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SURVEY FINDING OF GOVERNMENT INSTITUTIONS EFFORT IN WATER, ENERGY AND ENVIRONMENT. FINAL REPORT

PUBLIC ACTION FOR WATER, ENERGY AND ENVIRONMENT PROJECT
PROSPERITY, LIVELIHOODS AND CONSERVING ECOSYSTEMS (PLACE) IQC TASK ORDER #5

Report no. 4

May 2010

This report was produced for review by the United States Agency for International Development. It was prepared by ECODIT for **Public Action Project for Water, Energy and Environment project**, Task Order No. EPP-I-05-06-00010-00.

AUTHORITY

Prepared for USAID/Jordan under Prosperity, Livelihoods and Conserving Ecosystems (PLACE) Indefinite Quantity Contract number EPP-I-05-06-00010-00, Task Order #05, awarded September 1, 2009, entitled “Public Action for Water, Energy and Environment Project.”

This “Final Report on Survey Findings of Government Institutions effort in Water, Energy and Environment” is made possible by the support of the American People through the United States Agency for International Development (USAID). The contents of this report are the sole responsibility of ECODIT and do not necessarily reflect the views of USAID or the United States Government.

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PREFACE

The Public Action for Water, Energy and Environment Project (PAP) is a public education and behavior change communication program developed to support USAID's technical and policy investments in the Jordanian water and energy sectors, and to support specific initiatives in the environment, in particular with regard to solid waste. The project has been awarded to ECODIT, a US small business holding the Prosperity, Livelihoods and Conserving Ecosystems, or PLACE, Indefinite Quantity Contract with USAID.

PAP is a five years program that has been designed in three phases:

1. Data collection and assessment phase of 9 months ending July 31, 2010;
2. Participatory strategic planning phase of 3 months that will include dialogue with the relevant stakeholders; and
3. Implementation phase lasting about 4 years.

The first phase of the project (Assessment and Baseline Phase) is to be completed by the summer of 2010. As part of this phase, ECODIT is conducting numerous surveys, including 16 research efforts, and it is from the totality of these efforts that the project will determine its direction and focus for behavioral change. ECODIT has divided this phase into the several rapid assessments.

This report presents the findings of the government institutions efforts survey which designed for the purpose of reviewing the government agencies' current and past communication activities in water, energy and environment (mainly solid waste management). Additionally, to assist the PAP team to design and implement communication strategies and specific behavior change campaigns by building on lessons learned from previous outreach efforts.

The specific objective of this survey is to review the Donor Position Paper on Outreach targeted sample of 36 staff from 22 government institutions. The survey sample addressed priorities and key issues outside of Amman, so that the interviews included staff in Aqaba Special Economic Zone and Karak Governorate.

EXECUTIVE SUMMARY

The Public Action Project in Water, Energy and Environment Project (PAP) strives to positively influence the behavior of Jordanians in relation to their environment and contribute to water and energy conservation

and improved solid waste management. The Project has commissioned a series of baseline studies to assist the PAP team and stakeholders to determine priority behavior changes and mechanisms for design of the public action program.

The Survey of Government Institutions in Water, Energy and Environment includes a review of government agencies' current and past communication activities in water, energy and environment (mainly solid waste management). The analysis is based on open-ended interviews conducted with a targeted sample of 36 staff from 22 government institutions, including public utilities. In order to address priorities and key issues outside of Amman, the interviews included staff in Aqaba Special Economic Zone and Karak Governorate. Discussions focused on the following main areas: priority issues and behavior changes needed in water, energy and environment; existing structure and potential of institutions to design and conduct communication programs; capacity building needs; opportunities and limitations for building partnership with the Public Action Project.

There are many government institutions which have some influence – technical, managerial and social – on management of water, energy and solid waste management. Many have more than one role; for example, the Ministry of Environment oversees solid waste management, industrial water use and reuse, the Royal Rangers who enforce all environmental laws, just to name a few.

Institutions have communications or outreach officers who are highly committed to their goals of improving behavior of industries, farmers, businesses and other consumers. They have implemented a variety of programs, some of which are considered successful, although it is hard to quantify. Communications officers expressed their frustration at having little or no training; some were brought from technical work and expressed a need for better understanding of their task and how to plan, manage, and most of all, monitor and evaluate programs. They also expressed need for assistance in fundraising.

Communications programs are scattered, with several departments even within one ministry working on different programs, sometimes coordinating, sometimes not. Donor funded projects add to this confusion, each having their own agenda, wanting their own logo, even often their own cartoon character to promote their programs. Credibility and trust between service agencies and their clients is also a concern. Senior officials within the water sector, for example, expressed their desire to work on improving the Ministry of Water and Irrigation image and credibility while at the same time tackling challenges such as preparing customers for an expected increase in tariff and asking them to use water wisely. All officials understood the difficulty of persuading people who already are living with limited resources to “save more” when they see that there is substantial waste in the agriculture sector, for example.

All interviewees emphasized that the Public Action Project needs to focus on two or three specific areas, and not try to spread itself too thin with scattered “campaigns.” The construction sector and special economic zones are highlighted in the as potential areas of focus. Existing government building projects can be showcases for green building practices, providing demonstration to customers of good practices, but also showing that government committed to improved management.

The Public Action Project is in the best position to take a lead role with donors and government stakeholders in developing National Communication Strategies and Action Plans. This might be one on environment which encompasses all sectors—or, more realistically, one for water, one for energy and one for solid waste management. Plans will include both the broader technical and enabling environment for improved management, and specific target behaviors, groups, communication channels and messages which can be implemented by agreed-upon agencies, some with donor funding. They need to be business-oriented, addressing consumer confidence and internal communication.

All capacity building activities should be focused on one goal: developing, implementing and measuring national communication strategies and action plans. This applies to governments, and also other stakeholders

addressed in related PAP studies: NGOs, private sector, and donors. Capacity building should include ongoing, on-the-job training as well as temporary staff secondment in selected institutions. Organizations should be involved in development of these plans also in order to secure their commitment.

ACRONYMS

Although an effort was made to reduce the number of acronyms used in this text, in some cases this was necessary. Whenever the acronym or abbreviation appears the first time it is defined in the text. The following list is provided for ease of the readers of this document.

<i>ADC</i>	<i>Aqaba Development Corporation</i>
<i>ASEZA</i>	<i>Aqaba Special Economic Zone Authority</i>
<i>ERC</i>	<i>Electricity Regulatory Commission</i>
<i>GAM</i>	<i>Greater Amman Municipality</i>
<i>GTZ</i>	<i>German Technical Cooperation</i>
<i>IDARA</i>	<i>Instituting Water Demand Management</i>
<i>JEA</i>	<i>Jordan Engineering Association</i>
<i>JICA</i>	<i>Japanese International Cooperation Agency</i>
<i>JISM</i>	<i>Jordan Institute for Standards and Metrology</i>
<i>JOHUD</i>	<i>Jordanian Hashemite Fund for Human Development</i>
<i>JVA</i>	<i>Jordan Valley Authority</i>
<i>MOPIC</i>	<i>Ministry of Planning and International Cooperation</i>
<i>MEMR</i>	<i>Ministry of Energy & Mineral Resources</i>
<i>MOA</i>	<i>Ministry of Agriculture</i>
<i>MoEnv</i>	<i>Ministry of Environment</i>
<i>MWI</i>	<i>Ministry of Water & Irrigation</i>
<i>NCARE</i>	<i>National Center for Agricultural Research and Extension</i>
<i>NERC</i>	<i>National Energy Research Center</i>
<i>NGO</i>	<i>Non-governmental Organization</i>
<i>PAP</i>	<i>Public Action Project</i>
<i>UNDP</i>	<i>United Nations Development Program</i>
<i>USAID</i>	<i>United States Agency for International Development</i>
<i>WAJ</i>	<i>Water Authority of Jordan</i>
<i>WDM</i>	<i>Water Demand Management</i>
<i>WEPIA</i>	<i>Water Efficiency & Public Information for Action</i>
<i>WSAU</i>	<i>Water Sector Audit Unit</i>
<i>WSD</i>	<i>Water Saving Devices</i>
<i>WUA</i>	<i>Water User Association</i>

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1.0 INTRODUCTION

1.1 THE PUBLIC ACTION PROJECT

The Public Action Project in Water, Energy and Environment Project (PAP) strives to positively influence the behavior of Jordanians in relation to their environment and contribute to water and energy conservation and improved solid waste management.

In Phase I of the project (November 2009 to July 2010), the PAP team is implementing a series of assessments in four groups: (1) assessment of USAID and other donor outreach efforts; (2) audit and KAP survey of key stakeholders; (3) assessment of local water, energy and environmental institutions; and (4) assessment of educational programs, activities and material.

The results of the surveys will provide information to the PAP team and stakeholders, enabling them to determine priority behavior changes and mechanisms for design of the public action program (Phase II, July to September 2010). In Phase III of the project (Years 2-5), PAP will implement the designed program in close coordination with stakeholders, including government institutions, donors, non-governmental organizations (NGOs), and the private sector.

1.2 SURVEY OBJECTIVE AND METHODOLOGY

The study's purpose is the review of government agencies' current and past communication activities in water, energy and environment (mainly solid waste management). This study will assist the PAP team to design and implement communication strategies and specific behavior change campaigns by building on lessons learned from previous outreach efforts.

In designing and testing the survey guide, the consultant reviewed the Donor Position Paper on Outreach and attended the PAP Kickoff Workshop. She then conducted open-ended interviews with a targeted sample of 36 staff from 22 government institutions (selected in consultation with PAP project staff). In order to address priorities and key issues outside of Amman, the interviews included staff in Aqaba Special Economic Zone and Karak Governorate. (See Annex A, which lists additional organizations to be contacted by PAP in follow-up discussions.) The interview pool was a cross section from communication officers to technical program managers, and included a few senior level decision makers.

The consultant conducted the interviews over a 13-day period between February 1 and March 10, 2010. The consultant also reviewed institution websites, daily English news items, national strategies and reports, and attended a kick off workshop for the United Nations Joint Programme on Climate Change Project, attended by several relevant government officials. She also used information obtained from a parallel study conducted in January 2010 on donor activities in water, energy and environment.

The consultant conducted open-ended interviews covering the following broad areas (see Annex B, Interview Guide):

1. Identify limitations and opportunities for building partnership with the Public Action Project. What does the institution see as its needs, and how it can work with PAP? Who do they think should play a key role in communication on water, energy and/or environment?
2. Assess existing structure and potential of institutions to design and conduct future communication and public education programs. What projects have taken place? How were they organized, managed, conducted? What materials were produced? Was any evaluation done? What were results?
3. Assess capacity building needs of institutions in relation to communication and public education. What are current capabilities? What training has been conducted for communication staff? Do they understand planning and implementation of social marketing?
4. Priority issues and behavior changes needed in water, energy and environment. What changes are needed? What is needed to facilitate these changes? Who needs to make them? What are the barriers to change? What is encouraging it?

Interviews brought up as many questions as they answered. In some cases, questions and issues which came up in early interviews, as well as the parallel survey of donor institutions, were further investigated in the later interviews. In others, follow-up was not possible within the time constraints of the interviews.

Overall, the consultant obtained a greater depth of insight and opinion with the assurance attribution of individual statements would not be made. Therefore, information and opinions are not generally attributed to specific individuals.

1.3 ORGANIZATION OF THIS REPORT

This report provides a review of institutional activities, priorities, capabilities, future plans, as well as a detailed annex listing institutions and activities in outreach on water, energy and solid waste. It provides suggested areas of cooperation and assistance to government institutions, as well as recommendations on priority focus areas, approaches and methodologies to influence long-term behavior change. The report complements a parallel report, *Survey of Donor Efforts in Outreach and Communication*.

The report contains four chapters:

- Chapter 1 - **Introduction**
- Chapter 2 - **Water, Energy and Solid Waste – Issues and Institutions**
This chapter provides an overview of the main issues, and institutions, influencing behavior change. In addition to sub-sections on water, energy and solid waste management, it also provides an overview the construction sector and special economic zones.
- Chapter 3 - **Communication Capabilities and Priorities**
This chapter includes an assessment of institutional capacity to plan and conduct behavior change programs, priority behavior changes as identified by interviewees, proposed approaches and activities and a summary of identified assistance needs.
- Chapter 4 - **Conclusions and Recommendations**
This chapter summarizes the main conclusions and provides recommendations on priority behavior change targets and approaches for the Public Action Project, including mechanisms for working with key government institutions.

There are three annexes:

- Annex A – Interview List
- Annex B – Interview Guide
- Annex C – Government Institutions – Roles, Activities, Potential Areas of Cooperation and Assistance

2.0 WATER, ENERGY AND SOLID WASTE – ISSUES AND INSTITUTIONS

2.1 OVERVIEW

For each sector covered in this report – water, energy, environment – there are several main institutions which have overall responsibility, supplemented by many related government institutions which can affect the outcomes of any behavior change activities. The main institutions are noted in Table 1 below, which is based on a detailed presentation of institutions and their communications capabilities in Annex C. Annex C is the basis for a working document for PAP and other stakeholders to monitor related activities and possible linkages. There is a Ministry of Water and Irrigation (MWI), Ministry of Environment (MoEnv) and Ministry of Energy and Natural Resources (MOEMR), all with various subdivisions covering different aspects of water, energy and environment. In addition, there are municipalities who manage solid waste collection and sometimes treatment (special economic zones like Aqaba) and public utilities such as the water and electric companies.

TABLE 1: INSTITUTIONS WITH ROLE IN COMMUNICATING TO PUBLIC ON WATER, ENERGY AND/OR ENVIRONMENT

INSTITUTIONS WITH ROLE IN COMMUNICATING TO PUBLIC ON WATER, ENERGY AND/OR ENVIRONMENT (<i>W = water, E = Energy, SW = Solid Waste, ENV = Environment</i>)				
	W	E	SW	ENV
Ministry of Water and Irrigation - Media and Communication Division	x			
Water Demand Management Unit	x			
Water Authority of Jordan	x			
Programme Management Unit – Water Sector Audit Unit	x			
Public Awareness Directorate	x	x		
Northern Governorates Water Authority	x	x		
Miyahuna	x	x		
Aqaba Water				
Jordan Valley Authority	x	x	x	x
Ministry of Agriculture (inc. National Center for Agricultural Research and Extension)	x		x	x
Ministry of Health – Environmental Health Directorate	x		x	
Ministry of Environment – Outreach Department	x	x	x	x
Hazardous Substances and Waste Management Directorate			x	x
Department of Inspection and Enforcement (including Royal Rangers, also managed by Police Dept.)	x	x	x	x
Royal Energy Commission		x		
Ministry of Energy and Mineral Resources - Public Affairs Office		x		
Renewable Energy Efficiency Department, Energy Advisory Center		x		
National Energy Research Center		x		
National Electric Power Company		x		
Jordan Electric Power Company		x		
Electricity Distribution Company		x		

Electricity Regulatory Commission		x		
Executive Privatization Commission	x	x	x	x
Ministry of Municipal Affairs			x	
Greater Amman Municipality	x		x	x
Aqaba Development Corporation	x			
ASEZA – Environment, Investment, Infrastructure Commissions	x	x	x	x
Development Zones Commission			x	x
Ministry of Finance – Customs Department		x		
Jordan Institute for Standards and Metrology	x			
Ministry of Awqaf	x			x

This chapter reviews the main issues of concern articulated by interviewees including a brief outline of responsibilities. Although all sectors are interrelated, each section covers one sector – water, energy and solid waste management. Time and again, interviewees raised concerns about the construction sector, which is covered in a separate sub-section below. A final section discusses particular concerns of special economic zones.

Government officials consistently expressed concern regarding: contradictory messages to the public; a lack of coordination, consultation, or agreement on national plans and agendas; or if agreement was an agenda in place, no coherent overriding national strategy or communication. Within each sector, a few examples of contradictory messages include:

- **Recycling** - The Greater Amman Municipality (GAM) announced the establishment of a recycling program. Yet one GAM official working with solid waste management said he didn't think recycling was feasible for Amman.
- **Water** - An official of the Water Authority of Jordan (WAJ) Programme Management Unit said "I drink tap water all the time." Another person said "I never drink tap water, especially after I was visiting WAJ labs and they told me that they do not drink tap water."
- **Wastewater reuse** - Engineers in charge of wastewater treatment want plenty of water in the system to keep the BOD down and improve wastewater flows; engineers in charge of water supply want a reduced water flow and consumption.
- **Energy** - Hybrid vehicles were duty-free and subsequently many American high energy use vehicles were imported. The government has currently lifted the duty fee exemption on hybrid vehicles regardless of engine size, causing a big upset in the local car market.
- **Royal Rangers** - A Ministry of Environment official stated the priority for the Rangers, with limited funding, is to enforce regulations in the chemical industry. The General Director for the Royal Rangers affirmed his priority is the reduction of litter and littering. He also noted it should be the Rangers, not the Ministry of Environment which decides the priority.

Overall, the Ministry of Planning and International Cooperation stated there is insufficient monitoring and evaluation of aid projects. In the future, MOPIC will require projects to include evaluation at the end of, and several years after project completion. MOPIC expressed concern there are too many upcoming energy projects and is doing a mapping exercise to ensure complementary activities to avoid duplication and overlap due to lack of coordination of efforts.

2.2 WATER

The water situation in Jordan is in crisis, and has been for years. The Royal Water Commission in 2009 produced a National Water Strategy in consultation with all stakeholders which included the development of a new Water Law, strict caps on future water use for agriculture, and a reduction of groundwater use in the highlands (i.e. increase use of reclaimed water). It is common knowledge that when the new Water Law is passed and restructuring occurs, there will be significant changes. The government still depends on new

megaprojects to solve some of the water crisis, although it is paying more attention to water demand management.

The Ministry of Water and Irrigation, in cooperation with utilities Miyahuna and Aqaba Water, has overall responsibility for water management. While key to the country's infrastructure and welfare, the water sector (and subsequently the organizations that control and inform key management decisions) has not positioned itself as a credible resource for relaying messages and instilling change. In order for a basis of real change to exist, a shift in how the water sector operates and communicates to the public is necessary. Due to several water quality scandals, there is little trust in the water sector. The public is tired of hearing "save water" when they do not see the Ministry doing their part to provide clean, safe and reliable water supplies for domestic or agricultural uses. Even in Karak, where water supply is reliable and there have been no scandals, people know the news from other areas and do not trust WAJ.

Water demand management is seen in Jordan as being "water conservation". Government officials, promoters of conservation programs, and donors misunderstand the term water demand management (WDM), often seeing it as being "water conservation programs". WDM is much more than water conservation, including:

1. Efficient delivery – physical and administrative losses
2. Efficient use
3. Recycling and use of renewable resources such as treated wastewater
4. Allocation – between sectors and within sectors (different types of households/industries, etc.)

Even within the Ministry of Water and Irrigation, the Water Demand Management Unit has no mandate in water allocation or water use in agriculture. Given agriculture is such a large user of water, it adds to the misimpression of what WDM is. In addition, previous water conservation campaigns have been scattered. Everyone is doing it, but with no coordination on target behavior change, messages, or communication channels. There is no measurement of impact. Officials are understandably skeptical when they see one more project focusing on "water conservation" or "water demand management" which they often see as the same thing.

This misimpression also adds to the image that Jordan "is not doing anything in water demand management". In fact, Jordan has many activities which contribute to water demand management and is seen as a leader in the region. Aggressive non-revenue water programs, especially by the water utilities, are gradually showing results. The water reuse program, whereby much of the water allocated for agriculture is now treated wastewater, has helped free up fresh water for domestic use. Improved efficiency of water management through the establishment of water utilities has helped to ensure clean and regular water supplies. Even rationing, not a well-liked concept, but one which is accepted in Amman, helps to limit overuse of water. One of the major concerns, in fact, is that some households do not receive enough water – not that they are using too much.

Water demand management plans developed through the USAID-funded IDARA project have helped water officials to identify potential areas of water savings, and therefore help utilities and WAJ to prioritize activities which will help target consumer groups to save water. Many water sector officials, however, still focus on developing supplies. While this is needed, as there is an ever-increasing population and economic growth, more focus is needed on demand management.

In order to provide better service and more water, all water officials agree that tariff increases are needed. For this to happen, there needs to be a policy and thorough understanding in place among the decision makers that *water costs money*. Even with a minimal increase in funds, the level of service will increase and areas that are currently not served will be included. There seems to be a lack of consensus and understanding among the decision makers, especially those outside of the water sector, that each and every initiative costs money, and that there are varying layers of cost implications within each plan.

One major concern is the use of groundwater in the highlands for agriculture. The government, with GTZ assistance, is establishing the Highland Water Forum, which enables water users and decision-makers to enter into dialogue and exchange views and ideas on the Azraq water basin.

Previous and current donor projects through the MWI, Water Authority of Jordan and Jordan Valley Authority have contributed to improved water use efficiency in households and agriculture. However, much still needs to be done. The Water Demand Management Unit at the MWI is developing a communication plan to promote water demand management. The Assistant Secretary General for Media and Communication will implement the plan. Yet there is no expertise within either department to develop or administer such a plan. A new Public Awareness Directorate exists in the Water Authority of Jordan, but the role is unclear.

The Ministry of Health Environmental Health Directorate has stated most contamination is found in the household. According to the WAJ laboratory director, 60-70 % of the complaints about odd water taste or smell are caused by badly maintained roof tanks. A recent study quoted in the Jordan Times shows that 80% of residents in central Jordan drink bottled water, with most unaware of WAJ's procedures to ensure safe water. Other studies have shown that only about 25% of consumers use bottled water. Outside of Amman, there are varied views towards water and water services. In Irbid there is a "no water culture" with some receiving water six hours/week. In Karak, there is a concern about the industry using too much groundwater. The most significant problem expressed by WAJ officials is pollution of groundwater by septic tanks which have no bottom floor. Households prefer seepage pits with no concrete floor, as opposed to fully sealed septic tanks, thus reducing pit emptying charges. Karak water officials also expressed concern about pollution in household tanks, a common concern throughout Jordan as noted.

Aqaba Water provides service 24/7 and since it is a relatively small town, reports of leaks are taken care of quickly. However, according to a senior ASEZA official, there's "no problem with water, we can even get more if we want." The priority for the Aqaba Development Corporation (ADC) and the Aqaba Special Economic Zone Authority (ASEZA) is economic development. Aqaba Water has the greatest concern about water use, stating that they are now including WDM in their annual reports, have a WDM plan developed with IDARA, and are concerned they may need to ration in the near future. Overall, development is taking priority. Water reuse is for industry and landscaping, and there is more demand than supply.

Miyahuna and Aqaba Water have had some promotional activities for water saving devices (WSDs.) In Karak, the WAJ officer can supply brochures about water saving devices to households and indicated that the WSDs are available in the local market.

The Ministry of Environment official in Karak raised the issue of greywater, as he had worked on a previous project in Wadi Mujeb where the treatment efficiency was low, resulting in treated greywater with a bad odor. This gave a negative impression of greywater, while at Mutah University, the Ministry is doing greywater recycling (without kitchen wastewater) in a student housing complex, with great success.

The **agriculture** sector is under increased pressure to reduce water use yet the Ministry of Agriculture receives limited donor funding and there are few programs of assistance. The perception of the agriculture sector is not generally positive. In the Jordan Valley, the only successful solution to the illegal water use problem, according to officials, is the Water User Associations (WUAs). Currently, there are 23 registered associations and six have contracts for water distribution. The associations manage water at a local level for approximately JD20, 000 per annum. The knowledge base is increasing as the people working within these organizations become more educated with the water issues specific to their region, such as irrigation cycle. For instance, the importance of improving on-farm irrigation efficiency is understood, but more donor support is needed. Yet the Ministry of Agriculture, which advocates for and supports small farmers in the rest of Jordan, is unaware of the existence and/or effectiveness of WUAs.

The Ministry of Agriculture is also concerned about new projects promoting **wastewater reuse** for agriculture. The ministry knows it's inevitable, but is concerned about exports due to quality issues. Several years ago, Saudi Arabia ceased importing Jordan vegetables, ostensibly due to concerns over safety; but there is an understanding this was more a political maneuver rather than agricultural.

The Ministry of Environment takes the lead in industrial water use efficiency and pollution prevention, with projects funded by USAID. The new USAID project on this subject includes developing a communication plan for the industry.

2.3 ENERGY

In the past few years, there is more focus on the energy sector due to increasing fuel prices. There are many strategies, frameworks, or programs of assistance either under development or in start-up. The parallel donor survey report outlines many of these programs, but a detailed plan outlining specific steps to improve energy efficiency doesn't exist. The emphasis is on supply through renewable energy, nuclear energy or other programs, but not on energy efficiency. The recently established Renewable Energy and Energy Efficiency Fund will be a catalyst for improving energy efficiency.

This sector is also characterized by misconceptions and mixed messages. For example, Jordan Electric Power Company (JEPCO) officials expressed concern that energy saving bulbs would produce a strain on electricity grids. The Acting Director of the National Energy Research Center (NERC) clarified this, stating that energy saving bulbs might have been a strain on the electric system in the past, since they did not have a "harmonics balance" but in the newer bulb, the harmonics variation is approximately 5%, an insufficient amount to harm or use additional energy within the household or outside to the distribution companies. However, it's possible some of the less expensive Chinese energy saving bulbs on the market is the older version.

There is a common belief that energy companies have no incentive to promote energy saving devices. However, according to some officials, incentive exists because if peak loads are reached, they cannot provide 24/7 service to their customers. Lower energy use delays the need for more capital investment. Also, the majority of domestic customers pay a subsidized rate, so if those customers save energy, they are in fact saving the electricity companies money. (The same could hold true for the water sector.) This was corroborated by a Karak Electricity Development Company official, who said electricity demands have increased by 15% over last year or two, a much higher than any increase in the last 20-25 years. Even in Amman, a meter reader at the PAP office reportedly said that electricity companies are struggling to meet demand.

Some officials reported the Ministry of Energy and Mineral Resources has strong credibility since there is full disclosure about oil price changes. On the other hand, the government's changing position on hybrid cars has caused a loss of credibility. But of more concern is an article in the Jordan Times concerning the cutting of electricity to a Qualified Industrial Zone. Industries were objecting to a weekday electricity cut announced by the electricity company, arguing that they would lose money and the company should instead cut electricity off on a Friday. A conference held in early May 2010 on "power quality" focused on concern that power outages and irregular supply could hurt economic development.

2.4 SOLID WASTE MANAGEMENT/ENVIRONMENT

Solid waste management, the main concern in the "environment" aspect of this report, includes management of hazardous, industrial, medical, domestic, and agricultural waste. Recycling of waste, industrial or domestic,

is gradually increasing, but there are no facilities for recycling many materials, and no mechanisms for collection.

The Ministry of Environment oversees solid waste management, but municipalities also play a large role in collection and treatment. The UN Relief and Works Agency (UNRWA), which manages Palestinian refugee camps, also collects in the camps. The Ministry's funds are limited and do not cover what is needed to properly manage waste in the country, according to an official.

In Karak, the Ministry of Municipal Affairs (MMA) official said solid waste management is their biggest concern. Other major problems include: industrial olive waste, construction waste, medical waste. The Joint Service Council, composed of elected officials, manages the two landfills. The MMA is responsible for collection. The Mayor, however, also influences aspects of management and at times is the bottleneck in enforcing rules and regulations. In the landfills, Contractors often extract paper for recycling. The Ministry of Environment encourages projects related to biogas in order to solve the problem of animal waste and produce energy.

Officials wanted to do more recycling at source, but had not yet formulated a plan which would work for collection. With some prompting officials agreed with a proposed idea of starting by collecting paper from all schools and the governorate office for recycling. This could be a good demonstration project. GAM also wants to do segregating at source, but the official describing this project was ambiguous about the possibility of executing the project.

USAID will be funding a new landfill in Aqaba, but littering is still a huge problem. ASEZA pays 2 million dinars yearly for cleanup (using foreign labor), and has made minor attempts to stop the practice, but with no resulting behavior change. ASEZA conducted a "campaign" threatening they would film people littering and fine them. But ASEZA did not follow through on this campaign and/or threat, and there was no 'capturing' of littering on tape, thus no consequences, and therefore no change in behavior.

Medical waste is the biggest concern of officials in Ministry of Environment and Aqaba. Medical waste is treated with domestic waste; often industrial waste also is dumped at domestic sites. Some hazardous waste is either burned at unqualified incinerators and within residential areas, or dumped without treatment in landfills designed for domestic waste. Jordan's first medical and industrial waste treatment plant begins operation in April 2010. The landfill will be energy-producing. The Ministry of Environment is establishing a system of medical waste collection, even from private clinics. However, some hospitals and almost all clinics do not manage medical waste properly on their premises and need education on this topic. A landfill in Tafilih also takes in Aqaba medical waste, but with two new hospitals under construction, further education is needed since the medical waste amount will increase in the near future. ASEZA is also concerned about hazardous waste from airplanes and ships.

The government established the **Royal Rangers** to enforce all regulations (up to 22 of them) related to the environment – health, water, waste, etc. The Ministry of Environment leads and trains the 600 Rangers, but they report directly to the Public Security Department. A US government funded training program helped to establish procedures and processes, but the Rangers still have a weak enforcement role in terms of fining companies or individuals who violate the law. Their mandate is unclear, since enforcement mechanisms are weak. At the moment, they focus on education and negotiation with violators in the case of industries, as they do not want to close businesses down. The General Director believes they should have a licensing role, as well as their inspection and investigation role. Some of their plans are stalled due to budgetary constraints and lack of clarity on their role. In Aqaba, they give people "fines" on the beach for littering, but the Rangers simply register the violators' names in the local court, with no mechanism for follow up. The Rangers are committed to combating littering and enforcing the law, although not in agreement with the Ministry of Environment on priorities. The Ministry of Environment's priority is chemical industries; the Rangers is

reducing and/or eliminating public littering. No clear mechanism exists for determining priorities in the face of limited budgets and personnel.

3.0 CONSTRUCTION SECTOR

The worldwide movement for “green building” has reached Jordan, with the Green Building Council and the National Building Council promoting the concept. Other organizations, like the National Energy Research Center and projects working on water have been promoting water and energy efficiency as elements of green building—water recycling, solar water heaters, using energy saving devices, passive solar design, using effective insulation, etc. Private developers are taking on the challenge; a yearly Green Building conference started by a private company attracts private sector, government and NGO officials. This section provides a brief description of some of the challenges in promoting this concept.

Based on the consultant’s personal experience in building a home in Jordan, below are a few reactions from the architects and engineers involved in the design and construction:

- The architect: “Don’t do anything *different*; contractors won’t be able to do it, won’t want to do it, and if you persuade them to do it, they will charge you double.”
- The mechanical engineer regarding greywater recycling: “You can’t do recycling of water in your home – it’s illegal.” (We did it anyway, and there is no odor, no contamination, even with no greywater treatment.)
- The contractor’s reaction when asked to install insulation using a simple, but different technique, said “That’s very tricky, not sure we can do that.” The engineer supervising the contractor was not willing to supervise this, leaving the task to the owners.
- The architect was not interested in passive solar heating in the design, leaving that to the owners.

There is a strong “green building” movement since 2005, when the consultants’ house was built, which means at least some architects and contractors are now interested and even experienced with green building techniques. However, the numbers are still very limited.

An official from Aqaba Water had a similar experience. When constructing his home, he had to purchase solar panels in Amman and bring the expertise for installation from Amman. He estimated the additional cost for installing water and energy conservation systems at 8,000 Jordanian dinars.

There are, in fact, regulations and codes concerning water and energy efficiency in homes. However, these are not enforced. Although there is a rigorous approval process in place for establishing codes via the Jordan Institute of Standards and Metrology, there is no system to follow through and inform builders or those responsible for enforcing codes. Nor is there a mechanism to inform builders, homeowners, and architects of any new decisions on duty-free items such as water or energy saving devices. Often vendors take advantage and pocket the savings on the duty-free items.

The Jordan Engineering Association (JEA) approves home designs. Builders provide the mechanical, construction and electrical designs; but they only look at the construction design. The Greater Amman Municipality grants licenses to homes after a final inspection; but they only check the square meters correspond to the original designs. The Civil Defense department must give approval of any buildings over 4 stories.

The Jordan Institute for Standards and Metrology (JISM) informs the Ministry of Trade and Industry (MOTI) once the Prime Ministry has approved new standards for duty-free items. The MOTI in turn informs Customs. However, Customs often needs the assistance of technical experts. They test water saving devices

and know many of them by brand. For energy, they have no mechanism to test items other than light bulbs. Customs provides training for their officers for any new duty-free item.

There are numerous housing initiatives, public and private, which provide opportunities to demonstrate green building. Although the USAID-funded school construction program was reluctant to take on this concept in Aqaba due to high costs, KfW Development Bank is planning a pilot school construction project to demonstrate water and energy efficiency. Mansion Hills, a high scale development planned for Aqaba, includes water reuse and energy efficiency. This project is now on hold due to the general economic downturn. Several 4 and 5-star hotels include water conservation as their standard. Aqaba Development Corporation has two master plans for labor villages of various types, for blue collar and white collar workers, dorms for industrial estate workers. ADC is seeking investors for these plans which might be opportunities to showcase water and energy saving. The Royal Decent Housing Initiative provides a perfect opportunity to include green building techniques to benefit lower income households.

4.0 SPECIAL ECONOMIC ZONES

To attract foreign direct investment, Jordan has established the Aqaba Special Economic Zone, several “Qualifying Industrial Estates” and, through the Development Zones Commission (DZC), is establishing additional special economic zones. The zones play an important role in improving management of water, energy and waste. Yet the push to attract business is stronger than the push to protect the environment. The organizations have weak environment directorates and are reportedly not able to fully enforce even their own regulations.

In ASEZA, the regulatory body in Aqaba, some senior officials thought there was no water problem at all, while at the same time lamenting the fact that a USAID-funded schools construction project was showing no interest in building water and energy efficient schools. The ASEZA Environment Directorate was instrumental in the early years of ASEZA in establishing solid regulations supporting environmental responsibility. Partly due to the economic downturn, however, ASEZA’s main concern seems to now be to promote investment. In ASEZA the only organization promoting water conservation was Aqaba Water. Aqaba Water officials expressed concern that their town could have a water crisis soon due to increased demand, especially if ASEZA continues to ignore its own regulations. The Aqaba Development Corporation also expressed concern on this topic.

Despite ASEZA’s concern that environmental restrictions will inhibit investment, the private sector has taken some initiative on its own. The Movenpick in Aqaba will soon receive “green building” status, an initiative they have taken on independently, despite ASEZA’s concerns that promoting these concepts will discourage businesses. Tala Bay has its own wastewater recycling plan, reusing treated wastewater for landscaping. The Aqaba Industrial Estate is installing a windmill to save on energy costs.

The Development Zones Commission (DZC) was established as a platform for sustainable development, enhanced competitiveness, niche markets in underdeveloped areas, with the goal to provide a benefit to local communities through generation of jobs. The DZA has a committed and able Environmental Sustainability Officer, but she has no staff, relying on assistance from officials from line ministries such as water and environment. The new Commissioner for the DZC is an environmental expert, so there may be increased emphasis on environment as activities progress.

In other industrial estates, the Qualified Industrial Zones, businesses are concerned about the high cost of production, especially energy and water prices. Government and private industries often work counterproductively, with government decisions often described as “not industry friendly.” When businesses complained to the government about proposed electricity cuts, they complained to the Ministry of Trade and

Industry not to the Electricity Regulatory Commission, which is the entity responsible for dealing with customer complaints.

5.0 BEHAVIOR CHANGE COMMUNICATION IN GOVERNMENT INSTITUTIONS

5.1 COMMUNICATION CAPABILITIES AND EXPERIENCE

Of the 22 institutions covered in this survey, many have active outreach programs which are making some inroads into encouraging consumers to use water and energy wisely. However, none have a broad communication strategy and action plan developed in consultation with others within their institution, or combining the various activities. Nor are plans individuals have based on solid research, with plans for monitoring and evaluation. Two water communication officials have extensive experience in working on communication in water; both have self-trained in many aspects of their work. They have also been exposed to on-the-job technical assistance and some very short, specific training courses, but no comprehensive course on communication, social marketing or behavior change communication. The National Energy Research Center also had extensive experience conducting campaigns, but no technical communication expertise. The Jordan Radio and Television Station had no knowledge of evaluation of programming. Annex C includes a summary of communication mechanisms currently in the institutions reviewed.

When communicating to the public or to specific target groups, there is no coordination between government institutions, or between various departments in some government institutions. In the water sector, for example, there are three divisions within the Ministry of Water and Irrigation who conduct outreach activities: the Media and Communication Office and the Water Demand Management Unit, both of whom report to the Secretary General of the MWI, and the Public Awareness Directorate, who reports to the Secretary General of WAJ. The Directors of the WDM Unit and Public Awareness Directorate also have other, unrelated management roles. In addition, the utilities, Aqaba Water and Miyahuna, have their own communication plans and programs. Miyahuna coordinates to some extent with the Media and Communications Department in MWI. Miyahuna focused on the first two years in improving services and general communication with customers through employee and customer newsletters and other activities. This was successful in generating trust with the customers and now they are promoting water conservation with a number of ad hoc activities.

The Water Demand Management Plans under development through the IDARA project can assist in focusing communication and behavior change efforts. In Aqaba, for example, a study found that kitchens provided the greatest opportunity for water saving. The Customs Department in Ministry of Finance has a small communications department, but they deal mostly with investors. They do not see it as their role to inform people of changes in duty-free items. JISM also does not play a role here.

The Rangers have a public relations department and the General Director has a comprehensive understanding of the principles of social marketing. However, their activities are also the standard mix, with no planning in terms of priorities or monitoring of effectiveness. They do not see their priority as communication or education; they have produced a few brochures, done some education, for which they train their own people internally, but nothing systematic.

The Ministry of Environment has two engineers who were moved to an Outreach Department yet were given no training, budget or support. They have a few minor programs, but like most other organizations, do what comes up, what seems like a good idea, and obtain funding where they can. The Outreach officer is creative

in obtaining funding through other projects and other ministries in order to support her goals. They do have an initiative to build three demonstration “green homes” in the North, Middle and South of Jordan.

The Development Zones Commission and ASEZA have small communications offices which mostly deal with investors. They do not promote green building.

In the energy sector, the Electricity Regulatory Commission (ERC) is involved with JOHUD in a one-year project on electricity saving – again, a program without any baseline assessment, planning or even clear goals which can be measured, nor any sustainability. Materials reviewed cover a variety of topics – water, energy and environment. No one organization is taking a lead role in promoting energy saving – the ERC says they could if they received funding. The electricity companies state the Ministry of Energy and Mineral Resources should take the lead, with the companies implementing. The National Energy Research Center considers that they have the best experience and should take the lead.

JEPSCO, for example, has a public relations officer, but has a minor role. They are reorganizing Customer Service into a new Customer Care section, with a central Customer Call Center for all services. There are no outreach or communication activities concerning energy saving at this time. USAID wants to supply high efficiency light bulbs to large institutions via JEPSCO and other electricity distribution companies. JEPSCO will distribute the bulbs to customers who will pay in installments. JEPSCO understands the need for this type of program, but is not enthusiastic about taking this project on for all customers.

For solid waste management, the situation is similar. There is no national plan, nor a plan for communication within the Greater Amman Municipality, although funding is now available for through a World Bank loan.

This report, of course, only describes the government institutions. The parallel donor report provides detail on many donor projects conducted through these institutions, all of which have their own goals, materials, and often their own “main character” or mascot. Many NGOs are also promoting water or energy saving, improved solid waste management or other environmental goals.

The lack of coordinated communication on these important issues results in mixed messages and overloads the public with pressure for behavior change on many fronts. Most programs are not targeted to specific groups. In addition, the lack of strong customer-client relationships between consumers and the service agencies makes it harder for organizations to persuade people to change. The many accomplishments of Ministries of Water, Energy and others are not always recognized; thus consumers say “why should I change if others are not making an effort?”

Most institutions are producing materials internally, both for cost and quality control reasons. It is difficult to find advertising agencies who understand social marketing principles, and those found are quite expensive. Miyahuna, for example, has hired their own graphic designer to produce materials. No one is monitoring or evaluating ‘material effectiveness’, but a few people recognize it is needed.

The role of media in promoting change in water, energy and environment is covered in a separate survey for the PAP project. However, since Jordan Radio and Television is a government agency, the consultant and PAP media expert met together with the former Director, who provided insight into its role in promotion of environmental messages. JRTV has 6 radio channels, 42% of people watch Jordan TV. JRTV has become more Jordanized, producing 90% of their own shows. Most are talk shows and news shows due to lack of funds. They don’t do baseline studies, monitoring or evaluation of their shows and how they are received by viewers. JRTV has produced a number of shows related to water and energy in Jordan, and have plans to include topics and content related to the environment in their development of season three of Sesame Street, funded by USAID. (A representative from the Ministry of Environment is on the Board of Directors of Sesame Street.) They are also producing a small series which at the end will have a prize for people who answer questions about the environment correctly.

With 42% viewership of Jordanians, educating and accessing the public via JRTV would be extremely effective. The only areas in Jordan where viewer numbers are lower are West Amman (upper middle and upper class households, mainly) and Zarqa, where viewers prefer fundamentalist religious shows.

The JRTV former director expressed concern with senior officials appearing on talk shows unprepared in terms of content and presentation.

5.2 PRIORITY BEHAVIOR CHANGES - BARRIERS TO CHANGE

Water sector officials stated that their biggest concern in relation to persuading consumers to use water more carefully was that the Ministry does not have a strong positive image with the general public. They stated that messages related to responsible water management are ignored by the public, who do not understand all of the positive measures the Ministry is taking to improve the water situation in Jordan. Miyahuna recognized this early on, and its communication plan for the first two years focused on improving customer relations and internal communication in order to gain staff support and commitment. This has paid off, with customers providing positive feedback to current conservation messages.

Senior decision makers are often seen as the largest stumbling block to change. In Karak for example, the Mayor, an elected official, makes final decisions, and often counteracts environmental regulations. ASEZA is another example, where the priority is on investment, not environment. For raising water tariffs, senior government officials stated that many of their colleagues even within the sector do not understand the necessity of tariffs to cover costs.

What keeps officials from recognizing and understanding the need for change and the challenges? Anecdotal information along with the consultants own views from long experience working in Jordan, can provide a few insights, although they are by no means conclusive. As with any behavior change, whether it's decision makers or consumers, one needs to understand what is important to them and where their priorities lie. Some challenges in the water sector for decision makers, both within and outside of the water sector, are noted below:

- **Political** – businessmen with good connections (“wasta”) are owners of many of the large farms which use extensive water for irrigation. This is not an easy group to challenge for even a government minister.
- **Showing results** – although developing new water supplies takes time, water officials can promise senior leaders that “we will have X amount of water available to you by this year...” To date, water conservation programs have consisted mainly of posters, brochures, etc., which encourage water saving; but which have no quantifiable results. There is no way for water experts to show senior decision makers that these programs have obtained results or will make a difference in overall water budgets.
- **They do not understand “awareness”, “communication” or “social marketing”.** The communication experts have not spent enough time focusing on internal communication within sectors to convince decision makers of the need for their programs. Water conservation programs are part of the problem, and in some cases have conveyed a bad image to technical experts. Most of them have not been based in science and evidence. Water demand management plans of utilities now reportedly have such evidence-based plans and will focus on where the greatest savings can be made. This principle should be transferred to the energy sector. Why spend thousands of dollars changing street lights when they use only 3% of the country’s energy consumption.

- **Communication experts need to learn these principles of water and energy demand management** – technical, social and economic – so that they can gain credibility with the engineers managing water and energy programs.
- **Most decision makers, even outside of the water and energy sectors, are engineers. Engineers understand science, evidence and numbers.** They are fully capable of understanding the “softer” side of technical issues; most communication officials are also engineers. However, it is still much easier to design a new water supply, a technical challenge, than to determine how to persuade someone to use less water in a rich house in West Amman, or to stop throwing their garbage on the street.

Any programs which focus on communication needs to take these aspects into account.

Officials presented the desired following actions for general public or specific groups. They are combined with some of the constraints in promoting these concepts:

- **Improve home water use** - Not to “save water” but to better utilize existing, limited, resources. People do not think the Ministry is doing enough to provide them with clean, reliable supplies, so are not inclined to do anything that is not in their interests. The only way to persuade them is when they can stretch their resources further – not caring about the general “environment”.
- **Don’t pollute**
- **Do not reject tariff increases** - Citizens do not trust the water sector. They know there are big projects, but even the decision makers are not fully aware of costs. Tariffs are needed to support systems and service improvement. (They are also a tool of water demand management, but the Ministry’s biggest concern is covering costs and needing people to understand this.) For the Disi megaproject, not only price is a concern, but quality, due to reports that the water is radioactive. The Ministry is planning a campaign specifically on this topic.
- **Report water leakage** - People do not think it will make a difference if they report this.
- **Greywater recycling** - Designers and plumbers do not know how to do this. Nor do households. Some projects did not work well, making a bad reputation.
- **Use reclaimed water for agriculture and industry** - Even the Ministry of Agriculture is not happy about this. There are few programs assisting farmers to adjust.
- **Rainwater harvesting** - this is being promoted by several organizations, but not in any comprehensive manner. The investment vs. return costs need to be reviewed.
- **Put a bottom on your septic tank** - It is difficult to convince people to do this, since they will have to pay more often to empty their pits.
- **Clean your water tanks** - People do not realize how great a source of contamination these are
- **Take care of your water meter** - Miyahuna is planning this campaign to show customers that we care about them, not just about tariffs or the general “environment.”

With so many messages, from so many sources, it becomes difficult for people to prioritize. There is no national strategy. Several officials called for a national Water Communication Strategy or Campaign, where all partners work towards implementing the same strategy. Most of all, the water sector needs to improve its image, following the lead of Miyahuna and Aqaba Water, and starting with internal communication within government institutions. For any successful campaign, it is imperative awareness begins from the ground up. Trust and knowledge needs to be created and fostered within the organization and subsequently, consumer confidence will increase.

The Ministry of Water and Irrigation is planning a campaign specifically on the tariff issue beginning April 2010. They expressed the need for the public to understand the water situation and comprehend costs involved in developing and providing water.

In **energy**, desired behavior changes include:

- **Energy efficiency** - Use energy saving light bulbs and other appliances. For the water sector, increase pumping efficiency.
- **Use clean energy** - For households, use solar panels. For industries, use solar, wind power. New landfills can produce energy.
- **Build and maintain energy efficient homes** - **According** to one energy official, people only understand one thing, their bill; if it's less, they will continue to save energy costs.

Possible barriers in the energy sector are concerns by electricity companies about harmonics distortion and its effect on the energy load. If electricity companies fear that energy saving bulbs will increase the energy load, they will only pay lip service to promoting their use. Another barrier is vendors are not lowering prices on some items, even though they are now duty free. One electricity company official suggested selling the energy saving bulbs at the Army Store, Carrefour, and a few other big outlets at the correct price. Therefore the consumer will learn when he is being cheated by smaller vendors. Testing for duty-free energy saving devices is also not available in Jordan. Some consumers have said that “anyway, energy saving bulbs do not save energy”, also complaining the bulbs are not as bright and take longer to light up than normal bulbs.

Although there are general figures available on which sectors use more energy, energy audits within specific sectors will assist in determining where the greatest savings can be made. For example, street lighting consumes 3% of the energy in Amman, yet there is one donor project focusing on energy saving in street lighting; perhaps not the best use of scarce resources?

Energy saving bulbs are considered hazardous waste and needs proper recycling. Some officials criticize promotion of these bulbs; however, many households are using fluorescent lighting which also is hazardous waste. Proper collection and disposal methods can be improved; but there is no need to delay promotion of energy saving bulbs due to this issue. Some of the Chinese energy saving bulbs on the market burst when being installed or do not last long, though they are half the price of other energy saving bulbs. As one official noted, “if people lose faith in the technology, it will ruin our campaigns.”

Many officials expressed concern that low-income consumers are being told to use less energy and use less water when they already have limited resources. Any communication campaign needs to be targeted to specific income groups, and also needs to target their needs. For example, with low-income households the biggest concern will be reducing the electricity bill. With high income households, making “save the environment” trendy, as in other nations such as the US, could possibly be quite successful.

Key behavior changes in **solid waste management** include:

- **Recycle, lowering the overall amount of waste generated** - People do not know where to take recycled items, and there is not a way of processing many of them.
- **Batteries, old computers, other household items, need special handling** - The Ministry of Environment announced a program to combat this, saying that people should “bring old computers and batteries to the Ministry of Environment.”
- **Proper handling of medical waste** - There are three steps: onsite handling, collection and transport, and treatment. The biggest concern is onsite handling in clinics and some hospitals, and letting them know about new systems for collection and treatment. Yet the Ministry of Environment does not have funds or a plan for this.
- **Stop littering** - Littering is a major concern which no one has yet properly tackled. The Rangers do not have enforcement mechanisms.

All of these changes and constraints affect the construction sector, which already is one known to resist change, especially building contractors. On the subject of green building, the Green Building Council is working with architects and engineers to improve their knowledge of methods, especially through the

international LEED (Leadership in Energy and Environmental Design) program. However, a holistic and comprehensive approach needs to encompass consumers, designers/architects, builders/contractors, and the multiple layers of technical people such as the individuals and businesses supervising construction on a local and regional level. All government sectors need to have a role in developing and implementing this approach.

The decision makers and investment promotion officials are often more interested in promoting economic development than environmental responsibility. This is rapidly changing as the “environment” starts to make even business sense. The Development Zones Commission is, in some cases, successfully promoting “green business” in cooperation with the Ministry of Environment. Yet this is not part of an overall strategy integrated with the Ministry of Trade and Industry and other key stakeholders. The Commission and ASEZA need to be able to communicate in a language that investors will understand by presenting a business case behind environmental responsibility. According to a DZC official, more economists are needed in Jordan who can present environment in this way.

5.3 PRIORITY APPROACHES AND ACTIVITIES

Although there is no understanding of how to develop and implement a comprehensive communication strategy, officials were consistent in describing the approaches to changing behavior for improving water, energy and solid waste management. Most agreed on the following:

- **Demonstration Projects (not just general “awareness”)** - Specifically use mosques, schools and low-income housing as examples. Demonstrations should be located in the North, Middle and South to ensure easy access. As noted in the description for a demonstration energy efficient home in Aqaba – “A building has greater impact than a brochure.”
- **Document and Disseminate Success Stories** - Publicize or publicly acknowledge people or organizations ‘already doing good things’
- **Target Decision Makers** - Senior government officials, such as Mayors, development zone commissioners, and senior government officials of all ministries, are the most important target group. For example in Aqaba, where the tourism industry is doing more than is required, they could be used as advocates with decision makers for improved environmental responsibility.
- **Support School Environment Clubs** – several officials mentioned this, but with no details on how effective these clubs are
- **Conduct Coordinated Joint Activities** - Activities are good done jointly, but only if organizations have very clear roles and responsibilities, in terms of individuals and organizations involved.
- **Most effective utilization of the Royal Rangers** – The Rangers can play a key role in advocacy as well as enforcement.

In Amman most people said the relevant ministry (Environment, Water, and Energy) should take the lead in developing strategies. Interestingly, in Karak, government officials said that NGOs should take the lead, possibly due to a stronger NGO role in rural areas.

On demonstration projects, for example, officials noted in Karak that a project focusing on government buildings would encompass 500 buildings (including schools) which use 12-13% of the governorates overall energy. Officials suggested focusing on hospitals as good demonstration sites because the site and facility are highly visible. Government employees all have families and relatives. If they learn about water and energy efficiency, they will pass that information on to others.

For the building sector, any program needs to target consumers, designers, architects, builders, contractors, the Jordan Engineering Association, Greater Amman Municipality, Civil Defense, Customs and JISM. The challenge is – who will take the lead? Many efforts will help – but they need to be coordinated.

For the PAP projects, while most officials gave their “wish lists” consisting of various campaigns – not strategies – one official advised the project to focus on one or two sectors and work within these constructively and efficiently.

5.4 REQUESTED ASSISTANCE NEEDS

Specific organizational requests for assistance are provided in detail in Annex C – Government Institutions Roles, Activities and Potential Areas of Cooperation. Many are for a campaign on subjects such as water saving, energy saving, stopping littering, etc. Some could not express their targets clearly, so could not articulate how PAP could help. Several needed areas of assistance are common to all organizations:

- **Training in Social Marketing** – PAP has conducted initial training and this will continue throughout the life of the project.
- **Training in Monitoring and Evaluation of Social Marketing Programs** - The upcoming training will cover this to some extent; however, institutions will need further training and technical assistance.
- **Developing Strategies and Action Plans** - What is most important, however, is ongoing on-the-job capacity building through secondment to selected organizations and assistance in developing organizational communication strategies and plans which will fit in with national plans.
- **Direct Assistance for Specific Campaigns** - Most organizations have limited budgets for communication and requested money for campaigns.
- **Fundraising** – Under the USAID-funded WEPIA project, completed 5 years ago, government organizations and NGOs received fundraising training. Additional training should be considered as most organizations requested help with how to raise funds to support their communication activities.

The Secretary General for Ministry of Water and Irrigation requested PAP provide advice on how to structure communication activities between the various divisions in the Ministry of Water and Irrigation. She suggested that staff be seconded to the Media and Communications Department to help develop and implement communication plans. She encouraged PAP to work with the IDARA project in planning for the International Water Association 2010 Water Efficiency Conference, to be held in Jordan.

6.0 CONCLUSIONS

There is no national communication plan or strategy for improving water, energy or solid waste management. Many officials called for such a plan; many others did not recognize or understand the need for one. Communication and outreach specialists are conducting many programs with some degree of success, but all would like to have more training, a higher profile and more tools to successfully fulfill their goals.

Communication expertise is greatest in the water sector; yet it is the sector which also has the greatest challenges in obtaining consumer trust. With the exception of Miyahuna, communication activities have focused on specific campaigns, not on improving the overall image of the sector. Campaigns to reduce littering have no enforcement mechanism; no one seems to be listening or changing their behavior. Efforts are scattered, and there is much duplication.

The energy sector has almost no communication experience. This could be seen as a difficulty; but also provides an opportunity to train people comprehensively.

Government policies address energy and water supply and demand management; but in practice, most activities focus on supply. If sector officials can learn to understand the difference, and promote both equally, that in itself would be a major achievement.

7.0 RECOMMENDATIONS

The most important recommendation in this report and the parallel donor report is that PAP takes the lead in assisting stakeholders to develop one national communication strategy on environment, encompassing all three sectors. Or, if that is too unwieldy, develop one strategy for each sector. Overall, specific campaigns will continue to be funded by scattered donor projects. The various sectors need national communication strategies, developed by the partners in cooperation as part of their capacity building. They then need to develop action plans, which specifically outline roles and responsibilities, taking into account various donor projects. These plans should include mechanisms to raise funds, including partnerships with private businesses. These plans will allow people to take on a specific campaign or task which presents a message consistent with other messages, and the particular organization can take credit for any successes.

These strategies should be approached in the same manner one would develop a business strategy – i.e., focus on internal communication, establish trust with the consumer/customer, and address desired behavior changes. What do we need the consumer to know in order for them to better support our institutions? What do we want them to do? Topics such as increasing the tariff and improving customer service cannot be separated from other issues.

All capacity building activities should be focused on one goal: developing, implementing and measuring national communication strategies and action plans. This applies to governments, and also other stakeholders addressed in related PAP studies: NGOs, private sector, and donors. All “awareness” and “behavior change” efforts will be unsustainable, and only temporary, if this is not done. Any progress will be long-term ineffective if the issue of credibility of institutions is not addressed. Capacity building should include ongoing, on-the-job training as well as temporary staff secondment in selected institutions. Organizations should be involved in development of these plans also in order to secure their commitment.

The Public Action Project should consider the request by the Ministry of Water and Irrigation to second staff for short periods to specific departments; this methodology can be implemented in other government agencies, as well.

Other, more specific recommendations include:

- Do not conduct any “campaigns” which are not directly related to demonstration projects or existing technical activities.
- Focus efforts and do not take on too many sectors and tasks. The construction sector is a large one, which needs considerable attention. For water and energy efficiency, focus on the various barriers to change within this sector—institutional and individual.
- After the initial training activities already planned, consider sector-specific training – energy, water, solid waste management. Communication officials are starting from the basics, but they have many good ideas. They need advice from people within their own sectors to assist in development of plans.
- Use good economics and business sense. As soon as the Water Demand Management Plans are finalized for Ministries, PAP needs to review them to understand priorities. The energy sector needs to develop similar plans if they have not done so already; PAP could assist with this if needed.
- Train senior officials in how to present themselves on radio and TV – both in terms of content and in terms of how they look, speak, etc.
- Show we care – individuals, especially low-income households, need to know that we care about them. Not about the environment, not about recovering costs, but about them and their needs.

- Sustainability is most important. Conducting training programs will help, but developing national strategies as roadmaps for promoting behavior change is most important. One official said “we engineers like to have a map, all on one page, showing who’s responsible for what.” Once they are completed, putting the national strategies and plan on one or two large posters for distribution to all stakeholders is a key recommendation.

PAP should consider focusing on one or two specific sectors, such as the construction sector. The construction sector covers many aspects of water, energy and environment, and many government agencies. It does not cover everything – but supporting and helping to coordinate promotion of green building activities, both technical in support of enabling environments, and social in terms of marketing of the concept, would help to provide a focus around which all activities take place. NGOs can also be involved in this task, through housing and rural development projects.

8.0 ANNEXSES

8.1 ANNEX A: INTERVIEW LIST

	Institution	Name
1	Royal Water Commission	Raid Zureiqat, Water and Environment Business Unit Manager, Engicon 460-2120, ext. 206 rzureiqat@engicon.com
2	Renewable & Energy Efficiency Department, Ministry of Energy and Mineral Resources	Muawiyah Faydi Supervisor of the Energy Advisory Center 079-6237885 muawiyah_20@hotmail.com
3	National Energy Research Center	Walid Shahin, Acting President 962 6 533 8041 w.shahin@nerc.gov.jo
4	Ministry of Water and Irrigation	Eng. Maysoon Zubi, Secretary General secretary Pauline 06 5683462 +962 6 5652265 / +962 6 5652267
5	Water Demand Management Unit, Ministry of Water and Irrigation	Jamal Hijazi, Director of Water Demand Management Unit 962 6 5652265 jamal_hijazi@mwi.gov.jo
6	Public Awareness Directorate, Water Authority of Jordan	Ibrahim Obadah, Director Ibrahim.Obadah@mwi.gov.jo 0777-655-6030
7	Jordan Valley Authority	Yusuf Hasan, Assistant Secretary General 079-558-8087
8	Ministry of Water and Irrigation Media and Information Office	Adnan Zu'bi, Assistant Secretary General 565-2265, ext. 1098
9	Miyahuna	Joumana Al Ayed, Communications Manager 079-922-2771 jalayed@miyahuna.com.jo
10	Aqaba Water	Na'em Ahmad Saleh, Director of Technical & Engineering Affairs 962 3 2014390 x100 n_saleh@awc.com.jo Aref Al-Batoush, Public Relation & Water Awareness Head Office 962 3 2014390 x215 a_batoush@awc.com.jo Eng. Ayman Al-Alawneh, Head of Research and Development 962 3 2030825 a_alawneh@awc.com.jo
11	ASEZA	Dr. Salim Al Moghrabi, Commissioner for Economic Development & Investment Affairs 962 3 2091014 smoghrabi@aseza.jo
12	Aqaba Development Corporation	Eng. Mohammad Al-Sakran, Manager, GIS and Land Planning 962 3 203 9100 msakran@adc.jo
13	Customs Department, Ministry of Finance	Abdul – Wahab Al Sarayra, Assistant Director General 962 6 4620659 Sarayra@custom.gov.jo
14	Hazardous Substances and Waste	Dr. Mohammad Khashashneh, Director

	Management Directorate, Ministry of Environment	5560113, ext. 140 mkhashashneh@yahoo.com
	Institution	Name
15	Inspection and Enforcement Directorate, Ministry of Environment	Adnan Zawahreh, Director 962 6 776-724982 zawahreh2001@yahoo.com
16	Development Zones Commission	Ruba al-Zubi - Director Environmental Sustainability, Acting Director Institutional Development & Project Management, member Green Building Council, former advisor Ministry of Environment 079-587-3564 rubaalzoubi@gmail.com
17	Jordan Radio and Television Corporation	Hala Zureiqat, Advisor and former Director 962 6 4202336 hala@jrtv.gov.jo
18	Ministry of Planning and International Cooperation	Maha Zubi, international projects coordinator (secretary, Abir Al Madani) maha.z@mop.gov.jo
19	Environment Health Directorate, Ministry of Health	Salah Hiyari, Director 079-905-0206, 568-5386
20	Ministry of Agriculture	Mohammad Rousan, Director of the Private Sector Relations and Parliamentary Affairs 962 6 565 295 m.alrousan@yahoo.com
21	National Center for Agricultural Research & Extension, Ministry of Agriculture	Dr. Faisal Awawdeh, Director General 962 6 4726680 director@ncare.gov.jo
22	Jordan Electric Power Company	Eng. Marwan Bushnaq, General Manager 962 6 5503600 jepco@go.com.jo
23	Electricity Regulatory Commission	Hala Batayneh, Head of Public & Media Relations 9626 580 5000 x287 hbatayneh@erc.gov.jo Tahreer Al Qaq, Commissioners Council's Secretary 9626 580 5000 tahreer@erc.gov.jo
24	Royal Department for Environment Protection Rangers	Col. Edwan Edwan, Director 962 6 5921702 edwanedwan@gmail.com Major Mohammad Al Rahahleh Chief of Coordination & Proceeding Section 962 6 5922864 Rahahleh2001@hotmail.com L.Col. Sami Sabri Baj Chief of Environment & Nature Protection Division 962 6 5926082 samisabribaj@hotmail.com Col Ahmad Alsmadi L.Col. Qasem Abuhaija Captain Fadi Al Zu'bi
25	National Electric Power Company	Ghaleb Maabreh, Managing Director 581-8230 gmaabreh@nepco.com.jo

		Designated contact person is Amani Azzan, in the Commercial/Planning Department
	Institution	Name
26	Ministry of Environment	Sanaa Labadi, Outreach Department 079-990-1061 sanaallabadi@yahoo.com
27	Ministry of Agriculture	Suliman Rkibat Director of Trade Agreements Unit
28	Ministry of Interior, Provincial Governor's Office	Rasmi Issa Al Qaisi Assistant Governor
29	Water Authority of Jordan, Karak	Eng. Atef al Zubi 077-695-174
30	Ministry of Municipal Affairs	Eng. Lama Majali Director of Municipality Affairs of Karak Region 079-5454505, 03-2386801 Lama_Jor@yahoo.com
31	Ministry of Environment, Karak	Eng. Haitham Al Adailleh, Director Mobile: 079 588221 E-mail: hadaileh@hotmail.com
32	Electricity Development Corporation, Karak	Engineer Hassan Thuneibat
33	Ministry of Energy and Mineral Resources	Hala Qaryouti, Public Relations Officer 580-3060
34	National Electric Power Company	Ghaleb Maabreh, Managing Director 962 6 5818230 gmaabreh@nepco.com.jo
35	Aqaba Water Reuse Information Center	Hotaf Yassien, former staff of Aqaba Water Reuse Information Center 962 79 5229215 Hotaf_yassien@yahoo.com
Note: As part of Donor Survey, also met with Jordan Institute of Standards and Metrology and Greater Amman Municipality.		
SUGGESTED FUTURE CONTACTS		
Northern Governorates Water Authority		Motaz Obeidat is PR person according to Mohammad Saqran from ADC
Executive Privatization Commission		
Irbid District Electricity Company (IDECO)		
Civil Defense		Give approval of buildings 4 stories or higher
Greater Amman Municipality (GAM)		
Chief Commissioner ASEZA		Secretary, Khulood, ext. 2039, kedwaan@aseza.jo
Ministry of Awqaf		Minister Abbadi
ASEZA – Mona Hawa, Investment and tourism		Secretary Hidayat, ext. 2111
ASEZA Infrastructure Commissioner		
Royal Energy Commission		
Higher Council of Youth		H.E. Ahmad Masarweh President of the Higher Council for Youth, Office : 5679903
Ministry of Municipal Affairs		
Ministry of Tourism		SG Ihab Ammarin

8.2 ANNEX B: INTERVIEW GUIDE

GOVERNMENT INSTITUTIONS

Brief introduction to interview

GOALS – Review current and past communication activities in water, energy and solid waste management; assess institutional potential to design and conduct programs, capacity building needs, opportunities and challenges for partnership with Public Action project.

Questions/points below are guiding questions – specific order of questions will be determined by the flow of the interview. (With some, may start with the basics of “what’s your program” – with others, will start with general discussion of priorities and programs.)

PRIORITIES AND GOALS

1. **Your view - priority issues in water, energy and solid waste management?**
2. **What is needed to address these issues?** Who needs to change behavior? How? (i.e., individuals, organizations, government, etc.).
3. What is **impeding change**? What is encouraging it?
4. After some general discussion, focus on **one very specific action** that has come up (for example, saving water) – and ask **“how specifically do you think this type of individual/institution can be persuaded to change?”** What is needed? Resources, knowledge, funding, etc.?
5. If focus of discussion has been mainly on one sector – **ask about other 2 sectors.**

INSTITUTIONAL ROLE and COMMUNICATIONS ACTIVITIES

6. General re **role of institution**
7. Specifically, role of **individual** and your **unit/division**?
8. **Strategy/action plan?** Copy available?
9. **Communication plan?** Copy available?
 - ✓ Who developed it?
 - ✓ Who implements it?
 - ✓ Resources available? Staff, funding? Donors?
 - ✓ Resources needed? (*Ask again later, to get more insight*)
 - ✓ How do you know if you succeeded? Baseline? Results? Reports?
10. Discuss **one or two significant projects or activities**:
 - ✓ What was significance of project in changing behavior in water, energy and/or environment?
 - ✓ Who implemented the project? (partners, donors, etc.)
 - ✓ Was there any way to measure the change in behavior? The achievement of project goals?
 - ✓ What would you do differently if you were funding/managing this project again?
11. Do you have any **new activities planned** in outreach/public action on water, energy, and environment? If yes, for **which sectors, what purpose, with which partners?**

IN GENERAL ON COMMUNICATION IN JORDAN

12. What are the **major gaps** in communication in the sector? In messages, approach, implementation capacity, in funding

THE FUTURE

13. For a **communication plan** for **water, energy** and **solid waste** what is the MOST important thing that needs to be done? Priority target behaviors, messages and mechanisms?
14. What do you need most to do your job? Funding, capacity building, equipment?
15. Partnering – who do you want to work with? What would be best way to work with them?
16. **Who** do you think should **take lead** on such a plan? Who should **be involved**?

FOR SPECIFIC TYPES OF ORGANIZATIONS, some questions will be added as new points come up (i.e., after analysis of first 5-10 interviews), such as:

1. **For utilities** – what incentives do you give customers to save water? What incentives do your staff get for their water conservation efforts (NRW, etc.)?
2. **For government ministries:** What are you doing in your organization to save water, energy, to manage solid waste better?
3. Others for specific organization based on interviewer's prior knowledge of institution

TIME PERMITTING (Note – there was no time for this question in almost all interviews)

Choosing one specific project intervention, describe in detail:

1. How was the activity developed? By whom?
2. Who, specifically, conducted the activity? Organizations, individuals, beneficiaries?
3. How was the project managed?
4. Were there any baseline studies at the start of your project?
5. What are you trying to do (review of goals/objectives/targeted results)
6. What is your message? To whom?
7. Were there other agencies/projects with whom you worked and/or coordinated?
8. What were/are project results? How are they measured?
9. What do you feel are the project's main successes/difficulties?
10. Were these measured in any impact studies at project end?
11. If project over a year old, has there been any follow-up study to assess results and behavior change?
12. How do you think the project contributed to changing behavior to better manage/preserve WESWM?
13. What would you suggest/plan as follow up to further spread and/or reinforce behavior change? Or to take what your activity did to move from change of attitude to actual behavior change?

Communication Materials – for one set of materials (from a few interviewees, will not be time with all)

14. What were they? (TV spots, brochures, internet site, etc.)
15. Where are they located? Online, office, library?
16. What was message and purpose of the material?
17. How were the materials produced?
18. Materials presentation? Arabic/English?
19. Overall format – pictures, text, both, etc. – brief description
20. Dissemination: How many were produced? (i.e., # and frequency of TV/radio spots, # of brochures, etc.)? Where were they distributed? By whom?
21. Results - were you satisfied with, process of developing materials (staff, agencies...), the responses to the materials
22. Evaluation - Was there an impact evaluation? How was measurement done? Do you have any anecdotal evidence or sense of success, esp. a year or more later?

8.3 ANNEX C: GOVERNMENT INSTITUTIONS – ROLES, ACTIVITIES, POTENTIAL AREAS OF COOPERATION AND ASSISTANCE

Note: This table is based mainly on information obtained in interviews and materials provided by interviewees, supplemented by the consultant’s knowledge Organizations not interviewed, but relevant to the sector, are also listed here.

INSTITUTION	GENERAL COMMUNICATION ROLE	STAFF/PROJECTS/ACTIVITIES	ASSISTANCE REQUESTED AND POTENTIAL AREAS OF COOPERATION
Cabinet	All Ministers – must approve tariffs and major private sector contracts		
Parliament, includes Lower House Water and Agriculture Committee	Can call Ministry and officials any time for questioning and will be influential in passing water, environmental legislation	Currently the Parliament has been suspended, but when new one elected will be a key target group	
Royal Water Commission	Advisory, with Royal backing.	National Water Strategy – relevant ministries now working on Action Plans, future role unclear.	
Ministry of Water and Irrigation	Water master planning, megaprojects, public relations department, tariffs		
Secretary General	On occasion speaks to press directly on issues. Has some influence on how Ministry communication is managed.	Supervises ASG of Media and Communication.	Requested PAP provide advice on how to structure their communication, second staff to WDM Unit and also to ASG for Media. After a year, could be hired by MWI directly. PAP should work with IDARA on IWA 2010 Water Efficiency Conference, to be held in Jordan.
Assistant Secretary General of Media and Communication	Designated by Minister and Secretary General as the key spokesperson and person in charge of managing communication programs.	Main spokesperson and communications specialist for MWI. Small staff. . Former journalist, long experience with MWI. Has no budget to work with. PA Directorate also works under his supervision.	Key partner for PAP. Requested support for practical projects. Budget to buy WSDs for poor people – esp. women – charity but for a purpose. Help with plan for dealing with tariff.
Water Demand Management Unit	Role is to design communication activities which will then be implemented by MWI Secretary General for Media and Communication	No budget. Director and 4 fresh graduate engineers. No staff experience in communication, social marketing. No communication strategy. 2 days training on outreach through IDARA. Director has dual role also managing total quality management reform. With IDARA, developed WDM plan Director only mentioned these plans: printing some materials; water harvesting in poor areas, waterise gardening in schools, audits, action plans for other Ministries. On Communication – WDM Unit will design strategy, MWI ASG Media will implement.	Key partner for PAP. Training for all MWI/WAJ departments needed in communication and social marketing. Want to train engineers on everything – assumption is most will not stay once they are trained.
INSTITUTION	GENERAL	STAFF/PROJECTS/ACTIVITIES	ASSISTANCE REQUESTED AND POTENTIAL AREAS

	COMMUNICATION ROLE		OF COOPERATION
Water Authority of Jordan	Water and wastewater management – supply, distribution, collection, treatment, reuse.		
Programme Management Unit – Water Sector Audit Unit	Oversight of utilities, management of some capital investment projects. Preparing for role as regulatory body.	Currently no awareness activities, previously conducted non-revenue water awareness activities under Japanese-funded project.	Potential partner in relation to work with utilities and if becomes basis for Regulatory Commission.
Public Awareness Directorate	Established with JICA support under non-revenue water project to strengthen relations between WAJ and local communities. SG Media says Director of PA Directorate reports to him.	Worked with GTZ on Water Wise Women Initiative, a Public Awareness Action Plan for 2010, cooperation with Dubai Capital, cooperation with Zain on broadcasting free messages from MWI No previous experience. Director also manages social and environmental impact assessment for Disi water supply project.	Key partner for PAP. Assist with role and responsibility vis-à-vis other MWI/WAJ departments.
Middle Governorates Management Contract	Pending – will manage water and wastewater – will need to communicate with customers	Not yet established.	
Northern Governorates Water Authority	Semi-autonomous water and wastewater agency for Northern Governorates. Still part of WAJ.	There is a Transaction Advisor who will develop a Management Contract. No one interviewed had heard of any outreach activities. Do have a public relations officer, but acc. to one source he has no experience.	Should be included in any water communication planning and capacity development. PAP might want to connect with Transaction Advisor to provide input into Management Contract tendering process to ensure communication aspects are covered.
Miyahuna	Limited Liability Company owned fully by WAJ with WAJ Secretary General as Chairman of Board. Responsible for most water treatment and all water distribution and wastewater collection in Amman Governorate	Miyahuna most organized and experienced of all organizations interviewed. Manager has high profile (reports directly to General Manager). 2 staff – one assistant, one graphic designer. Does materials in-house – cheaper and they have better quality control, had internal training in design programs. Budget of approx. \$200,000/year but sometimes get re-allocated Several activities, very successful from anecdotal info, but requested training in M&E: <ul style="list-style-type: none"> • Developed school education program which has been very popular (40 out of 500 Amman schools done, characters and materials developed) • Water festival – tried it out first with children of staff (water sector staff pride) – then did a second with GAM (found it best to do it on their own) • Customers get brochure with bill – have employee newsletter, customer newsletter, tons of brochures on how Miyahuna works, etc. • Gave out WSDs with HSBC support and IDARA/USAID – 2,500 of them • Energy conservation 	Fundraising plan. Measurement – surveys, baseline, needs, etc. – scientific measurements. Institutionalizing school awareness activities into school syllabus. Water Museum – Visitors’ Center – maybe get private sector support....old pumping station would be a great location. Direct project cooperation so have project for which funds cannot be reallocated
INSTITUTION	GENERAL	STAFF/PROJECTS/ACTIVITIES	ASSISTANCE REQUESTED AND POTENTIAL AREAS

	COMMUNICATION ROLE		OF COOPERATION
Aqaba Water	Limited Liability Company owned by WAJ (85%) and Aqaba Development Corporation (15%). Also holds management contract for Wadi Mousa (Petra) water and wastewater management.	Public relations activities, ad hoc. Do have water conservation as a theme in their PR programs. Creating an awards scheme for children to write stories about water (not necessarily conservation) and the best stories they will publish in a small booklet. No budget, but can get money when they need it. no experience, no training, no plans, no M&E. Have water model produced with USAID funding – want to put it in their HQ, inaccessible to public.	Research and development in AWC said they can do studies with the right training – social and technical. Already they are collaborating with IDARA in installing loggers on 26 homes and residences to determine end-use consumption, but they could also be doing more regular studies on public attitudes and behaviors. Help set up water model in Marine Park instead of HQ, train educators to explain it, and use Marine Park as center for information.
Jordan Valley Authority	Jordan Valley development, including irrigation water supply and agriculture	Water User Associations - seen as the solution to improving water management, rapidly expanding. Also French project supporting improved technology for irrigation.	Need more assistance for farmers in improving irrigation technology. If PAP focuses on agriculture, work through Water User Associations.
Ministry of Agriculture	Responsible for all agriculture outside of Jordan Valley, including agricultural research and wastewater reuse		
National Center for Agricultural Research and Extension NCARE	Reference center for developing conducting applied research and disseminate the results in order to achieve comprehensive and sustainable agricultural development	Extension dept includes 4 departments: extension, information, awareness and mass media, training. Awareness done on a project-by-project basis. No overall plan. Research integrated with extension. About 350 professional staff, 61 Ph.D. holders, 92 masters, the rest have BSc. 8 regional centers, labs. 13 research stations, 13 extension units, 20 subunits for extension. Socioeconomic and M&E departments. Have absorbed 65 former MOA extension agents.	Potential partner if PAP works on agriculture and irrigation efficiency.
Ministry of Health – Environmental Health Directorate	Protection and safety of public health through Public Health Law 47 of 2008. Monitor and regulate wastewater discharge (including septage disposal), design of wastewater facilities, water quality, water safety plans.	Drinking water and accidents with cleaning substances are biggest priorities. Do regular testing at household of water quality. Nuisances - covers just about everything else – such as dumping solid waste or liquid waste – streets, yards, work with all relevant ministries (environment, water, etc.). Posters on how to preserve and protect drinking water. No overall communication plan or program. Materials development is project based or done by MOH public awareness staff.	MOH is an important partner. Perhaps has greater credibility on water quality issue than MWI. Regular household water quality testing program is good source of info for any campaigns re household plumbing and water tanks
Ministry of Environment	Environmental protection, water quality monitoring, especially water reuse. Main responsibility Green business, energy conservation top ministry goals for 2010		
INSTITUTION	GENERAL	STAFF/PROJECTS/ACTIVITIES	ASSISTANCE REQUESTED AND POTENTIAL AREAS

	COMMUNICATION ROLE		OF COOPERATION
Outreach Department	Two engineers, neither trained. No budget. cooperates with other organizations and uses their funds for projects	Environmental awareness programme targeting 15 kindergartens, which entails visits to Zahran Park in Jabal Amman. Environmental demonstration houses, one in North, South and Central Jordan. Work with GAM “sport gardens”- teach children about environmental issues.	Requested funding for projects. Also need extensive capacity building, including monitoring and evaluation.
Hazardous Substances and Waste Management Directorate	Covers all aspects of waste management.	Studies, pilot projects. Priorities are industrial and medical waste, esp. at clinics. Special treatment facility just established. School education - - have some info ready on environmental issues. NGOs as arm of ministry to reach community – network of 25 NGOs claiming to work on environment.	Developing recycling and waste management project with GAM. Could use immediate assistance in development and implementing communication plan for this project. Communication to clinics concerning handling of medical waste.
Spokesperson	Speaks to media for Ministry	Several times quoted in newspapers, speaks for Ministry, although there is also Outreach Department and other officials are often quoted.	
Department of Inspection and Enforcement	Works with Rangers – priority is chemical industries, but would like to work with all industries	Will get some support through RIAL II	Close coordination needed if PAP works directly with Rangers.
Public Security Department Royal Department for Environment Protection Rangers	Operate according to the police law which says that we have to implement/enforce all laws in the country	Administratively Public Security Department, technical support from Ministry of Environment. 600 Rangers, should be 1300, but do not have budget. Do one month training for new people. 5 sections – one in each region, 25 in Aqaba, 100 in north, for example. Enforcement role is weak due to weak legislation. Doing some education and awareness, understand process, but no funds or activities except some school education. Director understands social marketing concepts, but has no funds or staff to design or implement. There is a public relations and media section with three people.	Rangers – requested assistance with influencing Ministry of Environment to convene a workshop with stakeholders to change the law so that Rangers also develop legislation. Also needs capacity building and project funding. Most of all, need other agencies to develop stronger enforcement mechanisms.
Royal Energy Commission	Reports to Prime Minister, developed National Energy Strategy		Potential high level partner in development of National Communication Strategy on Water.
Ministry of Energy and Mineral Resources	Oversight of electricity sector, including electricity companies.		
Renewable Energy Efficiency Department , Energy Advisory Center	Public education	Used to have a big showroom near Abdali, people went there, was very nice, but there was little interest because fuel prices were low. Now not very accessible, but suddenly lots of donor interest. Future not certain. Conduct energy audits for businesses.	Requested help in establishing a good public information/advisory center, attractive to public and in good location.
Public Affairs Office	For public to walk in with questions on anything related to Ministry.	Brochures available about MEMR, some on energy saving. Helpful with giving information, but no knowledge of communication strategy or planning.	
INSTITUTION	GENERAL	STAFF/PROJECTS/ACTIVITIES	ASSISTANCE REQUESTED AND POTENTIAL AREAS

	COMMUNICATION ROLE		OF COOPERATION
National Energy Research Center	Technical arm of MEMR, do the technical work. Public institution – not an NGO, 20% of budget from government, rest from donors.	Since 1996 - 100 training seminars, 25 awareness workshops – chambers of industry, etc. Newsletter 4x/year goes to 1200 recipients, also a once a year director of suppliers of equipment. Workshops for suppliers, etc. all done under the division Rational Use of Energy. 7 people now. Do visits to schools. Do some training at universities and colleges. Have new project in energy efficiency funded by French in Abdoun. See themselves as taking lead role in any work on education for energy saving. Communications activities based on donor funding and no clear overall communication plan.	Advocated for having larger, key role in communication on energy. Would like to take lead on developing national strategy.
National Electric Power Company	Provides electricity to the distribution companies and also to a few large consumers.	No communication role at present. See it more as role of distribution companies.	
Jordan Electric Power Company	Electricity distribution.	Only a small public relations department, no communication plans or activities.	
Electricity Distribution Company	Electricity distribution.		
Electricity Regulatory Commission	Regulatory body, reports directly to Prime Ministry	No expertise or communication strategy or plan. Had a capacity building project which included communication. Are doing awareness on energy with JOHUD with USAID funding, but generally awareness seen as role of electricity distribution companies. Their main contact with customers is through the customer complaints division – they follow up on customer complaints with electricity companies.	
Executive Privatization Commission		Medical Waste landfill – energy producing - EPC floated the tender in April 2007 in cooperation with the Ministries Of Environment and Health and the Greater Amman Municipality	
Civil Defense		Building inspection of buildings 4 stories or higher.	Potential partner if focus is on construction sector
Greater Amman Municipality	Responsible for Amman development. Mayor is on Board of Miyahuna. Manages solid waste.	Solid waste collection. Also on Board of Miyahuna.	People segregating at source very important. Ready to take off with GAM with a program of recycling, but need help with the marketing. Need PAP to help as catalyst. Also help to develop system for managing hazardous waste.
Aqaba Special Economic Zone Commission	Chief Commissioner and 6 commissions regulate and enforce Aqaba rules and regulations. Commissioner reports directly to Prime Minister.		All Commissions must be included in any plan for water, energy and environmental management in Aqaba.
INSTITUTION	GENERAL	STAFF/PROJECTS/ACTIVITIES	ASSISTANCE REQUESTED AND POTENTIAL AREAS

	COMMUNICATION ROLE		OF COOPERATION
Investment Commission	Responsible for promoting investment.	Coordinate with investors and utilities on water and energy needs. Discourage water-intensive industries such as textiles, but biggest concern is attracting industry, not saving water.	
Aqaba Development Corporation	Private corporation under contract with ASEZA to develop Aqaba.	Promote investment and development. Do have environmental specialists.	
Development Zones Commission	Government agency establishment of special economic zones through attracting Master Developers.	Has one Environment Sustainability Officer, and 3-person communications department. No communications plan. Needs to communicate mandate, role and specific messages to h key stakeholders (national decision makers and local community) to gain support for zones and also to attract investment. Also need to improve relations with other Ministries as need help of line Ministries for their activities.	Needs communication plan, stronger for working with businesses, but also on environmental issues. Would include communication procedures with line ministries.
Jordan Institute for Standards and Metrology	Develops codes and standards – water quality, water saving devices, building materials, energy saving devices	Plumbing codes and WSDs with IDARA and WAJ. No communication plans or system for communicating new codes besides informing the relevant bodies.	Requested English language training and offered their location for training activities. PAP can help with plan for promotion of new building and energy codes?
Ministry of Finance	Provide input into tariff. Receives payment of fines which Ministry of Environment would like to go direct to Environment Fund.	No communication role at present. Not investigated.	
Customs Department	Enforces duty or duty-free on imports – including water and energy saving devices.	Enforce decisions made by others. Do not communicate with public, although have communication plan for investors. Sometimes need assistance from line ministries in judging if an item is, for example, water or energy saving.	
Ministry of Awqaf	Has joined environment and water conservation campaigns.	Were key partner under USAID-funded WEPIA project.	Potential key role depending on specific activities and targets.
Jordan Radio and Television Corporation	National media	Environmental shows, etc. do not do any M&E, nor initial assessment of audiences. Most shows are “talking heads” since do not have large production budget.	Could broadcast shows PAP produces. Training for decision makers who go on TV on presentation – content and impressions.
Ministry of Planning	Approve and monitor all international projects	Improving transparency will have all donor projects on website. Also will be requiring M&E of all projects several years after completion.	
Ministry of Municipal Affairs	Solid waste collection	Municipality collects solid waste. Joint Service Councils manage solid waste collection and treatment. Mayors have major influence on enforcement of all regulations.	Mayors are key target group for any behavior change campaigns.
Ministry of Interior	Provincial Governors are part of Ministry		
Ministry of Tourism			
INSTITUTION	GENERAL	STAFF/PROJECTS/ACTIVITIES	ASSISTANCE REQUESTED AND POTENTIAL AREAS

	COMMUNICATION ROLE		OF COOPERATION
Ministry of Trade and Industry	Development decisions influence water allocation and tariff issues. Coordinates closely with special economic zones.		
Ministry of Education			