the public would also know and be aware of the revised codes; training programs for municipality staff; and support to the Ministry of Public Works to publish the revised codes. True to its initial approach of inclusiveness as a key program strategy, codes were changed with continuous support and participation by relevant government agencies as well as representatives from the sectors that would most likely be affected—the hospitality industry, hospitals, schools, construction industry, and suppliers of water-efficient technologies in an effort to motivate them to increase their inventory.

   Long-term strategies also included curricular reforms in the education sector. WEPIA staff considered non-formal efforts with school children, such as club programs, competitions, and event exploitation, as short-term measures intended to raise consciousness. However, long-term behavior change could come only from reform of the formal school curriculum to emphasize the importance of water conservation as a subject and to provide opportunities to practice water conservation in schools. Thus, a committee of experts, curriculum developers from the Ministry of Education, educators from private and public schools, and NGO representatives was established that focused on reform of all school textbooks from kindergarten through the 12th grade in five subject areas.

2. ***Sustainability is a dynamic expression of growth and change, not a static target that can be achieved.*** Although sustainability is often measured in financial terms, perhaps a better measure is commitment. Sustainability means an organization is able to survive and flourish in relationship to the causes it is passionate about and to other parts of the system. Systems theory looks at the relationships that are formed within systems, thereby expanding and strengthening those systems. WEPIA and its staff were the principal motivators and were passionate about their work and its value to the country. Similarly, key USAID and MWI figures were also passionate and supported WEPIA in their activities and through difficult times. The International Water Demand Management Conference solidified MWI support for water demand management.

WEPIA, from the start, looked at the various systems that touched on water issues and built networks across and within systems, spending considerable effort in nurturing these systems. All of WEPIA's work was integrated into existing institutions within these various systems, with guided practice, to ensure participation and sustainability. These institutions ranged from NGOs to universities to professional associations and the private sector. Everyone was welcome to participate in WEPIA activities and the range of institutions and individuals that remained as partners with each other, even after their formal relationship with WEPIA ended, is testament to the strong relationships that developed.

3. ***Building capacity of local supervisory partners and colleagues will help strengthen relationships and alleviate challenges and constraints.*** At first, WEPIA's sustainability efforts were hampered due to partners' lack of experience with certain management concepts.

   Building collaborative efforts and strengthening partnerships with persons and entities outside one's immediate circle of loyalty seemed unnatural to Jordanians. Individuals tended to work for their own benefit, and WEPIA's attempts to build sustainability were at times hampered by this attitude. In spite of these difficulties, WEPIA continued to work towards building the capacity of, and giving ownership to, local organizations.

   These characteristics also extend to local NGOs. Most NGOs reflected this same tension between management and staff and it showed in the rapid turnover of their key personnel. To some extent, WEPIA's efforts mitigated this hostility by concentrating on the key implementation staff within each agency or institution and developing cordial and nurturing relationships directly with them. Through the development of such relationships, WEPIA was able to use these trusted intermediaries when faced with difficult situations while implementing program activities.

Summary of Goals and Results

Goals and Results for 2000 to 2002

Goal #1:

Interactive water education programs are widely available and accessible to teachers, students in public and private schools, religious leaders, and NGOs.

These programs should build upon previous water education activities conducted in Jordanian schools. Pertinent material available in Jordan and the US must be utilized and built upon.

Anticipated results:

1. *Water education curricula using interactive teaching methodologies available for use in elementary, intermediate, and secondary schools. At least 1,000 teachers receive training on the effective use of the curricula. Promote existing UNICEF and Royal Society for the Conservation of Nature curriculum for elementary schools.*

Completed with additional achievements:

- Interactive water conservation curriculum fully integrated into school textbooks grades 1–11 in five subject areas since December 2002.
- Inaccurate information in textbooks was corrected.
- Latin Patriarchate of Jerusalem (LPJ) school system developed water conservation interactive teacher materials and trained all teachers in their school system to integrate water issues during "Water Week" into every subject. LPJ won 2002 Prince Hassan Award for Science for the water conservation program.
- Water video made by Ministry of Education, which was shown to 2 million school children during the summer of 2002.
- 1,000 teachers trained through LPJ schools, Jordan Environment Society, and Royal Society for the Conservation of Nature efforts.

2. *At least 50% of religious leaders receive training and materials on water issues and conservation techniques.*

Completed with additional achievements:

- WEPIA organized systematic and informal training for 50% of Jordan's approximately 4,000 religious leaders. 1,000 religious leaders (male & female) received formal and intensive training in workshops conducted through

subcontracts with the Jordan Environment Society and the Jordan Forum for Business and Professional Women. The training was conducted with materials such as the *Imam Training Guide,* which WEPIA developed in a participatory approach with imams and *waethat* (female lay religious leaders), and included sessions on the water situation in Jordan, water resources, water conservation methods, and public speaking skills for imams. Through other means such as *khutbas* (sermons), organized during the Water Week campaign in 2002, approximately 2,000 religious leaders listened to a Friday *khutba* on water conservation. In addition, approximately 591 *waethat* and 148 imams conducted water audits for 739 houses, and 134 *waethat* and 10 *imams* participated in retrofitting 144 houses. Approximately 6,450 laywomen were educated on water conservation concepts.

- Articles were placed in the Ministry of Awqaf journal (*Hadi Al-Islam*) on water conservation. The journal reaches all religious leaders in Jordan. In addition, in a participatory approach, JES, in cooperation with imams from the Ministry of Awqaf, developed a training guide for imams. The imams were able to cite 63 *suras* (verses) from the Quran on water conservation. The Ministry of Awqaf received copies of these guides for future reference.

- Specific material was prepared and distributed for the religious leaders and ongoing programs were developed to encourage them to reach out. The impact of the program was monitored to see results such as number of *khutbas,* number of mosques retrofitted and audited, and number of lectures given to worshippers.

- National training and education program established for religious teachers in schools and the *waethat*.

3. *Personnel from at least five women's NGOs receive training and materials on water issues and conservation techniques.*

Completed with additional achievements:

- More than 400 members of women's NGOs were trained in water conservation and the use of water-saving devices. Women's NGOs included the Jordan Forum for Business and Professional Women and the Aqaba Women's Business and Professional Association. Members of the women's NGOs and CBOs associated with the community grants program were also included in training activities on water conservation.

- Three social marketing and strategic planning seminars were conducted.

- Water conservation resource materials (flipchart and brochures) were made available at women's NGOs resource centers and on Web sites.

- Special programs were developed to reach women in NGOs that have both men and women such as Red Crescent in Aqaba. The programs reached out to neighborhood women using trained local women and flipcharts to do water conservation education.

- LPJ schools held a special retreat of girl guides for more than 400 girls and dedicated the retreat to water conservation training for girls to perform audits.

- A mix of educational materials, such as children's books, plays, and songs, was developed. Contests were also designed and implemented in collaboration with local schools and NGOs.

- AED and Haya Cultural Center translated and dubbed children's videos from the United States for use by Haya's roaming bus to show school children in rural areas.

- Haya Cultural Center produced a 3-part, 1-minute children's video, which was produced and acted by children.

- Haya Cultural Center produced one coloring book on water conservation for children that was modeled on a book developed by AED for the GreenCOM project in Egypt.

- Haya Cultural Center held an art competition for children.

- "Water week" in 2002 saw the production of school plays and contests for plays with songs and music between schools in Amman.

- Curricula written and completed by the Royal Society for the Conservation of Nature and the Ministry of Education. A supplemental CD was produced with games and quizzes for school children.

- Youth journalism workshop was held May 19–21, 2001, at the Zain Al-Sharaf training center. In addition, youth at LPJ schools produced materials and completed activities.

- Youth journalists contributed 15 articles to a women's magazine and produced one newsletter (*Sharqyat* women's magazine and *Swa Swa* youth magazine).

- Youth co-produced *Tartashay* magazine and a quarterly journal (8 editions produced during the first three years of the program).

- Eight editions of newsletters were produced in English and Arabic for the water community, NGOs, and governmental, donor, and private agencies.
- Supplemental materials were produced for NGOs and incorporated into their resource centers, such as flipcharts for the Jordan Forum for Business and

Professional Women and brochures for the Center for the Study of the Built Environment.

- Youth journalist walk-in center established at *Sharqyat* magazine.

- Children's materials were produced for WEPIA Web site. WEPIA turned over the materials for the interactive house to MWI for use on its Web site. NGOs now include water issues targeting children on their own Web sites.

4. *Percentage of population that has a sound understanding of Jordan's water situation and is familiar with everyday conservation techniques increases by 30% above the current 22% for knowledge of Jordan's water situation and 30% above the current 17% of knowledge of conservation techniques.*

Completed with additional achievements:

- Results of omnibus surveys by Ipsos-Stat and MRO following the 2001 and 2002 Water Week media campaigns indicated that knowledge of water conservation techniques by Jordanians increased and specific knowledge about water-saving devices increased from 17% to 88%.

- Ninety percent of citizens are now fully aware of water resources, reasons for water shortage in Jordan, and three ways to achieve water efficiency.

- Increase in knowledge levels for the following efficiency measures using a baseline in 2000 of 0% knowledge included: rainwater harvesting 15.6%; water reuse 45%; arid landscaping 30%; and regular leak detection and maintenance 18.3%.

5. *At least one professional course is developed and implemented in each of the following subject areas: xeriscaping and water auditing and maintenance.*

Completed with additional achievements:

- Professional courses on water audit and maintenance techniques were developed and delivered during the program for retrofitting of large water consumers (two courses for governmental entities, three courses for municipalities, and four courses for NGOs and the private sector). The courses were developed with assistance from consultant Tom Pape of Best Management Partners Inc. and other experts from the United States and Jordan.

- Three professional courses were developed and delivered on concepts and techniques of arid landscape by the Center for the Study of the Built Environment in cooperation with the University of Arizona with funding from WEPIA. One course (offered twice) trained private sector nursery owners, landscape architects,

and horticulturists. One course was devoted to parks and recreation staff from Aqaba, Karak, and the Greater Amman Municipality.

- Materials developed by the Center for the Study of the Built Environment to promote xeriscaping (landscaping that requires minimal water resources) included a guidebook on plants and trees suitable for arid areas, three posters, postcards, and a set of five brochures on ornamental plants and shrubs for arid areas, trees for arid areas, hardscaping (non-plant landscaping), xeriscaping principles, and native plants of Jordan.

- Web site was developed by the Center for the Study of the Built Environment on water-conserving gardens.

- The Center for the Study of the Built Environment developed expertise in xeriscaping and NGO management.

- Professional course offered by the Center for the Study of the Built Environment on water-conserving gardens in Dubai (at Dubai government expense) proved that the center, as an NGO, is capable of sustainable activities independent of WEPIA.

Goal #2:

Effective media campaigns that apply state-of-the-art social marketing techniques and use radio and TV spots, special TV programs and special print materials are designed, tested and disseminated. The print materials will be designed for businesses and members of the public as well as more specific materials to reach targeted audiences including women and youth.

Anticipated results:

1. *Development of three to six media campaigns that lead to better understanding of water issues and promote water conservation. The selection of the campaigns will be determined in collaboration with the Government of Jordan and USAID, by establishing a committee that oversees the development of these campaigns. The Government of Jordan, USAID, environmental NGOs and the recipient should be represented in this committee. The campaigns will relate to specific policy objectives, and when appropriate, will incorporate cross-cutting themes that help achieve policy measures. Following are some illustrative campaigns: Jordan's water resources, agriculture is a big consumer of water, water is not free, water-saving devices, and sources of contamination and misuse of groundwater resources.*

Completed with additional achievements:

- A media committee was formed from WEPIA, NGOs, MWI, and the private sector to develop media campaign objectives during Water Week.

- The following campaign themes were used:

    - Why Jordan has a water deficit
    - National water lottery
    - Water conservation methods
    - Water conservation promotion
    - Xeriscaping

    Campaigns included: TV, radio, print press. Within each theme, issues such as scarce water resources, sector consumption of water, misuse of groundwater, water-saving devices, water cost, and importance of water to industry were included. Mini-campaigns were also run by partners targeting their own subscribers.

- Multiple materials developed and researched indicated increases in knowledge, attitude, and behaviors among Jordanian citizens.

- Product information packets included leaflets, flipcharts, and brochures for the public and specific informational material targeting hotels, tourists, and industries. Selected materials were delivered to more than 300,000 households in Jordan through water meter readers and Jordan Water Authority collaboration.

- Multiple press kits and press releases were developed. Research indicated significant increases in quantity and quality of coverage of water issues in print.

- In 2002, the overall campaign won the "Best Campaign in Jordan Award for Two Years." The Jordan Advertising Awards are awarded every two years and cover over 47 categories of media.

- Three workshops developed and delivered for Amman journalists on water issues.

- Three field visits for 15 journalists to explore water issues at 1) Jdetta community grants program, 2) Zai Water Treatment Plant, and 3) Ein Ghazal Wastewater Treatment Plant.

- Reception and orientation for chief editors, TV producers, and journalists to talk about water issues.

- Draft booklet for journalists on water issues prepared.

- Creation of cartoon character Abu Tawfir as a water conservation logo with national recognition.

Some indicators not met due to circumstances beyond control of the program:

- Good Neighbor Award (permission refused by secretary general of MWI).

- Soap opera (JTV rejected request for collaboration).

2. *Development of a media campaign on xeriscaping.*

Completed with additional achievements:

- Development of the Water Conserving Garden Web site (bilingual)
- Development and airing of water-conserving garden TV spots
- Development of educational material on xeriscaping (posters, brochures)

3. *Establishment of public demonstration sites on xeriscaping.*

Completed with additional achievements:

- Establishment of Princess Basma Park in Aqaba as a demonstration site for xeriscaping.
- Designed street medians in Aqaba as sites for xeriscaping.
- Initial research for National Gallery Park conducted.

4. *Three videos describing the challenges facing the water sector in Jordan developed.*

Completed with additional achievements:

- Produced *Jordan Water Crisis* video for donors.
- Developed video on water conservation needs and efforts in Jordan for municipal conference attended by Queen Rania.
- Arabic language policy video, *Jordan Water Sector: Challenges & Opportunities,* developed in script form but not completed for decision makers in Jordan (2004).
- Designed and produced MWI print materials (folders and briefing papers) for donors.
- Conducted research study with policymakers to determine interests and opposition as formative research for policy video.

Goal #3:

Significant increase in local NGO capacity. The grantee will develop and implement a strategic plan for institutional capacity building of partner NGOs to sustain an ongoing process of improving water resources management through public awareness and participation. (Note: Applicants must indicate in their proposal how they plan to measure the increase in NGO capacity).

Anticipated results:

1. *Partner NGOs will have the capacity to carry out sustained public awareness programs on water or other environmental issues.*

Completed with additional achievements:

- Partner NGOs received formal workshop training in: 1) how to organize a public awareness campaign, 2) how to deal with the media, 3) public speaking, 4) social marketing (2 workshops), 5) accounting methods and financing, 6) fundraising, and 7) water conservation and auditing methods. All capacity-building activities utilized the services of U.S.-based and local experts. NGO training was offered to both national NGOs and CBOs during community grant start-up activities. NGOs exhibited expertise in these areas during their partnership with WEPIA.

- Three hundred CBOs received training in 1) needs assessment techniques, 2) how to write a proposal, and 3) financial accounting for CBO grants. CBOs also received guided practice as part of their training. CBOs used WEPIA accounting methods to prepare and maintain accounts for other grants they received. CBOs developed proposals and received funding using the models WEPIA developed for them. CBO retained trained staff.

- Partner NGOs participated in TV and radio programs during WEPIA media campaigns and led independent campaigns.

- Partners such as Haya Cultural Center and Jordan Environment Society continued to promote water conservation with their constituents after the close of WEPIA funding. The Royal Society for the Conservation of Nature, Center for the Sutdy of the Built Environment, Jordan Environment Society, Haya Cultural Center, and Jordan Forum for Business and Professional Women used their expertise in water conservation education to lead parallel workshops with other donor funds both in Jordan and outside, demonstrating both sustainability and leadership. The Farmer's Association/Jordan Valley Branch provided leadership in other areas.

2. *Partner NGOs are better prepared to seek changes in government policy or legislation such as legislation to reduce taxes on water-saving devices, legislation allowing NGOs to engage in revenue raising, and legislation on commercial activities.*

Completed with additional achievements:

- Future Search conference resulted in a participatory assessment of water conservation in Jordan and policy recommendations. (Conference gathered 80 persons representative of NGOs, universities, the Jordanian government, and donor agencies.)

- Construction codes altered and passed in 2002 by Inter-Ministerial Higher Council of the Cabinet to reflect lower water flow and flush rates. Jordan Environment Society and other NGOs (quasi-governmental) participated in deliberations as well as NGO associations from the hotel and hospital industries.

- Senator Paul Simon visited Jordan at the request of AED in collaboration with USIS to promote water policy issues and meet with NGOs.

- NGO efforts to improve their legal status came to fruition in the second phase of WEPIA through the CBO grant program, CBOs formed a coalition to request more support from the Ministry of Planning. The Farmer's Association/Jordan Valley Branch was active in representing farmers on agricultural law reform.

- Three workshops for mayors held in the northern, southern, and central Jordan.

- All municipal buildings in Jordan were audited.

3. *Ten practical fundraising activities are identified that the NGO community can use effectively to raise money. These have to be tailored to the Jordanian social/ legal system. At least five fundraising activities are initiated by NGO partners.*

Completed:

- Two fundraising workshops led by Indiana University's School of Philanthropy.

- Electronic consulting (or "e-consulting") services by Indiana University's School of Philanthropy were customized and delivered to 15 NGOs for two years.

- An electronic newsletter for 120 NGOs was provided through Indiana University.

- Partner NGOs identified and obtained additional funding (Royal Society for the Conservation of Nature, Jordan Royal Ecological Diving Society, Business and Professional Women's Association, Center for the Study of the Built Environment, Haya Cultural Center).

- NGOs revamped existing fundraising practices using social marketing and fundraising principles.

- Examples of fundraising activities that the NGO community initiated to to raise money more effectively:

    - Royal Society for the Conservation of Nature changed its strategy to target big donors and started developing new ways to approach individual donors.

    - Center for the Study of the Built Environment started to utilize its Web site to sell books and organize workshops as a way to raise funds.

    - A fundraising plan was instigated by Jordan Forum for Business and Professional Women with the assistance of philanthropy consultant Joan Mason.

    - A fundraising plan was instigated by Jordan Royal Ecological Diving Society with the assistance of Joan Mason.

    - Haya Cultural Center sold a coloring book to raise funds.

    - Haya Cultural Center started to ask its board of directors for donations, an approach that was never used before Joan Mason's workshop.

    - Jordan Royal Ecological Diving Society participated in Ramadan bazaars and organized special plays and activities to raise money.

    - All WEPIA NGO partners participated in selling water-saving devices during the Water Week campaign* to raise funds.

    - All WEPIA NGO partners appeared on TV and radio during the Water Week campaign as a way to promote their causes and raise funds.

    - The Jordan Forum for Business and Professional Women approached the Ministry of Planning to organize workshops for donors in order to promote saleswomen who were selling water-saving devices and women plumbers. The two groups are now negotiating an agreement.

    - The Zad Al Kheir Coalition was initiated by NGO partners to promote the concept of fundraising and philanthropy in Jordan after the fundraising workshop by Joan Mason.

**Note: The word "campaign" is not used by the fundraising community as it implies a one-off activity. Instead NGOs are encouraged to adopt specific practices and long-range programs.*

Goal #4:

Development of a pool of professionals working in the environment and water sectors and/or NGO sector, proficient in NGO management and in management and marketing for social change. To achieve this, in addition to on-the-job mentoring through NGO partnerships, short-term, in-country training should be provided to the environmental NGO community, in particular, and more broadly to the Jordanian water and NGO sectors. Training materials available in Jordan and the U.S. pertinent to NGO management and social marketing shall be utilized and built upon.

Note: recipient shall develop a mechanism to measure the effectiveness of the training. Participants that are not working in NGOs implementing water activities will have to cover part of their share in the training cost.

Anticipated results:

1. *Short-term intensive training courses are offered in the following areas for partner NGOs and other local collaborating agencies:*

    - project management
    - strategic planning for NGOs
    - fundraising
    - social marketing and development and tracking of social marketing campaigns related to water-use behaviors
    - development of environmental educational materials, participatory education, and communications skills
    - environmental journalism
    - xeriscaping

Completed:

- On-the-job training was provided to NGO financial staff on financial management and bookkeeping.

- NGO partners participated in a Future Search strategic planning conference.

- NGO partners received training in 1) technical report writing, 2) how to write a proposal, and 3) how to communicate with the media.

- Two workshops were held on the topic of social marketing for NGOs (led by Dr. William Smith and Mona Grieser).

- A series of "brown bag" lunches held on social marketing for NGOs by Cubeisy Associates.

- Nine NGOs involved in producing campaigns and using social marketing principles.

- NGOs have staff capable of designing a social marketing strategy.

- Journalists have been trained in environmental journalism focused on water.

- One public park in Aqaba completed.

- Training workshops on xeriscaping were delivered in cooperation with the University of Arizona.

2. *Appropriate outreach strategy instituted within the MWI and implementation initiated. Material summarizing the water situation, what the Jordanian government has accomplished, what different donors have implemented, and what remains to be done were prepared.*

Completed:

- Outreach material summarizing the water sector in Jordan has been developed and utilized along with the *Jordan Water Crisis* video for donors.

- Outreach activities involving Department of Public Affairs took place occasionally (for example, children's school play competition in the summer of 2002).

- Additional outreach collaborative efforts were rejected by MWI such as a journalist's competition and World Water Day.

Goal #5:

Significant increase in the number of public and private buildings that install water-saving devices and other technologies such as collection of rainwater for reuse.

Anticipated results:

1. *Water-saving devices installed in 50% of private hotels, 50% of private hospitals, 35% of private schools, and 50 large private businesses.*
2. *Appropriate water-saving devices are installed in 30% of public buildings.*
3. *At least one municipality adopts the voluntary water management code developed by WEPIA and its partners.*

Completed with additional achievements:

- Water-saving devices were installed in hotels, private hospitals and schools, and public sector institutions according to the target.

- Meetings with the customs department were held to educate staff on water-saving devices and their characteristics in an effort to rid the market of inefficient devices. The customs department was provided with samples of all equipment and devices and explanations of how they work and briefed on efforts to modify the National Building Code.

- Dealers and suppliers increased their stock and increased their distribution network for water-saving devices.

- MWI refused to allow WEPIA to promote specific products or locations where water-saving devices could be found. Prisma advertising provided the equivalent of US$35,000 independently to advertise locations to complete the campaign.

- Two representatives from the Ministry of Public Works and Housing accompanied WEPIA and USAID team to learn about policies and programs on water conservation in the United States and to assist in the promotion of conservation in Jordan.

- The secretary general of MWI accompanied a team of WEPIA and USAID staff to Cyprus to see how Cyprus handles its water scarcity in an effort to encourage MWI to promote water conservation in Jordan.

- The Aqaba Special Economic Zone Authority adopted the National Jordanian Building Code modified by WEPIA. Workshops were held in Aqaba to promote the new code in December 2002.

- Assessment of Water-saving device sector in Jordan completed in 2000.

Goal #6:

Sustainable understanding and participation in water activities initiated in selected communities.

Anticipated results:

1. *A minimum of two and a maximum of four community-based groups engaged in grassroots community action related to water. Small grants and/or incentive programs can be considered.*

Completed with additional achievements:

- Eighteen grants in three years provided to rural CBOs after the first program amendment increased the budget for such grants.

- Grants awarded to the Business and Professional Women's Association for setting up a women's sales force for water-saving devices, with 120 women trained.

- Multiple grants awarded to youth groups (Latin Patriarchate of Jerusalem schools, University of Jordan's Community Service Center, JUST, NGO for University Youth awarded grant for training 100 youth).

- Girl Scouts of Jordan held a youth summit and 400 youth were trained in water conservation and home audit techniques.

- In 2002, as part of its cost-sharing component, WEPIA won an award for community grant work from the Ministry of Planning. A total of 65 grants were awarded at this time related to water conservation. The Ministry of Planning grants were all for agriculture-based CBOs while WEPIA/MWI grants were used for residential improvements related to water conservation.

Goals and Results for 2003 to 2004 (WEPIA Cooperative Agreement Extension Period)

The original cooperative agreement for WEPIA stipulated that the program would run for approximately 36 months. If results exceeded standards provided for in the request for assistance and additional work was required, an option was available to extend the agreement for an additional 24 months.

WEPIA's achievements over the first two years of the program were very good and USAID/Jordan requested an internal agency evaluation of the WEPIA program. Ms. Roberta Hilbruner from USAID/Washington carried out the evaluation. Her report was very positive and she recommended that the program be extended for an additional two years. Following are her recommendations for the goals and results to be included in the extension period.

Goal 1: Increasing Water Use Efficiency

1. *Increase retrofit of users consuming more than 500 cubic meters per quarter to 60%.*

    - Retrofit program has audited almost 100% of the universe identified by WEPIA and retrofitted more than 60% of all buildings capable of being retrofitted. The universe now consists of 740 sites.

2. *Complete the revision of outdoor municipal water conservation codes and submit for approval to the Ministry of Public Works and Housing. This includes rainwater harvesting and xeriscaping for all large consumers when feasible.*

    - Outdoor "Beautification Codes" completed and submitted to Ministry of Public Works and Housing for approval.

3. *Initiate a sustainable water and energy consumer protection program including accurate labeling of water-efficient products and promote them.*

    - A comprehensive study on the kinds of appliances available in the marketplace in Jordan was completed and furnished to the MWI and the Jordan Institute for Standards and Metrology (JISM). The report, originally intended as a background document for the labeling program is now the background document for new appliance standards that are being developed by JISM. This organization develops and monitors the work of Daman Corporation, an agency similar to the U.S. Underwriter's Laboratory that serves as an independent standards board to verify the claims of manufacturers either by testing their products independently or verifying the laboratories in which manufacturers have had their products tested.

4. *Sales of water-saving devices for small/medium enterprises and households show a constant increase by the women's sales force or any other sales form at least doubles each year.*

    - Sales of water-saving devices by the WEPIA-trained saleswomen initially increased but then decreased because once the devices are installed, replacements are not needed for several years. The saleswomen began to sell additional items such as waterless soap, which rapidly surpassed the sales of water-saving devices because soap must be replenished from time to time.

      The use of saleswomen in Jordan has cultural limitations with few of the women willing to sell beyond their circle of friends and neighbors. Those who did expand their customer base, however, have more than doubled their sales. Given that this is a voluntary effort, it is considered a successful one.

5. *Designs completed for three large water consumers (nominated by MWI and USAID) to establish gray water reuse systems, rainwater harvesting, and xeriscaping.*

    - AED submitted a letter to USAID/Jordan on October 22, 2004, regarding problems encountered during the implementation of this activity. The problems included: 1) lack of response to the initial two RFPs for designs, 2) budgets that were provided far exceeded funds available for the activity, and 3) the inability to identify a firm, either Jordanian or U.S.-based, that was interested in a design-only activity.

Goal 2: Institutionalizing Technical Assistance

1. *Design systems for water conservation code enforcement with relevant agencies.*

    - A thorough research effort was conducted by WEPIA on water conservation regulation in the international setting that could be adapted to Jordan. A report

was submitted to MWI and USAID called "Steps to Regulatory Mechanisms Necessary to Enforce Indoor Codes."

2. *Design a policy requiring a grace period for private consumers to retrofit with water conservation fixtures, followed by imposed fines.*

    - Material was collected from other countries to provide greater credibility for the development of a grace period for both building renovation and retrofit and for supplier and importer adherence to codes. However, this was not pursued any further as it was agreed with the Ministry of Water and Irrigation to wait until the National Building Code was introduced first through proper channels such as engineering associations and then through voluntary adoption of the codes.

3. *In partnership with U.S. universities, establish the following short non-degree courses: social marketing, xeriscaping (arid landscaping), and fundraising.*

    - Philadelphia University hosted a three-credit-hour equivalent course in fundraising, in partnership with Indiana University. The Center for the Study of the Built Environment and the University of Arizona hosted a two-week course in arid landscaping. The social marketing course was requested to be incorporated into the master's degree program rather than remain as a stand-alone course. However, the whole master's degree program was delayed due to the start of hostilities in Iraq and the evacuation of WEPIA's chief of party in 2003. The resulting delays in re-starting programs and wining the confidence of U.S.-based academics resulted in a condensed time frame for the delivery of the planned courses. (WEPIA had already delivered three courses in social marketing in Jordan that were conducted by Dr. William Smith from the Academy for Educational Development, Mona Grieser, and Mr. Cubeisy.)

4. *In partnership with U.S. universities, establish a master's degree course in water demand management.*

    - The indicators for this degree program were altered due to time lost during the Iraq war, evacuation of staff, and consequent inability to bring expert consultants during 2003. WEPIA implemented with the Jordan University of Science and Technology (JUST), a series of eight courses that form the core of a master's degree program. JUST started the program in the Fall of 2004 by offering two of the core courses. In 2005 JUST opened enrollment into the master's program. WEPIA implemented a media campaign around the courses to encourage participation from Jordan and around the world. WEPIA subsidized Ministry of Water and irrigation and Ministry of Agriculture staff to take the initial round of courses.

5. *Establish a plumber's training program in Jordan's vocational school, including a pilot plumbing course for women designed and offered.*

- Revision of current plumbing curricula completed by two U.S. experts and adopted by the Vocational Training Corporation (VTC). VTC staff provided training by WEPIA in the new curriculum. A U.S. plumbing expert provided a short course titled "Women's Home Maintenance" to 23 women in June 2004. Development and delivery of "Professional Women Plumbers" certification course at VTC completed in December 2004 with 14 students initially enrolled.

6. *Upgrade the training facilities at the vocational training center to the minimum acceptable standards for the upgraded plumbers' course.*

   - WEPIA purchased equipment in country and from the U.S. to upgrade the facilities at the VTC training center. The equipment was turned over to VTC in July 2004.

7. *Establish a teachers certification program in interactive education.*

   - WEPIA explored the possibility of providing a certification program in interactive education for teachers with the U.S. Department of Education. USAID recognized that the procedure for certification would be drawn out and complex and amended the result to the development of a course in interactive education for 60 teachers. The course was given in January 2004 with participation by a U.S. expert from the George Lucas Foundation.

8. *Professional development of at least ten journalists, five Ministry of Education Curriculum Development staff, and ten NGO staff.*

   <u>Journalists:</u>

   - Five "brown bag" lunch programs provided to journalists in current issues. (Although WEPIA used some experts from the U.S. for these brown bags, the secretary general of MWI changed the subjects and the speakers for some brown bags, preferring to use existing MWI staff rather than permitting journalists to meet with foreign experts.)

   - Three 3-day workshops held for journalists from governorates in northern, central, and southern Jordan to familiarize them with water issues. Journalists in Amman were previously trained.

   - Three journalists invited to participate, with lodging provided, in the International Water Demand Management conference. At least 30 others were invited to attend conference meetings. More than 300 articles, radio programs, and TV announcements were made by journalists during conference coverage.

   - *Guidebook for Journalists on Water Issues* completed with intensive assistance from the secretary general of the MWI. Five hundred hard copies were printed and 500 CDs made available to MWI at their request for distribution.

Teachers:

- Two workshops held for 5 Ministry of Education staff, 20 teachers, and NGO staff in textbook development through a subcontract with the Royal Society for the Conservation of Nature. More of these workshops were planned but the Ministry of Education and MWI forbade WEPIA to use foreign consultants, stating they did not need the training.

- Eighty teachers, supervisors, and curriculum development professionals trained in interactive education.

NGOs:

- Six NGO staff received one-on-one in-depth training on financial management by consultant Amin Pakzad. Four NGOs were fully audited.

- Fifteen NGOs participated in fundraising workshop in 2003. An additional 15 NGOs participated in fundraising course at Philadelphia University in 2004.

- Twelve NGOs participated in Steering Committee Fundraising Day activities learning and implementing social marketing and fundraising principles. Sixty-five NGOs participated in fundraising activities.

9. *Adequately train demand management unit personnel within the Ministry of Water and Irrigation in designing and carrying out water conservation efforts.*

- Consultants Tim Skeel, an economist, and Mary Ann Dickinson, a planning & policy specialist, traveled to Amman in June 2003 to train Water Demand Management Unit (WDMU) personnel. MWI had assigned no personnel other than the director to this unit so the two worked primarily with WEPIA staff attached to this unit. The secretary general did not approve of any meetings or presentations planned for other MWI directors. The WDMU director was absent several days during the visit having just returned from an overseas trip and missed much of the training. Mr. Skeel became ill and was not able to complete his assignment, although he left his materials and software.

- WDMU director was provided a study tour to the U.S. to review water conservation programs.

- WDMU director was requested by WEPIA to work on policy program with the codes committees. She presides but refuses to work on policies.

- WEPIA hired short-term services of Dr. Ben Dziegewski to help the WDMU director draft a policy paper.

- WDMU director worked closely with WEPIA staff on the Water Demand Management Conference.

- WDMU director took all water demand management courses as part of master's degree program.

- WDMU director served on all RFP review committees.

- WDMU director served on community grants selection committee and visited recipients of grants, the model community project, and model parks.

- WEPIA paid for clerical support to WDMU and provided financial support for day-to-day expenses.

- WEPIA provided WDMU physical facilities such as desks, chairs, library, carpeting, computers, and office supplies.

- WDMU was a recipient of all WEPIA books and materials.

- WEPIA registered WDMU director and unit to receive relevant professional magazines.

10. *Hold a regional water demand management conference in Jordan with international exhibitors, seminars, and U.S. technical support. Arrange for business meetings between U.S. and Jordanian/regional manufacturers of water conservation equipment.*

    - This conference grew from a small regional conference to a major international conference. WEPIA spent considerable effort to ensure its success. About 1,000 participants from 27 countries participated.

    - A major promotional campaign preceded the conference. The conference was covered in local, regional, and international media.

    - WEPIA suffered a cost increase when MWI insisted on changing the venue of the conference from Amman to the Dead Sea. WEPIA was still able to get sufficient cost-sharing from a number of sources that more than off set the cost, leaving WEPIA with an unexpected surplus of funds.

11. *Assist one local manufacturer to upgrade production of water-saving devices to match water conservation codes.*

    - WEPIA brought to Jordan the leading supplier of water-saving devices in the U.S. and arranged meetings with several agencies and a manufacturer, Sayegh Group, in the hope that a joint venture might materialize. (Sayegh Group was the only

manufacturer that expressed interest in meeting with the American consultants.) The U.S. supplier determined that the time was not ripe to invest in Jordanian manufacturing of water-saving devices but agreed that it would be appropriate to develop an imported product line designed specifically for the Jordanian market. The Sayegh Group was provided with a business plan for a new product line but chose not to avail themselves of the opportunity. They requested to receive at no cost the specifications for manufacturing a water-saving device even though they did not wish to manufacture one at that time, which reflected their misunderstanding about how U.S. businesses operate. The U.S. experts refused to provide that information for free. WEPIA's responsibility was to facilitate the possibility of launching a joint venture, but the program could not force an agreement. WEPIA met its goal and any expectation beyond facilitation of meetings would have been unreasonable.

12. *Assist two nurseries in obtaining the capability to market and provide drought-resistant plants for sale.*

- Khadija Bent Khwiled, Rimon, and the Productive Women's Cooperative Society, in Marka received intensive training on how to propagate drought-tolerant plants.

- The two CBOs, mentioned above, started promoting their products to garden centers and the Greater Amman Municipality received Purchase Orders to assist with this work.

13. *Draft with the Water Demand Management Unit at the MWI a workplan which targets other large water consumers that USAID regulation does not allow WEPIA to approach.*

- A workplan was drafted in collaboration with the director of the WDMU and submitted to the secretary general for approval. The plan requested that the secretary general provide an engineer to the WDMU to work on implementation of the unit's planned activities. The secretary general refused to provide an engineer or make MWI employees available to assist the WDMU. And although the International Development Research Centre offered free training on conducting water audits for MWI staff and maintenance workers from other agencies, but the secretary general refused the offer.

Goal 3: Public Education

1. *Conduct three public media campaigns that support the implementation of the results identified in this SOW. (Proposal needs to identify the areas covered by the campaigns).*

   More than three public media campaigns were developed during the extension period:

- "Clean the Water Tank" campaign to support MWI efforts and summer water rationing. Print materials (a comic strip was published in a newspaper and handed out on a flyer by the water utility) and mass media (one spot) were used.

- The "Ramadan" campaign utilized TV spots and press already developed by WEPIA. This was supported by religious lessons taught by the *waethat* in the women's sales force program. Interpersonal communication, mass media, and a booklet for Ramadan were produced and distributed.

- "Zad Al Kheir" campaign was conducted to promote the work of NGOs and their role in public education and to support fundraising by NGOs. Multiple media, including print, TV, and radio, were used.

- "International Water Demand Management Conference" campaign. Multiple media channels were used to promote the conference.

- A campaign was also launched to promote the master's degree program in water demand management. Brochures, TV, and radio were used.

2. *Complete revisions of the water conservation curriculum and submit these to the Ministry of Education for approval.*

    - The Royal Society for the Conservation of Nature completed the water curriculum for all grades and all subjects and presented it to the Ministry of Education, which is awaiting other curriculum changes under the Jordan Program of Support for the Education Reform for the Knowledge Economy (EREFKe) Program before it incorporates them. MWI participated in the material development.

    - An interactive educational CD was completed.

    - A teachers guide was prepared, and teachers from public and private schools have been trained.

3. *In completing curriculum revisions, develop a cadre of skilled curriculum writers in Jordan, including the Ministry of Education subject matter experts.*

    - Twenty skilled technical writers were trained and produced a portion of the water education curriculum mentioned in number two above.

4. *Develop and implement a program to increase the capacity of major print and electronic media to promote and report on water conservation.*

    - A manual for journalists was prepared in 2002 and 2003 but was held by the MWI for approval and re-writing. In 2004, the manual was finalized and distributed to journalists.

- Journalists from northern and southern Jordan and Amman (Wadi Musa, Irbid, and Amman proper) have now been trained in water conservation and are regularly reporting on water issues.

- All Petra media agency field staff and some Amman staff trained.

- WEPIA maintained a regular public relations outreach program to assure that the media continuously covered water issues.

- Cost-sharing with print and radio media is now routine. Radio Monte Carlo also reports routinely on water-related news, including segments about WEPIA's water demand management conference, interviews with the minister, etc.

- JTV staff attended media workshops on water reporting. (The JTV training program was later canceled when the network received a grant for staff training from another donor.) Staff from the talk show *Youm Jadid* were trained to carry out a bi-weekly program on water issues. The subject matter discussed was changed to allow the MWI to use their staff on air at the request of MWI. Due to interferences with the MWI, the producer of the program eventually stopped it.

- The newspaper *Al-Dustor* carries a regular weekly page on water issues.

- The *Jordan Times* agreed to carry a water column.

5. *Maintain public awareness of efficiency methods through continued use of media.*

    - See above. Promotion of water conservation is now largely institutionalized through the various media outlets and training of journalists.

6. *Develop materials suitable for ICI [industrial, commercial, institutional] education programs.*

    - Materials were developed through a participatory process with large industries in Jordan (Hamodeh Dairy Products, Al-Marai, and Coca Cola). Brochures were distributed through workshops held by The Energy Management Services to large industries on water and energy conservation.

7. *Provide technical assistance as needed to the Haya Cultural Center, and to the new children's museum for design and fabrication of water-related exhibits, videos, and xeriscaping.*

    - WEPIA was exempted from this deliverable. The Haya Cultural Center continued work with technical assistance as needed from WEPIA. The museum plans were put on hold by the Greater Amman Municipality. WEPIA received no funds for this activity in its award.

8. *Provide at least three interactive water exhibits to the new children's museum.*

    - WEPIA was exempted from this deliverable. See number seven above.

9. *MWI and its two authorities have an updated Web site that addresses public concerns and explains the ministry's efforts to improve services in the water sector.*

    - WEPIA hired a local Web designer who worked with the Web site committee assigned by MWI to design the new Arabic and English site, translate all Arabic documents available on the site to English and modify previous English translations, develop a structure for all Web-based services offered by MWI, and train Web maintenance personnel. The Web site was completed but had been made available only to ministry staff by December 2004 because the secretary general wanted all Web documents to be complete before the site went public.

Goal 4: Community Support

1. *Administer a community grants program to provide assistance to poor communities to improve water supply networks, increase rural income, improve agricultural productivity related to water conservation, and foster the production of native and drought-resistant plants at local nurseries.*

    - All grants were awarded and completed in cooperation with WEPIA's community grant technical committee.

2. *Administer pilot projects in five rural communities to illustrate indoor and outdoor water and energy conservation while benefiting multiple segments of the community.*

    - Five sites were selected as demonstration sites, including a girls school in Ma'daba, a mosque in Shigera, a rehabilitation center in Mu'tah, and two community centers in Mafraq and Irbid. All sites were provided solar energy water heaters and lights, water harvesting technology, water-saving devices when applicable, and in the case of the mosque, a gray water system.

3. *Administer and award a competition to architects/contractors to design low income housing that is both energy and water efficient while remaining simple and family friendly.*

    - The Center for the Study of the Built Environment designed and organized the competition. Three awards were given for the best design of low-income housing with water and energy conservation features. The Aqaba Special Economic Zone Authority provided additional prizes. Habitat for Humanity is currently working with the Center for the Study of the Built Environment and the winning architect to adopt the design in their homes.

4. *One pilot poor rural community (to be mutually approved by USAID and MWI) remodeled to become a demonstration model of a community that is efficient in water use, indoor plumbing, gray water reuse, rainwater harvesting, and xeriscaping.*

    - WEPIA provided support to the village of East Shigera to become a model community in water and energy conservation. Through a participatory approach with the community, WEPIA identified specific areas for rehabilitation: water networks, rainwater harvesting, gray water reuse, solar lamps and systems to heat water, and water-saving drip irrigation systems. Assistance in all of these areas, including the necessary equipment, was provided to 18 homes in the village. In addition, at the request of USAID, WEPIA facilitated the tarring of streets, placement of street lights, tree planting along the main street, and construction of a small park.

5. *Develop three community parks as demonstrations of xeriscaping, gray water reuse, and rainwater harvesting.*

    - Al-Mansura, Irbid and Zatari, and Mafraq parks were completed as model parks for water and energy conservation. The parks were provided with rainwater harvesting equipment, water-saving devices, drip irrigation networks, solar heating systems and lamps, and children's playgrounds. Shades, a cafeteria, and signage for Al-Mansura park were also developed to promote the park as a tourist site.

    - The National Gallery Park was rehabilitated to become a model park for water and energy conservation. Although this project was slowed because of inclement weather and delays by the Greater Amman Municipality in awarding and monitoring contracts for the work, the park renovation was completed in March 2005. It now has hardscape features, such as a small theatre, irrigation systems, solar lamps, a water reservoir, drought-tolerant plants with signage, an improved children's playground, sculpture, and new railings at the periphery.

Appendix A:
NGO Capacity Building

Appendix A
Contents

Executive Summary

WEPIA worked closely with Jordanian NGOs to build their capacity to effectively conduct core activities and raise funds. WEPIA and its NGO partners successfully met all core objectives of the capacity building component, despite significant challenges. Although these activities benefited a wide range of NGOs during the course of the program, the focus was always on groups that worked to improve water-use efficiency in Jordan.

Photo courtesy of the WEPIA Program
A demonstration of water-saving devices at the Haya Cultural Center, WEPIA Partner NGO. Children observe how water-saving devices work.

Jordanian NGOs faced a number of obstacles in conducting their activities – including some common to NGOs everywhere and some unique to the Jordanian context. These obstacles included: problems with the legal environment in which NGOs operate, a scarcity of qualified personnel, negative attitudes toward NGOs among the general public (particularly toward secular NGOs), a tendency among Jordanians to give directly to the needy rather than through intermediary organizations, and a perception that the primary function of the volunteer sector is to meet the needs of unemployed and poor people. In addition to these "external" challenges, there were also challenges that arose from within the NGOs such as resistance to change operational practices among boards of directors, particularly regarding communications and strategic planning efforts.

As part of its planning efforts, WEPIA carried out a nationwide study of the non-profit sector in Jordan and an assessment of the abilities of NGO partners. This research effort included both qualitative and quantitative analysis and targeted individuals, corporations and NGOs. Findings included:

1. Most NGOS did not practice professional fundraising and were not aware of modern techniques in this field.
2. Jordanians were not aware of the services provided by local NGOs.
3. Jordanians were not aware of how they can help NGOs.
4. People prefer to give directly to the needy and to religious NGOs over secular NGOs.
5. Many Jordanians were distrustful of NGOs.

6. Laws governing NGOs were outdated.
7. Charitable NGOs were the most widely accepted by Jordanians; non-charity causes such as environment, small enterprise, women's issues, and income generation are not popular.
8. Corporations were being asked to play a larger role in working with NGOs; however, while corporations were more understanding of NGO goals than the average person, they were typically less willing to give than the public at large.
9. There was a gap of trust between the private sector and the non-profit sector; WEPIA advisors suggest that this lack of trust arises from the NGOs' shortage of skilled and professional personnel.
10. Tax laws were underdeveloped and did not provide sufficient incentives for corporations to give to non-profits.
11. NGO employees needed training on non-profit management, social marketing, fundraising, and proposal writing.
12. NGOs in Jordan did not communicate in a professional and systematic way with the public and did not generally have specialized fundraising and marketing specialists.
13. Wages for NGOs staff were very low compared to other sectors.
14. Only one entity, the Union of Voluntary Societies, legally represents NGOs; many NGOs complained that this union often acts as a competitor to NGOs for resources and neither does it provide services to NGOs and nor does it effectively lobby for changes in the NGO law and other issues of key importance to non-profits.

Working closely with its partners, WEPIA designed a series of action steps to help NGOs build their capacity meet the above challenges. These actions focused on building the skills of NGO employees and establishing a network of WEPIA partner organizations.

Deliverables under this capacity building program included:

1. Workshop on "How to Organize a National Fundraising Day."
2. Mini courses on "How to Develop an Effective Partnership Between Boards and Staff" for all WEPIA partners.
3. Three-credit hour courses on "Principles & Techniques of Fundraising," in cooperation between with one local and one U.S. university.
4. Provision of technical support and practical guidance on fundraising to all WEPIA partners.
5. The first Jordanian National Fundraising Day for all NGOs.

All the above deliverables were successfully completed and were well received by the NGOs. However, in the course of these activities, it also became clear to WEPIA staff that, as ambitious as this program was, there remained a need for a comprehensive, national program to build on the successes of WEPIA's capacity building efforts and to expand them to the broader spectrum of Jordanian NGOs operating outside water-related issues. If such a program were to be adopted by the Jordanian government, the promise of the WEPIA capacity building program could be fully realized.

This report includes descriptions of several capacity building activities delivered by WEPIA during the last two years of the program and closes with a set of recommendations for how the Government of Jordan, USAID, other donor organizations, and the Jordanian non-profit sector might build on these activities in the future.

Major Activities

Throughout the WEPIA Program, staff worked closely with NGOs to build their capacity. In order to support NGO sustainability, several workshops and courses were offered during the program. Below is an illustrative list of the key activities with a brief description.

1) Fundraising Course: "How to Organize a National Fundraising Day."

This course was established to bring NGOs together to begin planning for Jordan's first national Fundraising Day. Thirty-three people from 20 NGOs participated in this course. It provided participants with an opportunity to interact with each other to discuss problems and suggest solutions. In addition, the participants established the steering committee for the first national Jordanian Fundraising Day. The Steering committee was developed to meet regularly to plan, supervise, and follow up on needed arrangements for the national fundraising day.

2) Mini Courses: "How to Develop Effective Partnerships Between Boards and Staff"

These courses were designed especially for WEPIA's NGO partners to help their governing boards better understand non-profit management principles and their role in securing funds and sustainability for organizations.

Workshops targeted NGO decision-makers, focusing on changing internal environments in which NGOs operate. These highly specialized courses dealt separately with different NGOs' on the obstacles they face, which sparked discussion between the board of directors on how to best overcome these obstacles.

Before conducting the courses, a questionnaire was developed and handed out to all WEPIA NGO partners; this questionnaire helped to clarify the strengths and weaknesses of the targeted NGOs. The success of the mini courses underscored the point that non-profits in all sectors, not just water-use efficiency, could benefit from such training and capacity building efforts. The content provided in these mini-courses included, but was not limited to, importance of boards, duties of boards, NGO mission statements, leadership, diversity, relations between boards and staff, setting agendas, members, role of executive manager, and board accountability.

The training program targeted various NGOs. Findings and comments raised by participants included:

- NGOs need definitions of board duties.
- Many NGOs lack written and accurate scopes of work for each board member.
- NGOs lack strategic plans.
- NGOs lack development strategies.

- NGOs need professional fundraisers; with one exception, participating NGOs lacked fundraising or development departments.
- NGOs lack awareness of social marketing principles.
- NGOs are eager to learn more about non-profit management.
- Beneficiaries are missing from boards at most NGOs, limiting effectiveness in meeting stakeholders' needs.
- Few board members have distinguished managerial skills.

Recommendations:

1. This training course should be made available to all Jordanian NGOs, and should be presented by an expert facilitator. The facilitator should promote interactive discussion and help the participants to brainstorm and guide them toward effective solutions.
2. USAID, MWI, and other funding agencies could perform an assessment of NGO boards.
3. USAID should develop a list of standards for NGOs boards to help them move forward. In addition, they could publish a "Boards & Beneficiaries Bill of Rights" before giving grants to NGOs.

Study: Patterns of Giving in Jordan

WEPIA conducted a national statistical survey to provide insight into Jordanians' patterns of giving. This survey targeted individuals as well as corporations and included quantitative and qualitative interviews. The survey measured the level of giving, giving habits, reasons people give, the causes to which people give, public understanding of tax laws and incentives for giving, attitudes towards corporations that give, and examined briefly the best methods to promote NGOs for fundraising. Finally, it looked at other support to NGOs from government and donors, and most importantly, examined how the public perceives NGOs.

Survey Results: General Public

For the quantitative study, the sample included 550 individuals from Amman, Zarqa, and Irbid. Of those interviewed, 68% had given to charity, mainly in the form of cash, in the last 12 months.

Overall pattern of giving (base: all respondents)

Base:	**(550)**
	%
Gave nothing	32
Gave something	68
	100

Based on 68% of respondents that gave something, the type of gifts included:

- Giving money to charitable organizations.
- Giving products or items to charity.
- Giving time to charity. On average, individuals donated 25.3 hours of their time per year.

Based on 32% of respondents that do not give, the reasons included:

- Lack of personal means and time
- Lack of trust regarding how money is spent
- Lack of awareness of NGOs and how people can help.

Attitudes toward giving

Jordanians felt that giving to charity provided personal satisfaction even if it was also a moral duty. The majority believed that giving to charity can help make society better. The percentage of respondents that agreed with the statements below can be found in parentheses at the end of each statement:

- "A duty, whether we want to or not" (86%)
- "I get a lot of personal satisfaction from giving to charity" (96%)
- "By giving to charity, we can help to make our society better" (91%).

Based on 68% of the respondents that give, the table below lists the causes given to within the past 12 months.

	All
Total	**(375)**
	%
Poverty	81
Religious societies and activities	55
Health care/ helping sick	39
Orphanages	14
Children's rights and services	13
Rehabilitation for handicapped	7
Women's rights	6
Human rights	5
Grants for education	3

Jordanians identified the following as the most important motives for giving:

- Religious motivations (83%)
- Personal links and involvement (39%)
- Royal involvement (12%).

Based on responses from 293 respondents, the table below shows the amount of money donated, by geographic area

	Amman	Irbid	Zarqa
Base	(198)	(42)	(53)
	%	%	%
Up to JD 25	30	19	26
JD 26-50	45	26	38
JD 51-100	18	33	25
JD 101-200	5	19	8
JD 201+	3	2	4
Total	100	100	100
Average (JD)	51	74	60

Preferred methods for giving (base: all givers)
(1 = most preferred; 9 = least preferred)

	Ranking score
Direct contribution to needy	2.3
Through church/mosque	2.8
Directly to societies	4.1
At a charitable function	4.5
Through donation boxes	4.9
Through TV appeal	5.1
Through mail-in fund drive	5.6
Direct bank accounts	6.8

Preferred methods for receiving information (base: all respondents)
(1 = most preferred; 9 = least preferred)

	Ranking score
TV advertising	2.5
Personal visit	3.1
Newspaper advertisement	3.3
Radio advertising	3.8
By telephone	4.2
By post	6.2
By fax	6.4
By e-mail	7.0

Knowledge of the tax law and its relation to donations

- 16% of all respondents had heard of tax laws relating to charitable donations.
- 74% felt that tax laws already encouraged charitable donation.
- 52% believed that tax laws should be developed to encourage more giving to charity.

Corporate contributions and public image

- 50% of respondents had heard of corporations in Jordan that supported charity.
- 60% said they would buy products or use services of a company donating to charity.
- 57% believed corporations give out of a mixture of philanthropy and desire for self-promotion.

NGOs & public awareness

- Only 44% said they know what an NGO is and were able to provide an example of an NGO; this clearly indicates that knowledge is limited and a sustained communications program is needed.
- Even after prompting with an oral description of an NGO, 54% of respondents admitted not knowing of any such organization. Around 10% gave a vague response which may or not be an NGO (e.g. "elderly home") and 7% gave an incorrect response (e.g. UNICEF).

Opinions on the role of NGOs

- The great majority (77%) of respondents believe that NGOs generally perform an important role in Jordanian society although, given the lack of precise knowledge about NGOs, this figure should be viewed with a degree of caution.
- A small minority (5%) of respondents felt that NGO's do not play an important role.

Success of NGOs in informing and educating the public

Based on the responses, 30% of the respondents believed that NGOs had been successful in selling themselves to the public. However, 27% replied negatively and 42% said that they did not know, a response rate that suggested, NGOs have not been successful informing and educating the public about their work.

Only 13% of all respondents believe that the government could do the work of NGOs.

Survey Results: NGOs

During the time WEPIA conducted a study on the Jordanian attitudes toward NGOs, WEPIA also conducted a statistical analysis of NGOs to gather information about NGOs such as their relationships with the government, management structures, and sources of funding. Appropriate recommendations were made, and key data points and analysis from the survey included:

NGOs in Jordan

In Jordan, there are 874 registered NGOs and over 150 registered non-profit companies. NGOs are registered with one of the following ministries:

- Ministry of Social Affairs
- Ministry of Interior
- Ministry of the Environment
- Ministry of Agriculture
- Ministry of Cultural Affairs
- Ministry of Al Awqaf
- Ministry of Trade and Industry

There was broad diversity among NGOs not only in the causes they support but also in their sustainability, size, and management structures. Financial management and ability to be self-sustaining were key factors in the success of NGOs. Most NGOs, if not all, needed to put more efforts into training their staff. Networking between NGOs needed to be more formal and systematic, and there appeared to be a strong case for establishing an association of NGOs to coordinate activities such as joint training programs, joint representation, and joint marketing.

Funding Sources Used by Jordanian NGOs

- Donor organizations
- Government funding
- Foreign institutions
- Membership fees and subscriptions
- Fees for services
- Income generating projects
- Social events
- Private or individual donations
- Legacies.

NGO Communication Efforts

Many NGO staffers believed they were doing an effective job of communicating outside their organization. Nevertheless, many seemed to think of marketing efforts as

appropriate for occasional events rather than as a continuous process. National-level NGOs focused most of their efforts on fundraising and targeted two principal sources:

- Foreign funding agencies
- Corporations.

Individuals, who were the most important source of funds worldwide, seemed to be forgotten or neglected and were not properly solicited by NGOs in Jordan. Involving Volunteers in NGO work does not seem to be a priority for many NGOs; there are no written procedures to recruit and involve volunteers in most NGOs, and no procedures to manage them.

Computerization

In keeping track of and staying up to date with donors, members, and other supporters, most of the NGOs stated they had a computerized list; however, only one reported having specialized software. Some complained that their computers were out of date, and a few did not have computers at all.

There was a strongly held belief among many NGOs that donations should be voluntary and spontaneous:

Comments from NGO staff included:

- "We do not ask people for donations."
- "If someone visits the home and makes a donation, which is up to them, we do not ask."
- "We are far from anywhere and almost unknown. Why should someone living in Amman care about us?"

Dealing with Corporations

Some NGOs were more successful than others in dealing with corporations; in the survey and analysis of Jordanian NGOs, WEPIA found that the "involvement" approach was clearly more successful than the "give me" approach.

- Example: "I wrote to ----- asking them to give us the money for a new bus. They refused, even though the general manager is from this area"

- Example: "We sent them a written report about our society and its activities went to their offices to present ourselves and invited them to visit the home. They have supported us in many ways for several years."

Relations Between Government and NGOs

It was clear that government relationships with NGOs vary from one NGO to another depending on the level of funding they provided for each. One interesting comment held that:

"Government funds are not distributed equally between NGOs, nevertheless it seems to be that larger and more professionally run NGOs receive more funds and help from government than smaller and less developed NGOs"

Knowledge of the legal issues involved in fundraising varied according to the individual respondent. Knowledge of the laws governing NGOs was limited; although this was a specialized area in which only a few people might be familiar.

Attitudes Toward Laws

Some NGOs felt that the existing laws were acceptable; others complained that the laws were too complicated and created unnecessary work. Some NGOs felt that laws governing NGO's were outdated and should be made relevant to the 21st century (note: all laws governing NGO work were issued in the 1960s).

Tax Laws

All NGOs interviewed knew that donations were tax exempted; however, many NGOs themselves do not know whether they were tax exempted or not. Only 18% of individual respondents knew that there were such tax exemptions. As a general rule, NGOs did not take full advantage of tax laws to encourage donations.

Survey Results: Corporate Giving

Representatives of 10 corporations of varying sizes were interviewed for WEPIA's survey on corporations and patterns of giving. All corporations interviewed were included in their mission statement clauses about giving back to the community; however, only the international corporations operating in Jordan had written mission statements. None of the corporations had a written manual or standard form to accept proposals from NGOs, a standard evaluation procedure to deal with NGO requests, or were committed to paying a fixed percentage of their annual profit or budget to give back to the community.

Criteria, upon which a grant was awarded, differed from one company to another. Companies wanted to give to those causes related to interests of their potential customers or related to their products and services.

Grants did not necessarily reflect the size of the corporation in the market. Most grants were limited and small, even though corporations received a large numbers of proposals

each day. Only a few such requests got the attention of the personnel in charge. Of those, only a small number would receive the grants they requested.

Previous experience with an NGO plays an important role in decisions regarding renewal of a grant, especially if that experience met the demands of the corporation. When corporations where asked to name three items of advice for NGOs seeking corporate assistance, corporations stated the following:

- They were more likely to support events and NGOs that have good causes, especially those linked to the corporation's products,
- Some said they might have a negative response to events which have royal patronage, as it may divert attention from the cause to the royals themselves, and
- Others said royal patronage might add credibility to the cause.

Lack of Trust in NGOs

All the corporate representatives interviewed were uncertain of the ability of NGOs to run their work in a professional manner. Some corporations found a small number of NGOs transparent and worthy of trust in regards to managing funds and felt comfortable with their previous experience with these NGOs. However, the majority of corporations said that they have serious concerns and doubts regarding financial management in NGOs. They feel that many NGOs appear to be managed as if they were a family business.

Corporations certainly know that helping their society can improve their image and help their businesses one way or another, and they would prefer NGOs to get them involved in their activities rather than simply asking for money. While some corporations will request site visits to see projects that they funded, the majority feel that NGOs themselves should provide feedback on the differences made to the lives of others and to society through their interventions and the corporate funds provided.

Tax Laws and Corporate Giving

One surprising result of the WEPIA survey was that tax laws didn't seem to have much of an impact on the decisions of corporations to fund an NGO. Most decision-makers in corporations do not know how much of a tax deduction they get when they donate to a charity. Often, they were not even aware if all NGOs they helped get tax exemptions. One said, "Yes, I heard that we get tax deductions when we fund NGOs, but really I don't know how much it is. It is our accounting department who knows." When the representatives were asked if they really think of this option when deciding whether or not to give a grant, most said they did not. Some said that tax laws must be improved in order to encourage corporations to help more.

Corporate contributions were very limited, and greater promotional efforts and awareness campaigns were needed on the part of NGOs and government to get corporations more involved.

Survey Conclusions

The act of giving to charitable causes in Jordan was relatively widespread; 68% of those interviewed said that they had given to charity, mainly in the form of money, within the 12 months prior to the survey. Admittedly, giving to charity was widely considered to be a duty, but nonetheless one that gave pleasure.

Even among those who didn't currently give, the barrier among most was a lack of personal means or time rather than an outright rejection. However, some of those who did not give to charitable organizations expressed a lack of trust of how their money was spent, and they preferred to give directly to the needy individuals.

There was also a lack of awareness of organizations and how they gave (money, items or time). There was an underlying complaint that charitable organizations were not doing enough to communicate with the public about what they did and how people might help.

Donations in the past 12 months were mainly in support of fighting poverty, religious societies, the sick, and children's causes. Certainly, poverty, religious societies, and helping the sick were widely regarded as the most deserving causes while subjects such as family planning, women's rights, job creation, the abused, and the arts were lower ranking. Religious motivations were considered a major factor in giving to a charity.

The idea of making a will for charity was not widely known or considered (about one in three respondents). The main barriers to this concept were simply not having the money or property to bequeath, and a view that family "my children" should come first.

Awareness of tax laws in Jordan, relating to charitable donation, was low (less than one in five). There were, however, mixed views about whether laws should be developed in Jordan.

There appeared to be a limited degree of understanding, often vague, of NGOs; less than half of the respondents were able to give a correct example of an NGO. Similarly, when asked to name the NGOs, over half of the respondents admitted that they were unable to do so and others cited non-NGOs. Of the NGOs specified, The Hussein Center for Cancer, The Foundation for the Care of Cerebral Palsy, and SOS were the most widely and strongly supported. A common theme of these organizations was that they were seen to help those most in need such as the chronically sick and children. Although the understanding of the role of NGOs was limited, the majority of people believed that NGOs performed an important role within Jordanian society.

A key aim of the study was to ascertain whether NGOs could be sustained by public support. At the time, the answer almost certainly was "no." This does not rule out possibilities for the future but garnering sufficient public support would require substantial levels of investment in communication and education, to the point where actual services offered to the needy may be affected in the short term. To achieve the necessary levels of public support, activities should:

- Educate the public on what NGO's are, who they are, and the work they do,
- Reassure the public of the integrity of NGO's in using donations properly,
- Persuade the public that their donations were better used by an organization than by giving directly to the needy, and
- Communicate to the public and facilitate the means of giving whether money, items, or time.

Principles & Techniques of Fundraising

In 2004, WEPIA offered a three credit hour course on the Principles & Techniques of Fundraising. The course was developed in collaboration with Philadelphia University and University of Indiana - School of Philanthropy. This five-day (43-hour) course was unique in the region, teaching a systematic approach to fundraising. Moreover, it was the first time, to WEPIA's knowledge, that a 3-credit hour course in fundraising was presented at a university in Jordan. The course covered topics such as expectations and obstacles, institutional readiness of fundraising, a marketing approach, planning and strategic decision-making, selecting the right fundraising vehicle, donor recognition, volunteerism, boards, leadership, team building, application of principles, and discussion of expectations and obstacles, testing the concepts, and preparing a statement of objectives.

Recommendations:

1. Reproduction of this course for other Jordanian NGOs as a cornerstone of any building capacity training program.
2. Concentrate on having "train the trainers" courses to ensure the broadest possible audience for fundraising training.
3. Translate the contents of this course into Arabic and adapt research to Jordanian context using WEPIA survey data.
4. Provide scholarships for Jordanians to study non-profit management in U.S. universities.
5. Start a non-profit management degree program in one of the Jordanian universities.

Arabic Fundraising Newsletter: Nama'a

WEPIA's fundraising specialist developed and launched an Arabic fundraising newsletter called "Nama'a," which in English means "Growth." This newsletter was distributed to all steering committees and WEPIA partner NGOs. It covered many subjects such as direct mail, soliciting corporations, raising funds through the Internet, and related fundraising subjects.

The newsletter was initially published on the NGOs Center of Excellence website and it was recommended that a similar newsletter be developed and distributed to all NGOs in Jordan.

Zad Al Kheir Day
First Jordanian National Philanthropy Day
October 1 2004

Zad Al Kheir Flyer

Overview:

Perhaps one of the most exciting aspects of the capacity building program was the encouragement and development of an advocacy group by WEPIA. The advocacy group was simultaneously considering changes to the NGO law and learning fund-raising methods through the launch of "the Zad Al Kheir" fund-raising day; coming together as an inclusive rather than a competitive group for the benefit of all.

Zad Al Kheir Steering Committee

While WEPIA was the prime motivator and provided inspiration and secretarial services for the group and their work, it tried not to lead but instead sought to derive leadership for the group itself. A steering committee and sub-committees developed programs, sought sponsorship, established bylaws, secured the patronage of Her Majesty Queen Rania for the day, developed a list of volunteers, and stimulated 64 NGOs and CBOs to register and participate in the Zad Al Kheir coalition. The steering committee succeeded in obtaining the mayor of Amman's support, both financially and morally for the use of facilities, labor, commodities, and permission to raise funds. This mobilization of the NGO community was by itself an outstanding success. The NGOs realized that the success of the day was not only in the amount of funds they raised but also in the very fact that they worked in cooperation and harmony for the good of the country. The members of the committee grew and were inspired themselves; before they had been reluctant to work together.

One of the most difficult obstacles they faced during the 14 months of planning and preparations was a lack of legal standing and the need to make themselves and their goals better known to all ministries, including to the Ministry of Social Affairs. However, they ultimately managed to secure official approval to register the Zad Al Kheir Foundation, which would be responsible for organizing the national fundraising day each year.

The Zad Al Kheir steering committee, with technical and financial support from WEPIA, organized a one-month awareness campaign prior to Zad Al Kheir day. The campaign

was comprehensive and worked on three parallel axes: 1) raising awareness for the work of NGOs and the services they provided; 2) raising funds for the 64 participating NGOs, and after the event, the funds were distributed equally; and 3) inviting people to come to Al Hussein Park to share the joy of giving through an entertainment activity.

More than 120,000 people came to the park on Zad Al Kheir day. Sixty-four NGOs participated in the Charity Village and more than 300 volunteers joined the effort. Also participating were 14 bands, 25 artists, 6 ministries, and 23 different corporate sponsors. The day was a huge success, and it gave strong boost to the steering committee's efforts to develop greater cooperation among NGOs and greater awareness of their work among the general public.

Zad Al Kheir proved the importance of having an independent entity to serve Jordanian NGOs, to provide a networking environment for all NGOs to share experiences and ideas, and to discuss common problems.

Details of Zad Al Kheir Day Report:

The Zad Al Kheir Steering Committee worked in collaboration with WEPIA, which provided technical and managerial support and necessary experts and support during the preparation period that took 14 months – from August 2003 to October 2004.

1. The steering committee consisted of the following societies: Al Hussein Society for Habilitation/ Rehabilitation of the Physically Challenged, Cerebral Palsy Foundation, Haya Cultural Center, Society for care of Neurological Patients, Jordan River Foundation, Jordan Royal Society for the Conservation of marine Environment, SOS, Young Muslims Women Center, and Jordan Society For Exporters and Producers of Fruits and Vegetables.

2. 64 NGOs participated in the event coming from different parts of the Jordan.

3. The following ministries and departments supported the campaign:

    - Amman Greater Municipality.
    - General Police Department
    - Ministry of Water and Irrigation.
    - Ministry of Culture.
    - Ministry Of Awqaf.
    - Royal Automobile Museum.

4. More than 120,000 people attended the event, and 50% of the participants visited the charity village where they saw the booths of the participating NGOs and had the opportunity to take NGO brochures and ask questions about the services they provide.

5. Prior to Zad Al Kheir Day, a comprehensive campaign was carried out in three phases:

    - Phase 1, from September 1 to September 15, 2004, aimed to increase understanding of the term philanthropy and the services provided by Jordanian NGOs.

    - Phase 2, from September 15 to September 30, 2004, included the following activities:

        - Shopping mall campaign from September 15 to 30, 2004. Representatives of Zad Al Kheir solicited donations in Mecca Mall, Abdoun Mall, Al Salam Markets, all Safeway branches, and Majdi Mall.
        - Door-to-door Campaign: more than 300 students from universities and private schools conducted a door to door campaign in all regions of Amman.
        - A bank account was established at Jordan Bank.
        - Donations were also accepted through the telephone (090000707), allowing donations of 0.70 JD to the campaign per minute.

    - Phase 3, from September 15 to September 30, 2004, promoted Zad Al Kheir and invited people to attend. Many people answered this call, including artists, bands, families, schoolchildren, villagers and urban dwellers.

6. All three phases garnered national media coverage, which included:

    - 6 TV spots discussing topics such as children, environment, fighting poverty, diseases, volunteerism, soliciting donations, and inviting people to join in Zad Al Kheir day.
    - 2 FM radio ads aired on Fan FM and Amman FM, airing 10 times a day.
    - Newspaper ads were placed in Al Rai, Arab Al Yawm, Al Gad, and Madinat Al E'lam.
    - Over 100 press releases.
    - 5 press conferences.
    - 9 TV interviews and TV reports in Yawm Jadeed, Yesed Sabahak, 60 minutes, the news, and many others.
    - Radio interviews and reports on Amman FM and Monte Carlo.
    - 2 SMS campaigns.
    - 2 Mass mailers.
    - Development of a website: www.zadalkhier.com
    - Posters; Brochures, 265,000; and flyers, 70,000.

7. The most important activities in Zad Al Kheir Day:

    - Charity Village contained 64 booths for the participating NGOs, booths for sponsors, and cartoons for children.
    - Arts Village included work of 25 artists around the pillars circle in Al Hussein Park, accompanied by musical shows throughout the day presented by the Jordan Academy for Music.
    - Games and Entertainment Village included trampoline, horses, children's cars, plastic and rubber toys, face painting, electrical games and a food court.
    - In the Fun Village, schoolchildren participated with their own home-made games.
    - Auditorium shows included eight folk bands from different parts of Jordan.
    - Police helicopter shows, orchestra performances by both the police and army, glider airplanes, balloons, and bungee jumping.
    - The day was held under the Patronage of Her Majesty Queen Rania, who deputized Prince Raed and Princess Majeda to honor all those who supported this campaign and event.

8. Financial and in-kind support:

    - Initial estimate of in-kind support, which includes media support, equipment, free ads, gifts, printed materials, artistic performances, security, sound systems, and venue was 240,000 JD.
    - Cash funds obtained from the campaign were 25,420 JD.

9. Zad Al Kheir Foundation:

    The Zad Al Kheir steering committee succeeded in obtaining official approval from the Ministry of Trade and Industry to register as a non-profit foundation under the name of Zad Al Kheir Humanitarian Foundation. They are now responsible for organizing Zad Al Kheir Day on an annual basis and pursuing many other goals such as awareness campaigns, training, and marketing the voluntary sector.

Recommendations for Future Activities

1. Establish training programs for NGO staff in fundraising, social marketing, advocacy, networking, managerial skills, and public awareness.

2. Organize the first national conference (workshop) for non-profit management to help Jordanian NGOs and other non-profit organizations in the Arab world to better understand the scientific approach to manage non-profits and to enhance Jordan's position as a leader in this field.

3. Set standards for grants given to NGOs in Jordan to push NGOs to improve managerial skills and standards. It is also recommended that when a NGO winds a

grant from USAID, cost-share should be one component of the grant. This additional task will encourage and help NGOs learn how to solicit funds, thus becoming more sustainable.

4. Translate, adopt, and develop Arabic manuals in non-profit management and fundraising.

5. Continue the efforts that WEPIA started such as creating partnerships between international institutes and local universities in non-profit management, with the goal of creating a non-profit management degree program.

6. Continue research to measure attitudes toward philanthropy and NGOs and the obstacles NGOs face. This research would provide essential information to all NGOs and funding agencies to help them develop projects and services required by Jordanians.

7. Formulate and train NGO advocacy groups.

8. Update the NGO law because this law and the tax laws in Jordan do not satisfy the needs of NGO work; there should be an initiative to change these laws by supporting NGOs in lobbying and forming coalitions.

9. Support the Zad Al Kheir coalition, and build on the success they made during 14 months of working together; this coalition could be the cornerstone of any future work to deal with any of the previously noted problems.

10. Start a network between all CBOs and NGOs working with or under USAID projects. Combine them in joint activities; the joint activities would provide them with a venue to share experiences, ideas, responsibilities.

11. Train and provide scholarships each year for qualified and experienced fundraisers to obtain a degree in an area of specialization within the fundraising field from a U.S. university.

12. Market the voluntary sector through continuous public awareness and active social marketing campaigns to help change the environment in which NGOs operate.

Appendix B:
Community Grants

Appendix B
Contents

Executive Summary

The Hashemite Kingdom of Jordan faces a chronic imbalance in the population – water resources equation. In 1990, the population was nearly four million and the nationwide demand on water was approximately 1,000 million cube meters. In 2001, the population was estimated at nearly five million with water demand exceeding 1,250 million cubic meters; representing an increase of nearly 25% in both population and water demand. The available water supply, however, only increased by approximately 12% (from 850 to 950 million cubic meters) in the same period. The water supply increased due to a greater use of groundwater aquifers, sometimes to levels beyond the safe yield; wastewater reuse, and additional rights to water from the Jordan River System, which the country gained after signing a peace treaty with Israel in 1994. The water deficit, however, is expected to continue rising and is expected to reach 400 million cube meters by the year 2020. The inadequate water supply and other natural resources are factors that have contributed to debt, poverty, and unemployment to as fundamental problems in Jordan. Nearly 2% of the population earns less than $1 per day, and another 7.4% earns less than $2 per day, thus, placing approximately 30% of the population below the poverty line. Since the early 1990s, poverty has continued to rise. With nearly one third of the population living below the poverty threshold, access to municipal and other vitally important services is unevenly distributed across the regions, and rural areas in the south and northeast of the country are under-served. These shortfalls in service delivery have reduced income opportunities. In turn, low income has decreased people's ability to pay for services.

Rural communities use large amounts of water, and the capacity to implement solutions in these communities is limited. Under the WEPIA program, one core objective, as identified by USAID, was to develop a plan to engage communities in public education, infrastructure improvement, and communication efforts through a series of community grants for projects related to water conservation and water-use efficiency in small communities. In implementing this component, WEPIA supported overarching USAID goals by giving preference to women's Community-Based Organizations (CBOs), remote areas, community-serving facilities, CBOs working with children and/or handicapped persons, and innovative proposals. A systematic approach to addressing such problems requires the identification of causes, consideration of potential remedies, and implementation of capacity building activities.

Grants disbursed through this program went only to CBOs, and not to individuals. CBOs that received grants included voluntary societies, cooperative societies, and semi-national NGOs. A key goal of the program was to build the capacity of these CBOs by working with them through each step of the grant application, award, and implementation process. CBO staff received training in proposal writing and financial management, and WEPIA monitored after-implementation procedures, changes, and results.

Grants were typically awarded to those proposals that addressed immediate issues, thus, the duration of each grant activity tended to be short, six months or less. Since the grants were small, collaboration with other donors was important. Communities were

encouraged to seek other funding such as donors playing a supervisory role or donors providing funds to complete work, which made the community grant process participatory.

Prior to WEPIA's extension period, grants were approved and supervised by a special committee, all the members had an equal say in decision-making. However, under the terms of the WEPIA extension, grants required only USAID and MWI approval, although the committee continued to provide advice. In practice, USAID also had the authority to override MWI and committee grant decisions that it felt were incompatible with and inappropriate of USAID policies or grants.

During the WEPIA program, ninety-five grants were awarded under the WEPIA Program, twenty-seven grants under AED's agreement with USAID and sixty-eight under AED's agreement with the Farmer's Association Jordan Valley District Branch. To ensure the success of implementing these grants, WEPIA worked directly with the regional governorates and local water authority. Meetings were held in each governorate whereby the governor invited the CBOs to attend. These meetings provided opportunities for the CBOs to present their project. To build the capacity of CBO staff in the grant process, several proposal writing workshops were offered to train CBO representatives.

AED was aware of the implications of economic development in the region and the importance of building the capacity of and educating the non-urban sector to support the effort to improve water use efficiency. Through the WEPIA community grants, the program improved the livelihoods of over 4,000 people. This overview does not include details of the grants awarded under the AED/FAJVDB program. An illustrative sample of the grants are provided below.

Methodology

The first step in launching the community grants activity was the formulation of a multi-disciplinary advisory committee with members drawn from Global Environment Facility (GEF), Canada Fund, German Agency for Technical Cooperation (GTZ), USAID, the MWI, Near East Foundation (NEF) and WEPIA. The committee set the criteria for selection of proposals, which included:

1. Solving a water problem and/or contributing to improving water conservation techniques,
2. Increasing water awareness in the target groups' community,
3. Sustainability,
4. Local community participation,
5. Innovative/traditional community-inspired idea,
6. Generating income,
7. Capacity of organization, and
8. Poverty indicators.

In 2002, USAID amended the criteria to include:

9. Avoiding grants for gray water infrastructure unless the community has no sewerage hook-up and is unlikely to have a hook-up for several years,
10. Avoiding grants for spring rehabilitation unless the MWI has not designated the particular spring for rehabilitation and use for WAJ, and
11. Avoiding grants for expansion of irrigated agriculture.

The community grants program was advertised through meetings with the governors of various governorates, contacting governmental bodies that deal with CBOs, as well as through the advisory committee, and community-to-community dissemination. Throughout the process, continuous "Proposal Writing Workshops" were held, along with trainings on technical and financial issues. CBOs were given a manual and outline of the proposal format.

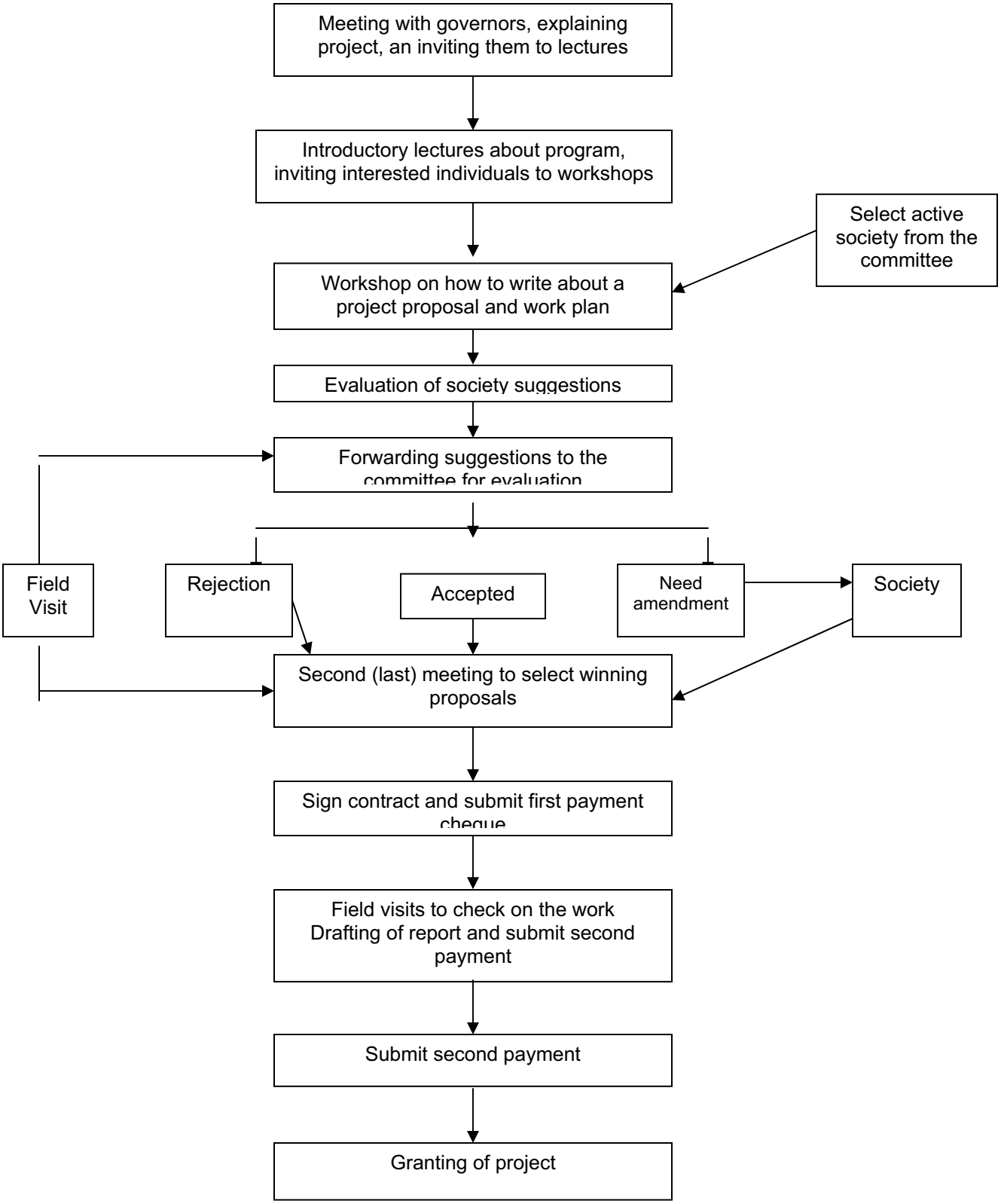
CBOs interested in applying for grants would write and submit draft proposals, which were reviewed and screened according to the above criteria by a specialist from WEPIA. Field visits might be required, along with some modifications to the proposal. Proposals were then forwarded to the Community Grant Advisory Committee (CGAC) and were evaluated according to a grading table. Later, a general advisory meeting would be held to finalize proposal ranking and proposals were finally accepted, rejected, postponed or returned to await modification. All proposal submitters were informed of the results.

Following acceptance, representatives from the winning CBOs would gather at an awards ceremony, agreements would be signed and awarded, and the CBOs would receive instruction on the required financial and technical reports. Implementation of the proposal was started by the CBO and regular follow-up/check-up visits were conducted by

WEPIA. CBOs submitted regular progress reports and a final report was submitted upon close out of the grant.

Follow-up monitoring was conducted to register the difference before and after the program implementation. Lessons were gleaned from the relative success of activities, documented, and used to guide choices in the future. Typically, grants were given only for short-term needs and were expended within six months. Most grants were given as a revolving fund; at the discretion of the combined committee, some communities were very poor and needed the funds at the outset.

Process Map for Evaluating and Selecting Projects



Grant Activities

Jdetta Charitable Society

The problem: 170 farmers were dependent on two springs for their irrigation. However, the inefficient irrigation system (open soil canals) was subject to evaporation and percolation of water; therefore, the trees were not getting the water they needed.

Implemented work: 500 meters of canals were lined with concrete, and the network was rehabilitated.

Photo courtesy of the WEPIA Program
The canals in this photo were lined with cement to decrease perculation of water into the soil.

Results: 170 farmers, which included families, benefited through a regular and sufficient supply of water for their orchards, which led to increased product quality and quantity enhancement, and increased farmers incomes. In addition, farmers saved time and effort.

The local community contribution was in kind (labor and meals for workers). The continuity of the project was guaranteed through the formation of a committee of farmers to protect the work from sabotage and to collect a modest contribution from farmers for use of future maintenance.

Photo courtesy of the WEPIA Program
The people of Karak depended on precipitation for their agriculture. In order to collect rainwater, pear-shaped cisterns, as shown in this photo, were dug to collect rainwater so crops could be irrigated as needed.

Smakiyyeh Charitable Society

The problem: Annual precipitation in the Karak governorate was around 300 mm. People were dependent on rain-fed agriculture and livestock. Moreover, residential tap water was not sufficient.

Implemented work: Construction of 10 pear-shaped cisterns that would be filled from catchment area (roof, nearby inclined land, street) during the winter, then, purchase water during the summer. The society managed the grant as a revolving fund. The beneficiary would take a loan to construct the cistern and pay it back in installments for two years; as soon as funds were recouped, other beneficiaries could take loans.

Results: This project increased available water supply for agriculture and livestock, especially during the summer. This additional water was then used for residential use such as drinking and cleaning, which improved the health and hygiene of families. Families also saved money by not having to buy water at commercial prices. Supplementary irrigation was provided for home gardens, as rural families tended to produce most of their diet locally.

Gharandal Charitable Society

The problem: Water leakage, due to old residential network, which resulted in high water bills. Poor families could not pay maintenance costs, which lead to continued degradation of the network.

Implemented work: The society completed a survey that revealed the situation of the networks of every house. As a result, 266 families maintained their networks and storage tanks and received water-efficiency awareness materials and instruction.

The Cultural Society for Youth and Childhood

The problem: Children are the leaders of the future. Living in a water-scarce country, it was necessary to raise awareness of water issues among the younger generation.

Implemented work: Three awareness workshops were held for university students and two in youth camps in Madaba and Zarqa governorates. In addition, seminars and lectures were offered, and a special water-awareness booklet was designed for children.

Results: More than 100 students received training and awareness in water conservation issues. This project was one of the first awarded. WEPIA staff learned a great deal from this grant, which generally was considered less satisfactory. The society used the funds to cover its own overhead costs, which created several problems for the program. As a consequence, the review committee thenceforward stated that WEPIA should not provide grants to national organizations, but only to CBOs.

Bsera Charitable Society

The problem: The Janeen water spring had been deteriorating for three reasons: the municipality diverted water from the upstream Gharandal spring for residential use, explosions made from a nearby cement factory disrupted the natural system, and consecutive years of drought decreased discharge. In addition, poor utilization of the water exacerbated the problems.

Implemented work: Construction of a 30 cubic-meter reservoir, 1000m canal from the spring to the reservoir, and 2000m lateral canals from the reservoir to the orchards.

Results: 100 farmers (and families) benefited from the provision of sufficient irrigation to the orchard, which led to an increase in product quality and quantity, thus increasing incomes. Time and effort were also saved. The local community contribution was in kind (labor and meals for workers). The continuity of the project was guaranteed through the formation of a committee to protect the work from sabotage, and a modest contribution was collected from the farmers to use for future maintenance.

Jabal Akhdar Cooperative Society

The problem: Rural people depended on rain-fed agriculture and raising of livestock, and residential tap water is not sufficient.

Photo courtesy of the WEPIA Program

People living in rural areas of Jordan, depend on rainfall for their livestock. To ensure water availability for livestock, a community grant was provided for the construction of a drinking facility.

Implemented work: Construction of 10 pear-shaped cisterns to be filled from the catchment area (roof, nearby inclined land, street) during winter. The society managed the grant as a revolving fund whereby the beneficiary would take a loan to construct the cistern and pay it back in installments over two years. Once the grant was recouped, other beneficiaries could take loans.

Results: The society was awarded a grant for 5,000 JD to construct eight wells. The grant was designed as a revolving grant, so members of the society re-pay 20 JD per month, which allowed for the construction of three additional wells. Annual pre-project water costs were 512 JD and annual post-project water costs were JD 130. Eleven households benefited directly and 85 persons benefited indirectly from this project.

Results: Increased water supply, especially during summer, for residential use. This resulted in improved health and hygiene of families. Families saved money by not having to purchase water at commercial prices. Supplementary irrigation was provided for home gardens because rural families tend to rely on these for nutritional needs.

Al Hilal Charitable Society

The problem: Villages under the Hilal society were located in a remote area high in the mountains of Ajloun, where the land is rocky, high in lime content, and well drained. However, it could be made suitable for the plantation of Pistachio trees with simple soil conservation structures.

Implemented work: Uncultivated land had previously been prepared with suitable structures, such as stone walls and tree basins, mainly on slopes. Construction of a cistern (to be filled through water harvesting, as precipitation is adequate in the area) was combined with drip irrigation for the under-cropping, because pistachio trees need six years to reach commercial production. The area underneath was used for rain-fed cultivation, which helped fix nitrogen in the soil for use by the pistachio trees. The society managed the grant as a revolving fund wherein the beneficiary would take a loan to construct the cistern and pay it back in installments over two years. Once the grant was recouped, other beneficiaries could take loans. Twelve cisterns were constructed and more than 120 seedlings planted.

Photo courtesy of the WEPIA Program
Up in the mountains of Aijloun, the terrain is rocky and well drained. Because the terrain is suitable for growing Pistaccio trees, simple soil conservation techniques were applied, and now, pistachio trees grow in this area. This photo was taken one year from bearing fruit.

Al Zahra' Charitable Society

The problem: Annual precipitation in Karak governorate was just 300 mm. In this region, people depended on rain-fed agriculture and raising of livestock. Residential tap water was insufficient.

Implemented work: Construction of 10 pear-shape cisterns to be filled from catchment areas during the winter. The society managed the grant as a revolving fund wherein the beneficiary would take a loan to construct the cistern and pay it back in installments over two years. Once the grant was recouped, other beneficiaries could take loans.

Results: Increase in available water supply, especially during summer, for residential use. This improved the health and hygiene of families. In addition, families saved money because they did not have to purchase water at commercial prices. Supplementary irrigation was provided for home gardens because rural families tend to rely on them for nutritional needs. This program resulted in an increased monthly income by 10 to 15 JD. In addition, the project saw an annual savings of 850 JD in water costs.

Aidoon Charitable Society

The problem: A 100 dunum area park belonging to the municipality had been neglected and gradually transformed into a dump yard because there were no nearby water resources, and the area was subject to soil erosion.

Implemented work: A woman's voluntary society took the initiative, in collaboration with the municipality, university, and local population, to rehabilitate the park. They planted 50 dunums with different trees and constructed stone walls, five cisterns, and fencing. Using grant funds, they also constructed one reservoir, repaired a reservoir, installed two metal tanks, and installed a drip irrigation system with electrical pumps.

Red Crescent Society

The problem: Water leakage caused by an old residential network, which resulted in high water bills. Poor families could not pay maintenance costs.

Implemented work: The society completed a survey that revealed the situation of the networks in each house. Eighty-six families maintained their networks and 43 storage tanks. The network of a girls' school was replaced. In addition, two water awareness lectures and one "water-saving devices" workshop were held.

Photo courtesy of the WEPIA Program
In the Mkhebe Foga village, 15 homes were retrofitted with new faucet fixtures to repair leaks.

Productive Women Cooperative

The problem: A 50-dunum dump yard had been transformed into a park. Dirt was removed and the soil leveled; 6,000 forest seedlings and 500 olive seedlings were planted. These seedlings required regular irrigation until they were large enough to subsist on rain and minor supplementary irrigation during summer.

Implemented work: A catchment area was leveled and lined with cement and guided to an existing reservoir and a drip irrigation system was installed.

Mkheba Foga Charitable Society

The problem: The traditional water source for Mkhebe Foga village was the Himmeh spring, which has high sulfur content. Municipal tap water was provided in the early 1980s. However, municipal water was provided only once per week. Once it was consumed, people would use the spring water for the rest of the week. Aside from contributing to aquifer depletion, this was a potential health hazard because of the high sulfur content. The municipal water needed to be put to more extensive use in order to offset consumption of the spring water.

Implemented work: Maintenance work on 15 houses, which included: floats, faucets, tanks and leakage repairs.

Mleh Voluntary Society

The problem: The largest cactus plantations in Jordan were around the town of Mleh located to the South of Madaba, where more than 110 hectares produces more than 3,000 tons of fruit. The area and production is continuously increasing. Most of the farmers irrigated by open furrow or by hose, which resulted in high losses through evaporation and deep percolation. This was due to lack of capital to install drip systems and to the misconception that over-irrigation results in better production.

Implemented work: The grant was used as a revolving fund to give grants to farmers to install drip irrigation systems. 15 farmers installed systems, and the number was expected to continue growing due to the payback. In addition, six beehives were bought for the society as an income generatimg project because the cactus flower is very suitable for honey production. In addition, a cactus pad-shredding machine was designed and given to the society to provide supplementary fodder during the dry season. The society demonstrated the machine to teach farmers how to use it.

Abdul Rahman Voluntary Society

The problem: In Hamrat Al-Azaydeh, located to the west of Madaba, farmers planted high-value guava crops irrigated by a nearby natural spring. The spring's discharge has decreased in recent years because of erosion during winter. As a result, farmers received low-quality crops or even lost trees.

Work implemented: The spring was cleaned of sediment and channeled through a plastic pipe leading to four large storage ponds, which were previously prone to links. These ponds rehabilitated and lined with mesh and cement plastering. Farmers were very satisfied with the increased water discharge and with improved storage capacity.

Grayyat and Ored Voluntary Society

The problem: Grayyat (meaning "small villages" in Arabic), located to the west of Madaba, is rich with Roman ancient water harvesting cisterns. Throughout history, inhabitants have been dependent on water harvesting for drinking, livestock raising, and agriculture. Even today, with municipal lines in the area, people rely on the cisterns. The problem was that some of the cisterns were leaking and needed maintenance.

Photo courtesy of the WEPIA Program
Throughout Jordan, people living in rural areas rely on cisterns for drinking, livestock, and agriculture. However, over time, the cisterns have worn down and require repairs. The cistern in the photo was renovated to repair leaks.

Work implemented: Nine cisterns were renovated and two new ones were dug. The cisterns ranged in size from 100–400 cubic meters. These cisterns were used by many families. WEPIA provided technical support to implement the project with the highest quality and lowest possible costs.

Taibeh Voluntary Society

Work implemented: Three springs were maintained along with three reservoirs (20 cubic m each). Drinking places were constructed for livestock. This increased water discharge, decreased losses, and allowed farmers to install drip irrigation systems due to increased pressure from appropriately installed reservoirs.

Rural Woman Cooperative Society

The problem: Women in the Jordan Valley would like to be more involved in the community work and to play an active role in income generation.

Work implemented: The cooperative offered interest-free loans to women to implement agricultural projects related to water efficiency. The types of projects implemented ranged from plastic ponds, irrigation systems, fertilizer pumps, to water harvesting. Proper guarantees regarding the beneficiary resulted in a high rate of payback.

Results: The fertilizer pump project significantly reduced the costs of fertilizer application due to increased efficiency. The initial cost of the project was 500 JD with an

annual pre-project fertilizer cost of 250 JD and annual post-project fertilizer costs of 200 JD. This resulted in an annual savings of 150 JD.

Hussein Society for the Physically Challenged

The problem: The society serves 130 physically challenged children with educational and therapeutic services. The therapeutic pool was leaking at an average rate of 3.6 cubic meters per day, which resulted in high water bills (1,350 JD per quarter) and jeopardized the foundation of the building.

Work implemented: Maintenance work on the pool, in which old tiles were removed and rusty pipes replaced, then plastered with special treatment and retiled. The pool now functions without leaking.

Results: Due to the rehabilitation of the therapeutic pool, over one-hundred disabled Jordanian children have benefited. The project resulted in an annual cost savings of 2,340 JD in water costs and has a recovery of 3.5 years.

Khadija Bint Khuwailid Cooperative Society

The problem: Landscape design in Jordan and the Middle East has been greatly affected with Western designs and plants, regardless of the fact that Jordan is one of the ten most water poor countries in the world. One of the WEPIA mandates was to introduce the concept of xeriscaping (landscape design using low water-consuming plants).

Work implemented: A water-harvesting cistern was dug. In addition, land was fenced, ploughed, and planted with water-efficient plants. Also, a greenhouse and other facilities were refurbished. The first production will be in Spring 2005.

Productive Woman Cooperative

Work implemented: In support of xeriscaping, a greenhouse, drip irrigation system, and mother stock plants were provided. As a result, women have local work opportunities and local nurseries are supplied with native and/or Mediterranean drought-tolerant plants.

Results: Through the implementation of this project, water availability increased and water expenditures decreased. The annual savings was valued at 1150 JD.

Red Crescent Society

Because of the great success of the first grant to the Red Crescent Society and because of the need for residential network maintenance, the society was awarded a second grant to continue its work.

Implemented work: The society completed a survey, shedding further light on household water networks. Eighty-six families maintained their networks and 43 storage tanks were installed.

Imtiyaz Cooperative Society

The problem: Farmers in Al-Eina Valley depend on irrigation from five natural springs. Because the area was very large, each farmer was only able to irrigate once a month. This led to periodic over-irrigation, which caused soil erosion.

Photo courtesy of the WEPIA Program
In the Al-Eina Valley, farmers depend on natural springs for irrigation. Reservoirs, as shown in the photo, were built to store water to allow farmers to irrigate their crops more regularly.

Work implemented: The society managed the fund as revolving loans for construction of 30 cubic-meter reservoirs that served as efficient irrigation structures. They stored water to allow regular irrigation. In addition, a drip irrigation system was installed. The reservoirs also permit water harvesting during winter.

Rahma Voluntary Society

The problem: People in Theeban depend on rain-fed agriculture and raising livestock, residential tap water was insufficient.

Implemented work: Construction of 6 pear-shape cisterns that would be filled from the catchment area during winter and purchased water during the summer. The society managed the grant as a revolving fund; the beneficiary would take a loan to construct the cistern and pay it back in installments over two years. Once the grant was recouped, other beneficiaries could take loans. The cisterns provided an increased supply of water, especially during summer, for residential use, which improved the health and hygiene of families.

Mghariyah Voluntary Society

Work implemented: The existing main cement canals were replaced by plastic pipes (2000m). The farmers and the society were hesitant at first to use plastic pipes instead of rehabilitating the old cement canal, but when they tried the first portion they felt it was

better, cheaper, and less prone to leakages. Farmers pay a small annual fee for the maintenance of the system.

Results: Olive growers in Mghariyah increased their olive production by 250 oil containers valued at 6,250 JD annually. Due to increased water availability, olive oil productivity has increased by 10%. Approximately 190 households directly benefited from this program and 1500 persons indirectly benefited from this program.

Zubayriyyeh Voluntary Society

Work implemented: This society was nominated by the Minister of Water and Irrigation. After a the materials and work were competed, 2,000 meters of three-inch plastic pipes and peripherals were installed in old degraded cement canals and covered with sand. The pipes covered all of the orchards and the farmers expressed their satisfaction with the work and speed of water delivery.

Onsor Cooperative Society

Work implemented: This society was also nominated by the minister and received pipes from the ministry. The pipes (3,200m) and peripherals were installed on both sides of of the valley. The water reached all the orchards.

Photo courtesy of the WEPIA Program
To reduce the amount of water lost in degraded cement canals used for irrigating orchards, 2,000 meters of plastic piping were installed in the place of the canals and covered with sand. This new system increased delivery and availability of water.

Jhayyir Voluntary Society

The problem: Old cement canals in a spring previously would become buried due to erosion and sediment build up during the winter.

Work implemented: After the rainy season, the canals were cleaned, and plastic pipes were installed then buried. Some small reservoirs were constructed to help farmers store water and irrigate more frequently.

Analysis

The community grants program was a link that allowed WEPIA and local communities to collaborate. It tackled water issues – both agricultural and residential – in the communities by directly and quickly addressing their needs. The program allowed the benefactors to express their needs and guide the process of selecting activities. The grant community program was efficient and cost-effective, results were quick and tangible, and overhead costs were low.

Grantees benefited from the implemented activities and also from training on how to prepare and write proposals. The program provided examples of how to acquire funds from government and NGOs and encouraged independent thinking and self-reliance. The institutional capacity of partner CBOs was improved as they managed and implemented the projects and received training in financial issues and transparent reporting.

The program also encouraged creativity, spurring farmers to develop new ideas and implement activities for the first time, such as the utilization of cactus as livestock fodder, fish raising in ponds used for irrigation, residential gray water, turning a dump yard into a park, and other innovative activities.

Obstacles and Constraints

In general, the program was implemented without major problems, as government and local communities were supportive, welcoming, and cooperative. However, the following constraints should be mentioned:

- The communities were reluctant to try and accept new and different ideas. This could be overcome by demonstration sites.
- A weak society might have a brilliant idea, but the chances of success are reduced by weak management.
- Due to distance and abundance of projects, field visits were less frequent than desired, thus making follow-up more difficult.
- People from isolated and remote communities have a difficult time visiting other areas and learning from experiences in other parts of the country.

Conclusion and Recommendations

It is recommended that the following points be considered in efforts to extend or expand the community grants program:

- Increase field visits to target groups to more closely guide and advise them.
- Increase training input of target groups to further sharpen management skills.
- Introduce monitoring and document results.
- Follow up with partners and target groups after the project.

- Document the whole process, including, obstacles, lessons learned, monitoring and evaluation results, and success stories, in reports distributed to other donor agencies.

Final List of Grants Under the WEPIA Community Grants

Name of group	Project title	Village/ town	group gender	Total grant (JD)
AJLOUN				
1. Jabal Al-Akhdar Cooperative society	Cisterns construction and maintenance	Jabal Al-Akhdar	women	5730
2. Al-Hilal charitable society	Cisterns construction and pistachio plantations	Shkara/ Fakhira/ Sakhina/ Safina	mixed	5151
AMMAN				
3. Productive Woman cooperative	Reservoir and drip irrigation system	Marka	women	5000
4. The cultural society for youth and childhood	Water awareness program for university students	Amman	mixed	3305.88
5. Al-Hussein society for the habilitation and rehabilitation of the physically challenged	Therapeutic pool repair	Amman	mixed	7000
6. Productive woman cooperative society	Nursery for drought tolerant plants	Marka	women	9336
AQABA				
7. Red Crescent society	Residential network repair and education	Aqaba city	mixed	5000
8. Red Crescent society	Residential network repair and education	Aqaba city	mixed	5370
BALQA				
9. Rural Woman Co-operative society	Revolving fund for water efficient programs	Der Alla	women	7000
IRBID				
10. Jdetta Charitable Society	Concrete water canals	Jdetta	mixed	3525
11. Aidoon Charitable society	Reservoir, concrete canals and drip irrigation system	Aidoon	women	4100
12. Mkheba Foga charitable society	House network repair and WSDs	Mkhebe Foga	mixed	5595
JERASH				
13. Khadeeja bint Khuwailid cooperative society	Nursery for drought tolerant plants	Raymoon	women	5114
KARAK				
14. Smakiya Charitable Society	Cisterns construction	Smakiya	mixed	3500
15. Al-Zahra' charitable society	Cisterns construction and repair	Zarha'	mixed	6000
16. Taibeh voulntary society	Repair and rehabilitation of 3 water springs	Taibeh	mixed	9330
17. Imtiyaz Cooperative Society	Water harvesting and irrigation reservoirs	Nueimat villages	men	6000
MAAN				
18. Mgar'iyyeh Voluntary Society	Canal lining with plastic pipes	Mgar'iyeh	mixed	4500
19. Zubayriyya Voluntary Society	Replacement of cement canals with plastic pipes	Abu-Makhtoob	mixed	2930
20. Onsor Cooperative Society	Replacement of cement canals with plastic pipes	Jaye	mixed	3750
21. Jhayyir Voluntary Society	Rehabilitation of spring and plastic pipes	Jhayyir	men	3180
MADABA				
22. Grayyat and Oder voluntary society	Roman cisterns repair	Grayyat	mixed	7000
23. Mleh voluntary society	Drip irrigation systems and bee keeping	Mleh	mixed	9150
24. AbdulRahman Ibn Auf voluntary society	Gray water systems	Madaba city	mixed	4000
25. Rahma Voluntary Society	Water harvesting cisterns	Theeban	men	6000
TAFEELAH				
26. Gharandal charitable society	Repair of house network and water tanks	Gharandal	mixed	3113
27. Bsera charitable society	Water reservoir	Bsera	mixed	4600

Appendix C:
Water Audits and Building Retrofits

Appendix C
Contents

Executive Summary

Water Efficiency Programs

Water management utilities worldwide have reduced potable water usage by implementing water efficiency programs. The management of freshwater resources to accommodate growing communities has traditionally focused on supply-side projects such as dams and reservoirs. Often these large-scale projects have generated negative impacts such as diversion of water from wildlife habitats, and have fostered dependence on wasteful management practices. In addition, the cost of obtaining and treating new sources of water have steadily risen, making demand-side options economically attractive.

Photo courtesy of the WEPIA Program
Throughout the project, WEPIA promoted the use of water-saving devices such as showerheads and aerators to conserve water

In the same way that rising fuel prices during the energy crisis of the 1970's led to the development of more energy-efficient appliances and vehicles, recent improvements in water-conserving technologies for toilets, showerheads, irrigation equipment, and faucets have enabled the maintenance of quality lifestyles, while reducing water consumption. Water-efficiency strategies aim to employ these technologies along with innovative management practices to use less water, while delivering an unchanged or improved level of service to consumers. There are numerous strategies or "Best Management Practices" (BMPs) for communities and local governments to utilize in striving for water efficiency. Examples of BMPs include: conservation/efficiency rate structures, reduction of supply system leaks, wastewater ordinances, landscape water use audits, water-efficient landscaping (xeriscaping), home and business audits and retrofits, water reclamation, and public education programs.

Several communities have adopted water efficiency and educational programs that increased the efficiency of water consumption through behavioral, operational, and equipment changes. For instance, in facing water shortages, the city of Ashland, Oregon -- a small city of approximately 20,000 people -- had two options available to increase water supplies. The first was to create a reservoir by damming Ashland Creek at a cost of approximately $11 million. The second was to lay 13 miles of pipeline to the Rogue River, at a cost of approximately $7.7 million. The city decided, however, that the options were neither fiscally nor politically feasible; instead it implemented a four-point water efficiency program. The program became a natural addition to the city's existing resource conservation strategy and the city council adopted a water efficiency program with four major components: 1) system leak detection and repair; 2) conservation-based water rates; 3) a high-efficiency showerhead replacement program; and 4) a toilet retrofit and replacement program. Implementation of the program began with a series of customer water audits, which in turn, led to high-efficiency showerhead and toilet replacements and to a $75

rebate program. The Water Conservation Program began in 1992, and by 2001 almost 1,900 residences had received a water audit. Almost 85 percent of the audited homes participated in the showerhead and/or toilet replacement programs. As a result, Ashland was able to reduce its water demand by 395,000 gallons per day (16 percent of winter use). An additional benefit of the program has been an estimated annual savings of 514,000 kilowatt-hours of electricity, primarily due to the use of efficient showerheads. The cost of the program was estimated at of $825,875 — or approximately one-twelfth the cost of the proposed dam that had been proposed originally.

Faced with similar water problems, the city of Cary, North Carolina recognized the need to incorporate conservation into its integrated resource management. As a result, the town council adopted a water conservation program in 1996 that consisted of eight elements: public education, landscape and irrigation codes, toilet flapper rebates, residential audits, a conservation rate structure, a new homes points program which gave extra points for subdivisions that used selected water-efficient measures, a landscape water budget, and a water reclamation facility. As a result of the program, the city delayed the two water plant expansions, projecting that the 10-year savings from water conservation would be between 1 and 2 million gallons per month by 2019. Also, city ordinances restricted water use, which decreased usage during peak demand months.

The water supplies in Houston, Texas, were forecast to meet demand through 2030. However, the city's groundwater sources were threatened by increasing instances of land subsidence, saltwater intrusion, and flooding. Since conversion to surface sources would have required costly construction of water treatment plants and transmission mains, Houston implemented water conservation programs in 1993, in order to help reduce city expenditures and capital investments. Their conservation program had four elements: education, an in-house program, a contract customers program, and a conservation planning program. The education program consisted primarily of outreach initiatives as well as efficiency retrofits for older structures. The in-house program included city irrigation audits, leak detection and repair for city pools and fountains, and analysis of city departments' water use. The contract customers program added penalties for excessive water usage during peak-demand periods. The conservation-planning expanded existing educational and other programs to include residential water audits, appliance labeling, commercial indoor audits, cooling tower audits, public indoor and exterior audits, pool and fountain audits and standards, an unaccounted-for water program, increased public education, and a "water-wise" and energy-efficiency program. At a total cost of $22,000, which was shared between the utility and the housing authority, the program reduced water consumption by 72 percent, or by 1 million gallons per month. Water and wastewater bills dropped from $8,644 to $1,810 per month. These dramatic results led the Houston Housing Authority to develop plans to retrofit more than 3,000 additional housing units.

Water Efficiency in Jordan

The Water Authority of Jordan (WAJ), the national water utility, under the direction of the Ministry of Water and Irrigation (MWI), provides the urban and rural water supply in Jordan. In most towns and cities, water flows are rationed to once a week and most buildings, residential, commercial or industrial, acquire a reserve of water that is expected to last for one week. Any additional water supply they may need was supplemented by a system of private wells that are monitored by WAJ, but for which the subscriber pays an additional and slightly higher tariff. As mentioned before, Jordan faces a chronic imbalance in the population/water resources equation. The nationwide demand for water is increasing at a rate that exceeds the increase in available water resources. As a result, the water deficit is expected to rise continuously and is anticipated to reach 420 million cubic meters in the year 2020.

In past decades, the Government of Jordan has developed extensive water resources management schemes. In addition, several donor agencies such as the United States Agency for International Development (USAID), The German Technical Cooperation (GTZ), the Japanese International Cooperation Agency (JICA) and many others, have invested billions of dollars in water related projects aimed at solving or reducing water scarcity in Jordan. For example, during 1999, USAID designed and started a new water policy implementation program focused on reducing groundwater depletion and on optimizing the reuse of treated wastewater in Jordan. USAID also initiated a new program to encourage private sector participation in the water sector and an activity to strengthen the government's capability to develop, contract, and manage major infrastructure projects.

With USAID assistance, the Ministry of Water and Irrigation planned a major Build Operate Transfer (BOT) wastewater project and a private sector management contract for the Wadi Musa water and wastewater facility under construction. In the agriculture sector, USAID provides a variety of technical assistance focused on restructuring irrigation tariffs and increasing cost recovery. In coordination with other donors, USAID is also engaged in a policy dialogue with the Government of Jordan on the need for significant structural reforms in the irrigated agriculture sector. USAID, the World Bank, JICA, and other donors are also funding a portion of a multi-donor program to rehabilitate and restructure the entire water network of Amman and other major cities in Jordan; this program will also rehabilitate ten contaminated springs and wells throughout the country.

The USAID-sponsored Water Efficiency and Public Information for Action Program (WEPIA) focused on immediate actions towards the adoption of water efficient technologies such as installing water-saving devices (WSDs) in the buildings of large water consumers and policy efforts designed to ensure that future construction conforms to international water conservation standards. Secondly, the WEPIA program addressed the next generation’s attitude towards water consumption. To achieve its objectives, the program deployed social marketing techniques to promote the use of water-saving devices (WSDs) in both the domestic and commercial sector. WEPIA’s primary targets were residential and commercial consumers. This report presents the findings and accomplishments of this program in the area of adopting water efficient technologies. It also presents the water savings resulting from adopting a “Water Fixture Retrofit Policy” as one of the strategies in promoting water efficient technologies.

In its early stages, the WEPIA program conducted an assessment to identify the largest consumers of water in Jordan, identify suppliers of water savings devices and tracking sales, and identify laws and regulations that might support or discourage those wishing to conserve water. Field visits to 52 of 570 large consumers indicated that considerable savings would result from the retrofit program. The study revealed typical attitudes of the Jordanian public and the peoples' frustrations that resulted from the lack of sufficient access to water.

Although Jordanians were aware of the water scarcity problem, they felt that it was the government's responsibility to find solutions through the construction of dams and the use of groundwater resources. The assessment also found that although Jordan's large consumers of water, large industries and corporations, were familiar with water-saving devices (WSDs) and had an interest in water conservation techniques, they were either not using any technologies to reduce their water consumption or had erroneously been encouraged to use the wrong WSDs. The cheapest WSD in Jordan is the restrictor which is produced locally of Poly Vinyl Chloride (PVC). Even though restrictors reduce water flow in faucets, they negatively impact the comfort of the user and do not meet the official definition of WSDs. More importantly, such restrictors can have a negative impact on the plumbing pipes due to mineral build-up on taps.

Since it is generally reliant on groundwater resources, Jordan's water, for the most part, is hard due to concentrations of dissolved calcium and magnesium salts. These minerals come from sedimentary rock such as limestone, which causes an increase in water hardness. Over time, hard water leads to the build-up of minerals on taps and other fixtures. By contrast, aerators that meet the German Specification according to the Deutsches Institut fur Normung (DIN) 246 specifications, which have lens shaped screens, prevent the mineral build-up. Furthermore, these aerators compensate any reduction in water flow with air, and they do not affect the comfort of the user; he/she generally does not even realize that a WSD has been installed on the faucet.

WEPIA's assessment also revealed a general lack of awareness about WSDs among average citizens. They were seldom used in residences and dwelling units because citizens believed that it was the government's responsibility to ensure water availability. The lack of interest in WSDs and their non-promotion was evident in suppliers' sales. The few suppliers of aerators in Jordan had sold less than 100 aerators during the entire year prior to this assessment. The assessment also revealed that Jordanians generally found personal cost savings to be a more compelling reason for conserving water than the awareness of the country's water scarcity problem. Perhaps the most important finding was that the legal mechanisms for encouraging conservation were simply not in place. While most Western European and North American countries had adopted strict water reduction codes for plumbing and sanitary ware, Jordan's code was based on an outdated UK code that permitted water flow and flush rates from taps to be as high as 20-50 liters a minute. In fact, the code specified only a minimum flush rate and not a maximum, as do the newer codes. Thus, another part of the WEPIA effort was aimed at revising the codes with the support of the Ministry of Water and Irrigation and the Ministry of Public Works and Housing, which are responsible for these codes. Code revisions take time and require participation by many different stakeholders. The assessment clearly indicated that the retrofit of the large water consumers was the quickest and easiest route to water savings. Because Jordanians are already amongst the lowest consumers of water in the world, it was determined

that in order to have the public's support, the WEPIA program should focus on cost savings coupled with the advocacy of inexpensive and reasonable retrofit requirements (focus on aerators and showerheads rather than toilets).

Unlike the retrofit model, rebates are used as incentives to purchase water efficient technologies, in the U.S., Jordan's economy could not afford such incentives; therefore, a free water audit in itself became an incentive for the public to participate in the program. As a result, WEPIA began to focus on water audits as a tool to promote the use of water-saving devices. The "Water Audit" tool was successfully used by the WEPIA program in convincing decision makers to install water-saving devices. It is for this reason that the WEPIA program launched the "Water Audit and Water Fixture Retrofit Policy," that targeted large water consuming entities in the different sectors -- governmental, commercial, industrial, and private.

Methodology

As mentioned earlier, the main objectives of this work was to audit the entire universe of large water consumers in Jordan and to convince 60% of it to install WSDs on their water outlets. To meet these objectives, a large water-consuming universe was developed. Following that, water audits were conducted at the majority of large water consuming entities, nationwide, and the results of the audits were then used to convince decision makers at those entities to retrofit their buildings and install WSDs on their water outlets. This section describes the methodology used to collect and analyze the data.

Universe Definition

For the purposes of the study, a large water consuming entity was defined as any entity that consumed more than 500 cubic meters per a single billing cycle in three months, regardless of the number of buildings served by any given subscription. For instance, the University of Jordan, which is one of the largest consumers, has 5 water subscriptions that serve nearly 57 buildings on the university's campus. Therefore, the study team dealt with subscriptions rather than buildings for the purposes of the study.

To arrive at such a universe, the WEPIA program obtained lists of subscribers consuming more than 500 cubic meters per cycle, nationwide, from the Ministry of Water and Irrigation's Water Authority's (WAJ) computer database. Unfortunately, WAJ's database did not have the ability to re-produce subscribers according to a certain required criterion such as public, private, or industrial; therefore, a complete list of all subscribers from the different categories with a water consumption rate in excess of 500 cubic meters per cycle was accumulated. The technical teams then sorted out the types of subscriptions in the accumulated list and classified them according to the following categories:

1. Governmental buildings
2. Hotels
3. Hospitals
4. Schools
5. Commercial buildings
6. Restaurants
7. NGOs

In total, 739 large water consuming subscribers were identified, as detailed in the table on the proceeding page.

Sector	Statistics	
	No.	Percent (%)
Public	399	53.99%
Schools	47	6.36%
Restaurants	34	4.60%
NGO	21	2.84%
HS	39	5.28%
HT	100	13.53%
Commercial	99	13.40%
Total	739	100%

Data Collection – Water Audits

As mentioned earlier, previous studies have found "Water Audits" to be one of the most effective tools in promoting the use of WSDs. Therefore, the study team relied heavily on the water audit procedure as a means of achieving the goal of retrofitting 60% of the large consuming entities.

As the name implies, a "Water Audit" can be defined as the process of conducting a complete inventory of all water fixtures and identifying leakage locations in a building, usually a large consumer. Inventories include the number of fixtures (e.g., faucets, toilets, urinals, showers, etc.) and their respective water consumption as measured by their potential flow rates. The detailed procedure of conducting a water audit is outlined in the following section.

Water Audit Procedure

To conduct a water audit, information relating to water consumption and water usage habits of the building's inhabitants is collected. There are three parts to the information collection. The first part relates to general information on the building and its logistics such as type of use and building, number of floors, number of employees, and the number of visitors per day. The second part is related to the water consumption rates in the building and includes: total annual water consumption (from the water bills), annual amount of water brought in by tanks, well(s) production, if any, and the value of the water bill. The third part relates to non-domestic water usage in the building, which includes: source of irrigation water, irrigated area, water consumption per irrigation, irrigation frequency, and cars washed (number and frequency). This data is used to familiarize the auditor with the building being audited and to accumulate data necessary in the calculations to follow the water audit. In addition, the water audit includes: counting the water fixtures in the building, measuring flow rates for the different water fixtures in the building, and determining the leakage conditions for those water fixtures. Since most of the public buildings are big and are multi-floored, the International Research Corporation (IRC) audit team usually audited one floor at a time. To keep track of all the data collected, the auditors used an Audit Form for each audited site. The three main water fixtures audited were faucets (found mainly in restrooms, kitchens, and laboratories), toilets, and showers. The required information was gathered for each fixture as follows:

Faucets

The total number of faucets can be counted in the building. However, while counting the faucets, the auditor has to measure the faucet flow rate, specify the type of threading, and indicate whether any faucet leaks or not. To measure the flow rate of a faucet, the auditor must prepare a container of known volume (e.g., 1 liter), prepare a stopwatch, turn the faucet on all the way, place the bottle directly under the running water, and start the stopwatch to measure the time required to fill the container to its capacity (e.g., 1 liter). Then, the flow rate can be calculated using the following equation:

$$\text{Flow in liters per minute} = \frac{60 \text{ seconds}}{\text{Time measured (sec)}}$$

The type of the faucet threading can be observed directly. The types of threading are externally threaded, internally threaded, or not threaded. This information is needed to determine a suitable type of WSD to be installed on the faucet.

Finally, the auditor must observe and record the number of leaking faucets, if any. This will help the auditor determine any maintenance requirements for the water fixtures in the building. The importance of detecting and fixing leaks stems from the fact that a leaking faucet can dispense up to 43 liters of water per day.

Toilets

As with faucets, the total number of toilets can be directly counted in the building. The auditor also has to measure the toilets' flow rate and specify their type (e.g., Turkish, gravity, hidden tank). The size of the toilet tank is usually indicative of the toilet's flow rate per flush. Since some tanks are not filled completely, it is recommended that the toilet tank lid is removed, then, mark the level of water in the tank with a marker, flush the toilet and close the supply faucet, refill the toilet with a known volume bottle to the mark, and calculate the volume of the toilet tank (no. of bottles needed x volume of the bottle). Most toilet tanks in Jordan, however, have capacities of 6-liters, 9-liters, or 12-liters.

Finally, to check a toilet for leakage, the auditor must remove the tank lid, check the overflow tube, drop in dye tablets, and wait for 15 minutes. If color appears in the bowl then there is a leak in the toilet. Another approach is to evenly drop some powder on the inner walls of the bowl. If there is a leak, the leaking water will cause streaks in the powder. A leaking toilet can waste up to 800 liters per day.

Showers

The auditor also has to count the total number of showers in the building, measure their flow rate, specify the type, and indicate whether any showers leak or not. Determining flow rates and detecting leaks is conducted following the same procedure used for faucets.

Water Consumption Behavior

This type of information was essential in conducting water audits. It centered on determining the frequencies and durations of use for the inventoried fixtures (e.g., numbers of times of use and the respective time-of-use of each type of fixture). This data was collected through direct questions asked to inhabitants (employees) of the large water consumer and from statistics previously gathered by the WEPIA technical teams. It mainly included the numbers of inhabitants/users by category (e.g., employees, students, residents, guards, visitors, etc.) as per the nature of the building. It also included the estimated number of fixture use and duration by each category of users.

Water audits, as summarized above, have been found to be a very convincing tool for homeowners and large water consumers to install WSD's. Once potential users realize that such simple devices pay for themselves, they usually do not hesitate to install them. The reason for conducting detailed audits as opposed to just performing the feasibility calculations based on total water consumption(s) as measured by the water bill is two fold:

1. The water bill may be exaggerated due to leaks in the piping system of the building.
2. The potential investor may be interested in partially installing WSD's, and therefore, would be interested in the economic feasibility for certain parts of the building.

To conduct the actual audits, the technical teams needed the necessary political cover and needed to obtain contact officers at each of the sites to be audited. This was obtained by the WEPIA program in two different ways:

1. A letter issued by the Prime Minister was distributed to public entities urging them to install WSDs as a means of easing the pressure on the national budget and to help cope with the Kingdom's water shortage problems.

2. The Minister of Water & Irrigation issued a second letter in reference to the letter issued by the Prime Minister informing large water consuming entities of the ongoing WEPIA activities and the water audits to be conducted at those entities. The Minister's letter also requested those entities to nominate a contact officer to coordinate with the technical teams in order to facilitate the water audit.

Following responses from the different entities, and in coordination with the WEPIA program and the MWI, the technical teams started communicating with contact officers, arranging for visits, and conducting the necessary water audits. The contact officer or his/her designee usually accompanied the audit team. As mentioned before, all data collected during an audit was reduced on a pre-designed form to facilitate the conduct of the required analysis at a later stage.

Audit Data Analysis

The water consumption rates can be estimated by determining the frequencies and durations of use for the inventoried fixtures (e.g. number of times of use and the respective time-of-use). Such behavioral data was collected during the audit, where possible, and were obtained from previous

audits conducted both by the technical teams. After conducting these calculations, the water auditor can estimate the amount of water that could be saved through the utilization of WSD's and fixing all leaks. To better quantify those savings, they were converted into their equivalent monetary value according to the local water tariff. Simple cash flow analysis was then conducted to justify the feasibility of investing in WSD's by showing that the money saved would exceed the investment required to purchase and install WSD's.

The first step in conducting the analysis was to calculate the weighted average flow rate for each type of fixture in the audited building. Average flow rates were calculated using the following formulas:

Average faucet flow rate $Fqavg = \frac{n1q1 + n2q1 + \ldots\ldots\ldots\ldots + nmqm}{n1 + n2 + \ldots\ldots\ldots\ldots\ldots\ldots + nm}$

where,

nm = number of faucets with a measured flow rate equal to qm liters per minute

Average toilet flow rate $Tqavg = \frac{n1q1 + n2q1 + \ldots\ldots\ldots\ldots + nmqm}{n1 + n2 + \ldots\ldots\ldots\ldots\ldots\ldots + nm}$

where,

nm = number of toilets with a measured flow rate equal to qm liters per minute

Average shower flow rate $Sqavg = \frac{n1q1 + n2q1 + \ldots\ldots\ldots\ldots + nmqm}{n1 + n2 + \ldots\ldots\ldots\ldots\ldots\ldots + nm}$

where,

nm = number of showers with a measured flow rate equal to qm liters per minute

Then, for each type of fixture, the audit data was used to extract the following variables:

- Number of people using the outlets daily,
- Total number of days per year each fixture is used (365 minus holidays),
- Number of times each person uses each outlet per day,
- Length of time (minutes) each person uses each outlet per use, and
- Recommended flow rates after installing WSD's for each type of outlet, which are 6 liter per flush for toilets, 6 liter per minute for faucets, 8 liter per minute for dish washing faucets, and 9 liters per minute for showers.

Using this data, the estimated water savings were calculated for the different fixtures as follows:

Faucets

$$Wsf = (Fqavg - R) * N * T * Nu * L / 1000$$

Where Wsf is the water savings from faucets (m3 per year), Fqavg is the average faucet flow rate (l/min), N is the number of people using the faucet daily, T is the total number of days per year the faucet is used (365 minus holidays), Nu is the number of times each person uses the faucet per day, L is the length of time (minutes) each person uses the faucet per use, and R is the recommended flow rate after installing WSD (6 liter per minute).

It should be mentioned that whenever the audit revealed that the average flow rate for a faucet was higher than 10 liters per minute, a value of 10 liters per minute was used instead of the actual measured flow rate to calculate the anticipated savings. This was done to avoid any unrealistic water savings that may result from significant reductions of flow rates.

Toilets

$$Wst = (Tqavg - R) * N * T * Nu / 1000$$

Where Wst is the water savings from toilets (m3 per year), Tqavg is the average toilet flow rate (l/flush), N is the number of people using the toilet daily, T is the total number of days per year the toilet is used (365 minus holidays), Nu is the number of times each person uses the toilet per day, and R is the recommended flow rate after installing WSD (6 liter per flush).

Showers

$$Wss = (Sqavg - R) * N * T * Nu * L / 1000$$

Where Wss is the water savings from showers (m3 per year), Sqavg is the average shower flow rate (l/min), N is the number of people using the shower daily, T is the total number of days per year the shower is used (365 minus holidays), Nu is the umber of times each person uses the shower per day, L is the length of time (minutes) each person uses shower per use, and R is the recommended flow rate after installing WSD (9 liter per minute).

The total anticipated saving as a result of using WSD's can then be calculated using the following equation:

$$Ws = Wsf + Wst + Wss$$

After estimating the amount of water saved as a result of installing WSD's, the study team compared the cost of the saved water to the cost of installing WSD's. This is a very important step. Once potential users realize that such simple devices pay for themselves, they usually do not hesitate to install them. Two main monetary values were calculated and compared:

Value of Saved Water = Total water saved x unit price of water
Total Cost of fixtures = (No of faucets x unit price/aerator) + (No of showers x unit price/shower aerator) + No of toilets x unit price/trim)

The unit costs for WSD's were as follows:

Threaded faucet	=	JOD 3.5
Unthreaded faucet	=	JOD 9
Shower aerator	=	JOD 18
Toilet dam	=	JOD 3.5

Once those two values were calculated, the study team was able to compare the cost of purchasing WSD's to the cost of the saved water in order to determine the feasibility of investing in WSD's.

Post-Audit Follow-Up

Following the completion of the audit, and since the main purpose of the audit was to convince the decision maker(s) at the audited entity to approve the retrofitting activities, it was necessary to develop a post-audit approach to achieve this goal. As a result, a "post-audit" package was prepared for every audited entity and constituted of:

- A cover letter from H.E. Minister of Water and Irrigation and/or the Secretary General addressed to the decision makers at the audited sites.
- A summary sheet of the audit results summarizing the water savings, the cost of the retrofit, and the financial feasibility of the investment.
- Recommended WSD specifications.
- List of local suppliers.

Once the packages were prepared, the technical teams arranged a visit to the decision maker(s) at the concerned entity. During those visits, the technical team gave the decision maker(s) a briefing on the WEPIA program and the results of the water audit conducted at their building(s). In most cases, the decision maker(s) approved the recommendations of the technical team and gave direction to initiate the retrofit process. Then, the technical team continued to follow up with the responsible person, which in most cases was the same contact officer originally appointed to facilitate the auditing activities. This follow up mostly included technical assistance in the tendering and procurement process. Considering the size of most tenders, the majority of them were tendered through direct solicitation of prices from the approved list of suppliers provided by the study team. Some tenders, however, were executed through a complete tender process. The technical assistance offered by the study team included provision of minimum required standards and guidance throughout the tendering/award process. In some cases, members of the study team were asked to participate in the tendering process to identify a supplier; whereas, in other cases, the concerned entity completed the entire procedure on their own.

Following the award of a contract the study team continued to coordinate with the winning supplier until the building(s) was completely retrofitted.

Post-Retrofit Follow-Up

Once a building was retrofitted, the study team re-visited the site and conducted another audit to verify that the post-retrofit flow rates were within the recommended standard (e.g., 6 liters/min for faucets, 6 liters/flush for toilets, and 9 liters/minute for showers). The majority of public buildings purchased faucet aerators due to the high cost of retrofitting toilets.

Whenever a water fixture was found to have a non-compliant flow rate, the supplier that installed WSDs in the building was contacted and asked to re-visit the site and either fix or replace all non-compliant fixtures.

Results, Analyses, and Inferences

Using the procedure outlined in the proceeding section, the technical teams audited the entire universe. The post-audit calculations were performed for each of the audited sites and were used to convince the decision makers at those buildings to issue directions to retrofit their buildings. This section summarizes the results of the retrofit policy implemented by WEPIA for the period from November 2001 through October 2004.

Universe Statistics

As mentioned earlier, the technical teams identified a universe consisting of 739 large water consumers. The universe was defined through an extensive review of water consumption rates, as per the Water Authority of Jordan database records. It should be mentioned that the size of the universe varied throughout the conduct of the study because certain sites were found not to be a large water consumer upon visiting. Although visited by the technical teams, those sites were excluded from the universe. Four main reasons for exclusion of sites were identified and summarized as follows:

- Wrong meter reading indicating that the site is a large water consumer when it's not (verified upon site visit). Although some of those sites were in Amman, the majority of sites were located in the governorates. The problem was attributed to mal-functioning meters, which was less frequent in Amman due to LEMA's aggressive campaign to replace water meters in 2001/2002.
- Water company readers accumulated a series of low readings into one reading, thus, coming up with a high reading. In these cases, the WAJ readers estimated the subscription's consumption without actually visiting the site to take the reading. The estimate was usually made in line with previous consumptions. In many instances, an actual reading was taken a number of cycles later, which indicated high consumptions. This is attributed to the non-read consumptions accumulated into one cycle after which the consumption per cycle went back to normal.
- Excessive temporary consumption for a limited period of time (e.g., nearby construction, and leakage)
- Illicit connections whereby neighbors would connect to a nearby mosque or school meter. This was most frequent in remote areas where the levels of enforcement were low.

In total 192 sites out of the 739 sites were deleted. This information is summarized in the following table. The remaining 547 subscription were retained for further analysis and were considered large water consumers eligible for retrofit. Again, it should be kept in mind that one subscription does not mean a single building. Therefore, the 547 subscriptions account for a much higher number of buildings, with some subscribers having as high as 10 buildings per subscription.

Sector	Statistics		
	Total	Excluded	Remaining
Public	399	136	263
Schools	47	7	40
Restaurants	34	6	28
NGO	21	1	20
HS	39	1	38
HT	100	9	91
Commercial	99	32	67
Total	739	192	547

Auditing/Retrofitting Statistics

All sites were audited during the period of November 2001 through October 2004. The following table summarizes the number and percentage of audited and retrofitted sites for the various sectors.

Sector	Retrofitted		Audited	
	No.	Percent %	No.	Percent %
Public	160	60.80%	263	100%
Schools	27	67.50%	40	100%
Restaurants	13	46.40%	28	100%
NGO	9	45%	20	100%
HS	27	71%	38	100%
HT	56	61.50%	91	100%
Commercial	36	53.70%	67	100%
Total	328	60%	547	100%

Persistence Studies for Water Consumption and Savings

Persistence studies were defined as a post-retrofit check to document the actual water savings as a result of installing WSDs. The actual post-retrofit water consumption rates were obtained from the Water Authority of Jordan and compared to the pre-retrofit water consumption rates. Unfortunately, a significant number of the sites were retrofitted in 2004. Therefore, not enough time had elapsed to document an annual average post-retrofit savings. For the purpose of this analysis, the study team only included the sites for which an entire year had elapsed after the retrofit, if available, and for which a history of consumption was obtained from the WAJ, since

WAJ was not able to provide histories for all the retrofitted sites. The results of the savings for the various sectors are summarized in the table below. The savings were categorized into two time categories: 1) November 2001 through December 2002 and 2) January 2003 through December 2003 because the WEPIA program, which started in 2000, did not start its official large water consumers retrofit policy until November 2001. The first phase of the program ended in December 2002, then, WEPIA's extension, the second phase, started in January 2003 and ended in December 2004. For reasons mentioned above, savings from retrofitted sites were only taken through December 2003.

The table below shows savings and net savings in the various sectors. Net savings was used because although consumption rates decreased in some retrofitted sites consumption increased in others. The later can be attributed to several reasons which include:

- Drop-outs, sites that have removed their WSDs or were subject to vandalism,
- Sites where new buildings or sections were opened, and
- Sites whose service nature subjects it to an increase in users (e.g., students, hospital patients, and hotels). Although no formal comprehensive investigation was conducted to verify this, a random sample in the governmental sector indicated that nearly 22% of the sites were schools and 25% were hospitals.

Summary Statistics for WEPIA's Retrofit Policy Program

Sector	Actual Annual Water consumption (m^3)[a]	Actual Annual Water Savings Resulting From Phase I (m^3)[b]	Actual Annual Water Savings Resulting From Phase II (m^3)[d]	Overall Actual Annual Water Saving Resulting From the Entire WEPIA Program (m^3)	Portion of Total Savings Attributed to Phase II (%)	Sectoral Contribution to Overall Savings (%)	Sectoral Representation to Universe (%)[e]	Overall Savings as a Percent of Total Consumption (%)
Governmental	2,155,616	75,506	234,398	309,904	75.64%	46.17%	48.00%	14.38%
Hotels	756,504	102,326	64,306	166,632	38.59%	24.83%	16.60%	22.03%
Hospitals	264,012	49,237	60,755	109,992	55.24%	16.39%	6.90%	41.66%
Schools	163,212	31,341	10,303	41,644	24.74%	6.20%	7.30%	25.52%
Commercial	363,360	11,903	13,241	25,144	52.66%	3.75%	12.20%	6.92%
Restaurants	127,892	NA[c]	NA	17,864	NA	2.66%	5.10%	13.97%
Total	**3,830,596**	**270,313**	**383,003**	**671,180**	**57.06%**	**100.00%**	**96.1%**[f]	**17.52%**

a As per the universe prepared in 2001, 192 ineligible sites excluded
b By the end of the Retrofit Policy Program lasting from November 2001 through December 2002
C Only overall savings are available for restaurants and not by phase
d WEPIA's extension lasting from January 2003 to date
e Measured as the proportion of number of sites of each sector to overall universe
f NGOs not taken into consideration

Discussion of Results

According to the previous table, the large water consuming entities had a total annual consumption of nearly 3.8 million cubic meters annually. As a result of WEPIA's Phase I Retrofit Policy Program (November 2001 through December 2002), savings of nearly 270,000 cubic meters were obtained, which accounted for 7% of the total consumption. The continuation of the program, Phase II, contributed to an additional 383,000 cubic meters, which accounts for 10%. The two phases combined resulted in savings of nearly 670,000 cubic maters, which translates into nearly 18% of the total consumption. In other words, despite its short life, the Retrofit Policy Program has helped achieve savings of 18% in the Jordanian large water consuming universe. Assuming that the water saving technology is left intact and well maintained, then, this percent savings would be recurrent on an annual basis. Using the rate of JD 1.5 per cubic meters for water, this translates into an annual savings of nearly JD 1 million. It should be mentioned, however, that at the beginning of the WEPIA program, savings of up to 35% were anticipated among large water consumers. This is attributed to the fact that the WEPIA estimates were based on complete and comprehensive retrofits of all water outlets among water consumers (e.g., faucets, showers, and toilets). Unfortunately, and due to their high cost, there was hesitation among decision makers to invest in retrofitting toilets. Therefore, the majority of retrofits were for faucets and showerheads. Should the MWI adopt an aggressive policy to retrofit toilets among large water consumers, savings in the level of 30 to 35% could be achieved.

To examine the effectiveness of the program's extension, refer to the column in the table titled "Portion of Total Savings Attributed to Phase II." A ratio of 50% indicates that the extension, Phase II, doubled the water savings. Taking a close look at the table, one sees that in the Governmental sector the extension more than doubled the savings from Phase I because the majority of audits took place during this phase; however, the bulk of retrofits did not take place until Phase II. This is attributed to the slower governmental processes in tendering and procuring the WSDs. According to the table, the commercial and hospital sector doubled their savings, while schools and hotels achieved most of their savings during Phase I. Overall, it was clear that the extension doubled the savings in the large water consuming universe.

In addition, the data showed that the governmental sector contributed to nearly 46% of the savings because it was the largest sector in terms of consumption and number of sites. The second and third main contributors were hotels and hospitals with contributions of nearly 25% and 17%, respectively. Inferences about those numbers can be made when they are compared to how much each sector contributed to the size of the universe in terms of numbers of subscriptions. For example, the governmental sector accounted for 46% of the savings; and the number of governmental sites accounted for nearly 48% of the universe, a finding, which is consistent. Schools and hospitals demonstrated the same trend. However, when looking at hotels, although they only constitute 16% of the universe, their water savings accounted for 24% of the total savings. This indicates that hotels are the highest consumers of water and that emphasis should be placed on them in retrofit programs due to the significant savings potential. The same trend applies to hospitals; they represented 7% of the universe, but 16% of the savings. Finally, commercial buildings represented 12% of the universe; but their savings accounted for less than 4% of the total savings.

The table below presents a summary of the WSD sales volume during the WEPIA program. Approximately 55% of the aerators were sold during the second phase of the program. The trend for showerhead sales was not the same. A total of 8,863 showerheads were sold over the duration of the program of which 38% were sold during Phase II; the sales for showerheads increased by a factor of 1.6 instead of 2 because the majority of large water consuming sites that purchase showerheads were hotels, which were more aggressively targeted during Phase I. The information provided in this table only pertains to the large water consuming universe and does not account for sales in the residential sector and sales to non-large water consumers.

WSD Sales Volumes

Phase I		**Phase II**		**Total**	
Aerators	Showers	Aerators	Showers	Aerators	Showers
9436	5493	11526	3370	20962	8863

Conclusion

This five-year two-phase program targeted at minimum 60% of the large water consumers to install WSDs. Water audit procedures were used to assist in achieving this goal. Based on the results, the usage of WSDs was effective in reducing water consumption in large water consuming entities. Achieving the goal, however, was a very cumbersome experience. The study team has identified certain areas that need to be addressed in order to achieve bigger savings among all water users in Jordan. This section summarizes those areas, and presents recommendations to help overcome these difficulties in the future.

Ministry of Water and Irrigation Support

Neither WEPIA nor IRC are governmental entities, therefore, approaching governmental entities with the idea of using WSDs required assistance from the government. Although this was provided via the prime minister and the Ministry of Water and Irrigation, this was not enough for a reasonably paced process of retrofits. Governmental bureaucracy was a problem that the study team faced. Even when the decision maker, presented with the economic feasibility of deploying WSDs, approved the retrofit; the procurement process underwent unnecessary and lengthy delays.

To overcome these difficulties during future activities, it is recommended that the newly established Water Demand Management Unit continue WEPIA’s efforts with a similar program that targets large water consumers that have not retrofitted their buildings and other entities such as military complexes.

WSD Suppliers

Ten local suppliers were identified by the study teams as suppliers with products compliant with the WSD standards and specifications. Every time a feasibility study was submitted, a list of those suppliers, along with their contact information, was submitted to the concerned entity. The products of the different suppliers varied in origin, quality, and durability. In addition, the suppliers' technical installation teams varied in quality. Unfortunately, the majority of suppliers did not have a technical installation crew, thus, were only interested in bidding for "WSD supply" tenders. The specifications, however, required that the supplier supply and install the WSDs at the site to be retrofitted. This created a problem that on many occasions, less than three suppliers bid on the governmental retrofit contracts. The Government of Jordan procurement law requires that at least 3 bidders compete for a contract. As a result of this, many WSD procurement contracts were terminated. The involvement of the WDMU in working with other governmental entities to speed up the procurement process is recommended. The WDMU is also encouraged to hold regular meetings with WSD suppliers to work out similar shortcomings and problems and receive some feedback from them and to help eliminate some of the problems faced by them that discourage them from bidding on the various contracts.

Audit Data Collection Forms

It is important that an accurate water usage behavioral model be developed for a statistically sound sample population. This calls for a more accurate way of collecting water use behavioral statistics. To facilitate this process, the study team recommends that a comprehensive end-use study be conducted to identify water usage behaviors in a more accurate manner.

Large Consumers Identification Criteria

A large water consumer was defined as any entity that consumes more than 500 m^3 per billing cycle. This means that an entity that consumes 600 m^3 per billing cycle is equivalent to an entity that consumes 10,000 m^3 per billing cycle, and each entity was considered as one large consuming site. Therefore, it is recommended that a new criterion for defining large consumers be adopted. One suggestion is to retrofit the required number of sites that would result in a pre-determined rate of total savings in water consumption; therefore, the WDMU could focus their efforts on a smaller number of sites, yet obtain equivalent results in terms of savings. Also, the universe should be stratified into categories based on consumption, then, attempt to retrofit a certain percentage of each category such as retrofit 5% of the category consuming more than 30,000 m^3 per billing cycle and retrofit 10% of the category consuming between 10,000 and 30,000 m^3 per billing cycle.

Toilet Retrofit Programs

The anticipated savings of 35% was not achieved because only a small percentage of the large water consuming universe retrofitted their toilets. Had all the retrofitted sites changed their toilets, an additional 17% savings would have been obtained, which is equivalent to an annual savings of nearly 700,000 cubic meters. Therefore, it is recommended that the MWI through the WDMU devise an aggressive campaign targeting toilet retrofits among large water consumers.

Among the large water consumer universe eligible sites, a total of 13,000 non-compliant toilets were identified. The estimated cost of retrofitting these sites would be approximately JOD 240,000, which would result in an annual water savings of 700,000 cubic meters.

Water Efficient Building Codes

The WEPIA program introduced changes to the building codes that addressed water efficiency and thresholds for flow rates in water outlets. A comprehensive analysis conducted by WEPIA considered factors such as Jordanian construction growth rates. The analysis results indicated that the percentage of water saving "cubic meter per capita per year" was estimated at nearly 28.1% had the new code been enforced and adopted. This reduction would result in a reduction in the size of pipes in the supply network and decrease the cost of piping for the networks. In addition, WAJ would reduce the costs of water production, pumping and delivery, by 28%. It is recommended that the Government of Jordan enforce and monitor the implementation of the new codes. Also, it is recommended that the responsible governmental entities develop capacity building and training programs that target design engineers and plumbing technicians to increase awareness of the new codes and their potential water savings.

Appendix D:
Media Campaigns

Appendix D
Contents

Executive Summary

The Water Efficiency and Public Information for Action Program (WEPIA) was a strategic marketing program, funded by the United States Agency for International Development, which addressed immediate and long-term water demand management in Jordan. Working closely with the Ministry of Water and Irrigation (MWI), the program sought to reduce per capita water consumption and create actual change in people's use of water. The program was implemented in two phases between 2000 and 2005.

Media Campaigns were included in the second goal of WEPIA's mandate during both phases. In Phase One, years 1 to 3, the second goal stated:

"WEPIA team will design and launch three media campaigns at the end of year 1. All three campaigns will motivate Jordanians to adopt water-saving practices: one will be product-specific and aimed at decision-makers in the public and private sectors. Two campaigns will be directed to segments of the general population – for example agriculture, business, women, or youth."

During Phase Two, years 4 to 5, the second goal stated:

"All of the various kinds of media uses are necessary for a WDM program, but may differ in intensity and in placement. It should be remembered that media and campaigns do not necessarily mean broadcast media exclusively, but they include press, outdoor media, events, and large-scale printing and distribution of brochures. All of these various forms of media will be used at various times, depending on the subject and the target audience in support of the programs stated in the Scope of Work."

The major problems of the water sector were identified in baseline studies conducted prior to the campaigns. These included factors that contributed to the water shortage in Jordan and society's lack of awareness about water scarcity and effective conservation methods such as installation of water-saving devices. Accordingly, the media campaign strategy was adopted.

The campaigns included:

- Campaign I: Water week 2001
- Campaign II: National water education 2002
- Campaign III: Tank cleaning 2003
- Campaign IV and V: Consumption during Ramadan 2003, 2004
- Campaign VI: WDM conference 2004
- Campaign VII: National fundraising day 2004

The campaigns impacted people across Jordan and increased awareness of the water shortage problem to 82.9%. A 30% increase was recorded in the number of Jordanians

linking population growth to the water shortage problem, and a 9.3% increase was achieved in those attributing the problem to limited water sources.
The common element used in WEPIA's campaigns was the groundbreaking media tool, Abu Tawfir, an animated character developed in cooperation with Prisma Advertising Agency. Abu Tawfir, representing an average Jordanian, won the Jordan Advertising Award in 2003. The cartoon was also rated as the best creative TV and radio public awareness campaign.

WEPIA maintained strategic consistency in all communication materials. Brand messages were controlled using the same starting and ending phrase ("the solution starts with you"). Supplementing the media campaigns, WEPIA conducted a series of training workshops and "brown bag" lunches, in 2003, to improve Jordanian journalists' understanding of water issues and to strengthen their relationship with government sources from MWI, which resulted in more accurate and insightful water-related media coverage.

This appendix highlights the methodologies, strategies, and results of the media campaigns that were implemented by WEPIA. It explains the media tools and channels used to deliver the messages suggested under each of the campaigns, including television, local and regional; press; electronic marketing, SMS messages and mass mail; and printed materials, brochures, posters, leaflets, insertions. It details each campaign illustrating the objectives, strategies and tactics, and results achieved. It also lists the obstacles that were faced. In addition, records of the financial figures of each campaign.

The data was analyzed based on previous research and KAP studies conducted by Ipsos Stat Jordan, and Market Research Organization (MRO), in addition to desktop surveys carried out by WEPIA.

Methodologies and Strategies

The WEPIA media campaigns used available mass media, a cohesive identity, and unified messages to reach the broadest possible segment of the Jordanian audience. WEPIA conducted studies to determine the basic elements of each media tool used in campaigns.

Photo courtesy of the WEPIA Program
During the WEPIA Water Week Campaigns, volunteers set up a display at the Safeway supermarket in Amman to educate people about water conservation and water saving technologies such as aerators. The sign of Abu Tawfir, water-miser, was used as the trademark of the WEPIA Program. The character was designed as a spokesperson for promoting water conservation.

Studies and Research

- In 2001, in cooperation with MRO, two studies were conducted to evaluate the impact of the water week campaign. The first study was conducted through a national omnibus survey to evaluate awareness of water-saving devices (WSDs). The second study was conducted using exit interviews in the areas where the water week campaign activities were conducted, such as Safeway stores (in Jubeiha and Shmeisani), Jordan University, and Orthodox Club (In Fohies). The results showed the difference in respondents' opinions on the campaign.

- During 2002, WEPIA conducted a series of studies, which began with a baseline study. The main objective of this quantitative study was to provide indicators pertaining to water-related issues to serve as comparative tools for the subsequent benchmark study. The baseline study was conducted by face-to-face interviews with individuals aware of the water consumption level and making decisions in regards to water consumption. The 365 houses were randomly selected.

- In February 2002, brochures and comic strips were pre-tested for the message, ease of understanding, recall, and motivation.

- In August 2002, a benchmark post-test study was conducted, which was comprised of two separate studies: 1) the TV post-testing and 2) the press post-testing. The main

objectives were to evaluate and assess the ongoing WEPIA campaign and provide principle advertising scores indicative of its performance and success.

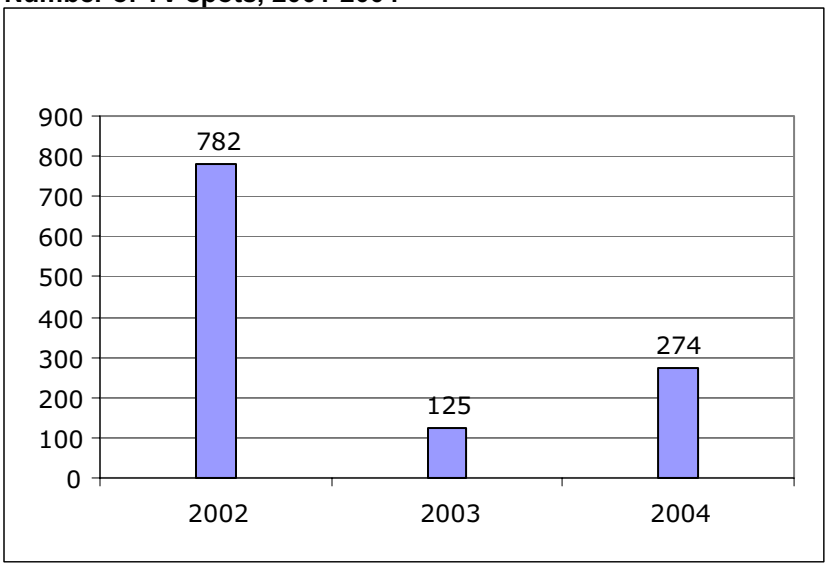
- In November 2002, a benchmark Wave 1 study was conducted. The objective was to monitor the evolution of indicators pertaining to water-related issues. This objective was achieved through the comparison with the baseline study results.

Media Tools

During the program's life, media activities included:

- 936 television spots aired on JTV1, JTV2, JTV3 and MBC.
- 210 mupi signs rented.
- 354 radio spots aired in Radio Jordan and Mood FM Station.
- 75 billboards rented.

Number of TV spots, 2001-2004



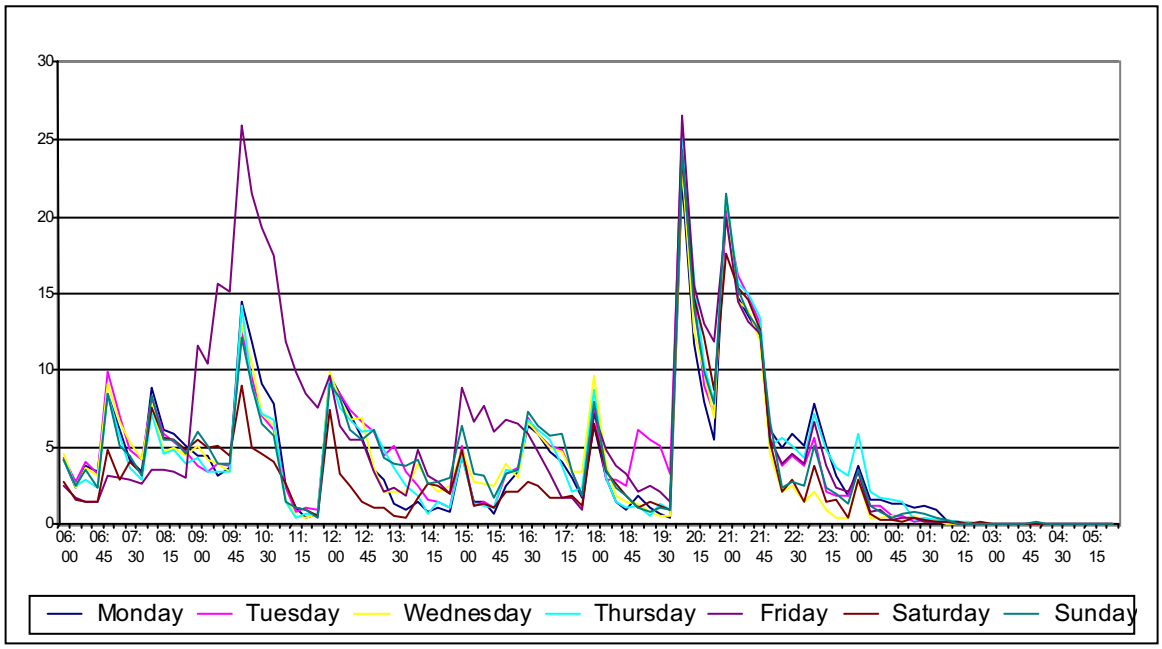
Television

Deciding on the best time to place an ad is as important as selecting the channels to air the ad. The time placement and frequency of the ad depended on the budget, targeted audience, and involvement of a season-related campaign such as "clean your water tank campaign," the Ramadan Campaign "Al Hakawati," or a general campaign such as "National Media Campaign - first component."

An effective advertising schedule was created by dividing the TV commercial spots throughout the week into evening and late night hours. For example, the spots might be aired three days a week at various times such as before news time, beginning of the prime time, and during the prime time, and between 4 and 6 spots were aired during the weekend. This was done to guarantee maximum exposure of the ad.

The Ipsos Stat analysis, which was based on the viewership patterns of a sample of the target audience, showed that prime time on the Jordan TV channel usually fell between 8 p.m. and 12 p.m. Accordingly, WEPIA planned to air its ads during this period. For older news-oriented people, WEPIA advertised through news bulletins and during the 10 p.m. movie. Other prime or peak times fell on weekend mornings, when families gather for breakfast or lunch.

JTV Prime times

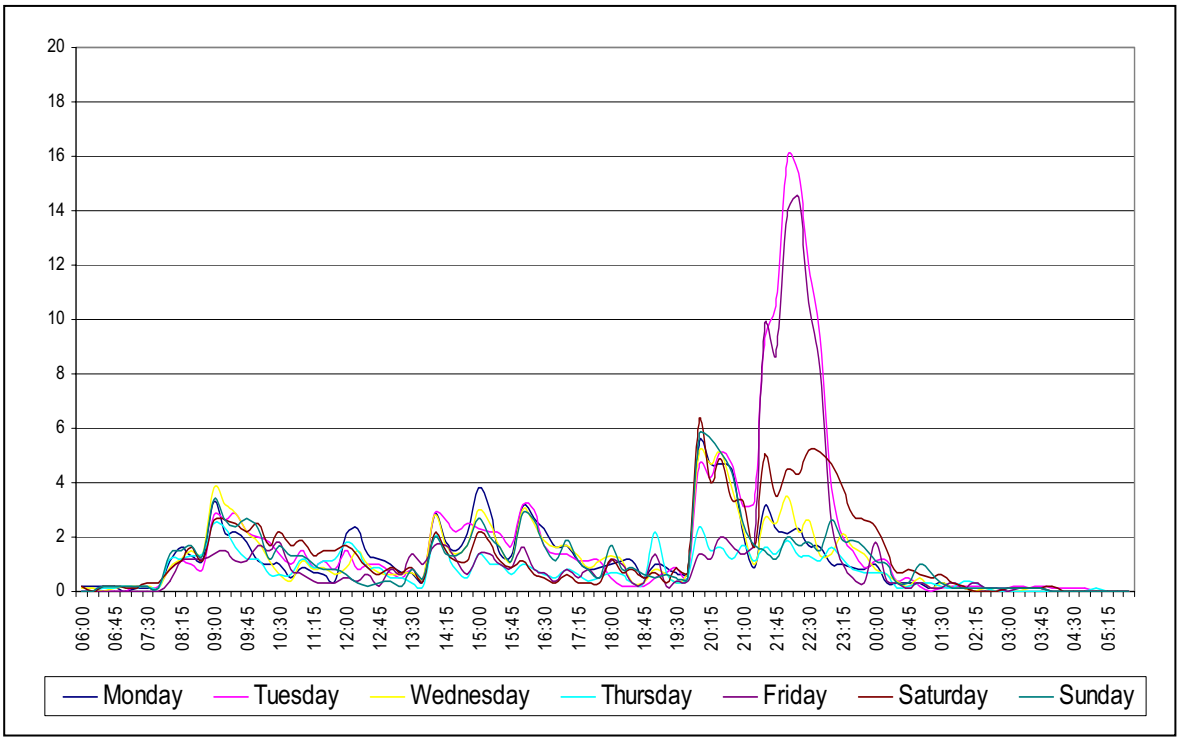


From July to December 2003 and from July to October 2004, WEPIA was received 15 minutes of air time, bi-weekly, on Jordan's most popular morning show, "Yawm Jadeed." WEPIA selected speakers from the program and its partners to present WEPIA activities and accomplishments. The themes ranged from water quality to community development.

WEPIA also aired spots during seasonal holidays. In the Arab region, the Holy Month of Ramadan is the time of year in which TV programs are most heavily watched because of the month's shorter working hours and increased family-centered gatherings, usually around a TV set, after the Iftar meal in the early evening. WEPIA aired special Ramadan TV spots in the 2003 and 2004.

The target audience watched Jordan First TV channel and the movie channel. However, at the time of the first campaign in 2002, the majority of the target audience watched the hit program "Who Wants to be a Millionaire" in its Arabic version on MBC, an Arabic Satellite channel. Hence WEPIA aired a WSD TV spot during this program as part of the National Water Campaign.

MBC prime times



Print

Local Newspaper Advertisements

Since the readership patterns showed that the majority of the target audience read the local newspaper, WEPIA advertised in all the local papers such as Al Rai, Al Waseet Classifieds, Al Dustoor and Al Arab Al Yawm.

Articles and Press Releases

Local newspapers also featured articles on water issues, motivated by media campaigns and the journalists' training program. In 2003, WEPIA, in collaboration with Sharqiyat Group, conducted three journalists' training workshops for the middle, north, and south regions of the country plus several small training sessions called brown bag lunches. Fifty television, radio, and print journalists participated in this program. The program succeeded in building their capacity to understand the underlying technical issues relevant to water and establishing trust between journalists and MWI officials. These training programs resulted in articles and press releases that were well written and correctly addressed technical water concerns.

Growth percentage in water related articles in local newspaper

Year	2000	2001	2002	2003	2004
% of articles carrying information on water issues	20.0%	30.0%	46.7%	53.4%	55.6%
Average size of the article	one column or less	4 columns with pictures	1/4 page	3/4 page	1/2 page with pictures

As a result of WEPIA's work, the program became a trusted source for many journalists, including the national Petra News Agency (a government-owned news wire that does not usually publish donor organization press releases).

Sharqiyat

Sharqiyat media had regular articles that featured WEPIA's work. The WEPIA logo appeared on all issues of the magazine for free. Sharqiyat Media Group also produced several WEPIA newsletters during the first phase of the program.

Tartasheh magazine

In collaboration with Jordan Press foundation, WEPIA produced a total of 5,000 copies for each of the 11 issues of Splash, a quarterly children's magazine that helped reach the youth with messages about WSDs, efficiency measures, and other issues addressed in the wider media campaigns targeting the general public. The magazine was distributed to private and public schools through WEPIA's partners: Haya Cultural Center (HCC), Jordan Forum for Business and Professional Women (JFBPW), and the Royal Society for Conservation of Nature (RSCN).

Outdoors

During the national water and water week campaigns, WEPIA used different outdoor media tools, such as billboards and Mupi signs at the main roads and intersections in Amman.

According to the post-testing research conducted in 2002 (Benchmark Wave 1), only 3% of WEPIA's target audience recalled seeing a water awareness ad using outdoor media tools. In contrast, 76.2% of the respondents reported seeing the ad on television, followed by 39.1% for print media. Therefore, WEPIA decided to focus on TV and print media to reach the target audience.

Campaigns

In 2000, the programs primary tasks were to build general awareness among the Jordanian public about the nation's overall water predicament and to help the public

understand that average people can play a role by installing WSDs and following water conservation methods in their daily lives.

WEPIA conducted a series of studies that started with a baseline study that was conducted in March 2002. The main objectives of this quantitative study were to provide indicators pertaining to water-related issues (consumption levels, perceptions, awareness levels, behavior patters, etc.) that served as a comparative tool for the subsequent benchmark post-testing studies. The baseline study was conducted through a random selection of 365 household face-to-face interviews with individuals who were aware of the water consumption levels in their house and were decision-makers regarding activities related to water consumption. WEPIA found that people have the intention to conserve water and save money but were not aware of methods to use. Moreover, people blamed the government for insufficient water supply and had a vague understanding of the factors that contributed to the water shortage. Most importantly, people did not realize that they could play a positive role to alleviate the water shortage. This study resulted in a campaign with the unified slogan, "the solution starts with you."

Campaign I - National Water Campaign 2002

The goal of this initial water campaign was to create broad recognition among average Jordanians that the Kingdom's water resources were under severe and growing pressure. Messages in this campaign laid the groundwork for future messages that would help the public understand more precisely what actions and water efficiency measures they could take to do their part.

The campaign consisted of three components: Jordan water sources and shortage problems, water-saving devices, and water conservation methods.

Overall Objectives

1. To enable 60% of the population to:
    - Cite correctly three sources of water in Jordan.
    - Cite correctly three problems contributing to water shortage.
    - Cite correctly three water conservation methods.
2. Buy WSDs.
3. Modify personal behaviors.

Overall Strategy

This campaign was comprised of three major components with different messages targeting different audience segments. WEPIA maintained strategic consistency by tying together all campaign messages, activities, and communication materials. Repetition was important to enhance exposure to campaign messages, and several media tools were used to capture different audience members.

WEPIA also developed a brand identity to link the campaign activities. The branding features of the campaigns included the logos of WEPIA, MWI, and USAID, in addition to slogans, which added credibility and importance to the messages.

Appropriate positioning and branding were critical to:

- Ensure the campaign messages are easily identifiable and recognizable.
- Reinforce the goal of the campaign.
- Win target group acceptance.

Another strategic approach was utilizing different media channels, which resulted in:

- Raising and enhancing knowledge and belief.
- Reinforcing existing attitudes.

Pre-testing

To ensure effectiveness, all messages were pre-tested to avoid unintended negative consequences among the audiences.

Component I: Jordan water sources and shortage problems

Objectives:

- To increase the target audience knowledge to identify three water sources in Jordan: surface water (rainfall), underground water, and reclaimed water.
- To increase the target audience knowledge of three factors contributing to water shortage: population growth, limited sources of water, evaporation.
- To neutralize negative opinions about water supply and show limits of water availability vs. governments ability to increase supply.
- Initiate a sense of individual responsibility towards the water shortage problem by using the slogan "the solution starts with you."

The principle strategy was to present facts related to the water situation and to initiate a sense of personal interest in water. Messages were serious, informative, focused, and strong, while at the same time raising questions regarding personal responsibilities. The sequence started with facts, then, highlighted the limited supply in the country and the government's efforts.

Messages:

- Jordan will face a major water deficit in the near future without more effectively managed population growth.
- The anticipated water deficit will affect economic growth, and thus the employment rate.

- The main water sources in Jordan are ground water, surface water, and reclaimed water.
- Reclaimed water is used to irrigate certain plants; we should keep it clean.
- Jordan depends on rainwater, of which 90% is lost to evaporation.
- The Jordanian government is improving infrastructure, building dams, and connecting households to the water distribution network through more durable water pipes.

Tactics:

- Eight TV information flashes, 15 seconds each,
- Eight radio information flashes, 10 seconds each,
- Eight newspaper ads, quarter a page, black and white, and
- Five newspaper ads, half a page, in color.

Component II & III: water-saving devices and conservation methods

Objectives:

- Demonstrate the efficiency of WSDs.
- Encourage the target audience to buy and install WSDs.
- Introduce water conservation methods: arid landscaping, water harvesting, water recycling, and leaks and maintenance.

Strategy:

The main objective was to encourage people to buy WSDs. The messages proved WSDs to be effective, cheap, and save money. The messages were informative and explained the types of WSDs, places of purchase, and ease of installation. WEPIA decided that the two components should run in parallel with each other.

Component II messages:

- WSDs are cheap and save money.
- Little devices with enormous benefits.
- WSDs are easy to install and maintain.
- WSD operation.
- WSD usage results in convenience and peace of mind.

Component III messages:

- Using the right methods and plants for arid landscaping will reduce lost water and water bills.
- Fixing the leaks will reduce lost water from pipes and water bills.

Component II tactics:

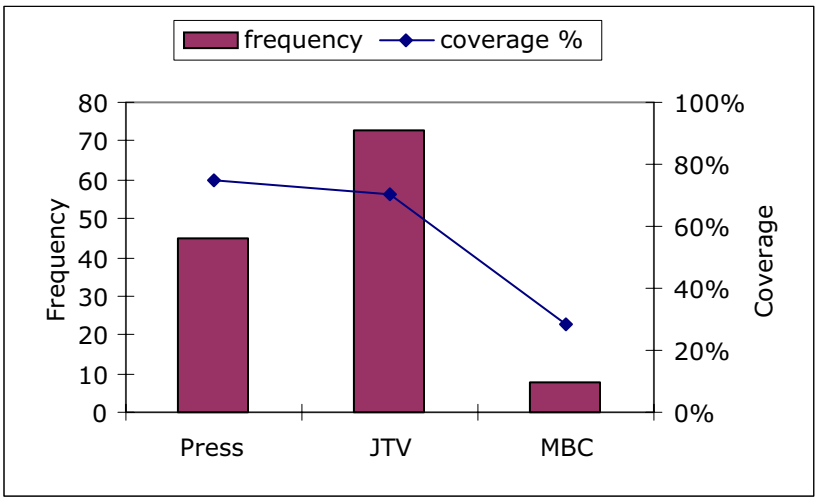
- One TV spot, 30 seconds,
- Three TV spots, 15 seconds each,
- One radio spot, 30 seconds,
- Three radio spots, 15 seconds,
- Four comic strips for the newspapers, half a page, full colored,
- One newspaper ad, half a page black and white,
- 3x4 billboards among the governerates, and
- 150 mupi signs.

Component III tactics:

- One TV spot, 15 seconds,
- One radio spot, 15 seconds,
- One newspaper ad, half a page, black and white, and
- Eight comic strips, half a page, colored.

Channels and frequency: WEPIA used the following available media channels:

- Jordan TV Channel One,
- Jordan Movie Channel,
- Middle East Broadcasting Channel (MBC),
- Jordan local Radio Station,
- Radio Jordan-FM,
- Al Rai newspaper,
- Al Dustoor newspaper,
- Al Waseet Newspaper,
- Mupi signs, and
- 3x4 billboards.



Frequency and coverage for media tools in Campaign I

Campaign II: Water Week Campaign 2002

This campaign was brief, conducted over a period of one week from April 22 to April 28, 2001. The purpose was to alert residents in specific regions of Amman that they could reduce their water bills through the purchase, installation, and use of appropriate WSDs.

Objectives

1. To test a method by which homeowners could be educated to tell which kind of thread they have on their bathroom faucets and then to determine which aerator would be suitable for them.
2. To test homeowner response to a new name for water-saving devices.
3. To test two or three messages for water-saving devices including:
   - A message about the improved quality of the water with the device,
   - A message about the money savings potential from WSDs, and
   - A message about the cost and convenience of the initial investment.
4. To test whether distributors can make enough sales to expand their distribution network following the mini-campaign
5. To test the ability of partners to mobilize and work as a team towards a mutual goal.

Strategy

The simple strategy, proposed by Dr. William Smith, AED Executive Vice-President during a visit to Amman, was to hold a lottery with prizes. The program allocated more than JOD 3,000 to prizes and gifts. Supplies such as backpacks were provided for children worth JOD 1,000.

The concept of a lottery is classic to social marketing. It permits the agency, in this case WEPIA, to promote ideas and information in attractive and fun ways, provides an incentive for the public to participate, prizes and rewards, and makes the job of evaluating success much easier. Additional promotional activities built around the lottery increased the profile of the campaign and provided additional opportunities to spread the messages.

Messages

The lottery itself carried a simple message. It required that the participant read the lottery ticket. On one side, it explained, in simple terms, how a faucet works and its components, and on the other side, the portion that was returned, it asked the participant to write down the type of water faucet they had and to answer three simple questions about the advantages and characteristics of water-saving devices. Finally it asked for their names, addresses and phone numbers. These three requirements for participating in the contest would show the following:

- Whether the individual would read and understand information provided,

- Whether the individual could analyze and correctly reply to the questions, and
- Whether the individual could identify his/her faucets (a photograph of the two kinds of faucets was provided on the lottery ticket)

No fee was charged for the ticket and no purchase of a WSD was necessary. The collection point for lottery tickets were supermarkets and stores in three areas identified by the program for the campaign activities. Volunteers, then, provided additional messages demonstrating on how WSDs work using a free standing sink and faucet to show people the difference in flow rates between a faucet with and without an aerator. The volunteers provided the client with a list of places where they could obtain the devices and a range of prices from which they could choose. These additional efforts provided the client with messages about how the devices work and where they can be accessed.

Partners

To implement this strategy, WEPIA worked through its partners and media specialists who were brought on as subcontractors but ended up as partners. A strategy session led by Dr. William Smith and Mr. Peter Mitchell, of AED, was attended by all of WEPIA's partners. The effort echoed earlier WEPIA efforts to create an advocacy team from the diverse NGO and government agencies with which WEPIA worked.

Because of the experimental nature of the campaign, WEPIA focused its interpersonal efforts in three areas:

- Fuheis, where the program could be supported by its existing contract with the Latin Patricarchate School.
- Shmeisani, where the MWI headquarters are located and where JES and Haya Cultural center have their offices, and;
- Jubeiha, the location of RSCN University of Jordan campus.

Events were planned and implemented in these areas by each partner and included activities that were aimed at national media (press and TV). In addition, WEPIA paid for the use of 65 Mupi signs (street billboards) in two areas where they existed and paid for street banners in Fuheis, which had no Mupi signs at that time. PRISMA Advertising was responsible for developing all print products.

Lottery Ticket

The individual participating in the lottery would fill in the required information and then bring it in person, adults only, to designated localities in the selected geographic area where individuals were placed to collect and share with interested individuals more information about WSDs, such as their advantages and costs. A few weeks after Water Week, prizes were drawn and awarded. Over a period of one week, the machines were placed at three different sites each for a period of two days from 8 a.m. till 8 p.m. Partners, WEPIA staff, and volunteers took shifts to cover this period.

The lottery tickets were distributed in the following ways:

- Through the schools in the neighborhoods: RCSN approached the school clubs and requested that each child take a ticket home to his parents. Tickets stated the location and dates of the lottery sites,
- Through university students and faculty to their residences and parents and university employees,
- At designated locations such as at large supermarkets, banks, etc.,
- Made available in the newspaper as an insert,
- Through mosques and churches,
- Through community centers and local associations, and
- Through partners to their membership.

At designated sites and on designated days, demonstration machines were available to show the public how WSDs work and to encourage them to purchase WSDs or take leaflets as reference materials.

Campaign III: Water Tank 2003

In May 2003, WEPIA launched a public education mini-campaign to encourage people to clean their water tanks. The campaign was inspired by the MWI and ran from May 17 to May 30, 2003. It included television programs, television spots (re-running of two cartoons), flyer distribution, electronic marketing, and "Cleaning Water Tanks" tips.

The strategically integrated mini-campaign featured advertising, television, and printed material to reach people at every intersection of their lives: where they live, learn, and work.

Image courtesy of the WEPIA Program
This WEPIA-produced cartoon using the Abu Tawfir character admonishes readers to clean their water storage tanks once a year.

Tips were developed, in coordination with the Director of Water Authority of Jordan Laboratories, and placed in the daily newspapers utilizing the free space generally allotted to the MWI for public service announcements. The messages raised the profile of the campaign and delivered important information and shaped attitudes.

Objectives

- Get the target audience to clean their tanks twice a year,
- Spread the word about the importance of cleaning the water tank, and
- Increase knowledge by explaining how sediments in the tank can deteriorate water quality, affecting health.

Strategy

The strategy was designed carefully to provide data in a light format based on information provided by water experts at the MWI. The campaign targeted all ages with an emphasis on adults such as parents and housewives. Some 350,000 flyers were distributed to households through LEMA and the water authority in Zarqa and Irbid governorates.

Messages

- Keep the family healthy by cleaning tanks,
- Impurities coming from sedimentation such as dirt and leaves that chemically transform under the sun when in the tanks,
- If your family is getting sick in the summer it may not be the water that is bad, but rather putting good water into a dirty tank,
- Tanks should be cleaned a minimum of two times a year,
- Cleaning tanks is easy and cheap and you can do it yourself,
- The best times to clean a tank are just before summer rationing and just after summer rationing (spring and fall), and
- Directions on how to clean a tank.

Tactics

- Two TV spots, 30 seconds each,
- One comic strip in the newspapers, half a page, colored,
- Tips for cleaning the tank published in different newspapers,
- A flyer passed out to every home in Jordan,
- Public appearances on national radio and TV talk shows, and
- Electronic marketing (one of the existing comic strips was mass mailed to over 350,000 email addresses).

In addition, an agreement was reached with the producers of "Yawm Jadeed," a morning show, that provided WEPIA with a free 15-minute segment every two weeks.

Campaign IV: National Fund Raising Day 2004

WEPIA ran a media campaign from mid-August through October 10, 2004. The campaign had three components: 1) to raise knowledge about the roles of NGOs in

Jordan, 2) to encourage philanthropy by the general public, and 3) to get the public to attend Zad Al Kheir events. The campaign was based on the results of a study on philanthropy in Jordan by MRO in early 2004.

Objectives

To get 60% of the general population to:

- Define correctly the purpose of NGOs in Jordan,
- To cite that NGOs need three kinds of support from citizens: financial, in-kind, and volunteer,
- To understand that NGOs are reliable and that there are mechanisms in place to protect he money contributed (counter rumors and misinformation), and
- To get 10% of the adult population in Amman age (21 and over) to give funds to Zad Al Kheir.

Strategy

Three components, one integrated communication campaign

- This initiative was perceived as one integrated communication,
- The campaign was comprised of three major components, and
- Components were categorized according to the type of social change anticipated after the campaign.

Tying all campaign messages and activities to the communication strategy

- WEPIA maintained strategic consistency in all communication materials,
- All paid advertising was an expression of the communication strategy,
- Central messages were repeated in a variety of ways, and
- Monitoring system.

Developing a strong brand identity to link the campaigns' activities

- Creating a unified campaign message,
- The branding features included the logo of Zad Al Kheir, and
- The messages and tactics of the campaign differed according to audience and were based on WEPIA audience research.

Utilizing and expanding existing WEPIA partners

- All NGOs had a major role in the coming media campaign, and
- Efforts included the partners in private sector who are already contributing.

Utilizing different media channels

- To achieve the maximum effects,
- WEPIA media campaign used a wide range of mechanisms and formats. Choice and use of channels is dependant on cause factors,
- Every effort was made to obtain free or discounted rates, and
- Pre-testing all materials.

Component I: Philanthropy in Jordan
Objectives:

At the end of the campaign period, 60% of target audience would :

- Cite one reason why NGOs need to supplement government assistance with citizen philanthropy (can cite a specific example naming an NGO),
- Cite three critical services that NGOs perform, and
- Initiate a positive sense of individual responsibility.

Strategy:

- Present the facts related to NGO services,
- Initiate a sense of personal benefit from NGO services,
- Illustrate the governments' limitation and monitoring,
- Messages of this component were serious, informative, focused, and strong, and
- Use advocates that are trusted.

Messages:

- There were a diverse range of services performed by NGOs in Jordan and a diverse range of beneficiaries,
- NGOs need long term support,
- Funding received by NGOs is carefully monitored,
- Not all NGOs receive government assistance,
- The government encourages and supports citizens' support for NGOs, and
- Jordanians are very generous but don't usually give to NGOs – they need to give more.

Component II: Increase in philanthropic assistance to NGOs

Objectives:

- To increase in the number of persons willing to support secular NGOs, and
- Encouraging the target audience to give funds to NGOs either directly or through Zad Al Kheir.

Strategy:

- To encourage people to act,
- To advocate for identifying and supporting an NGO or charity of choice, and
- Messages are informative and educate the audience about specific NGOs and how and where to donate funds.

Messages:

- How to know and identify an NGO,
- How to evaluate the services of an NGO, and
- How to donate to an NGO.

Component III: Zad Al Kheir Day

Objective:

Encourage people to attend Zad Al Kheir

Strategy:

- Using the entertainment potential of the day to encourage participation, and
- Messages specify time, dates, and locations of Zad Al Kheir.

Messages:

- Feature different events taking place, particularly those that are free and unusual,
- Feature the low entry fee to participate, and the cause funds will go to, and
- Encourage children who would be accompanied by their parents.

Campaign Tactics

- Six TV information flashes 30 seconds each,
- Two Radio information flashes 30 seconds each,
- Over 100 press articles,
- Nine TV and radio talk shows with diverse speakers (NGO community, Ministry of Social Affairs , Ministry of Industry and Trade, donors),
- 250,000 Brochures, 5,000 posters and 70,000 flyers handed out door to door,
- Two press ads,
- Outdoor billboards and banners,
- 91,000 mass SMS messages, and
- Website.

Campaign V and VI: Ramadan Campaigns

WEPIA launched two similar campaigns in 2003 and 2004 during the Islamic month of fasting, which included a re-run of the two spots produced in 2002. The spots were aired on Jordan First Channel and Movie Channel.

Campaign VII: Water Demand Management Conference and Certification

WEPIA launched a campaign in May 2004 that did not include TV or radio spots but only newspaper ads, website, flyers, and mass mail because the target audience was limited to practitioners in the water sector. PRISMA was contracted to print 5,000 flyers, which were sent to professionals and students in the region, as well as in Jordan. A public relations firm was hired to send articles and news flashes to all media outlets for news coverage.

WEPIA obtained five minutes on Royal Jordanian Airlines to show a video to passengers. The script highlighted the water situation in Jordan and included an invitation to register for the WDM conference. Also an article provided by WEPIA was published in the RJ Wings publication. The second announcement and registration brochures were also placed in Queen Alia Airport arrival hall. As part of the WDM Conference marketing, Prisma developed the following: lamp post banners, first announcement advertisement, second announcement advertisement, press advertisement, banners, and posters.

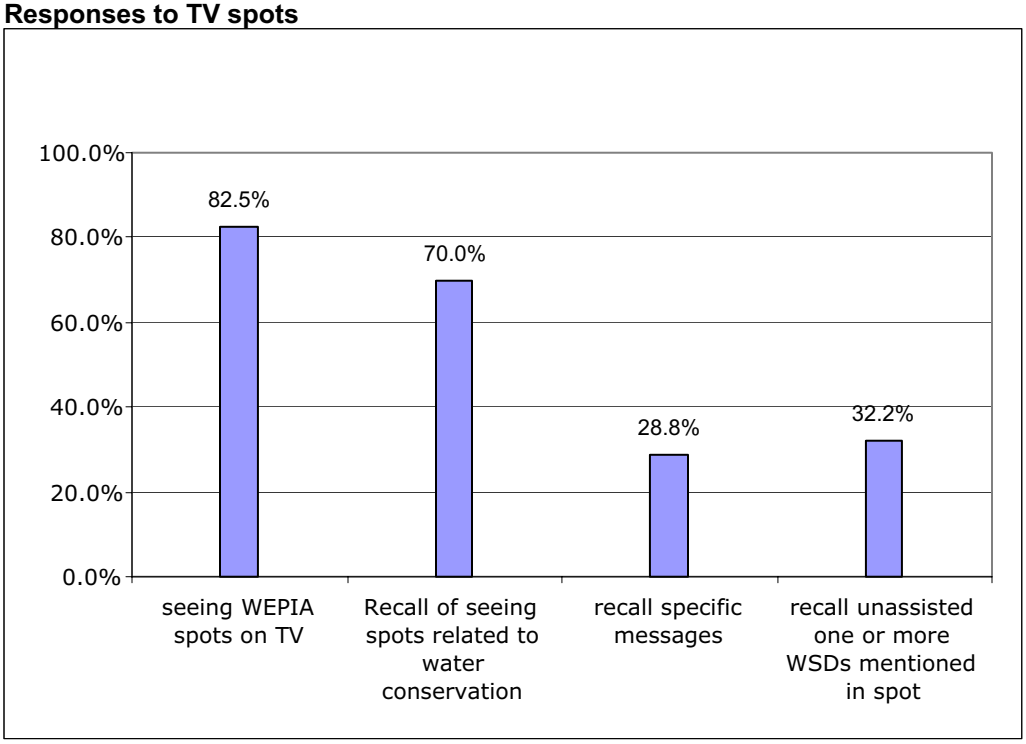
Results and Obstacles

Results

To verify that print and broadcast media campaigns achieved anticipated results, WEPIA conducted quantitative and qualitative studies that demonstrated that the campaigns impacted the public and helped increase awareness of water issues and water saving measures. The two studies were conducted on TV spots and print materials.

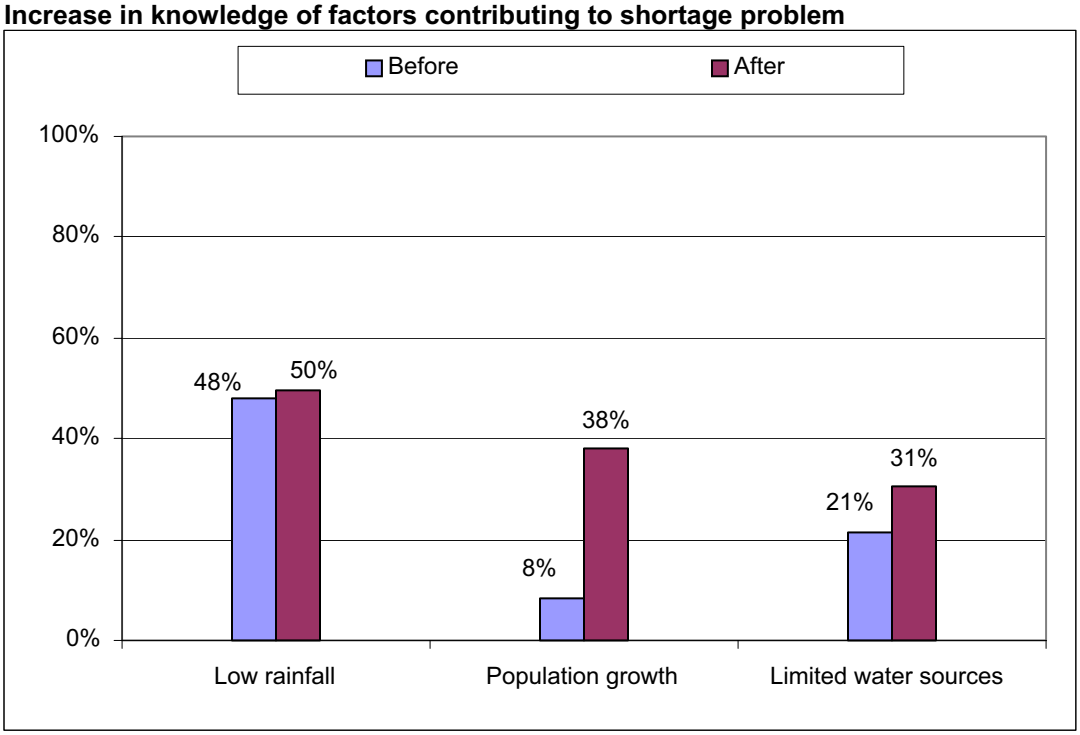
The post-campaign research measured the impact of the spots and ads, which included: assisted and non-assisted recall, behavior change, and respondent attitudes, which were broken down according to demographic group (Amman, Irbid and Zarqa). The study on responses to TV spots included 384 telephone interviews. The study on responses to print advertisements included 400 face-to-face interviews.

Responses to TV spots



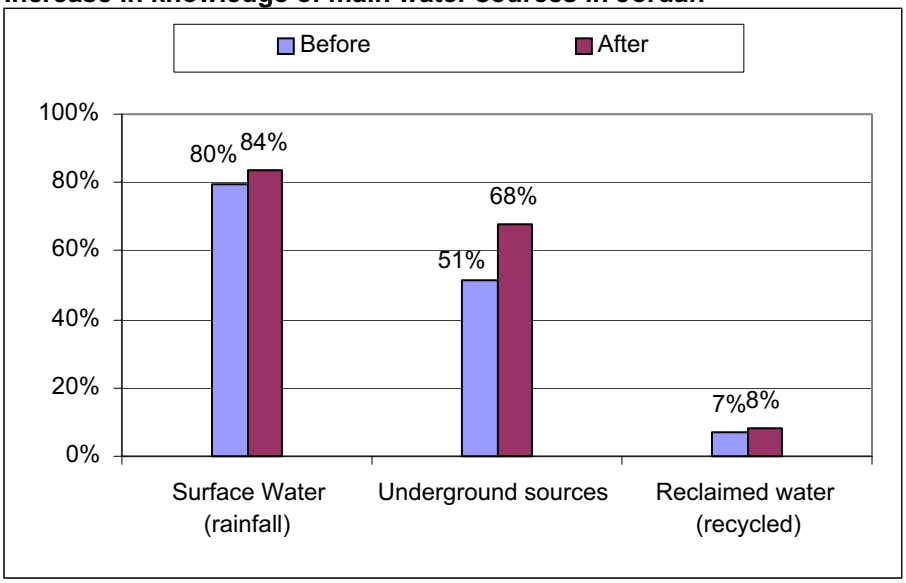
Based on the table above, more than 80% of those interviewed recalled seeing the colored spots and/or a separate series of black and white spots, and reported they had been influenced to purchase WSDs or change their behavior.

Increase in knowledge of factors contributing to shortage problem



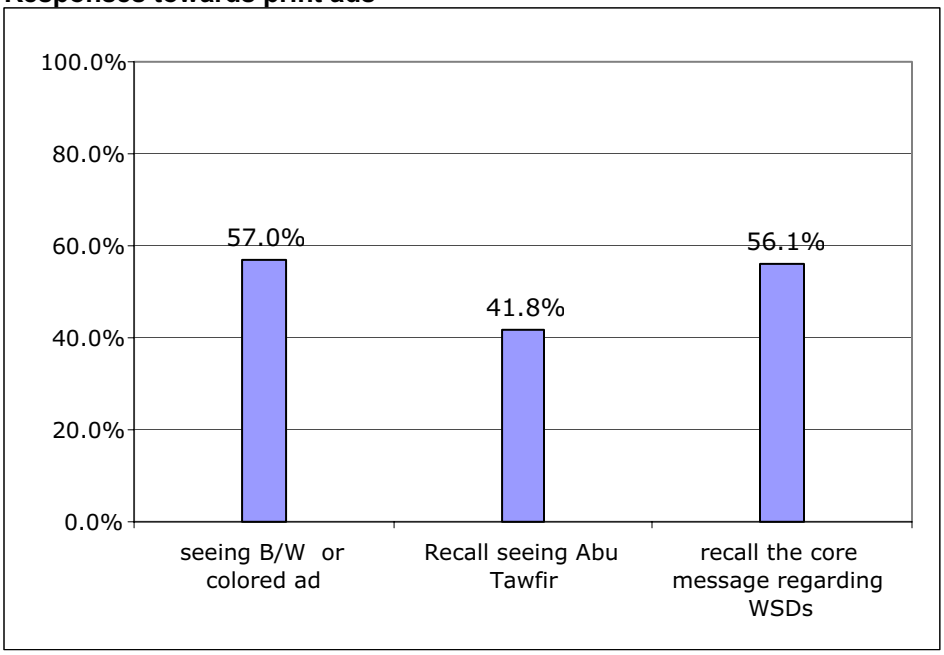
The study also compared awareness of water resources in Jordan before and after the campaigns.

Increase in knowledge of main water sources in Jordan



Results were similarly positive in the study of audience responses to print advertisements; 57% of respondents reported seeing a black and white teaser and/or a colored cartoon print ad in the month prior to the survey.

Responses towards print ads



Obstacles

The political situation played a paramount role when executing media campaigns, publishing articles, or simply appearing on local television. WEPIA kept a low profile and froze media activities during times of heightened tension.

Working with MWI restricted the accomplishment of certain tasks and delayed some media work. The approvals on printed materials took a lot of time and the lack of experience in the MWI media department postponed most print schedules.

Cost Sharing

Throughout program, WEPIA managed to bond not only with the Jordanian community and the average citizen, but expanded its abilities to make strong relationships with both governmental and privately owned entities. These strong bonds were translated into media expenses, cost-sharing between WEPIA, and its strong allies.

Over the programs operation from 2000 to 2004, the media campaigns succeeded in gaining a total of US$ 853,828 as cost sharing from the major media-sector elements: television, radio, press, and outdoor advertisement. WEPIA's media partner, Prisma, cost-shared the program at around US$ 45,000, which included broadcasted material, ad designs and outdoor ads. The program years 2003 and 2004 witnessed a wide variety of media tools in which expenses were cost-shared, while the media campaigns launched in the first three years of the program were limited to television, radio, and press.

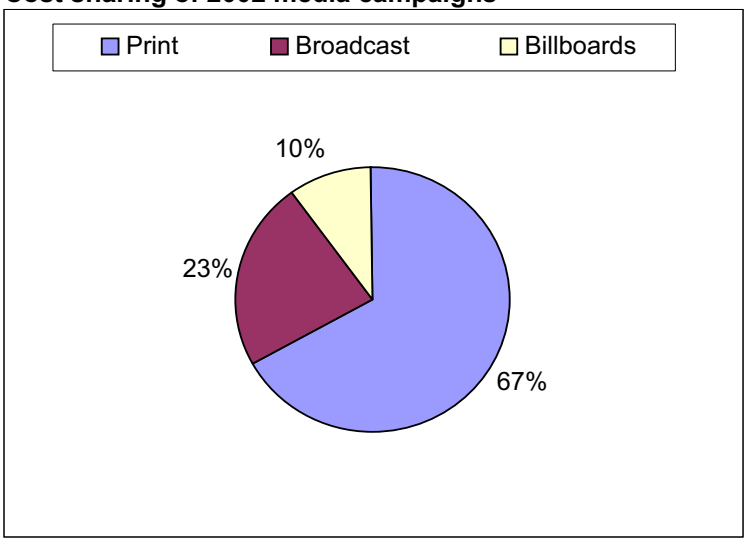
Cost shared media expenses, 2000-2004

Year	2000	2001	2002	2003	2004	Total
Cost Sharing (US$)	46,671	329,488	96,078	180,398	201,194	**853,828**
% of total	5.5%	38.6%	11.3%	21.1%	23.6%	**100%**

During 2000, cost sharing was only in the form of press releases used to introduce WEPIA to the public and pave the way for the media campaigns. The 2001 campaigns went a step further, building the foundation of a fruitful cost-sharing relationship with Jordanian broadcast media, television, radio, and press. During this period, the largest WEPIA campaign was launched, which resulted in 38.6% of the five-year total of cost-shared expenses. This cost sharing was limited to the three main media tools: TV, radio, and press.

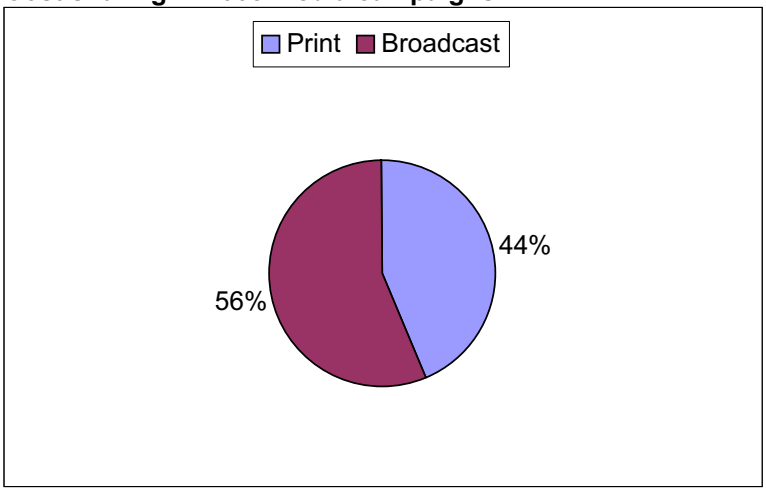
During the 2002 campaigns, cost sharing was achieved in what was considered an up-to-date tool to target the audience, the Mupi signs. The Mupi signs were used nationally and accounted for 10% of the cost-shared media expenses during that year, while print was still the backbone of the campaigns, with 67% shared.

Cost sharing of 2002 media campaigns



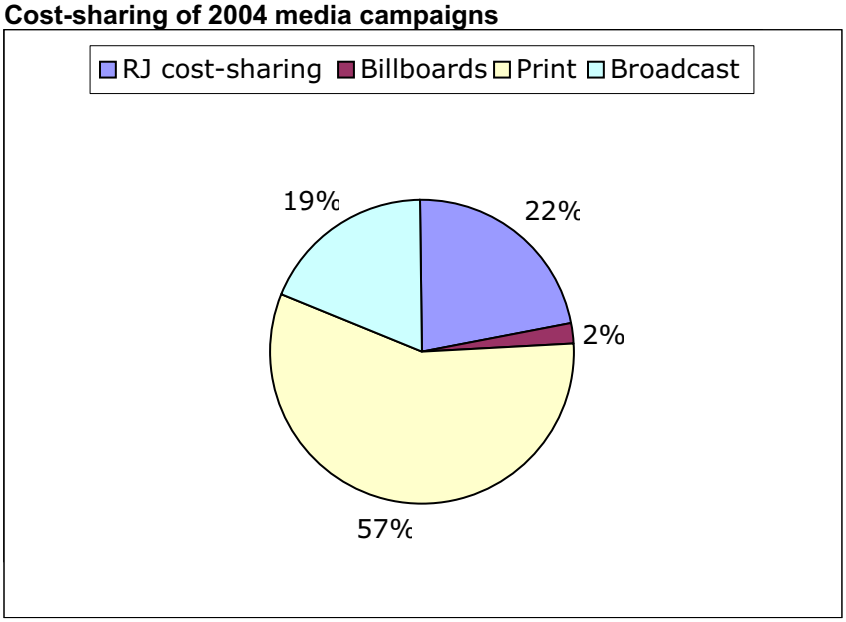
A revolutionary achievement took place in 2003, 56% of cost sharing came through broadcast activities, which left the remaining 44% for the press. The total cost sharing this year represented 21.1% of the total media cost sharing of the program. The TV was not only a tool for advertising but was effectively used to spread awareness through nationwide programs.

Cost sharing in 2003 media campaigns



In 2004, print materials accounted for the largest percentage of cost sharing for WEPIA media campaigns. The media campaigns launched during 2004 accounted for 23.6% total cost sharing, which included cost-sharing from Royal Jordanian Airlines, broadcast media, press, and billboards. A five-minute clip on WEPIA was aired on all Royal Jordanian flights, representing a cost-shared value of over US$ 36,000. WEPIA ads also appeared in the well-known Royal Wings Magazine that was distributed on all flights. Finally, WEPIA obtained three separate episodes in Hassan Tlitli's show on Monte Carlo, with cost sharing of $17,998 – a major accomplishment.

Cost-sharing of 2004 media campaigns



Appendix E:
Training Activities

Appendix E
Contents

Executive Summary

Throughout the life of the Water Efficiency and Public Information for Action Program (WEPIA), it made considerable efforts to improve the skill base of its partner NGOs staff, through guided practice and formal training workshops. At the beginning of the program, WEPIA conducted a training needs assessment that identified needs in proposal writing, financial management reporting, media campaigns, and fundraising for sustainability. This program was the first of its kind, focusing on water demand management and social marketing. Implementing each task was a learning experience not only for the NGO partners, but also for individual contractors, government counterparts, and consultants.

This report explores how WEPIA succeeded in introducing the concepts of water demand management and social marketing to Jordan and the region. The report also illustrates how training conducted by WEPIA not only developed the technical skills of participants but also helped to ensure sustainability of the water conservation program.

Initial Steps

Assessment of Water-saving devices in Jordan

The Assessment of Water-saving devices in Jordan, conducted in July 2000, was a multidisciplinary learning experience that set the stage for the program and enabled the WEPIA team and its partners to learn some valuable lessons. Experts from the Ministry of Water and Irrigation (MWI), the University of Jordan (UoJ), the Queen Rania Al-Abdullah Center for Environmental Science and Technology, Best Management Partners, hotels, hospitals, Cartelle Associates, Development Alternatives Inc., and the private sector collaborated on this study to assess the state of water-saving devices in Jordan and water consumption by large consumers. The teams studied the supply and demand side and enabling conditions for water-saving devices in Jordan.

Key Accomplishments

1. A definition of large water consumers was developed by the assessment team. Large water consumers were defined as customers with consumption rates exceeding 500 cubic meters per cycle (three months).

2. The comprehensive water audit concept was developed in response to variations in sanitary and plumbing fixtures that were discovered during the assessment. The water audit, after being further developed by the WEPIA team, became the base of the subsequent retrofitting program.

3. The assessment led to the development of a water audit training workshop for maintenance engineers and technicians. The assessment team had discovered that most leakage on the part of large consumers was due to lack of proper training.

4. The assessment identified water saving device (WSD) suppliers, which was an important first step for the WEPIA team in understanding the availability and relative efficiency of WSDs in the Jordanian market.

Lessons Learned

1. The assessment might have been more effective had mathematical models that calculated savings.

2. MWI might have participated in the assessment study making field visits and visits to WSD suppliers to learn about their problems. One of the obstacles encountered by WEPIA in the media campaigns was the MWI's refusal to promote the private sector.

Knowledge, Attitude and Practices (KAP)

All WEPIA programs were preceded by KAP studies. These studies were conducted by a research firm, in collaboration with a WEPIA NGO partner.

Success Stories

1. The joint work on the KAP questionnaire was itself a training tool in which participants enhanced their knowledge on water conservation.

2. KAP studies provided WEPIA with background information needed to design the media campaign and messages.

3. The studies established a benchmark for NGOs to use when measuring the results of their activities.

4. The KAP effort involved a large target audience; encouraging broad "buy-in" and feelings of responsibility and commitment.

Lessons Learned

1. No matter how carefully trained there was always room for human error.

WEPIA Training Activities

Future Search

Future Search is a strategic planning approach that brings together all stakeholders in a single venue to develop a shared vision of the future and a plan to achieve that vision. All stakeholders involved in the water sector (MWI, Ministry of Public Works and Housing, the Ministry of Education (MOE), hotels, hospitals, universities, WSD suppliers, and media) were invited to a three-day workshop to develop plans to achieve set water savings by 2003.

Key Accomplishments

1. Stakeholders identified causes of the water shortage over the preceding three decades. Participants benefited from new ideas and fresh perspectives of their colleagues.

2. Essential strategic planning took place with stakeholders developing objectives, action plans, and identifying potential obstacles.

3. Stakeholders developed a sense of ownership of the WEPIA program and a shared commitment to its success.

4. WEPIA staff were trained in strategic planning, so they were able to transfer skills to other program staff and NGOs when the KAFA'A program began.

Lessons Learned

1. Although Minister Dr. Hazim El-Nasser opened the Future Search workshop, there was almost no attendance from the MWI. It would have been more effective if all MWI directors had attended the workshop. Until the final year (2003) of the program's first phase, most MWI staff were not aware of the WEPIA program and its activities. The retrofit and policy components of the program would have benefited from the support of MWI personnel.

2. A follow-up meeting should have been organized one year after the future search workshop to evaluate process.

3. The workshop venue was changed just one week before the opening day, causing some confusion among participants and also creating a problem related to advanced payments for the first venue.

Financial and Administrative Management Training for NGOs

An initial assessment conducted by WEPIA in 2000 revealed that almost all NGOs in Jordan lacked sound financial and administrative systems. This was also evident when a fundraising assessment was conducted by WEPIA in 2002. WEPIA had contributed directly and indirectly to the development of financial and administrative skills for NGO partners.

Success Stories

1. All NGOs received a standard form that was developed by WEPIA to report monthly and quarterly progress. This was a simple training exercise for all NGO members to help them develop formal, results-oriented reports.

2. All NGOs received formal training on how to write a technical report.

3. All NGO partners received a special format template for financial reports, which they were able to follow when reporting monthly and quarterly expenditures.

4. Mr. Amin Pakzad, AED consultant, audited all NGO partners and volunteered to assist financial officers at NGOs in keeping proper financial records and conducting appropriate reporting.

5. The first fundraising workshop organized by WEPIA was a valuable experience for NGOs. It helped them learn how to develop fundraising plans and develop fundraising budgets. After this workshop, many NGOs, which included RSCN, CSBE, and Haya Cultural Center, approached donors for funding and were successful.

Lessons Learned

1. NGOs were trained on sound financial systems and reporting; however, a more intensive training in this area would be valuable. NGOs typically offer relatively low wages, so turnover tends to be high. To ensure sustainability and continued use of best practices by new employees, training needs to be repeated.

2. Most NGOs continued to perceive international donors as an endless source of money.

3. There was no transparency between donors and NGOs in financial matters.

Media Training for NGOs (Social Marketing, Water Week, Media Campaigns)

WEPIA introduced social marketing concepts to Jordan. The first media training workshop, held in February 2001, was attended by approximately 40 NGOs as well as donor agency and private sector representatives; this training session helped participants develop a strategic marketing plan. Participants confirmed over the proceeding years that this initial workshop was the impetus and conceptual base for further media plans.

Most NGOs lacked the skills required to work with the media. WEPIA's media campaign and the special training provided to WEPIA NGOs was instrumental in building their media relations capacity. The Water Week campaign was the NGOs' first real exposure to a systematic and well organized media campaign model.

1. WEPIA organized special trainings on public speaking and TV and radio interview skills. The partners, which participated, benefited from this training, especially the role-playing activities. Role-play activities were designed to put the participants in

real life situations. In addition, WEPIA organized a comprehensive TV and radio program for the different NGOs to talk about WSDs and water conservation in Jordan. WEPIA staff prepared questions and trained NGO staff before each TV and radio interview.

2. WEPIA trained all NGO partners on how to train and manage volunteers and to recruit them in media campaigns. NGOs were trained on developing checklists for all activities, and monitoring and evaluating volunteers. In addition, WEPIA trained participants, with the assistance of the Sharqiyat Media Institute, on writing press releases. Coverage from JTV and print media was clear evidence of the development of NGO staff in this area.

Training of Religious Leaders

One of WEPIA's objectives was to reach communities around mosques through Imams and other religious leaders. The training provided by WEPIA and the Jordan Environmental Society (JES) to Imams was comprehensive and included training on public speaking, development of work plans, and evaluation.

Success stories

1. The participatory approach of involving Imams in the preparation of the Imam guide was a valuable learning experience. Imams started to behave as professional trainers and think about objectives of future training activities, methods, and follow-up. In addition, this activity was an excellent exercise for reviewing the Quran and searching for Sura's that relate to water conservation.

2. Involvement of the Ministry of Awqaf was key; it gave credibility to the program as a whole.

3. The training of trainers workshop that was organized by WEPIA for the religious leaders was a two-way communication activity that not only benefited the religious leaders by introducing them to training skills and water conservation issues but also an excellent opportunity for WEPIA to learn about issues and concerns that might arise from the religious sector. For example, one of the concerns raised was that some worried that because WEPIA was an American program, then, the objective was to support Israel in taking the water allocated to Jordan.

4. WEPIA planned to follow up with the Imams and use their influence in neighborhoods to assist with collecting water audit forms from homes around mosques. However, JES, the implementing agency for this activity, did not follow up on this plan.

5. When the responsibility of the program was shifted to the Islamic Women's Association and the other religious leaders, there was a shift in the progress of the program.

Lessons Learned

1. One of the problems that faced this program was the fact that WEPIA was a USAID-funded program.

2. Selection of trainers for the Waethat should be selected based on religious background and language to gain the confidence and trust of the Waethat.

3. The Imam program faced difficulties because WEPIA was not permitted to pay incentives for Imams.

4. The implementing agency for this program, JES, was not thinking of the activity as a results-based program, with emphasis on the actual number of retrofits. They felt that their role stopped at training.

5. Inability of the Waethat to promote the WSDs in their religious lectures and lessons.

Informal Education at Universities

WEPIA contracted with the University of Jordan and the Jordan University for Science and Technology (JUST) to manage special programs for university students.

Success stories

1. Although WEPIA provided the background for these training workshops, programs were upgraded and modified by academics.

2. The hands-on experience that students had in conducting water audits for their communities was invaluable. The activity was fun and educational.

3. These activities have proven useful as a marketing tool for WSD, as well as, an educational tool.

4. The simple presentations conducted at the universities were considered a modest effort for the introduction of water demand management concepts.

Lessons Learned

1. WEPIA hoped that universities would continue this effort as part of students' community service work.

2. Although universities were efficient in training students and managing the water audit process, they failed to track the audits and potential water savings.

Integration of Water Concepts into the School Curriculum

This was the first initiative to review the school curriculum and integrate water concepts. Under the WEPIA work plan, the Royal Society for Conservation of Nature (RSCN) was to assist the MOE in reviewing the curriculum and developing the conceptual framework matrix. Three years of participatory work resulted in the integration of 40 water concepts

into the school curriculum, the development of lesson plans and a teachers' guide in selected schools.

Success stories

1. The participatory approach adopted by RSCN was valuable because it was the first time that school teachers received technical information directly from water professionals.

2. The workshops in interactive education and adult learning techniques were useful in changing attitudes of traditional teachers on the development of lesson plans.

3. The review of the school curriculum helped the MWI recognize the value of updating information and building conservation messages into lessons.

4. The education package developed under this program – lessons plans, teacher guide, and CD – was a model for similar programs at the MOE.

5. The teachers from public and private sectors benefited from the comprehensive training process. In addition, RSCN junior staff and WEPIA staff were trained on the different skills involved.

"The Water Authority is the main source of water in this village. It pumps water for households for 12 hours weekly. Often, we lose much of the water pumped due to lack of tanks and pipes. We use a hose connected to the main house pipe. Usually I fill water in buckets, then I leave the hose on the ground until pumping stops. I can do nothing about this.

"When the water is pumped during nighttime, it is left running down the roads for hours and hours; we pay high bills for this lost water and we have no choice, since there are no tanks in which to store water."

"Water doesn't last more than two days, after which I buy water, if I can afford it, or get water from the river, which is not suitable for drinking at all. We have a low financial income."

- A 50-year old Jordanian woman from the village of Faddiya describes typical conditions for rural residents, prior to the intervention of WEPIA, which supplied the tanks the woman needed through a community grant

Lessons learned

1. The program was delayed for two years due to internal problems in the MOE.

2. The review of technical information by the MWI was a slow process. In addition, there were times when some Ministry staff approved incorrect information.

3. Although MOE teachers were involved, a great deal of persuasion and pressure had to be used to convince them to attend meetings. This was a general problem when dealing with government employees.

Community Grants

During the lifetime of the program approximately 27 community grants were provided to community-based organizations (CBOs) with a water shortage problem. These programs had an impact on improving living conditions, generating income, and water accessibility.

Success stories

1. All CBOs appreciated the training on how to develop and write a proposal. This was a valuable exercise that benefited CBOs by preparing them to approach other donors for financial assistance.

2. The Community Grant Technical Committee composed of members from USAID, MWI, GEF, NEAF, and WEPIA provided the technical ground for discussions on different experiences and perspectives.

3. The field visits organized for journalists to WEPIA grant-recipient communities showed journalists the other side of the program and water conservation techniques for poor communities.

4. WEPIA tried in all its community grants projects to involve beneficiaries so they felt responsible and committed to continue with these projects.

5. Transfer of technology was not hindered by the literacy level of the CBOs. For example, operating the grey-water system in the East Shigera model community. In addition, the women in the village were familiar with all the health precautions with regard to grey water use.

Lessons learned

1. There were incidents where pressure was exerted by the MWI to give awards for political reasons.

Retrofitting Program

WEPIA's objective was to retrofit 30% of the large water consumers in the public and private sectors in the first phase of the program. In the second phase, the objective was to reach 60%. This activity was an example of learning by doing for all stakeholders involved.

Training workshops on how to perform a water audit were developed with participation of WEPIA staff and the private sector in Amman, Irbid, and Aqaba. The workshop focused on how to conduct a water audit, install water-saving devices, and meet the modified National Building Codes that WEPIA had assisted in revising. Developing the water audit form, which was later modified and custom made according to Jordan's requirements, was instrumental in learning a step-by-step procedure on how to calculate water consumption.

Lessons Learned

1. The water audit program did not take into account behavioral variations.

2. It would have been more effective if the program staff were trained on using more scientific equipment to measure water flow.

3. WEPIA staff should have been exposed and trained on mathematical models to calculate and forecast savings from installations of the water-saving devices.

4. WEPIA trained around 24 staff members from the MWI. However, these staff members were never utilized in retrofitting activities by MWI. Under the extension phase, the Water Demand Management Unit was entrusted with the responsibility of retrofitting the auxiliary sector. It would have been an effective program if MWI utilized the services of all those staff members trained under WEPIA.

Individual Capacity Building

The WEPIA program contributed to building the capacity of many individuals in the public and private sectors. Examples include, but are not limited to, the following:

1. The first American Water Works Association (AWWA) conference in the summer of 2001, attended by Eng. Mutasem Haddadin and WEPIA's chief of party, was the first exposure to the concept of water demand management for many Jordanians. According to Eng. Mutasem, the experience was valuable in allowing him to listen to many water experts discussing international experiences in water conservation and water resources. After this visit, he started implementing mathematical modeling to calculate water savings from retrofitting programs.

2. The development of the journalist guide and the organization of brown-bag lunches by Ms. Dina Zorba from Sharqiyat Media Institute were instrumental in developing Ms. Zorba's skills in water-related issues and training skills. WEPIA introduced various adult training activities that benefited Ms. Zorba in her training initiatives.

3. The work of Dr. Tareq Tarwaneh in the retrofitting program, labeling program, and UoJ student program, was beneficial in the development of Dr. Tarawneh's skills in this field. In turn, Dr. Tarawneh trained hundreds of government technicians and his own staff. After five years of work, WEPIA is leaving behind a cadre of trained individuals in water demand management and retrofitting.

4. WEPIA hired Prisma to develop and implement WEPIA's media campaign from June to September 2002. Mr. Saad Darwaza, who attended the two social marketing workshops, developed a comprehensive media plan based on what he learned from Dr. William Smith, AED Executive Vice President, in the two workshops. In addition, the success of this media campaign resulted in Prisma being awarded the 2003 Jordan Advertising Award.

5. In 2003, under the extension phase, the MWI established the Water Demand Management Unit and hired a director to oversee this unit. The director had no background in water demand management, however, she received training by guided practice from U.S. experts such as Tim Skeel and Mary Ann Dickinson. The director also took part in a study tour, organized by WEPIA, which provided her with the opportunity to attend the 2004 AWWA Annual Conference. Due to her

experience in water demand management, she was invited to invited to assist in the development of water demand management policies for the water sector in Jordan. Therefore, further training in management and leadership skills would be useful.

6. WEPIA opened training opportunities for many staff members. For example, the AWWA conference, attended by the senior technical specialist in water conservation in June 2002, was a very valuable experience in management of international conferences. That experience was the base on which the International Water Demand Management Conference was successfully held at the Dead Sea from May 30 to June 3, 2004. The conference coordinator followed the design, outline, activities, print material, and the database of the AWWA conference in the U.S. It was a remarkable training experience not only for WEPIA staff but also for everybody that participated in managing the conference: Lawrence for Conferences & Seminars, Dakkak Travel, Action PR, and Prisma. It was also a very valuable first experience for the MWI.

Although WEPIA ended in March 2005, the program left behind a long chain of trained Jordanian staff in several areas which included: communications, conference management, knowledge management, water demand management, social marketing, and community development.

Training of Journalists

WEPIA helped build a bridge between the media and the MWI. In 2002, WEPIA conducted a study on water consumption knowledge, attitudes, and behavior. It was evident from the research that there was public mistrust towards the MWI. The media were among the valuable tools that the MWI could utilize to change public perceptions. WEPIA's efforts in this regard were appreciated by the journalists and the MWI.

Success stories

1. The first journalists' workshop was organized by WEPIA to train journalists in writing investigative reports.

2. The organization of subject-specific presentations on water issues was a useful technique wherein journalists had an opportunity to listen to water professionals and ask questions that had sometimes been considered taboo.

3. WEPIA's invitation to journalists to visit community grants projects was an instrumental tool that showed how the Ministry was helping less fortunate communities. This helped to build the Ministry's public image. In addition, it was a good response to accusations that the Ministry was rationing water. In the community grants program, the Ministry was making water accessible to poor communities.

Lessons Learned

1. The interference of the MWI in the selection of journalist invitees and logistics caused some disturbances and delays in the activities.

2. The subject-specific topics were selected by a group of journalists; however, there were other water-related issues raised by journalists.

3. The MWI should not rely on projects to organize and deliver training to journalists on water-related issues. This activity should be integrated into the Ministry's goals in developing good relationships with the media.

4. The launch of the journalists guide will be carried out with an MWI ceremony. It would be more effective if the guide were presented to journalists in workshop sessions covering each chapter of the guide. It should be used as an educational tool, not as a promotional tool.

Arid Landscape Program

This was a unique program not only in Jordan but also in the Middle East. The program changed popular attitudes about what constituted a beautiful garden and had other notable successes.

Success stories

1. People can learn about drought tolerant plants through the website that was established by the Center for the Study of the Built Environment (CSBE).

2. WEPIA, through CSBE, created a cadre of trained architects in arid landscape techniques. Eng. Mazen Al-Daqaq, trained by CSBE, is now writing a monthly page on such landscapes in one of Jordan's most popular magazines, Living Well. In addition, WEPIA trained several Greater Amman Municipality engineers who now implement these techniques in most of Jordan's public parks.

Lessons Learned

1. Although CSBE won deserved praise for the professional quality of its work, if the NGO had been more aggressive in promoting the concepts, it would have spread more rapidly and to a larger audience.

2. Although CSBE trained many engineers in arid landscape techniques, the skill was limited to a number of experts who charge expensive rates.

3. Again, due to the savings possible from such techniques, it would have been very effective for the Greater Amman Municipality to adopt a policy forcing use of drought tolerant plants and arid landscape principles for parks as well as private gardens.

4. Lack of availability of drought tolerant plants was an obstacle to the more widespread adoption of the techniques.

Professional Women Plumbers Training

WEPIA, in collaboration with the Vocational Training Corporation in Jordan, organized a three-month intensive training for 15 women on plumbing techniques. This training was the first of its kind in Jordan and the Middle East.

Success stories

1. This program will change the way the community looks at women and will add to the social development of women.

2. This is considered an income generating activity that will improve the economic status of women.

3. Women plumbers will have better access to homes and will be able to better communicate with housewives.

4. This is considered a direct educational tool on water conservation for women in homes.

5. The relationship between women plumbers and WSD distributors will help in marketing the WSDs in Jordan and in educating distributors.

6. The institutionalization of this profession under the Vocational Training Corporation (VTC) will make it a respected profession and improve links with other professional associations.

Lessons Learned

1. Marketing for the professional women plumber training should have been carried out through VTC channels.

2. More advanced courses should be organized to upgrade skills of women.

3. The government should exert efforts to modify plumbing codes to support this effort.

4. This program should be extended to communities throughout Jordan as a community service program to open new opportunities for women.

Conclusion

WEPIA's training activities were results-oriented, sustainable, and effective. The success was due in large part to the following factors:

1. Most of the training for WEPIA NGO partners was through guided practice and through learning by doing. According to training theory, learning by doing is the most effective type of training.

2. In developing training and education programs, WEPIA provided NGOs with the freedom to design programs according to the NGO's experience and target audience. Thus, NGOs felt ownership and were empowered to make activities as successful as possible.

3. WEPIA provided all NGO partners with various learning resources on all aspects of the program. In addition, WEPIA made sure that representatives from all NGO partners attended workshops organized by other NGOs. This created an environment conducive to learning. A good example is the change in style of Tartashay magazine due to the resources that were purchased by and provided to the Jordanian Press Foundation.

4. Workshops organized at the request of WEPIA made NGO partners responsible and committed to water conservation in Jordan.

5. WEPIA provided an environment that encouraged NGOs to trust and collaborate with each other. This was evident through work for Zad Al Kheir day. WEPIA provided an umbrella of respect and trust.

6. WEPIA's work with some NGOs substantially changed attitudes. For example, the work of RSCN on updating the school curriculum encouraged schools to apply more modern, learner-centered methodologies. In addition, all NGO partners learned the difference between Public Awareness and Public Education.

7. Finally, many NGO staff members who worked on WEPIA programs reported that they became more confident, respected, and experienced in technical and training skills as a result of the program.

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