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JORDAN

Communication Strategy for Achieving Behavioral and Policy Changes in the Water, Energy and Environment Sectors

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

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Acronyms and Abbreviations

Although an effort was made to reduce the number of acronyms used in this text, many are commonly used and are included here – specifically donors, government institutions and commonly used technical terms. Whenever the acronym or abbreviation appears the first time, it is defined in the text.

AED	Academy of Educational Development
ASEZA	Aqaba Special Economic Zone Authority
BMP	Best Management Practice
CBO	Community-based organization
CSR	Corporate Social Responsibility
CFL	Compact Fluorescent Light
ERC	Electricity Regulatory Commission
GAM	Greater Amman Municipality
GOJ	Government of Jordan
HH	Household
IdRC	International Development Research Centre
JOHUD	Jordan Hashemite Fund for Human Development
JREDS	Royal Marine Conservation Society of Jordan
JVA	Jordan Valley Authority
JEA	Jordanian Engineering Association
MoE	Ministry of Environment
MOE	Ministry of Education
MEMR	Ministry of Energy and Mineral Resources

MWI	Ministry of Water and Irrigation
NEEAP	National Energy Efficiency Action Plan
NERC	National Energy Research Center
NGO	Non-governmental organization
PAP	Public Action for Water, Energy and Environment Project
PLACE	Prosperity, Livelihoods and Conserving Ecosystems IQC
PTAs	Parent Teacher Association
QRTA	Queen Rania Teachers Academy
RSCN	Royal Society for the Conservation of Nature
RSS	Royal Scientific Society
U.S.	United States
USAID	United States Agency for International Development
WAJ	Water Authority of Jordan
WDM	Water Demand Management
WEPIA	Water Efficiency and Public Interaction for Action Program
WSDs	Water Saving Devices

EXECUTIVE SUMMARY

This national *Communication Strategy for Achieving Behavioral and Policy Changes in the Water, Energy and Solid Waste Sectors* presents a roadmap for Jordan to launch an integrated and systematic communications effort that will support the country in addressing its natural resource crisis. As the population has grown and pressure on Jordan's resources has increased, the water and energy sectors have evolved accordingly, and difficult, political decisions are imminently necessary. Many people (including governmental custodians, providers, and consumers) in the water, energy and solid waste sectors will need to *change their behavior*, if conservation and efficiency are to become the drivers of policy. Communication and social marketing, in particular, will be the tool that links status-quo altering decisions with the people whose lives will be affected.

Other countries with less perilous resource situations are taking broad steps to address environmental concerns with communication programs, and Jordan decision-makers should take note. For example, Ireland's National Energy Efficiency Action Plan (NEEAP) was released in 2007 and launched with The Power of One campaign, a national energy efficiency awareness program using (mass) media to encourage citizens to be more energy aware, provide energy efficiency facts, and energy saving tips. Germany has successfully reduced its per capita water consumption rate by 25 liters a day through political will, government agencies deliberate effort to create and communicate an environmental ethic, and public support for stringent efficiency measures that are primarily technical. Until now, Jordan has had no such national communication plan or coordinated effort—not in water, nor energy or solid waste.

Past efforts to reduce water and energy demand have relied on citizens to heed the Government's call to alleviate the national resource crisis. This Communication strategy proposes to achieve reductions in demand by instead considering consumer service needs as well as their knowledge and understanding of the crisis. Adopting a constituent centered approach will be more effective in motivating individuals to act. This document specifically reflects a systems analysis, looking into the behaviors of relevant and concerned individuals and groups, tracking programmatic decisions and looking at outcomes. Implementation of this strategy aims to achieve the following five goals:

1. Improve organizational outreach and communication in and among institutions (NGOs, Government, utilities, etc.);
2. Improve staff competencies and capabilities at these institutions to achieve behavior change;
3. Achieve desired priority behavior change within reasonable timeframes;
4. Equip the public and non-profit sector with the tools to identify the behavior change that is needed; and
5. Improve coordination among different agencies and stakeholders in their outreach effort.

Many professionals in Jordan's communication departments in the Water, Energy and Environment sectors will need more training in the soft sciences and communication fields to create systemic and systematic behavior change. Soft science practitioners act at the interface of humans and technology and possess the information and expertise that should support the water and energy fields. As a start, institutions and organizations will need to adopt communication strategies and policies, maintain functional and informative websites, encourage public discourse, employ social science research tools and adopt a strong monitoring and evaluation program. Communication specialists within these institutions will need to play a large support role in decision-making and other organizational functions, acquire English language skills, complementary technical expertise as well as specialized skills within the communication field, and become versed in social marketing as a communication tool for behavior change.

Jordanian institutions should employ social marketing - the systematic application of marketing, along with other social science and psychology concepts and techniques, to achieve specific behavioral goals - to achieve the nation's conservation and efficiency goals. This strategy outlines the following primary behavior change *Purposes* in the water, energy and solid waste sectors, which can be achieved through social marketing and communication methodologies:

- Increase household water and energy efficiency and conserving behaviors;
- Increase water and energy efficiency and conserving behaviors among large consumers including iconic buildings;
- Increase energy and water conserving behaviors among youth;
- Reduce the amount of waste that ends up in landfills; and
- Reduce littering in public areas (parks, beaches, highways and touristic areas) and by youth.

More specific Focal Areas, or objectives, under these Purposes are outlined according to a specific audience in the strategy. This document identifies a range of priority target groups and recommends synergies across sectors and across programs and projects. Given the large and diverse number of stakeholders and donors in each sector, coordination would be useful in assuring that core messages are standardized, workshops by different projects or agencies are not targeting the same people over and over again, and research results are shared, analyzed and improve the quality of implementation for all.

The Communication Strategy outlined here is an attempt to rally interest around national social and environmental goals. National goals, publicly established and publicly communicated, let consumers know that everyone is working towards achieving a particular goal. Simply appealing to consumers to reduce their consumption does not have nearly the same effect. While this strategy was generated by a particular project, the goal is to unify diverse stakeholders to promote an integrated communications approach and achieve similar gains across the water, energy, and solid waste sectors in Jordan.

المخلص التنفيذي EXECUTIVE SUMMARY

تمثل هذه الإستراتيجية الوطنية للإتصال من أجل تحقيق التعديلات في السلوك والسياسات المتعلقة بقطاعات المياه والطاقة والنفايات الصلبة خارطة طريق للأردن من أجل إطلاق الجهود المتكاملة والمنهجية التي من شأنها أن تمكن الحكومة من التعامل مع أزمة المياه والطاقة التي تواجهها. وفي الوقت الذي ينمو فيه عدد السكان ويزداد فيه الضغط على موارد الأردن الطبيعية، فإن قطاعي المياه والطاقة قد تطورا وفقاً لذلك، وسيصبح من اللازم بعد حين اتخاذ قرارات سياسية صعبة. وسيضطر العديد من الناس بما فيهم المسؤولون الحكوميون والمزودون والمستهلكون في قطاع المياه والطاقة والنفايات الصلبة إلى أن يغيروا من سلوكهم إن كانوا يرغبون بأن يكون الترشيد والكفاءة هي الدوافع التي تقوم عليها السياسة. وسيكون الإتصال والتسويق الاجتماعي، على وجه الخصوص، الأدوات التي تربط القرارات الخاصة بتغيير الوضع القائم مع الناس الذين ستتأثر معيشتهم بموجبها.

هنالك دول أخرى تعاني من ظروف أقل خطورة في مجال المصادر، إلا أنها تأخذ خطوات كبيرة لمعالجة القضايا البيئية من خلال برامج الإتصال، ولا بد أن يأخذ صناع القرار هذا الأمر باعتبارهم. فعلى سبيل المثال، قامت أيرلندا عام 2007 بإصدار خطة العمل الوطني لترشيد الطاقة (NEEAP)، وجاء إطلاق هذه المبادرة ضمن حملة "طاقة واحدة" (Power of One)، وهي برنامج توعية وطني لترشيد الطاقة، يعتمد على وسائل الإعلام لتشجيع المواطنين على أن يكونوا أكثر وعياً بشؤون الطاقة، وذلك من خلال تزويدهم بالحقائق المتعلقة بترشيد الطاقة والنصائح التي تساعد على تحقيق ذلك. وقد نجحت ألمانيا كذلك في تقليص معدل استهلاك الماء لكل فرد بمقدار 25 لتراً يومياً، وذلك بفضل الإرادة السياسية، والجهود المكثفة التي تبذلها المؤسسات الحكومية لخلق ثقافة بيئية ونشرها بين الناس، بالإضافة إلى الدعم الشعبي للإجراءات الصارمة المتعلقة بالترشيد والتي كانت تقنية بشكل أساسي. ولا يوجد في الأردن حتى الآن خطة إتصال وطنية أو جهود منسقة، سواء في مجال المياه أو الطاقة أو النفايات الصلبة.

وقد اعتمدت الجهود السابقة للحد من الطلب على المياه والطاقة على تجاوب المواطنين مع مناشدة الحكومة لهم من أجل الحد من أزمة الموارد الوطنية. غير أن إستراتيجية الإتصال هذه تقترح أن يتم الحد من الطلب من خلال النظر إلى احتياجات المستهلكين للخدمات، وتحديد مدى معرفتهم وفهمهم للأزمة. وإن تبني المنهجية التي تركز على جانب بعينه سيكون أكثر فعالية في تحفيز الأفراد على التحرك. وتمثل هذه الوثيقة بشكل محدد تحليلاً للأنظمة، كما تنتظر في السلوكيات للأفراد المعنيين وذوي العلاقة والمجموعات كذلك، وتتبع القرارات العملية وتدرس المخرجات. ويهدف تطبيق هذه الإستراتيجية إلى تحقيق الأهداف الخمسة التالية:

- 1) تحسين مدى الإتصال والتواصل التنظيمي داخل المؤسسات وفيما بينها (المنظمات غير الحكومية، الحكومة، المرافق، الخ)
- 2) النهوض بكفاءات وقدرات الكوادر العاملة في جميع هذه المؤسسات من أجل تحقيق التعديل في السلوكيات المرتبطة بالقطاعات المعنية.

- 3) تحقيق أهم التعديلات المطلوبة في السلوك ضمن أطر زمنية معقولة

- 4) تزويد القطاع العام وغير الربحي بالأدوات التي تساعد على تحديد التعديل المطلوب على السلوك
- 5) زيادة التنسيق بين مختلف المؤسسات والأطراف المعنية في جهودهم للتواصل.

وسيحتاج العديد من المهنيين في دوائر الاتصالات في قطاعات المياه والطاقة والبيئة إلى مزيد من التدريب فيما يسمى بالعلوم المرنة (soft sciences) وحقول الإتصال، وذلك من أجل تحقيق تعديل منظم ومنهجي للسلوك. ويعمل المختصون في العلوم المرنة في مجالات التقاء الناس مع التكنولوجيا، وهم يمتلكون المعلومات والخبرات التي من شأنها أن تدعم قطاعي المياه والطاقة. وبشكل مبدئي، ستحتاج المؤسسات والمنظمات إلى اعتماد إستراتيجيات وسياسات خاصة بالإتصال، وأن يكون لديها مواقع إلكترونية سارية ومفيدة، وأن تشجع على الحوار العام، وأن توظف أدوات البحث في مجال العلوم الاجتماعية، وتبني برنامج فعال للمراقبة والتقييم. كما سيحتاج المختصون في مجال الإتصال في هذه المؤسسات إلى القيام بدور فعال في دعم صنع القرار وغيرها من العمليات التنظيمية، وأن يمتلكوا مهارات استخدام اللغة الإنجليزية، والخبرات التقنية المساعدة، بالإضافة إلى الخبرات المتخصصة في مجال الإتصال، وأن يكونوا على إطلاع كامل بمجال التسويق الاجتماعي كأداة للإتصال من أجل تعديل السلوك.

ويجب على المؤسسات الأردنية أن تطبق مبدأ التسويق الاجتماعي - أي التطبيق المنهجي للتسويق وبعض المفاهيم والتقنيات الأخرى في مجالات العلوم الاجتماعية والنفسية، من أجل تحقيق أهداف سلوكية - حتى تتمكن من تحقيق الأهداف الوطنية في الترشيد والكفاءة. وتلخص هذه الإستراتيجية ما يلي من الأغراض الأساسية لتعديل السلوك في قطاعات المياه والطاقة والنفايات الصلبة، والتي يمكن تحقيقها من خلال التسويق الاجتماعي ومنهجيات الإتصال:

- تعزيز السلوكيات الخاصة بالكفاءة والترشيد في استخدام المياه والطاقة في المنازل.
- تعزيز السلوكيات الخاصة بالكفاءة والترشيد في استخدام المياه والطاقة بين المستهلكين الأكبر، ولاسيما المباني المثالية (iconic buildings)
- تعزيز سلوكيات ترشيد استهلاك المياه والطاقة بين الشباب
- الحد من كميات النفايات التي تذهب إلى مواقع ردم النفايات
- الحد من سلوكيات الشباب في إلقاء النفايات في الأماكن العامة (الحدائق، الشواطئ، الطرق السريعة، الأماكن السياحية).

ويتم تحديد جوانب التركيز أو الأهداف الأكثر دقة التي تقع ضمن هذه الغايات، وفق الجمهور المستهدف في الإستراتيجية. وتحدد هذه الوثيقة نطاق المجموعات المستهدفة الأهم وتقدم توصيات للدمج بين القطاعات وبين البرامج والأهداف. ونظراً للأعداد الكبيرة للمعنيين والمانحين واختلاف توجهاتهم في كل قطاع، فإن التنسيق يساعد في ضمان توحيد الرسائل الجوهرية، وتجنب أن تستهدف ورش العمل في المشاريع المختلفة نفس الجمهور مرة تلو الأخرى، كما يساعد التنسيق على تعميم نتائج البحوث، وتحليلها، وتحسين كفاءة التطبيق بشكل عام.

إن إستراتيجية الإتصال التي تم عرضها هنا إنما هي محاولة لحشد الاهتمام بالأهداف الوطنية الاجتماعية والبيئية. وهذه الأهداف الوطنية، إن تم وضعها وتعميمها على المستوى المحلي، ستساعد المستهلكين على إدراك أن الجميع يعملون نحو تحقيق هدف معين. وإن إطلاق المناشدات للمستهلكين حتى يحدوا من الاستهلاك لا يحقق الأثر ذاته. ومع أن هذه الإستراتيجية قد جاءت ثمرة مشروع محدد، فإن الهدف هو توحيد جهود كافة المعنيين من أجل نشر منهجية إتصال متكاملة وتحقيق نتائج مشابهة في قطاعات المياه والطاقة والنفايات الصلبة في الأردن.

I. INTRODUCTION TO COMMUNICATION STRATEGY

"It's not so much that we are afraid of change, or so much in love with the old ways, but it's the place in between we fear... it's like being in between trapezes... there's nothing to hold onto." - Marilyn Ferguson, Brain Revolution

I.1 Development of this Communication Strategy

Jordan's water and energy situation has been precarious for many years now. As the population has grown and pressure on Jordan's resources has increased, the water and energy sectors have necessarily evolved. Water demand management and energy efficiency have been introduced and scaled up as a way to temper demand as the Government of Jordan (GOJ) struggles to find ways to increase supply. Households, industries and the commercial sector are devising ways to reduce waste and obtain greater efficiencies. There are many positive efforts: policy recommendations for efficiency in agriculture, industry and new construction, new training for plumbers, electricians, and engineers, and more energy and water efficient products. Despite these efforts, institutional cultures will need to change to accommodate the way decision-making takes places around investments in efficiency.

The consequence of all this activity will be to change the status quo of how business in Jordan is conducted. Many people (including governmental custodians, providers and consumers) in the water, energy and solid waste sectors will need to *change their behavior* if conservation and efficiency are to become the drivers of policy. Communication and social marketing, in particular, links in meaningful ways, decisions that alter the status quo with the people whose lives are affected by the decision.

Demonstrated Need for Improved Communication Expertise & Behavior Change

The assumption underlying this *Communication Strategy* is that the goals of each sector are to create even greater efficiencies and conservation over the next 15 years. These efficiencies may initially be achieved through voluntary compliance on the part of the various target groups, but once early adopters are on board and with escalating political will, efficiency and conservation measures will become mandatory. Communication will play a key role in reaching conservation and efficiency goals.

The existing program strategy of most outreach and public education departments in these sectors is, and has been for some time, to create "awareness" about Jordan's critical resource situation rather than direct target audiences to specific actions or to provide specific knowledge. Staff in communication departments presupposes that the average Jordanian citizen will be moved by the plight of the nation and will reduce his demand accordingly. This assumption places the Government's position - its need to reduce demand - at the center of the program. This strategy proposes to replace Government need with the needs of the target group, placing citizens squarely at the heart. Outreach and public education need to move beyond awareness measures to

solicit action and employ a more surgical approach to behavior change that reduces systemic weaknesses in public education.

USAID projects have conducted a bounty of research and shared and discussed with over 100 concerned agencies at multiple events during 2010. That research identified key players in the systems that provide services in water, energy and solid waste. This document specifically reflects a systems analysis, looking into the behaviors of relevant and concerned individuals and groups, tracking programmatic decisions and looking at outcomes. These very specific behaviors of very specific target groups will need to be addressed if the technical resources of the reform effort are to be effective. The following groups' decisions and behaviors have major implication for Jordan's strained water resources:

- Policy-makers and financial and technical managers of national suppliers of water and energy (i.e. Ministry of Water and Irrigation (MWI), Ministry of Environment, Ministry of Energy, the National Energy Research Center (NERC) etc.);
- Managers and other individuals who work as providers of water and energy (i.e. Miyahuna, Kingdom, National Electric Power Company, etc.);
- Managers, engineers, maintenance men and financial managers of large consumers of water and energy (Government, municipalities, industry, commerce, tourism, agriculture, etc) for both in-service training and to create institutional behavioral change;
- Universities and other institutions that provide pre-service training for specialists including vocational school graduates;
- Municipality staff at relevant levels;
- Households (men and women) where water and energy is consumed, including household servants as they frequently come from water-rich countries and many work for high-income Jordanian families;
- Youth (boys and girls, children and the educators who work with them);
- Key professionals in the community of practice responsible for creating an environment where behavior change can be facilitated (managers of NGOs, consulting firms, the media, training professionals, communication professionals, university faculty, scientists);
- NGOs, consulting firms, relevant professional and commercial associations; and
- Urban and rural consumers, including agriculture.

The objective of this research was to identify the following:

1. What are the gaps in knowledge that can be addressed through information, education and communication programs for individuals who are willing to change their behavior? What stimuli do they need to put such knowledge into practice?
2. Where and how can that information be most easily transmitted?

3. How can the barriers (financial, structural, knowledge, resources), to behavior change be overcome? What support do individuals need to change their behavior?
4. What communication tools need to be identified during preparatory phases to ensure each target group is addressed, before going into action?
5. What policies, regulations, specifications, and laws need to be enacted and incentives used to create an environment where new ways of doing business can be adopted?
6. What kind of skills and competencies are needed in partner agencies and positions to be agents of behavior change?
7. What kind of institutional culture is necessary to bring about a more cohesive and systemic change in how business is done, including adoption of behavior change models in all institutions in the water and energy sectors?
8. What are the socio-and psycho-cultural and systemic barriers that impede the change process as well as facilitate behavior change?
9. How can all this be sustained and evolve over time as circumstances change (e.g. as global climate change takes its toll, aquifers are depleted, demographics change, and population growth exceeds resource supply)?

1.2 Overview of Communication in Water, Energy and Environment

Jordanians value higher education; at the highest levels, Jordan's water and energy sectors have ample Jordanian technical expertise and qualified engineers. Less valued, and therefore less advanced, are those fields that *support* the water and engineering sectors, among them the field of behavior change management. The quality of vocational education is very low, industrial training is limited, business schools turn out mediocre managers and marketers, the social sciences offer limited knowledge and even less information about Jordanian behavior adapted to the local milieu. Social psychology is almost a non-existent field. Information Technology (IT) is a stand out field, but even in IT, the hard technical advances are valued over the soft/content fields.

Soft science practitioners act at the interface of humans and technology and contain the information and expertise that should support the water and energy fields. Interdisciplinary knowledge, used to great effect by advertisers, policy-makers and regulators in developed countries, is a relatively untapped area in Jordan. As a consequence, decision-making is often rigid and technocratic, and hierarchy replaces functional needs. The dominant paradigm in outreach departments is running media campaigns with slogans that are not sensitive to customer needs, have low impact on consumer behavior, nor are they tied to corporate or organizational goals. At a time when Jordan needs professionals in the field of behavior change, the people occupying such positions generally lack the necessary specialized expertise and can offer limited support to their own organizations.

Institutional Strengths and Weaknesses

Water, Energy and Environment institutions tend to fall into two categories: (1) **Soft Institutions** and (2) **Technical Firms and Agencies**. Each category has its strengths, but neither possesses ALL the necessary skills to effectively implement behavior change programs in the water, energy, and solid waste sectors.

Soft Institutions. Many these institutions work closely with local communities, know a specific target groups well (youth, children, women, teachers), provide outreach for varying causes to those audiences, and have had some success in achieving change for the public good. However, in general, these institutions lack the knowledge of social marketing. Examples of such local NGOs include the Jordan River Foundation, Jordanian Hashemite Fund for Human Development (JOHUD), the Royal Society for the Conservation of Nature (RSCN), and Shabakat Al Ordon.

International NGOs, such as MercyCorps, are non-profit organizations that mainly work through local partners and build capacity among grassroots Community Based Organizations (CBOs) and national NGOs to institutionalize Water Demand Management (WDM) concepts. Their staffs are experts in community mobilization and employ social research tools. For example, CARE International implemented a regional project called EMPOWERS that built social skills and promoted behavioral change; the project commissioned local Jordanians to perform the water research, project planning and implementation. Despite this example, international NGOs usually do not fully encompass the principles of social marketing in project implementation.

Recently, large scientific institutions (e.g. the Royal Scientific Society (RSS)) are reinventing themselves as NGOs. RSS is a leading science and technology institution and provides specialized technical consultations and services to the public and private sectors. They are good partners for advocacy as they have prestige and scientific knowledge, but they do not have social marketing expertise. There are Associations that support their membership that also address water and energy issues, as they affect their parochial interests (EDAMA, Chambers of Industry, Engineer's Associations, and Hospital Associations). Jordan's NGO community is only slowly learning to specialize. Donors have an opportunity to foster that level of specialization and create solid partners in the NGO community, but they need substantial support and training.

Technical Firms and Agencies. Private sector consulting/engineering firms, utilities and Government agencies (e.g. IdRC, GreenTech, EcoConsult as well as Miyahuna, MWI, Ministry of Environment (MoE), Ministry of Energy and Mineral Resources (MERM), NERC, Electric Regulatory Commission (ERC)) know the hard sciences well. The private sector consulting firms have strong experience and knowledge of the water, energy and solid waste sectors, but they lack the soft science skills to do communication or social marketing. Like Ministries, they have the engineering staff but rarely, if ever have access to experts in the social sciences, using faculty from Universities as a stop-gap measure. No university in Jordan teaches communication in a comprehensive way, and marketing programs do not keep with pace with new emerging trends, including social marketing.

In the field of communication and social marketing, Jordan will require ex-patriot technical assistance for some years to support a handful of knowledgeable individual professionals in Jordan who have in recent years acquired social marketing skills. Yet, Jordan is not a developing nation, and the support agencies (advertising firms, print firms, film companies, research firms, satellite broadcast stations, radio stations and social media) are as developed as many Western countries. Jordan's needs therefore are either for very senior social marketers or for trained *Marketing* professionals with experience in *Developed* countries who can add the culture of the Middle East to their repertoire of skills. Ascertaining this expertise can help spur a movement that moves beyond the "awareness" message to communication strategies that take into account consumer needs and existing knowledge, attitudes and behaviors.

Past Behavior Change Campaigns in Jordan

In 2000, USAID supported the first Jordanian behavior change program, Water Efficiency and Public Information for Action Program (WEPIA). The success of WEPIA in increasing the knowledge levels of Jordanians to critical water issues and to change associated behaviors resulted in USAID awarding additional support through the Public Action for Water, Energy and Environment project (PAP) 5 years later. In the interim, little effort was made to reinforce the gains made by WEPIA in the water sector, and no new efforts were made in energy or solid waste.

However, research efforts 5 years later show evidence of residual effects of WEPIA. Over 60% of the population could still cite water conservation methods in residences, and over 45% were still employing many of these methods. At the end of WEPIA, these numbers were 70% and 35% respectively, suggesting that there was little degradation in knowledge and an overall increase in behavior. Miyahuna's initiative to give away aerators to their constituents may have been responsible in part for the increase in aerator use, though 18% of respondents in recent research stated they had first heard of aerators from Abu Tawfeer, the comic mascot of WEPIA or from TV several years prior.

Over 65% still knew what the principal causes of Jordan's water scarcity were, down from approximately 80% at the end of WEPIA, but such knowledge retention is considerably high without a maintenance promotion program. Ad hoc efforts by NGOs and the MWI have had little effect, and JOHUD's campaign to alert the public to low water use washing machines, did not affect the market, according to vendors who were interviewed.

Jordan's energy deficits are approaching unmanageable levels. In the summer of 2010, Jordan reached an absolute energy deficit, and power outages were widespread in the capital. Given foreseen growth in energy demand, curbing this demand through efficient use is critical and necessitates a national outreach campaign.

Structural and systemic changes are taking place to accommodate Jordan's challenging resource situation. These changes will require adaptation in the way people-engineers,

managers, and other staff - are doing business up and down the line, and the way consumers go about their daily lives with fewer resources. Unfortunately, changing a behavior is not as simple as mandating it and will require a strategic approach.

1.3 What is Social Marketing and why is it in a Communications Strategy?

Dr. William Smith, a social marketing practitioner with over 30 years of experience, defined social marketing as a process of creating, communicating and delivering benefits that a target audience(s) wants in exchange for audience behavior that benefits society without financial profit for the marketer. The key concept is that social marketing is an **exchange process**, same as commercial marketing, but it focuses on “selling” behaviors, i.e. promoting the benefits of adopting a new behavior.

In 1952, G.D. Wiebe, research psychologist, asked the question, “Why can’t you sell “brotherhood” like you sell soap?” The implication was that “sellers” of soap were effective while the “sellers” of brotherhood were relatively ineffective. He looked at several campaigns for social causes to determine what made some succeed and others fail, and he concluded that the closer the campaign was to traditional marketing the more successful the campaign. For many people who are unfamiliar today with social marketing, the term “marketing” suggests a communication activity that uses “campaigns” that are primarily mediated. TV or radio spots and print advertising were all at one time considered to be the heart and soul of a marketing campaign. Marketing has evolved enormously since the days when jingles and a pretty face sold products.

While media certainly has a place in social marketing, it is the last step in an extensive and intensive effort to determine how people, know, think about, value and act on a subject prior to developing any behavior change campaign. Social marketing efforts do not only target “customers” or “consumers,” but also, front-line managers, decision-makers, policy-makers, vendors, and other agents. Today’s social marketing programs look at systems, not just channels, and try to develop long-term relationships.

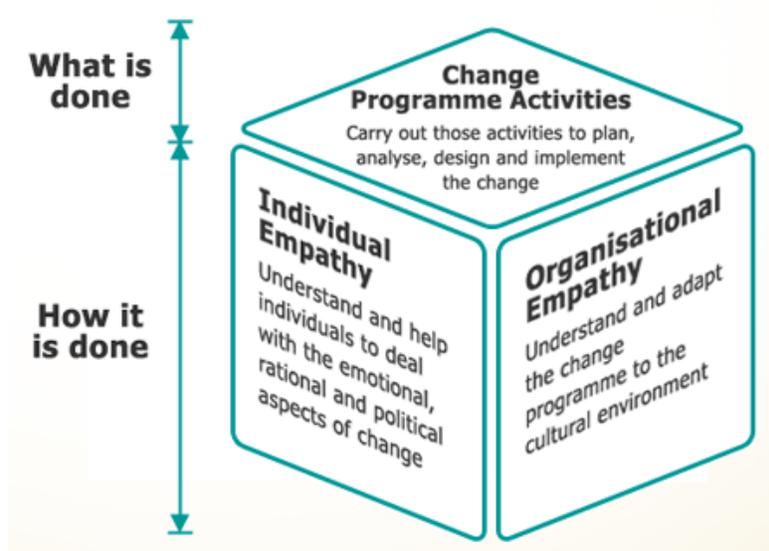
Marketing is a management process. As a philosophy, it is based on thinking about the business in terms of customer needs and their satisfaction. Marketing differs from selling because (in the words of Harvard Business School's emeritus professor of marketing Theodore C. Levitt), "Selling concerns itself with the tricks and techniques of getting people to exchange their cash for your product. It is not concerned with the values of exchange is all about. And it does not, as marketing invariably does, view the entire business process as consisting of a tightly integrated effort to discover, create, arouse, and satisfy customer needs." Social marketing is the systematic application of marketing, along with other social science and psychology concepts and techniques, to achieve specific behavioral goals for **a social good**.

Today’s Social Marketers are trained in financial analysis, brand management, consumer behavior, market response analysis, resource allocation, strategic design, price policies, advertizing, management theory, message development and more. Many professionals in Jordan’s communication departments in the Water, Energy and

Environment sectors will need more training in these fields to create systemic and systematic behavior change.

Behavioral models are structured approaches to transitioning individuals, teams, and organizations from a current state or behavior to a desired future state or behavior. They are part of a process aimed at empowering individuals to accept and embrace changes in their current business or life styles. In the development arena, behavior change models refer to a development process where new skills and processes replace old skills and processes. At the heart of the behavior change process are three components: the Individual, the Organization and the Program. Key to that change is communication as shown in *Exhibit 1*.

Exhibit 1 Behavior Change Model



Social marketing includes in its practice, the psychology of change, including the rational and emotional process underpinning people behaviors at times of change. Behavior change models examine and overcome the motives for resistance.

The planning process in a social marketing campaign starts with identification of a problem area. It is followed by identification of goals and objectives, referred to in social marketing terms as “purpose” and “focus” respectively. For each focus a very specific audience is segmented and classified. For each audience, very specific behaviors are targeted for change, and if changed, will impact the problem.

For example, if a *purpose* is to increase household efficiency in the water sector and the *focus* is to increase the use of technology to obtain that efficiency, then the behavior might be to encourage men and women in households to purchase and use aerators on all faucets. It is this logical sequence from a large purpose (goal), to a program focus (objective), to a target audience and then to a specific measureable behavior that distinguishes social marketing from other communication models.

While there are several change models, it is Social Marketing that has the widest acceptance in the behavior change field. First initiated by Philip Kotler, the model is now used extensively in health, in agriculture, in environment, in AIDS and indeed in all fields of development. There is extensive research to indicate that where social marketing methods are applied successfully, behavior change generally follows.

I.4 Goals of this Communication Strategy

Implementation of this strategy aims to achieve the following five goals:

6. Improve organizational outreach and communication in and among institutions (NGOs, Government, utilities, etc.);
7. Improve staff competencies and capabilities at these institutions to achieve behavior change;
8. Achieve desired priority behavior change within reasonable timeframes;
9. Equip the public and non-profit sector with the tools to identify the behavior change that is needed; and
10. Improve coordination among different agencies and stakeholders in their outreach effort.

I.5 Organization of this Communication Strategy Document

The Communication Strategy is presented as follows:

1. Introduction –*this chapter*
2. Water Sector Strategy
3. Energy Sector Strategy
4. Solid Waste Sector Strategy

... and

Annex A - Purposes, Focuses Behavioral Matrices

Annex B - Outcomes from Communication Strategy Roundtable Discussions - January 2011

2. WATER SECTOR

2.1 State and Trends of Communication in the Water Sector

Water is essential to daily life. Communication is critical to Jordan's water sector and the myriad systems that support it. Any change that is made to the sector, whether an increase in price, a delay in laying pipes, a policy to bring greater efficiency to industry or agriculture, changes in public codes, etc. should immediately generate a cascade of communication activities down the line to ensure that all those implicated in the change understand and are able to adapt their own behavior accordingly. Many actors and system support the Jordanian water sector. They include:

- Multiple official Government agencies such as the MWI, Jordan Valley Authority (JVA) and the Water Authority of Jordan (WAJ);
- Newly created private sector firms that supply water (Miyahuna, Aqaba Water, etc);
- Agencies that de facto regulate water use such as the Ministry of Housing and Public Works, the Jordanian Engineering Association (JEA), and Municipalities;
- Consumers, ranging from large industries and commercial establishments to hospitals and hotels, and to smaller light industry each supported by their specific Associations (chambers of Commerce and Industry, Hotel Association, the Agriculture Union, etc.)
- Agriculture and recreation, city beautification and gardens;
- Many donors and donor projects, and their partners the consulting firms and occasionally NGOs; and
- Lastly, and most importantly, the individual consumers—the Jordanian citizens.

Extensive research with staff of utilities, front-line Ministries, Associations, consulting firms and NGOs conducted in early 2010 has clearly shown that there are major systemic and structural gaps that inhibit quality behavior change programming within Ministries. One of the biggest problems is how decision-makers in these agencies view and misunderstand both the customer and the role of communication. Few, if any of the Jordanian agencies reviewed had communication professionals working closely across departments providing support, informing the public when power or water cuts might be expected ahead of time, showing industry how to improve their own consumption, providing access to details about new programs on-line, or building credibility and a favorable ambience for future changes in pricing of water.

In developed countries, communication plays an important support role to departments in a Ministry or a utility by building credibility with target audiences, addressing corporate concerns, building a “brand” that is recognizable and affiliated with “good” values—efficiency, customer satisfaction, consumer needs, water quality and good service etc. The customer-valued approach is reciprocated when water prices need to rise, or in times of water stress when the public is expected to reduce consumption, factories slow productivity, draconian drought regulations are enacted and must be

complied with. It is the development of this relationship that is at the heart of good communication.

Research shows that the general public does not have a comprehensive understanding of the state of water resources in Jordan. They understand scarcity from the rationing they experience every day, but not the stark issues that face the country or impending tradeoff decisions as the state leverages resources from one sector to shore up another. There is very little public discourse surrounding the serious decisions facing the water management such as use of Disi water and the Red/Dead Sea initiative.

The general public holds some misconceptions about their right to water; some believe they are justified in stealing water from government resources and public properties. Other people believe water should be free for religious reasons. The lack of personal responsibility for demand reduction exhibited by the general public and the reliance on Government to provide all necessary measures, suggests a dysfunctional relationship between the Public Utilities and Jordanians. Research verifies over and over again. Government and similar institutions in the public sector need to lay a foundation of trust and reciprocity on which they can rely when it comes time to make unfavorable decisions, pass difficult policies and regulations and ask sacrifices of the general public.

2.2 Roadmap for Behavior Change in the Water Sector

2.2.1 Priorities for Organizational Outreach and Staff Competencies in Water Institutions to achieve Behavior Change

- Communication departments need to play a **support role** to institutions and should therefore be part of all planning and decision-making within these institutions. Communication departments are vital among these institutions as they interpret and convey key decisions to the various target audiences-- from the media to vested interest groups (industry, agriculture etc.) to the general public. Communication departments could head off criticism and foster support.
- Communication specialists need to gain knowledge of technical aspects of water supply and demand as well as experience in-house (in various departments) and in the field to effectively communicate on issues, know where to find information and how best to problem solve. It is this familiarity with the issues of the agency as a whole that should drive the communication tasks. Additionally, these specialists need to be strong advocates and activists for environmental protection and integrity as it will benefit the public good and ensure water availability.
- Each Institution should have a communication strategy that clearly spells out the role and responsibilities of the communication department and follows international Best Practice in its application. Communication strategies should be reviewed annually and updated.
- Staff selected for these institutions should increasingly be specialists in communication, and standards should be established that set minimum skills and competencies for these roles, including English-language skills. The prestige of an

institution often rides on the capability of these individuals, and language and social skills are needed as much as skills and competencies in communication itself. Communication specialists should specialize within their department, such as in Public Relations, in industrial issues, and/or policy and advocacy issues.

- Each Ministry or Institution should have access to a well-maintained and monitored website that addresses concerns of all consumers, provides interactive learning and knowledge, and supports consumer-centric information. The website should be user-friendly and interactive. It should address citizen concerns, respond rapidly to queries, and perform regular and random evaluations to determine the extent of on-line customer satisfaction. The website should be in Arabic but mirrored and interactive in English. Web-presence is important, but at least for a couple of years, an in-house office for face-to-face interaction and customer service should also be available.
- Social science research should become a routine tool employed by the MWI and Utility communication departments. A variety of simple survey tools can keep these agencies updated on the level of customer satisfaction as well as the quality of the services they perform. It can also evaluate the quality of the specific tasks of the communication departments, measuring how good consumer knowledge and behavior is about particular issues.
- Ministries and utilities should use social media and internet judiciously to perform simple outreach functions, keeping consumers up to date on issues, informing consumers by e-mail of water cuts in their neighborhoods and letting them know when water services can be expected to resume. It is this outreach function with salient, relevant information that can help develop a close relationship between corporation and customer that is so valued in the private sector. Mass media use is expensive and should only be used in the water sector when deliberately targeting a large audience with a simple message. Disaggregation of audiences means that reliance on traditional mass media becomes much more limited.
- Managers and staff in the MWI and the utilities should be specifically trained in how communication and social marketing can assist in implementation of their programs. Such training should be customized and specifically address the technical concerns of that department. They should not be generic training in communication, social marketing or advocacy. Adult learners have little patience for information they are unlikely to use themselves, but a great deal of patience for information they can put to use in the immediate future. Such training should therefore be short, tied to actual need with specific target groups in mind. For example, JVA staff working in agriculture might benefit from communication training focused on outreach to farmers, vendors of seeds and fertilizers, water user groups when announcing quotas, public education for conservation, or supporting women farmers.
- Communication materials and products should be carefully planned to ensure they support programs and are part of a well planned and calculated media mix. These materials should be developed using professional expertise, attempt to go beyond promoting awareness, and pre-tested and revised accordingly; organizations may choose to outsource tasks. Design of materials should consider their audience and

how they will be distributed, and considerable effort is necessary to ensure that materials are widely distributed. Too often brochures and pamphlets are produced at great cost without sufficient thought given to design, quality, and message.

- Ministries should have a strong monitoring and evaluation plan in place as well as a reporting department and personnel that can conduct research continuously and create monitoring networks. Such simple monitoring and evaluation measures can be particularly useful as water becomes scarcer. They keep a pulse on subscribers, determine when compliance becomes frustration and when equity issues become more than grumbling. Research can and should be contracted out to professionals, but communication practitioners need to understand how to analyze research results and design programs based on findings.
- While an important program, the school lecture programs need revision and to be refocused. Greater effort needs to be made by the MWI and/or utilities to first plan the behavioral objectives for school visits for both teachers and students and ensure clear and accurate information is transmitted. The first step is for the MWI and the Department of Curriculum in the Ministry of Education to routinely review school textbooks and upgrade and correct outdated information, so that school visits may build on the curriculum. As recent research and curriculum mapping exercise demonstrated, water, as treated in the school curriculum, is well represented but needs updating and needs “Jordan-izing.” Similarly, the MWI website should reflect a children’s corner with materials, lesson plans and activities for teachers and information for students linked to the curriculum, sequenced by age and changed regularly to supplement classroom activities.
- Competitions are a communication tool that are rarely used by official agencies but have a place to stimulate citizen participation in public discourse, ingenuity, achieve a cost-effective solution to a problem, and get a community of interested persons working on a solution. Journalist awards could stimulate improved reporting; teacher awards could stimulate improved teaching; awards within an organization can reward employees by soliciting customer feedback on services. These awards could be announced on the Arab Water Day or the International Water Day. Competition can be a healthy means to achieve behavior change.
- Finally, to ensure that citizens begin to participate in public discussions around water services, water allocation, water quality etc., Citizens Boards should be established in every large community to provide feedback on quality of services and proposed regulations to water representatives, test new technologies and innovations before widespread implementation, and assist in the formulation of policy. All major utilities should have such a Citizen Board to meet among themselves two or three times each year to discuss and synthesize issues, and in turn, help provide input from the public to MWI by meeting with department Directors once or twice a year. Town hall meetings, organized and run by the Citizen Board, can be used to communicate utility decisions. The voice of the community should be as representative as possible including presence by women, young people, industry, and commerce.

2.2.2 Behavior Change among Target Audiences

Target audiences of utilities and Ministries are diverse and need to be linked to Ministry and utility program priorities. The needs of a family renting an apartment may not be the same as someone planning on building a home. An investor's needs are different from the needs of industries. Disaggregation of audiences is the first step in addressing target audience needs. By putting the target audience at the center of all communication planning, it is much more likely that the needs of that constituency will be better addressed, information conveyed, and behavior change will take place.

As the situation over the next 15 years becomes ever more critical in the water sector, it is imperative that agencies begin now to build that trust and competency with the general public and their own staff and continue to evolve their communication messages over time. The following program Purposes are recommended but several upstream efforts need to be put in place to achieve these purposes:

1. Increase Household (HH) efficiency in new and existing homes;
2. Increase and maintain water conserving behaviors among households;
3. Increase water efficiency among large consumers including iconic buildings;
4. Increase and maintain water conserving behaviors among large consumers including iconic buildings; and
5. Increase water conservation behavior among youth.

The Water Purposes as stated above are intended to bring greater efficiencies and more conservation to the use of water. Please see *Annex A* for a full list of behaviors associated with Purposes and Focal Areas for all sectors. Priority **Focal Areas**, shown below apply to multiple target groups (householders, large consumers, ,mosques, public utilities, etc...):

Domestic and Commercial

Increase use of water saving technologies promoting a cluster of technologies. A number of technologies in water apply to households whether renters or owners of their residences. These technologies (aerators, low flow showers, low-flush toilets or dual flush toilets etc...) can be expected to consistently cut back on demand and improve efficiency. A social marketing program promoting efficient toilets would need to perform upstream functions as well as downstream functions. Upstream functions would include financial incentives such as removing customs duties on efficient models, banning inefficient models from the market, and/or ensuring that codes are complied with in new construction. Downstream efforts would rely on communicating the advantages (economic, social and environmental) of each of these technologies to the consumer in such a way as to capture his attention and make it easy to adopt.

It is important to understand that social marketing relies on a comprehensive effort to adjust a system that fosters behavior change as the end goal. For example, if the goal is to encourage low flow showerheads to be promoted, an ambitious communicator might promote low-flow showerheads to households before the tax incentives have been

institutionalized. But the advantage to the buyer is not yet available and the communication effort will fail. It is the careful planning, design and synchronization of all parts of the system before a communication is made to the public that ensures success.

Introduce, Amend and Enforce water efficiency codes. This is primarily an upstream issue, though increased public education on code context and compliance. Jordan's construction codes and new plumbing law are currently under development and adoption by the necessary regulatory institutions; however, the systems intended to enforce these codes are weak. Public education about the codes is minimal, and education should be geared towards engineers, contractors, and household owners. Enforcers are unfamiliar with the codes and do not have the resources or the legal framework to support enforcement. Political support to enforce codes, particularly on large consumers, is necessary.

Increase knowledge on water conserving technologies and lifestyle behavior.

While an important focal area is the eventual adoption and use of efficient technologies, the individual homeowner or large consumer also needs to know where these technologies are available and how they are used. Research shows that even vendors often do not know which of their products are efficient and do not promote them. Architects and engineers are equally unaware of how to encourage greater efficiency or reluctant to promote greater efficiencies for fear they might increase the costs to their clients. Managers of factories are afraid to make decisions that might incur investment costs even when downstream operational costs are reduced.

Utilities and municipalities can encourage use of technologies by developing showrooms for low consuming products, printing reference materials for homeowners that describe the improved technologies, and linking websites to approved models. The cumulative effect of these measures is to make it easy for the target to find, purchase and install the efficient models. The logic is that the practice, i.e. purchasing and installing new technologies, will follow increased knowledge.

Households and staff in large consumers adopt and maintain water conserving lifestyles. While efficient technologies play a vital role in reducing demand, personal and social behaviors associated with water conservation are also important to practice. Shorter showers, turning off taps when brushing teeth, shaving or lathering hands are important practices that can multiply the effects of the technologies being used at the household level and in public bathrooms. Promotion and maintenance of these behaviors will create habits that are an important part of the systems approach to demand reduction.

Youth

Perhaps the most important individual target group in Jordan is youth. Making up over 60% of the population, the decisions and behaviors of this group as they grow up that will determine if and how Jordan can support its population with water. Sensitizing Jordanian youth to issues in the water sector and involving them in advocacy efforts and devising solutions to problems is an important way to get them engaged in public discourse.

In their early ages, children and youth are easily accessed through school curricula and teachers, and great emphasis should be placed on the formal sector to ensure Jordan's water resource situation is adequately taught. In later years, it is difficult to access youth, except through the channels that they themselves control and seek out (e.g. social media, cell phones, YouTube). Youth then become partners in communication and should be viewed less as targets. Once mobilized, youth can become partners in advocacy and share in public dialogue around key issues. It is clear that youth are not a homogenous group and communication efforts aimed at youth should clearly take their needs into account. Focal areas for youth include the following:

Increase knowledge among youth about Jordan's water crisis. Reaching out to school-going children and youth is a priority, beginning with the appropriate curriculum and well trained teachers. While knowledge levels for children in school are currently high, their general demeanor around water issues is not, suggesting that knowledge alone does not change behavior. More interactive teaching methods and extracurricular activities must be employed to motivate and engage youth with water issues for example, performing a mini-water audit of school faucets with and without WSDs and/or planting a water-wise gardens. The Queen Rania Teachers Academy (QRTA) will be uniquely positioned to disseminate such interactive teaching methods as they offer exclusive facilities and programs that enhance teaching and the learning environment. QRTA is able to focus on the knowledge of youth and teachers and building the teachers' and Ministry of Education staff's capacity.

Early research into out-of-school youth shows that harnessing their interests and mobilizing them may be extremely difficult. Their needs revolve around jobs and financial security. For many their alienation from Government is complete. Outreach to this group may not pay off in sufficient behavior change to make an impact on water demand.

Demonstrate improved practices around water. Ethical behavior, ingrained in childhood that develops into habit as an adult, does not come easily. Reaching children and youth therefore also requires touching the system at every level, through Parent Teacher Associations (PTAs), parental and community programs, teacher training, provision of reference materials for teachers, and opportunities for youth to be with peers in immersion programs such as outdoor education. Visual demonstration of environmental practices is very useful for this age group. These are all communication methods that should be applied to this age group to ensure ethical habits and environmental values are instilled as they grow up.

Increase youth engagement in public discourse/activism. Inspiring passion in a subject among youth is difficult if it does not immediately trigger interest or seems remote. But social marketing can point to ways that can involve youth such as competitions, program immersion, and peer-to-peer activities. *"Passion is a multiplier of human effort, but it can't be manufactured. It's present only when people get the chance to work on what they truly care about"*. Getting youth to care about water may not be easy, but using creative, youth-oriented platforms, such as YouTube spots, electronic

games, discussions with policy-makers, or comic strips may get their attention and keep it long enough so they learn and absorb the information provided. Internet access is available in almost all of the governorates of Jordan, making reaching out to youth, a much easier assignment. Reaching youth is about finding what they themselves are passionate about and capitalizing on that.

Responsibility/ ownership - It should be noted that knowledge about an issue is not enough to create change. Most students memorize what is asked from them without this information ever being translated to behavior or action. The key is to involve them in the process of making decisions and taking responsibility for those decisions, so they have ownership, responsibility and passion to practice and advocate behaviors needed for water, energy and solid waste. Part of their responsibility is being involved in decisions related to their communities. This is a unique way that enables them to know themselves better and then to know what can really change their behaviors.

University Roles and Service learning - Service-learning is a relatively new pedagogy and very applicable to the behavior change and environmental goals of this strategy. Service-learning combines service objectives with learning objectives with the intent that the activity changes both the recipient and the provider of the service. This is accomplished by combining service tasks with structured opportunities that link the task to self-reflection, self-discovery, and the acquisition and comprehension of values, skills, and knowledge content. Eyler and Giles (1999) summarize their observations by saying that in the service-learning model, "experience enhances understanding; understanding leads to more effective action".

The service may involve, for example, working in schools, health care settings, community development and **environmental** projects, construction projects, information and communications technology projects and a host of other activities that contribute to the well-being of local and national communities. The academic study may be integrated within many disciplines or fields of study, for example, the humanities, the social and physical sciences, the health sciences, education and technologies and will be linked to professional fields, including health and medicine, law, social work, engineering, education, and business

Rebrand skilled labor (primarily plumbing) to reduce the culture of shame for such professions. Given the worry and concern exhibited by youth about jobs and financial security, almost to the exclusion of everything else, it is important to ensure that youth appreciate the opportunity that skilled labor can provide to lift them up and out of poverty. Vocational programs, as currently taught, seem to make little difference to youth perceptions of manual and skilled labor and could be improved to inspire children. Vocational school is shunned as a possible source of employment but plumbers often make more money than office managers. Promotion of vocational professions (plumbers, solar energy installers, etc.) can help capture the attention of youth. Social marketing approaches can identify the key barriers to youth involvement and, at the same time, identify the potential benefits, through the lens of youth.

Agriculture

The field of agriculture and its symbiotic relationship with water has its own priorities. Many people, particularly the rural poor and disadvantaged, rely on agriculture. The MWI policies do not intentionally discourage agriculture, but do focus on improving on-farm efficiencies in the field and discouraging the practice of digging illegal wells for irrigation. Again, a systems approach can provide the lens to see where key activities might provide results. The following are some initial suggestions for addressing agricultural goals, however, this document does not pretend to summarize all potential agricultural behavioral activities. It is clear, however, that while the Jordan Valley agricultural activities rely on reclaimed water, it is use of fresh water in agriculture that poses a problem. In that case, both Disi agriculture and upland agriculture are targeted for efficiency. Agriculture focal areas include:

- Increase use of on-farm water saving technologies and techniques (such as minimizing evaporation in water storage structures);
- Improve crop selection in all areas of commercial farming;
- Introduce, amend and enforce water- saving specifications for farms;
- Policy amendments to reduce opportunistic digging of illegal wells; and
- Create a communication strategy for the agriculture and water use.

At present, the land use laws permit ownership of government owned land if squatters make the land productive. One of the easiest ways to make land productive is to plant fruit-bearing trees such as olives. Often these trees are inappropriate for the land on which they are planted and considerable water is needed to keep plants thriving. Wells are therefore dug to water the trees. Once productive, the “owner” of the land can then register the land in his name and once the property passes to him, the wells in question are no longer “illegal” and potentially, his new status permits him to dig more wells on “his” property. A review of these kinds of laws would reduce the number of illegal wells being dug.

Illegal wells are a particularly critical issue for the Jordanian highlands. The Jordan Valley has an exceptional status as the food basket of Jordan and is an important source of income for many Jordanian families. With the goal of improving management of groundwater resources in the highlands, the Highland Water Forum was created as a permanent and results-oriented Jordanian entity that brings together stakeholders to discuss concerns, develop ideas, and influence decision-making. The Forum started its work in Al-Azeaq Basin which includes Al-Azraq, As-Safawi, and Um Al-Qutain. The livelihood issues surrounding water in this area make it a sensitive subject, and managing water will require special regulations.

2.2.3 Coordination of Efforts among Different Stakeholders

Given the large and diverse number of stakeholders in the field of water, coordination would be useful in assuring that core water messages are standardized, workshops by different projects or agencies are not targeting the same people over and over again, and research results are shared, analyzed and improve the quality of implementation for all. Many agencies have already

demanded some level of coordination, and this should be encouraged by donors. The following are suggestions for possible coordination.

- In the water sector, there exists already a donor water committee with a sub-committee that addresses communication issues. It was this sub-committee that developed the strategy on which PAP was based. This committee includes the Chiefs of Party of the principal projects as well as other concerned individuals. Its utility is both to garner support across agencies, but also to vet new areas in which donors might wish to provide support.
- Water projects supported by the same donor, also do not routinely share information. Improving communication between projects and ensuring that project staff from diverse projects, are alerted/invited when conferences, workshops or other key technical meetings are held would be most useful. Regular meetings of project principals within the water sector would help to coordinate activities in ways that would avoid duplication of effort and allow for cross-project fertilization.
- The special strengths of each project can be used to support other programs and projects. For example, the USAID/IDARA project has a Master plumber certification and training program to promote water-use efficiency; USAID/SABEQ has a similar program for energy engineers; and the USAID/Civil Society Project has a Master trainer's program for Advocacy. The expertise of these graduates can be used by other projects and Jordanian institutions if the content of the curricula is shared among projects and stakeholders, the names and backgrounds of the graduates are shared (with their permission) and if projects are notified when training takes place so they can audit specific courses and verify the utility of the coursework to their needs. Quality of these training programs should be standardized across donors.
- Synergies can also be established across sectors. There is a symbiotic relationship between water and energy. Activities in one sector often touch upon another in diverse ways and frequently, decision-makers face trade-offs in resource use. For example, because of Jordan's particular plumbing methods the installation of rooftop solar thermal systems has the potential to cause substantial water loss in those living in apartments more than two floors down from the roof. That water loss becomes exponentially greater as more and more solar systems are installed. Collaboration across these two sectors might find a solution to the loss or compromise to the trade-off. Additionally, the public should be more informed about other water/energy tradeoffs, including the energy intensive nature of pumping water to Jordan's more populated areas and why Disi water is more expensive.

3. ENERGY SECTOR

3.1 State and Trend of Communication in the Energy Sector

Like the water sector, achieving greater efficiency and increased conservation in energy is the primary goal for the next 15 years. Already energy usage and demand has surpassed the ability of Government supply. Demand is likely to rise as Jordanian lifestyles improve and as the young population marries, secures their own residences and produces children. Demand can dip as efficiency measures are put in place.

Research shows that the general public is already taking preliminary steps to reduce their demand for electricity. Fluorescent light bulbs are the norm in most households and CFL bulbs are rapidly gaining in popularity—this without promotion and “awareness” efforts. The driver of these behaviors is the cost of electricity which, compared to water, is extremely high; people conserve for the benefit of their own economic situation. Despite these efficiency measures, knowledge of the true state of energy in the Kingdom and the issues related to provision of energy is nominal.

Different from prevailing attitudes in the water sector, the general public feels as if they have been treated fairly in the energy sector and are in charge of their demand and expenses. In the water sector, the politics of water is influential, and historically, there is a feeling that the dependence on external treaties with neighboring countries has somehow cheated Jordanians of their right to riparian water. Interestingly, even though Jordan’s energy needs are similarly satisfied through the purchase of energy resources from outside Jordan, it does not carry the same political connotation with Jordanians. This is important to communication efforts as the willingness to alter personal behavior often is a reaction to this political reality.

Price is a marketing tool, and the high price of electricity has already caused the public to seek efficiencies in their energy use. There are additional efficiencies that can be made by the public through the installation of new technologies, coupled with personal behavior. From solar energy to timers that shut off lights and equipment, from regulators and sensors that control usage to double glazed windows, from shade trees and awnings to fully automated smart homes—these and other technologies can be promoted to reduce demand. The weakness is in the ability of the public education institutions to promote technologies and innovations in ways that make them attractive, cost-effective, easy to purchase, install and use. The institutional weaknesses noted in public education in the water sector also exist in the energy sector.

A nation-wide campaign led by one of the country’s largest NGOs, implemented in partnership with ERC and sponsored by different agencies including USAID, attempted to promote multiple technologies and behaviors simultaneously –something that goes against practiced and proven principles of communication – while utilizing a numbers of mediums to reach various audiences. Messages were uncoordinated and confusing and did not motivate individuals to adopt the necessary change. Not enough

consideration was put into audience segmentation to target specific and appropriate behaviors based on research findings to relevant audiences.

The potential partners in solar energy who are familiar with the science of solar energy are few. Many partners have vested interests that make them less credible in the eyes of the general public. For example, some utility companies and organizations wish to promote solar energy through selling solar water heaters on a commercial basis, such as EDAMA which is an NGO/Association primarily of manufacturers of solar energy products and investors in solar energy. While their promotion of solar energy is admirable, and their advocacy assistance useful, to the general public their motives may seem self-interested. Jordanians are by nature extremely suspicious of the private sector and even of NGOs. Additional upstream work will be necessary to overcome this suspicion by using social marketing methods to put the consumer's interest at the heart of any program.

3.2 Road Map for Behavior Change in the Energy Sector

3.2.1 Priorities for Organizational Outreach and Staff Competencies in Energy Institutions to achieve Behavior Change

Much of what is recommended for improving the communication activities of water institutions is also recommended for energy institutions. Training, professionalization of staff in communication, improved understanding of the role that communication staff play in supporting the Institution or Corporation, the need to bring in citizen voices to provide authentic feedback—these are but a few of the ways of improving communication in energy. Building on and using research as a starting point for planning, designing and delivering communication activities, restricting campaigns to single behaviors rather than a plethora of behaviors, developing a relationship with subscribers that is authentic and based on mutual trust—these are all important changes that need to be made to institutions in the energy sector. These values and practices can materialize by putting the consumer at the heart of communication and drive customer service and relationships.

3.2.2 Behavior Change among Target Audiences

Social marketing will play a role in achieving the following Energy Purposes:

1. Increase HH efficiency in existing homes and in new homes;
2. Increase and maintain energy conserving behaviors amongst households;
3. Increase and maintain energy conserving behaviors amongst large consumers including iconic buildings; and
4. Increase energy conservation knowledge and behavior among youth.

The Focal Areas for energy include, but are not limited to the following:

- Increase HH use of energy saving technologies using a cluster of technologies;
- Introduce, Amend and Enforce energy efficiency codes;
- Increase HH knowledge on energy conserving technologies and lifestyle behaviors;

- HH adopt and maintain energy conserving lifestyles; and
- Large consumers use established Best Management Practices (BMPs) to reduce energy consumption;
- Introduce amend and enforce energy efficiency codes for large consumers; and
- Large consumers adopt and maintain solar and wind energy technologies.

It is also true, however, that for policy changes to be accepted by the public, including future raises in electricity or fuel prices, the public must understand the full scope of Jordan's energy crisis. Therefore, additional Focal Areas include:

Increase knowledge amongst all sectors of the population about energy in Jordan. Increase knowledge in the general public about sources and consumption patterns of energy in Jordan. The knowledge campaigns should also include patterns of distribution, allocation of energy by sector, government costs to provide energy and barriers to increasing supply. Multiple tactics can be used but it is likely that mass media will play a key role in increasing knowledge rapidly. Knowledge will be key to effective behavior change campaigns and gaining support from the public to reduce demand. Unlike the water sector, energy is not sequentially and systematically discussed in the school curriculum. A focus on the formal system is imperative. The Ministry of Energy, the Ministry of Education, professional educators, and key utilities should work harmoniously to improve the curriculum. At the same, time teachers should be trained in new concepts and how to promote ethical behaviors.

3.2.3 Coordination of Efforts among Different Stakeholders

As in the previous section coordination across stakeholders in energy is both useful to avoid duplicating efforts and foster complementarity in functions of each program. It is particularly useful for agencies that have limited resources and can piggy back on the resources of others—in field research, evaluation, use of mass media and training.

The field of energy efficiency has its own particularities that affect how and if coordination might take place. Energy efficiency is a relatively new field in Jordan, and there is intense competition amongst stakeholders to carve out a place for themselves. Associations representing private sector investors are interested in policy support to improve investment potential, private sector companies selling products want to stake their market share, NGOs would like to get some part of whatever funding might be available, and private sector consulting firms are successfully selling their services.

Yet social marketing and communication activities provide opportunities for cross-fertilization to take place that benefits everyone. One example is when three private sector agencies , two consulting firms (IdRC and Greentech) in collaboration with the Green Building Council decided to collaborate under Corporate Social Responsibility (CSR) and design the facilities of the Zaha Cultural Centers in Marka. These renovations will turn these centers into a demonstration site for water and energy conservation. The advantage to the consulting firms is the prestige gained from CSR activities, and Zaha gets state of the art bathrooms and kitchens. These relationships were deliberately fostered through various training programs and events and came about because of the system approach being advocated under Social Marketing.

4. SOLID WASTE SECTOR

4.1 State and Trends of Communication in the Solid waste sector

Of the three sectors, the least developed is the solid waste sector. Like the two previous sectors, solid waste sector is becoming overwhelmed by service demands. Solid waste is a municipal function, but it is supported by the efforts of the Ministry of Environment. In some municipalities, the functions of solid waste collection have been contracted out to private firms. The World Bank and USAID are the principal donors in this field with the World Bank handling the larger issues (construction of landfills) and USAID offering support through its projects.

The communication weaknesses exist at the Municipality level, Ministry of Environment, as well as in the private sector support firms. The Ministry has a very small communication department with modest ability to manage behavior change programs. Ministry contracts for mass media promotion have already been given out with little attention to target audience and message content. Young advertisers, who come from the private sector, are on the other hand eagerly applying concepts and slogans from other modern countries, abandoning basic principles of marketing in favor of novelty and creativity.

The lack of communication activities in this field is an advantage that should be capitalized on. There are few bad habits to break, and municipal staff is eager for attention and wants to develop their communication skills. It is an opportune moment to begin serious social marketing efforts as the larger municipalities are already considering innovative programs that include community-based collection and recycling. In the coming years, the Greater Amman Municipality (GAM) is expected to let out additional contracts for collection of organic waste for composting and collection of recyclables. They intend to foster programs with youth as well.

Several private sector recyclers function in the formal sector, and there are a number of professional commercial recycling agencies that collect recyclables from trash. Nevertheless, recycling is not well understood although many people assume it is already a reality in Jordan. Independent reclaimers also support these commercial firms. In very real terms therefore, a recycling program exists for a limited number of products. A few members of the general public (primarily West Amman) are only aware of a very small program where they are asked to bring their recyclables to a few depots (Cosmo supermarket, BaccaLaureate school). Large scale recycling is exclusively managed by one firm in Jordan which has contracts with 4 and 5 star hotels.

In 2010, for the first time, GAM announced waste pick-up times in the newspapers and on their web site, but have yet to make an effort to go house to house and alert homeowners of pickup times. Garbage handling at the residential level is complicated by the fact that many households, even among the poor and disadvantaged, have household help of some kind, and these auxiliary targets need to be addressed as well.

The one area in solid waste where there has been some communication activities, although piecemeal and not sustained, is littering. Jordanian urban areas and increasingly its rural areas are eyesores, and several groups in the past, have tried to take a stand against littering, but had little effect. No effort has yet been made to ban plastic bags or require individuals to pay for plastic bags at retail outfits. Most social marketing activities have tended to involve clean-up activities in or near public areas, and a few NGOs (JOHUD, schools) have actively encouraged their members to participate in clean-up days. The littering literature shows that while young people enjoy participating in such activities, it does affect their personal littering behavior.

4.2 Road Map for Behavior Change in the Solid Waste Sector

4.2.1 Priorities for Organizational Outreach and Staff Competencies in Water Institutions to achieve Behavior Change

Improvements in municipal Ministry activities are similar to those in other sectors. Staff at these institutions needs training and support. The Ministry of Environment has no clear cut communication strategy though a previous minister encouraged a system of declaring certain public ground as “hallowed” communal spaces.

Municipalities outside Amman are very willing to participate in communication training, including field research, but their resources are few and overwhelmed by demand for services. One example is Zarqa, where 40% of municipal trucks are out of commission and broken down. Spare parts are unavailable and/or unaffordable. The remaining fleet cannot cover the area necessary. Drivers are poorly paid and often do not have the requisite license to drive the larger trucks. City police do not ticket double parked cars which make it difficult for trucks to negotiate and clean streets on a fixed schedule. Bins are poorly constructed, and there are insufficient numbers of them on city streets. These circumstances create a cyclical process of insufficient waste management that hampers services and results in waste build up in communities. It is not just poor management but a genuine lack of resources that prevent smaller cities like Zarqa from being cleaned up. The inappropriate public response to this dysfunctional system is to blame women householders for the litter and demand a communication campaign aimed at them.

Amman, due to its size and budget, is a special case and indeed is using technology effectively. To ensure that street sweepers are completing their work, Amman intends to monitor them with a GIS chip embedded in a bracelet that sweepers will be required to wear. The chip can be tracked by satellite and the whereabouts of the worker, whether he is sitting or walking his route, can be easily determined. Gadgetry and the import of foreign workers is Amman’s alternative to changing individual behavior.

4.2.2 Behavior Change among Target Audiences

Purposes for solid waste over the coming years include the following:

1. Reduce the amount of waste that ends up in landfills;
2. Reduce littering in public areas (parks, beaches, highways and touristic areas);
3. Reduce littering by youth

Focal Areas for solid waste over the coming years include the following:

Improve HH waste disposal practices. Increasingly municipalities are finding that repeatedly returning to specific areas for waste pickup is expensive and unsustainable. Scheduled stops are becoming the norm and need to be communicated to households. A good example of creating sound solid management practices among households can be found in the Zabaleen neighbor in Cairo, Egypt.

Improve municipal sanitation services in select areas. As with any social marketing measure, a systems approach is necessary. Much of the improvements called for in this focal area may very well involve advocacy on the part of community members and the press to pressure decision-makers to improve municipal functionality by increasing municipal budgets for additional trucks and bins, more sanitation workers and to increase salaries of sanitation staff. Even in tough economic times, paying a fair and honorable living wage can substantially improve performance. In Zarqa for example, truck drivers routinely sabotage their trucks so that they can take paid leave. Truck drivers often feel they are underpaid, and thus justified in these minor acts of sabotage.

Improve citizen behaviors towards littering in public areas. Research conducted earlier this year points to young men and children as the worst offenders of littering in public spaces. Often children do not recognize litter, as it has become ubiquitous. Campaigns are called for to reduce public littering on roadsides, in parks and on beaches and go hand in hand with improved services.

Improve regulation and enforcement around waste management. In addition to campaigns and promotion of good environmental behavior, enforcement is necessary. Jordan's enforcement mechanisms are very weak and need substantial reinforcement, clarity and authority. Agencies such His Majesty's Royal Rangers, a force specifically created to deal with environmental breaches of the Law, are rarely able to police through ticketing, fines or imprisonment for egregious breaches of law. The law authorizing the force's existence and management of the force by the Ministry of Environment is opaque and needs further refinement and clarity. Recently, the Ministry of the Environment has threatened to take up enforcement as a main strategy. Communication campaigns should support any increase in Ranger or police enforcement activities.

Communities assume responsibility for neighborhood maintenance around waste issues. An attitude of victimization or apathy can be found in poor areas or refugee camps, where responsibility to the community is weak. The lack of individual initiative and concern is problematic. However, a few examples of individual initiative do exist and can be built on, publicized and the community spirit revitalized. Communities in Jordan in most parts of the country are still strong, often united as they often are composed of discrete tribal members with known leadership. Only in newly emerging urban areas such as Zarqa and Marka, or in refugee camps, have they lost their distinctive identity. Even when tribes are not physically present to support and unify, clans and large family structures can take their place.

Improve knowledge amongst children and youth around waste. As with water and energy, it is this group that requires the most attention. Behavior of children and youth considering waste is irresponsible and needs fostering if these children are to grow up with an appreciation of the cumulative cost of waste socially, financially and politically. As with energy, the formal school curriculum treats waste haphazardly, although it appears in more frequently than energy. A focus on improving teacher performance as well as working systemically with parents, community leaders, school supervisors and NGOs could substantially improve children's littering behaviors.

4.2.3 Coordination of Efforts among Different Stakeholders

Interestingly, it is in the solid waste sector that coordination has been easiest. There are relatively few donors and few projects. Institutions have discrete activities that are clearly defined and rarely compete with each other. For example, the Aqaba Special Economic Zone Authority (ASEZA) had given a contract to a private agency to handle municipal garbage. Individual hotels have given private contracts to handle their recycling needs. The larger NGOs such as the Royal Marine Conservation Society of Jordan (JREDS) handle beach clean-up and underwater clean-up while the larger women's agencies are financially supported by a USAID project to maintain city streets.

The Ministry of Environment, municipalities, private and public agencies, regulatory agencies and NGOs involved in this sector have shown great enthusiasm towards cooperation, and an example of this is in Zarqa where CBOs, the municipality, the Ministry of Environment and a USAID project are already collaborating on a sustainable solid waste social marketing program.

One area recommended for collaboration is among major partners such as the Rangers, NGOs, Municipalities and Ministry of Environment to clarify the legal issues surrounding enforcement. Communication alone cannot prevent such things as littering, toxic waste dumping, and illegal dumping of construction waste, and works best when it goes hand in hand with enforcement mechanisms. This is one area where collaboration could have substantial benefits in cleaning up city streets.

A second area of collaboration is in the development of standards and guidelines for eco-lodges and camps. At present, any facility can call itself an eco-lodge or camp and use this designation to promote itself. Research into some of these facilities suggests that they are far from running their facilities by what might be a common understanding of ecologically sound business standards. Rather than discouraging these businesses, one area of cooperation would be for tourism programs such as Siyaha to collaborate with the private sector and NGOs to produce Jordanian eco-standards that limit the amount of plastics that are used in these facilities, and specify what must be done with refuse. Tourist areas such as Wadi Rum and Wadi Musa, have become despoiled by the amount of waste left behind by tourists and facilitated by camp owners.

Finally, other opportunities for cross-collaboration include the development of community-based programs, offering mentoring opportunities for young people looking for communication internships, and training individuals to respect manual and trade labor.

ANNEX A: PURPOSES, FOCUSES AND BEHAVIOR MATRICES

WATER – HOUSEHOLDS

Purpose	Focus	Behavior
Increase water efficiency in new and existing homes	Increase HH use of water saving technologies	Homeowners seek out, install, and maintain aerators on all faucets.
		New homeowners seek out and install double flush/reduced flush toilets. Existing homeowners seek out and install double flush toilets/toilets during renovation, remodeling or at sale of property
		Homeowners seek out and install pressure nozzles on hoses.
		Homeowners seek out and install low flow showerheads.
		Homeowners seek out and install drip irrigation in home gardens.
		Homeowners seek out and install hardscapes in gardens.
		Homeowners seek out and install water harvesting systems in new homes.
	Introduce, amend, and enforce water efficiency codes for new and existing homes	Decision-making boards adopt water harvesting as a mandatory requirement.
		Decision-making boards adopt hardscapes as a mandatory requirement by reviewing and adopting water conservation changes to the Beautification Code (i.e the Code that mandates outdoor use of water).
		Regulatory agencies adopt policies facilitating ease of purchase and ease of use of water conserving fixtures and appliances and relevant authorities enforce them.
		Regulatory agencies develop new specifications to reduce water loss in solar water heating systems.
		Concerned authorities approve new harmonized water policies.
		Utilities adopt Consumer Water Advisory Boards to inform and guide utility decisions affecting consumers.
		Concerned authorities clarify enforcement roles and responsibilities and legally delegate authority to appropriate agency.
		Government raises water tariffs for large water consuming households.

WATER – HOUSEHOLDS CONTINUED...

Purpose	Focus	Behavior
Increase and maintain water conserving behaviors among households	Increase HH knowledge of water conserving technologies and lifestyle behaviors	The general public indicates that they have heard about and sought information on new technologies.
		Homeowners in the process of seeking construction license know where to seek information related to code compliance.
		Homeowners know what water conserving products to seek and from which source.
		Vendors and plumbers promote and provide correct information about water conserving products to customers.
		Frontline Ministries, municipalities and utilities provide updated, accurate information to the general public.
		Frontline Ministries, municipalities and utilities promote water conserving measures to the general public.
	Households adopt and maintain water conserving lifestyle choices	Iconic buildings demonstrate state of the art technologies for water conservation.
		Homeowners identify potential sources of water waste within their residence and perform routine maintenance.
		Communities exhibit zero tolerance against water thefts and report incidents to relevant authorities.
		HH practice three water conserving tasks in the bathroom.
		HH practice three water conserving tasks in the kitchen.
		HH practice three water conserving tasks on premises outside the home.

WATER – LARGE CONSUMERS

Purpose	Focus	Behavior
<p>Increase and maintain water efficiency among large consumers including iconic buildings</p>	<p>Large Consumers use established BMPs to reduce water consumption</p>	<p>Large consumers adopt and maintain BMPs and track conservation efforts as part of routine management.</p>
		<p>Large consumers identify where they need professional expertise and know where to source it.</p>
		<p>Large consumers identify, appoint, train and develop an authoritative role for an individual within their organization to become a Water Coordinator with direct access to management and responsibility to manage and oversee water conservation programs within the institution.</p>
	<p>Introduce, amend and enforce water efficiency codes for buildings that are considered large water consumers</p>	<p>Concerned authorities amend and enforce codes and regulations that require use of water conserving technologies as indicated by BMPs.</p>
		<p>Concerned authorities clarify enforcement roles and responsibilities and legally delegate authority to appropriate agency.</p>
		<p>Decision-making boards facilitate adoption of new technologies that reduce operational costs and have short payback periods for public buildings.</p>
<p>The Green Building Council raises the level of voluntary LEED certification for buildings that are considered large water consumers to a minimum of silver or gold.</p>		
<p>Government raise water tariffs for buildings that are considered large consumers.</p>		

WATER – LARGE CONSUMERS CONTINUED...

Purpose	Focus	Behavior
<p>Increase and maintain water conserving behaviors among large consumers including iconic buildings</p>	<p>Increase knowledge of water conserving technologies and practices among staff from buildings that are considered large consumers</p>	<p>Relevant governmental and quasi-governmental water authorities facilitate availability of correct information to large consumers as relevant to BMPs.</p>
		<p>Managers from buildings that are considered large water consumers notify and educate staff of water conserving measures being implemented in their building.</p>
		<p>Managers from buildings that are considered large water consumers post prominent signs to encourage water conservation practices.</p>
	<p>Institutionalize water conserving practices among staff from buildings that are considered large water consumers</p>	<p>Staff from buildings that are considered large water consumers correctly cite three water conserving practices.</p>
		<p>Managers from buildings that are considered large water consumers adopt annual preventative maintenance programs.</p>
		<p>Staff from buildings that are considered large water consumers correctly perform and record routine maintenance on water consuming equipment and take remedial action as needed.</p>
<p>Staff from buildings that are considered large water consumers identify and report potential sources of on-premises water wastage.</p>		

WATER – YOUTH

Purpose	Focus	Behavior
Increase water conservation behaviors among youth	Increase knowledge about the water crisis in Jordan among youth	Out-of-school youth aged 15-25 can cite accurately the sources of Jordan's water, three reasons for scarcity, and three technologies that can improve water conservation at the HH level.
		School children aged 5-15 (Grades 1- 10) can accurately cite the sources of Jordan's water, three reasons for scarcity, and three practices that can improve water conservation at the HH level.
		There is demonstrated improved interactive teaching methods.
		Schools request, install and demonstrate, as necessary, water conserving technologies
	Demonstrate improved environmental practices around water	School children aged 5-15 (Grades 1- 10) demonstrate improved personal water practices, including practicing two public water-saving
		School children aged 5-15 (Grades 1- 10) correctly cite attitudes about environmental water issues as they exist in or are authoritatively interpreted from the Holy Quran.
		Out-of-school youth aged 15-25 demonstrate improved personal water practices, including practicing two public water-saving tasks.
	Increase engagement in active, public discourse about the water crisis in Jordan of out-of-school youth aged 15-25	Youth in key water deficit areas of Jordan mobilize to promote and encourage improved action a) against illegal wells and b) to improve agricultural use of water in the highlands.
		A cadre of youth familiar with social media demonstrate leadership in advocating and motivating peers to act appropriately and to participate in public dialogue.
		Urban disadvantaged youth that attend an immersion program engage in community programs.
	Rebrand skilled labor, such as plumbing, to overcome the culture of shame and make such professions of interest to youth	More young men in project area focus apply for vocational school training and increase in native Jordanians applying for skilled employment.
		School children aged 5-15 (Grades 1- 10) in public schools state positive attitudes towards skilled trades.

WATER – AGRICULTURE

Purpose	Focus	Behavior
Increase water efficiency in agriculture	Increase use of water saving technologies on upland farms	Farmers improve performance of drip irrigation. Farmers increase use of water-saving technologies in upland farms.
	Introduce, amend and enforce water saving specifications for farms	MWI and MOA establish minimum specifications for drip irrigation in the uplands.
	Policy ammendments and enforcement	Fewer individuals engage in digging opportunistic wells
	Increase farmer knowledge of water efficient agricultural practices	Improved crop selection in commerical areas

ENERGY - HOUSEHOLDS

Purpose	Focus	Behavior
Increase energy efficiency in new and existing homes	Increase HH use of energy efficient technologies	HH seek out, installs, and maintains CFL/LED bulbs for lighting.
		Single family homeowners (1 or 2-story buildings) seek out, install, and maintain thermal solar energy systems.
		Homeowners seek out, install, and maintain highly energy efficient appliances (i.e. automatic washing machines).
		HH seek out and are able to use internet-specific sites where they can calculate their energy consumption and make decisions on how to reduce energy consumption.
		Existing homeowners seek out and are provided with free energy audits by utilities and can adopt recommendations to be paid back in installments through their utility fees.
		Homeowners seek out, install, and maintain AC units containing power inverters.
		Homeowners in the process of constructing new homes seek out and receive municipal and/or utility guidance for ensuring energy efficiency in the design and construction.
		Homeowners in the process of constructing new homes seek out, install, and maintain double-glazed windows and use additional sealants around windows and doors.
		Homeowners in the process of constructing new homes seek out and install building insulations for walls/ceilings/floors.
		Homeowners in the process of constructing new homes, include siting as an integral part of the design and a passive energy conserving method.
	Introduce, amend, and enforce energy efficiency codes for existing and new homes	Decision-making /regulatory agencies adopt thermal solar water heating as a mandatory requirement for all new housing including amending the plumbing code to accommodate pipes from solar systems (as needed).
		National Building Council (NBC) amend building codes to ensure minimum energy standards for all new housing reflect Jordan's specific situation.
		Green Building Council(GBC) amend their rating system to ensure minimum energy standards for all new housing reflect Jordan's specific situation.
		With relevant support from municipalities, NBC amend regulations for existing homes to include energy requirement compliance before re-selling, or re-renting homes and during re-modeling or renovation.
		Regulatory agencies and scientific community develop the technical specifications for energy efficient product labeling and associated categories to reflect Jordan's energy standards.
		Regulatory agencies adopt and introduce the new energy efficiency labeling program.
		Concerned authorities clarify enforcement roles and responsibilities and legally delegate authority to appropriate agency.
		Regulatory agencies adopt policies facilitating ease of purchase and ease of use of energy conserving fixtures and appliances and relevant authorities enforce them.
		Utilities adopt Citizen Boards to inform and guide them on decisions affecting HH consumers of energy

ENERGY – HOUSEHOLDS CONTINUED....

Purpose	Focus	Behavior
<p>Increase and maintain energy conserving behaviors among households</p>	<p>Increase HH knowledge of energy conserving technologies and lifestyle behaviors</p>	<p>HH cite three methods and technologies for reducing their energy consumption.</p>
		<p>Homeowners know what energy conserving products to seek, know where to purchase that technology, and how to correctly install it.</p>
		<p>Homeowners in the process of seeking construction license know where to seek information related to code compliance.</p>
		<p>Vendors of major appliances promote and provide correct information about energy conserving products to customers.</p>
		<p>Manufacturers and importers of technologies vet manufacturer’s guidelines on energy saving with the appropriate Jordanian institutions.</p>
		<p>Frontline Ministries, municipalities and utilities provide updated, accurate information to the general public.</p>
		<p>Frontline Ministries, municipalities and utilities promote energy conserving measures to the general public.</p>
		<p>Ministry of Energy and Mineral Resources, Ministry of Public Works, and utilities develop, promote and maintain consumer-friendly websites that allow for calculations of energy use in the home and provides tips to homeowners for energy use reduction.</p>
		<p>Ministry of Energy and Mineral Resources and municipalities develop and promote websites that allow construction firms, engineers, architects, etc. to consider technologies and designs, that reduce energy use in the home and calculate pay back and operational investment costs.</p>
		<p>Iconic buildings demonstrate state of the art technologies for energy conservation.</p>
	<p>HH adopt and maintain energy conserving lifestyle choices</p>	<p>HH practice at least three new energy conserving methods or lifestyle choices (e.g drawing curtains against sun during day hours, turning off lights, unplugging appliances when not in use etc.)</p>
<p>Communities exhibit zero tolerance against electricity theft and report incidents to relevant authorities.</p>		

ENERGY – LARGE CONSUMERS

Purpose	Focus	Behavior
Increase energy efficiency among large consumers including iconic buildings	Large consumers conform to industry Best Management Practices for improved operations including energy saving technologies	Large consumers adopt, maintain, and track energy sub-metering as a standard practice within their institutions.
		Large consumers adopt, maintain, and track energy audits as a standard practice within their institutions.
		Large consumers identify where they need outside professional expertise help and know how to source.
	Introduce, amend and enforce energy efficiency codes for buildings that are considered large energy consumers	Government to replace the flat tariff for industries that are considered large energy consumers and reduce with a new tariff designed to reduce peak-demand and encourage off-peak use.
		Decision-making boards facilitate adoption of new technologies that reduce operational costs and have short payback periods especially public buildings.
		Concerned authorities, agencies, and associations develop, introduce, and adopt BMPs aimed at energy efficiency for large consumers across various sectors.
		Concerned Entities raise the level of voluntary LEED certification for buildings that are considered large energy consumers to a minimum of silver or gold.
	Increase and maintain energy conserving behaviors among large consumers including iconic buildings	Increase knowledge on energy conserving technologies and practices among staff from buildings that are considered large consumers
Managers from buildings that are considered large energy consumers notify and educate staff of energy conserving measures being implemented.		
Financial managers from buildings that are considered large energy consumers are informed of energy consumption patterns of their building.		
Managers from buildings that are considered large energy consumers post prominent signs to encourage energy conservation practices.		
Institutionalize energy conserving practices amongst staff from buildings that are considered large energy consumers		Managers from buildings that are considered large energy consumers adopt annual preventative maintenance programs.
		Staff from buildings that are considered large energy consumers correctly perform and record routine maintenance on energy consuming equipment and take remedial action as needed.
		Staff from buildings that are considered large energy consumers report incidents of on-premises energy deficiencies with suggestions on how to improve them
		Managers of large consumers appoint a point-person as Energy Coordinator responsible for assuring energy conservation remains a priority for management.

ENERGY – YOUTH

Purpose	Focus	Behavior
Increase energy conservation behaviors among youth	Increase knowledge among youth about the energy crisis in Jordan	Out-of-school youth aged 15-25 can correctly identify Jordan's energy resources and cite three alternative energy technologies.
		School children aged 5-15 (Grades 1- 10) can correctly identify Jordan's energy resources and can cite three practices that can improve energy conservation at the HH level.
		There is demonstrated improved interactive teaching methods.
		Schools request, install and demonstrate, as necessary, energy conserving technologies.
	Demonstrate improved environmental practices concerning energy	School children aged 5-15 (Grades 1- 10) demonstrate improved personal energy conserving practices.
		School children aged 5-15 (Grades 1- 10) correctly cite attitudes about energy conservation issues as they are authoritatively interpreted from religious teachings.
		Out-of-school youth aged 15-25 demonstrate improved personal energy practices, including practicing two community energy-saving tasks.
	Rebrand skilled labor, in energy, to overcome the culture of shame and make such professions of interest to youth	More young men in project area focus apply for vocational school training, and an increase in native Jordanians applying for skilled employment.
		School children aged 5-15 (Grades 1- 10) in public schools state positive attitudes towards skilled trades.
		Vocational teachers in schools show/demonstrate improved teaching and motivating skills.

SOLID WASTE – HOUSEHOLDS

Purpose	Focus	Behavior
<p>Reduce the amount of HH waste that ends up in landfills and dumpsites</p>	<p>Improve HH waste disposal practices</p>	<p>HH deposit their garbage in municipal bins at correct times and in correct bags.</p>
		<p>HH know what the main components of their waste, know how to separate it –organic, recyclable, non recyclable, and toxic, and are aware of Jordan's waste-collection practices.</p>
		<p>Where pilot residential recycling programs are being conducted, HH place their recyclables in appropriate containers/packages or to the side of municipal waste bins.</p>
	<p>Improve municipal sanitation services in select areas</p>	<p>Municipalities determine and supply optimal number of easily visible bins in residential areas to facilitate drop-off of HH waste.</p>
		<p>Municipalities advertise HH waste pick up times and collect waste at these designated times.</p>
		<p>Municipalities develop communication plans to update and educate the general public regularly on waste reduction measure, pick-up times and breaks in service.</p>
		<p>Municipalities develop Citizen Boards to represent consumer concerns and needs on sanitation planning and policy committees.</p>
<p>Municipalities strategize future direction of waste management policy directions, identify and prioritize actions, and delegate responsibilities.</p>		

SOLID WASTE – PUBLIC

Purpose	Focus	Behavior
Reduce littering in public areas (including parks, beaches, principal highways, tourism establishments)	Improve citizen behaviors towards littering in public areas	Increase in the number of citizens outside their homes who recognize and use litter bins appropriately.
		More cars maintain a garbage container for disposal of waste, use this container, and dispose of the waste appropriately while in traffic.
		Increase the number of visitors who pack out their litter for later appropriate disposal after picnicking at urban parks and highways.
		Increase the number of visitors to Aqaba's Ghandour beach who pack out their litter for later appropriate disposal (to be coordinated with ASEZA plan).
		Increase number of visitors to campsites at Wadi Rum, Wadi Musa and other touristic camp sites who recognize and use litter bins appropriately.
		In major litter hotspots, increase the number of local vendors who remind customers to drop excess packaging in appropriate bins and ensure that bins are available.
	Improve regulations and enforcement around municipal waste management	Municipalities in projects areas enforce litter laws –in parallel with improved services and education efforts.
		Municipalities increase number of visible bins in public areas so that visitors can identify and easily access them.
		Eco-standards developed for all camp sites, with participation of camp owners, NGOs and regulatory agencies
		ASEZA develops a strategic plan based on consensus of all parties that addresses the systemic waste issues associated with the beach and future development around it.
		Aqaba Governorate, Petra Governorate and other North Governorates, alongside other relevant stakeholders, adopt eco-standards on waste disposal for campsites in Wadi Rum, Wadi Musa etc.
		Regulations to enforce Eco-standards developed and applied.
		Increase in the number of retail store customers who re-use cloth or permanent bags instead of disposal plastic bags.
	Communities assume responsibility for neighborhood cleanliness and maintenance	Citizens select community members to a neighborhood watch program intended to reduce solid waste/littering and devise a community plan of action.
		Communities report vandalism to authorities.
		Communities select liaisons to municipalities as member representatives on citizen boards
		Citizens attend and engage in town hall meetings and other venues where information about SWM is provided and customer service is encouraged and provided by the municipality.

SOLID WASTE – YOUTH

Purpose	Focus	Behavior
Reduce littering among youth	Improve knowledge among youth about waste	Out-of-school youth aged 15-25 can identify the main components of waste, know how to sort it –organic, recyclable, non recyclable, and toxic, and are aware of Jordan's waste-collection practices.
		School children aged 5-15 (Grades 1- 10) can identify the main composites for waste, know how to sort it –organic, recyclable, non recyclable, and toxic, are aware of Jordan's waste-collection practices, and can cite three practices that can reduce waste generation.
		There is demonstrated improved interactive teaching methods.
		Ministry of Education reforms curriculum for grades 1-6 to introduce concepts related to solid waste and to teach the value of responsible waste disposal.
		Ministry of Education includes the practice and ethics of environmental behaviors into kindergarten and pre-school programs.
	Demonstrate improved environmental practices concerning littering	School children aged 5-15 (Grades 1- 10) correctly cite ethical attitudes towards littering as they are authoritatively interpreted from religious teachings.
		School children aged 5-15 (Grades 1- 10) demonstrate improved waste disposal practices.
		Out-of-school youth aged 15-25 demonstrate improved waste disposal practices and conducted peer education activities.
		Pre-school/kindergarten children cite littering as a culturally inappropriate activity.
		Schools report reduction in visible solid waste and less vandalism.
	Youth demonstrate leadership in community clean-up programs	Youth voluntarily employ social media for peer-to-peer advocacy to discourage littering.
		Urban disadvantaged youth that attend an immersion program engage in community programs to reduce neighborhood littering.
	Rebrand skilled and unskilled labor in sanitation to make such professions of interest to youth and overcome the culture of shame	More young men in project areas apply for vocational school training and more native Jordanians apply for skilled vocational employment.
School children aged 5-15 (Grades 1- 10) in public schools state positive attitudes towards skilled trades		
Vocational school teachers in project area demonstrate improved teaching and motivating skills particularly in sanitation-related fields.		

ANNEX B: OUTCOMES FROM COMMUNICATION STRATEGY ROUNDTABLE DISCUSSIONS - JANUARY 2011

Water

<u>Theme</u>	<u>Purpose</u>	<u>Focus Areas</u>	<u>Year 5</u>	<u>Year 10</u>	<u>Year 15</u>
Efficient use of water at the households level	Increase water efficiency in new and existing homes	Increase HH use of water saving technologies and enforce water efficient codes for new and existing homes.	<ul style="list-style-type: none"> • Rating system – voluntary • Homeowners implement water wise landscaping and install the appropriate techniques and measures • Residents in old buildings/ poor areas to conduct maintenance of their plumbing networks and implement water use efficient measures. • Laws enforced and communication of laws is institutionalized. • Civil society program to train 	<ul style="list-style-type: none"> • Enforce a progressive payment system i.e. higher water use up to certain level, a higher imposed tax/fee is imposed • Use grey-water HH should have grey water in their gardens. However, this should be in balance with the Government plan to rezoning areas that aims to reduce dependent houses and increase the level of apartments in Jordan 	<ul style="list-style-type: none"> • Enforce law on treated water for buildings • Mentor, audit people consumption of water • Efficiency of water delivery reach 75%

			<p>people on communication</p> <ul style="list-style-type: none"> • Connect efficiency of water with development of Jordan • Link water-energy- food communication • Community engagement in decision meeting and more town meeting approaches • Construction Codes are enforced and encouraging green roof tops • HH incentives for less water users • Adoption of Water saving technologies institutionalized within the country standards 		
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Water conservation at the households level	Increase and maintain water conserving behaviors among households	Increase HH knowledge and practice of water saving technologies and lifestyle choices	<ul style="list-style-type: none"> • Connect to development i.e. the more you conserve, sustainable development is possible. • Educating public about green roof tops 	<ul style="list-style-type: none"> • Encourage/enforce community based collective projects that conserve water i.e. community water treatment facility covering communities through municipalities 	<ul style="list-style-type: none"> • Encourage/enforce self sustained agriculture in homes. i.e. plant gardens to allow HH to eat from their own plant/gardens • Develop environmental ethics
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Efficient use of water at the large consumers level	Increase/improve management ability and authority to reduce water consumption	<ol style="list-style-type: none"> 1. Use established BMPs to reduce water consumption 2. Introduce and amend codes & regulations 3. Enforce water efficiency codes 	<ul style="list-style-type: none"> • Creating water circles (similar to quality circles) particularly in manufacturing industries to encourage people to continuously discuss energy and water efficiency issues and come up with suggestions for improvements. • Support associations "such as private hospitals, hotels.. etc in industry to carry the torch and offer their members knowledge on water 		
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			<p>use besides their other services.</p> <ul style="list-style-type: none"> • Price increasing • Benchmark-for what industry is using • People prepared to the new water price • Government stops illegal wells, and illegal water sellers by enforcing the related laws 		
<p>Water conservation at the large consumers level</p>	<p>Increase and maintain water conserving behaviors among large consumers including iconic buildings</p>	<ol style="list-style-type: none"> 1. Increase knowledge of water conserving practices among staff 2. Institutionalize water conserving practices 	<ul style="list-style-type: none"> • Give financial incentives • Highlight success stories of those who managed to conserve and benefited 	<ul style="list-style-type: none"> • Allow industrial companies to mandatory issue “sustainability reports” where they highlight their strategy toward using resources i.e. Aramex, sustainability report • Encourage research and development success stories in industry that came up with water-saving technologies. 	

<p>Efficient use of water in the Agriculture Sector</p>	<p>Increase water efficiency in agriculture</p>	<ol style="list-style-type: none"> 1. Increase use of water saving technologies 2. Enforce water saving specifications for farmers 3. Policy enforcement 4. Increase farmer knowledge of water efficient agricultural practices <p>Others: Disseminate knowledge on high intensive water agricultural products among farmers – BANANA</p>	<ul style="list-style-type: none"> • Enforce and support research and development in agricultural sector • Switching crops • Adoption of new irrigating technologies. However, this should be in line with management capacity building programs to train farmers how to better manage their farms • Different way of farming, such as vertical farming • New farming policies in the JV and up-lands 	<ul style="list-style-type: none"> • Communication strategy for the Agriculture sector 	<p>No</p>
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Energy

<u>Theme</u>	<u>Purpose</u>	<u>Focus Areas</u>	<u>Year 5</u>	<u>Year 10</u>	<u>Year 15</u>
Efficient use of energy at the households level	Increase energy efficiency in new and existing homes	Increase HH use of energy saving technologies and enforce energy efficient codes for new and existing homes	<ol style="list-style-type: none"> 1. Increase the eco-technical research and paper works at a national level in energy issues. 2. Create incentive programs for energy efficiency and renewable energy utilization (especially the on-grid renewables). 	<ol style="list-style-type: none"> 1. Convinced utilities and organizations through research outcomes. 2. A new relationship between utility and customers based on clearly defined incentive schemes for energy efficiency and renewable energy utilization. 	<ol style="list-style-type: none"> 1. New generation of qualified and practiced professionals . 2. Better utilization of renewable energy technologies at customer levels.
Energy conservation at the households level	Increase and maintain energy conserving behaviors among households	Increase HH knowledge and practice of energy saving technologies and lifestyle choices.	<ol style="list-style-type: none"> 3. Stop importing bad quality products and support the better ones. 4. Review and improve the 	<ol style="list-style-type: none"> 3. Energy efficiency and renewable energy products are 	<ol style="list-style-type: none"> 3. Energy efficiency codes are well understood and practiced. 4. People are

<p>Efficient use of energy at the large consumers level</p>	<p>Increase/improve management ability and authority to reduce energy consumption</p>	<p>I. Use established BMPs for improved operations including energy saving technologies to reduce energy consumption.</p> <p>II. Introduce and amend codes & regulations</p> <p>III. Enforce energy efficiency codes</p>	<p>Energy Efficiency codes.</p> <p>5. Get the educational organizations more engaged through schools, universities and energy centers programs.</p> <p>6. Provide intensive training programs for teachers (at school and university levels).</p> <p>7. Provide training programs for mothers and people through cultural centers.</p> <p>8. Increase the collaboration between energy centers and organizations.</p> <p>9. Provide energy</p>	<p>available at reasonable prices.</p> <p>4. Mandatory energy efficiency codes for buildings.</p> <p>5. Qualified graduates to start carrying the energy role in the country.</p> <p>6. Energy conservation culture passed on to students through qualified teachers and programs.</p> <p>7. Energy conservation culture passed on to children through their mothers.</p> <p>8. Directed role for energy centers and</p>	<p>more committed for the energy efficiency lifestyle.</p>
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			<p>audits for large consumers.</p> <p>10. Provide benchmarking for each problem.</p> <p>11. Turn specific institutions into energy efficient icons.</p> <p>12. Provide campaigns for the public to show the important role of energy efficiency in their lifestyle and economy.</p> <p>13. Creating Energy circles (similar to quality circles) particularly in manufacturing industries to encourage people to continuously</p>	<p>organizations.</p> <p>9. Better understanding for the role of energy in the large consumer decision makers.</p> <p>10. Well known iconic buildings for energy efficiency.</p>	

<p>Energy conservation at the large consumers level</p>	<p>Increase and maintain energy conserving behaviors among large consumers including iconic buildings</p>	<ul style="list-style-type: none"> I. Increase knowledge of energy conserving technologies among staff II. Institutionalize energy conserving practices 	<p>discuss energy and water efficiency issues and come up with suggestions for improvements.</p>		
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Solid Waste

<u>Theme</u>	<u>Purpose</u>	<u>Focus Areas</u>	<u>Year 5</u>	<u>Year 10</u>	<u>Year 15</u>
Waste reduction at the HH level	Reduce the amount of HH waste that ends up in the dumpsites	<p>Improve the HH waste disposal practices</p> <p>Improve municipal sanitation services in select areas</p> <p>Create a sense of antilittering amongst children</p>	<p>1.MOEnv. Sustain the environment fund</p> <p>2.Growing trends to use mosques as a communication tool.</p> <p>3.Reduce littering is part of our loyalty to our country</p>	Recycling is institutionalized	