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WASTEWATER TREATMENT FACILITIES FOR SMALL COMMUNITIES IN JORDAN

TASK I
INSTITUTIONAL, LEGAL AND POLICY REVIEW

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TASK I

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CONTENTS

- Executive Summary 1**
- 1 Introduction 2**
 - 1.1 Overview of the Small Communities Project..... 2
 - 1.2 Study on Institutional, Legal and Policy Framework 2
 - 1.3 Assessment of Community Participation Approaches 3
 - 1.4 Organization of this Report..... 3
- 2 Government Policies..... 5**
- 3 Institutional Roles and Responsibilities..... 7**
 - 3.1 Legislation and Regulation 7
 - 3.2 Government Agencies Involved in Water and Wastewater Management..... 8
 - 3.3 Government Agencies with Roles in Local Governance 11
 - 3.4 Government Agencies with Development Roles 12
 - 3.5 Non-Governmental Organizations 13
 - 3.6 Private Sector Participation 14
- 4 Standards, Monitoring and Surveillance 15**
 - 4.1 Standards 15
 - 4.2 Monitoring and Surveillance..... 16
- 5 Pricing Issues..... 18**
- 6 Septage Collection and Regulation 20**
- 7 Wastewater Reuse 21**
- 8 Related Projects and Initiatives 22**
- 9 Community Participation..... 23**
 - 9.1 Overview 23
 - 9.2 Stakeholders’ Understanding of Community Participation 23
 - 9.3 Potential for Community Participation 24
 - 9.4 Suggested Approaches to Community Participation 25
- 10 Conclusions and Next Steps..... 27**
 - 10.1 Institutional roles and responsibilities 27
 - 10.2 Management Transfer to Local Level Institutions 28
 - 10.3 Next Steps 28

Appendix A: Contacts and References.....	30
Contacts.....	30
References.....	30
Appendix B: Wastewater Reuse Agreements.....	34
Summary of TWW Reuse Agreement Forms.....	34
Appendix C: Potential Questions for the Feasibility Study.....	37
Specific Topics to Address.....	37
Community Level Information.....	39

ABBREVIATIONS AND ACRONYMS

AWC	Aqaba Water Company
ASEZA	Aqaba Special Economic Zone Authority
BRDP	Jordan Badia Research and Development Program
CIDA	Canadian International Development Agency
CSBE	Center for Study of the Build Environment
EPP	Enhanced Productivity Program
GTZ	German Technical Cooperation (Deutsche Gesellschaft fuer Technische Zusammenarbeit)
IDRC	International Development Research Centre
ISO	International Standards Organization
JCC	Jordan Cooperative Corporation
JISM	Jordan Institute for Standards and Metrology
JVA	Jordan Valley Authority
MOA	Ministry of Agriculture
MOF	Ministry of Finance
MOH	Ministry of Health
MOMA	Ministry of Municipal Affairs
MOI	Ministry of Interior
MOPIC	Ministry of Planning and International Cooperation
MOTI	Ministry of Trade and Industry
MOU	Memorandum of Understanding
MSD	Ministry of Social Development
MWI	Ministry of Water and Irrigation
NGO	Non-Governmental Organization
NGWA	Northern Governates Water Authority
O&M	Operation and Maintenance
PSP	Private Sector Participation
RSCN	Royal Society for Conservation of Nature
RSS	Royal Scientific Society
RWP	Reclaimed Water Project

SETP	Socioeconomic Transformation Plan
TWW	Treated wastewater
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WAJ	Water Authority of Jordan
WRDSP	Water Resources Policy Support Project
WREU	Water Reuse and Environment Unit
WWTP	Wastewater Treatment Plant
WWT&R	Wastewater Treatment and Reuse

EXECUTIVE SUMMARY

The “Wastewater Treatment for Small Communities” Project will plan, study, design, and supervise the construction of two wastewater treatment plants (WWTPs) in two selected small communities and develop local capacity to operate and maintain those WWTPs and to reuse treated water in a safe and sustainable manner. In parallel with community selection and pre-feasibility studies, this study reviews the legal, institutional and policy framework as a basis for further investigation of the best institutional arrangements to manage, operate and maintain the proposed wastewater treatment and reuse (WWT&R) system in each community.

The Ministry of Water and Irrigation (MWI) holds overall responsibility for wastewater management and reuse. Within the Ministry, the Water Authority of Jordan (WAJ) manages the planning, construction, operation and maintenance of WWTPs as well as water reuse activities. The Jordan Valley Authority (JVA), also part of the MWI, has jurisdiction over water resources development, irrigation and economic development of the Jordan Valley. The Ministries of Health, Environment and Agriculture also play key roles in protecting public health and the environment, and supporting agricultural activities.

At the local level, the Ministry of Interior, through the Administrative Governor, is the ultimate authority in each Governorate. Municipalities, headed by mayors appointed by the Minister of Municipality and Rural Affairs (MMRA), in the past have had a limited role in development. Recent reforms and projects have been designed to increase the municipal role in day-to-day service provision and development planning at the local level. Line ministries have offices at the governorate and sub-governorate levels.

A positive setting for private sector participation (PSP) in the water sector has been set legally and in practice through changes in WAJ and JVA legislation and on-going PSP activities. Legally, WAJ can hand over management responsibility for wastewater treatment plants and/or reuse projects to another public entity or the private sector. There are a few examples of community-based organizations managing service delivery such as water reuse projects in the Jordan Valley and Wadi Musa. This study provides an overview of these activities.

WAJ, the Ministry of Environment and the Ministry of Health all monitor reuse of treated wastewater and sludge according to national standards.

Current water and wastewater prices do not provide for cost recovery of operation and maintenance (O&M), much less of capital costs. MWI has supported several studies on pricing policies, and is considering tariff reform.

Individuals and companies register their septage tankers with WAJ for permits to discharge at WAJ wastewater treatment plants. They pay a fee of JD 20 per month per tanker throughout the country, regardless of the number of times the tanker discharges at the plant. Tankers charge households based on distance to dumping site. Due to the limited number of WWTPs in certain areas, there is often illegal dumping of septage. Through official agreements with WAJ, farmers utilize treated wastewater to cultivate land within WWTP plant boundaries and outside of the plants.

The main task in the next project activity, the Feasibility Study (FS), will be to identify the key stakeholders at national and local level and select project partners for day-to-day planning and implementation. This report includes follow-up questions for the feasibility study and an assessment of the potential for community participation in selected communities.

I INTRODUCTION

The Wastewater Treatment and Reuse Activity for Small Communities, which commenced in June 2004, aims to introduce feasible wastewater treatment facilities for small/rural communities in Jordan. This study on the institutional, legal and policy framework provides an overview of key laws/regulations/policies and actual practices affecting local-level management of wastewater treatment and reuse (WWT&R) in Jordan. It also describes risks and opportunities for local management of the proposed wastewater treatment facilities.

I.1 OVERVIEW OF THE SMALL COMMUNITIES PROJECT

The activity has the following objectives:

- Plan, study, design and build two low-cost, low-maintenance wastewater treatment plants (WWTPs) for small communities using proven technologies
- Develop local capacity to operate and maintain the WWTPs and reuse treated water in a safe and sustainable manner
- Provide guidance/models for replicating project activities in other small communities in order to increase safe reuse of wastewater, especially for irrigated agriculture.

The counterpart agency for this project is the Water Authority of Jordan (WAJ), in the Ministry of Water and Irrigation (MWI). The project has two main challenges:

- To show, through successfully managed wastewater treatment plants (WWTP), that carefully selected and managed, low-cost, low technology treatment can work for small communities in Jordan
- To provide two examples of successful and sustainable local-level management of wastewater treatment and reuse

The project will serve two communities, which were identified by an extensive screening and selection process. A Community Screening and Selection Consultation Workshop was held on October 31, 2004, and was followed by a meeting with His Excellency the Minister of Water and Irrigation, Dr. Hazim El Naser and other officials. As an outgrowth of these consultations, the committee selected North Shouneh and Shobak as the two priority communities, with the community of Azraq as a third choice. The project team presented the results of this selection process in a separate report entitled “Planning and Community Selection Report (ECODIT/IRG, 2004).”

I.2 STUDY ON INSTITUTIONAL, LEGAL AND POLICY FRAMEWORK

This study of the institutional, legal and policy framework provides an overview of key laws/regulations/policies and actual practices affecting local-level management of wastewater treatment and reuse (WWT&R). The consultant undertook the following activities:

- Identified and interviewed a limited, carefully selected number of knowledgeable stakeholders (governmental and non-governmental) about the institutional, legal and policy issues and options for wastewater treatment and reuse in small/rural communities.
- Reviewed key laws/regulations, policies and actual practices relating to decentralized management of wastewater treatment and reuse to determine (1) roles and responsibilities at different levels (e.g., municipalities, village councils, Administrative Governors, private sector, cooperatives, MWI, WAJ,

Ministry of Health); (2) current and planned pricing policies, including charges for wastewater collection and treatment; prices of drinking water, irrigation water (ground and surface water), reclaimed water; etc. and (3) standards for wastewater treatment and reuse.

- Identified the various sources of legislation/policies and provide a detailed review of the most important laws and regulations and actual practices.
- Identified existing agreements, formal and informal, between farmers and MWI on treated wastewater reuse, including types of agreements, typical durations, basis for cost/price considerations, etc.

The resulting report provides an overview of the legislative, institutional and policy framework for wastewater treatment and reuse (WWT&R), with particular emphasis on the local level. Over the eight days allocated for this task, the consultant obtained and reviewed relevant documents, conducted interviews with key informants and project staff, and attended the Community Screening and Selection Workshop and meeting with H.E. the Minister of MWI and other officials of MWI, WAJ and the Jordan Valley Authority (JVA).

Consistent with an early decision, the consultant did not conduct formal meetings with officials outside of the MWI during this stage of the project. However, she was able, through informal contacts, to obtain information on related projects, local governance and decentralization relevant to this report (see Appendix A, Contacts and References). Formal consultation will be conducted as needed during the Feasibility Study.

Although the focus of this report is national, it does address some specific issues related to the communities. For example, North Shouneh is within the area under the jurisdiction of the Jordan Valley Authority, thus the need to include an analysis of JVA's role.

I.3 ASSESSMENT OF COMMUNITY PARTICIPATION APPROACHES

The consultant received an additional task of assessing the potential for community-based management. This included the following activities:

- Working with the project team, the consultant was charged with organizing and facilitating a session at the Project “Kickoff Workshop” pertaining to community participation approaches;
- Observing individual and group dynamics and inputs during the workshop, and drawing conclusions and recommendations for (1) the community participation approaches that are most likely to be feasible for each community and (2) the potential for community-based management and WAJ/JVA buy-in of the proposed WWT&R projects; and
- Revising this report to incorporate the findings and recommendations of the community participation sessions of the workshop, including suggested approaches for community participation in the communities selected and an assessment of the potential for community-based management and WAJ/JVA buy-in.

I.4 ORGANIZATION OF THIS REPORT

This report contains 10 chapters:

- *Chapter 1, Introduction* (this chapter)
- *Chapter 2, Government Policies* – reviews government policies relating to wastewater management and reuse;
- *Chapter 3, Institutional Roles and Responsibilities* – reviews legislation and regulations, current roles and responsibilities of relevant government and non-government organizations, and presents the current status of private sector participation in water and wastewater management;

- *Chapter 4, Standards, Monitoring and Surveillance* – describes the standards affecting wastewater reuse, and the current system of enforcement through monitoring and surveillance;
- *Chapter 5, Pricing Issues* – provides an overview of government pricing policy for water, wastewater and treated wastewater and the status of plans for tariff reform;
- *Chapter 6, Septage Collection and Regulation* – describes the current system of septage collection by municipal and private tankers, including prices and regulation;
- *Chapter 7, Wastewater Reuse* – provides a summary of current agreements between WAJ and others for using treated wastewater;
- *Chapter 8, Related Projects and Initiatives* – provides brief descriptions of a few projects (governmental and non-governmental) which may provide examples of successful community participation and/or capacity building;
- *Chapter 9, Community Participation* – assesses the potential for community-based management and WAJ/JVA buy-in to the project, and suggests approaches for community participation in the communities selected;
- *Chapter 10, Conclusions* – provides an overview of government institutions that may have a role in the project; summarizes the legal aspects of transfer of management responsibility to community-based organizations, and provides recommendations on next steps to ensure institutional and community buy-in to the project.

There are also three appendices:

- *Appendix A, Contacts and References* – lists people consulted for information and references used.
- *Appendix B, Wastewater Reuse Agreements* – provides a summary of key points of wastewater reuse agreements between the Water Reuse and Environment Unit (WREU) and farmers. This includes a standard agreement form, WREU agreement with the Jordan Badia Research and Development Programme (JBRDP) in Wadi Musa, and an existing agreement between a private farmer and the WREU.
- *Appendix C, Potential Questions for Feasibility Study* – provides a list of suggested questions, which require answers during the feasibility study, relating to legal, institutional and regulatory issues at both the national and local levels.

2 GOVERNMENT POLICIES

The Ministry of Water and Irrigation bases its plans for the water sector on the MWI Water Strategy (1997) and four policies approved by the Council of Ministers:

- Groundwater Management Policy (1998)
- Utility Policy (1998)
- Wastewater Management Policy (1998)
- Irrigation Water Policy (1998)

The **Water Strategy** states, **“Wastewater shall not be managed as ‘waste’; it shall be collected and treated to standards that allow its use in unrestricted agriculture and other non-domestic purposes, including groundwater recharge.”** All of the above policies reinforce this statement, focusing on ensuring high standards for safety of public health, using wastewater as a resource, protecting drinking water sources and encouraging private sector participation in water and wastewater management.

The **Wastewater Management Policy** states **“Wastewater is a perennial water source and shall form an integral part of renewable water resources and the national water budget.”** The policy states that fees for wastewater management should at least cover operation and maintenance (O&M) and that treated effluent sales should cover delivery costs. The policy also addresses the issue of protection of public health of farmers and consumers, as well as ensuring that WWTPs are located far from densely populated areas.

The **Irrigation Water Policy**, while encouraging the use of treated wastewater (TWW), also emphasizes that wastewater shall be **“collected and treated to standards that allow its reuse in irrigation unrestricted by health and public health considerations or unduly constrained by high salinity contents.”** On the issue of pricing, the policy states explicitly that differential prices based on water quality are applicable to irrigation water.

The **Utility Policy** provides support for private sector participation, with an emphasis on cost recovery for operation and maintenance. The **Wastewater Management Policy** emphasizes that “the private sector role in reuse of treated effluent should be encouraged and expanded”. The proposed **National Water Demand Management Policy** (Abdel Khaleq and Dziegielewski 2004) includes a review of water pricing and cost recovery and encourages including price incentives for water conservation and setting prices to cover operation and maintenance, as well as capital expenditures. The policy further states that, “It is the intention of the Government, through private sector participation, to transfer management of infrastructure and services from the public to the private sector, in order to improve performance and upgrade the level of service.”

Definition of Treated Wastewater

According to Instructions and Conditions issued under the Temporary Agriculture Law #44/2002, treated wastewater (TWW) is defined as: “...wastewater that went through one of the following treatment procedures: Biological, Mechanical, or Purification, in order to become suitable for the different uses in the mentioned instructions herein, and it should not be mixed with other water resources.”

The 2002 **National Strategy for Agricultural Development** also recognizes the fact that a continued water deficit in Jordan will force the agricultural sector to accept increased amounts of treated wastewater (TWW) for irrigation. “Since priority of water use goes to municipal and industrial uses, the expected shortage will mostly be on the account of the agriculture sector, which will be increasingly dependent on treated wastewater and non-traditional water resources.”

Treated wastewater is included as a water resource in the **National Water Master Plan** (2003), and WAJ plans call for the inclusion of a water reuse plan for any new wastewater treatment plant.

On the subject of septage, as distinct from wastewater collected by sewers, the Wastewater Management Policy states: **“Septage from unserved areas shall be treated either in municipal or in well monitored and maintained facilities designed to receive septage.”**

These policies provide the framework for the various plans, activities and restructuring of the water and agricultural sector, and are the bases for recent changes in legislation promoting private sector participation in the water sector. Chapter 3 describes these changes in the context of the legal framework and current practice in wastewater treatment and reuse (WWT&R). The project team will continue to examine the implications of these recent changes throughout the preparation of the feasibility study.

3 INSTITUTIONAL ROLES AND RESPONSIBILITIES

The Wastewater Treatment for Small Communities Project will include developing and implementing effective and sustainable management systems at local level for wastewater treatment and reuse. This should include full cost recovery of operation and maintenance costs, in compliance with the various plans and policies of the MWI. A review of institutional roles and responsibility must therefore address institutions beyond the usual ones involved in wastewater management. This chapter reviews current and future roles for the following governmental, non-governmental, and private sector organizations:

- Government ministries and departments currently involved in the wastewater treatment and reuse sector, including:
 - Ministry of Water and Irrigation, including the Water Authority of Jordan and Jordan Valley Authority
 - Ministry of Health
 - Ministry of Agriculture
 - Ministry of Environment
- Other government ministries and agencies which may have a role in community level management of wastewater treatment and reuse, including:
 - Ministry of Municipal Affairs
 - Ministry of Planning
 - Ministry of Interior
 - Jordan Cooperative Corporation
- Non-governmental organizations –some of which may provide “lessons learned” for the Small Communities Project, such as: the Royal Scientific Society, Jordan Badia Research and Development Program and the Jordan Farmers’ Union
- Private sector entities that do (or could) participate in water and wastewater management, and their relevance to the Small Communities Project, such as Aqaba Water Company, LEMA and micro-PSP in Northern Governorates

Chapter 4 covers the specific topic of standards, monitoring and surveillance.

3.1 LEGISLATION AND REGULATION

In Jordan, government **policies** provide guidance for legislation and directives from ministries. Parliament approves all **laws and their amendments**. Temporary Laws are issued when Parliament is not in session, which Parliament ratifies when it returns to session. **Bylaws**, also referred to as **regulations**, are approved by the Council of Ministers upon recommendation from the relevant Ministries. The relevant ministries and other government bodies issue **instructions, directives and administrative decisions** based on laws and regulations. Municipalities can also issue **directives**. The Municipalities Law makes it clear that municipalities cannot conduct any activities that contradict existing national directives, laws or regulations. The Jordan

Institute for Standards and Metrology (JISM) in the Ministry of Trade and Industry (MOTI) issues all **standards** in close coordination with the relevant line ministries. **Guidelines** are not legally binding, but often serve as the basis for development of the standards in the future.

There is some overlap of roles and responsibilities among institutions, especially in the area of monitoring and surveillance. Chapter 4, Standards, Monitoring and Surveillance, addresses this issue.

There is no independent, regulatory body for water and wastewater management in Jordan, although there has been extensive study and consultation within the Ministry of Water and Irrigation about the establishment of such a body. The MWI completed a study on regulatory issues in the water sector in 2004; the results of this study have not yet been made public. In 2001, the Water Resources Policy Support Project (WRPSP) developed a detailed proposal for a regulatory framework for the water sector. For control of wastewater reuse, another study has proposed the establishment of an independent institution for quality control. The report states that “A competent authority must be designated to take responsibility for updating, interpretation and enforcement for the regulations promulgated for the safe use of reclaimed water” (GITEC-AHT Group, 2004). In addition, the report advocates for an institution to monitor soils, groundwater quality, quality of agricultural produce and the general health situation of farmers and the general public in the Jordan Valley. To date, no specific plans have been approved for such a body, although the KfW-funded Water Reuse Project and the GTZ funded Reclaimed Water Project are addressing these issues.

3.2 GOVERNMENT AGENCIES INVOLVED IN WATER AND WASTEWATER MANAGEMENT

The **Ministry of Water and Irrigation** defines is “the official body responsible for the overall monitoring of the water sector, water supply and wastewater system and the related projects, planning and management, the formulation of national water strategies and policies, research and development, information systems and procurement of financial resources (MWI website). The Minister, who then provides his recommendation to the Cabinet of Ministers, approves policy decisions, including tariff changes and transfer of responsibility for management of water and wastewater services outside of the Ministry. The MWI includes two entities, the Water Authority of Jordan (WAJ) and the Jordan Valley Authority (JVA). Outlined below are the responsibilities of the WAJ and JVA.

The **Water Authority of Jordan** is responsible for water and wastewater infrastructure and services. This includes wastewater collection (septage and sewage), transport and treatment. There are currently 21 publicly owned wastewater treatment plants (WWTP) in Jordan. The WAJ only registers private WWTP if they discharge into public watercourses or into the public sewer system. There are around 20 of these plants, mainly owned by industries and hotels (Ahmad Rushaideh, personal communication). The WAJ Planning and Studies Directorate manages planning for all new wastewater collection, treatment and reuse projects. A Wastewater Committee, comprised of MWI/WAJ officials and other experts from the private sector, university and donor community, provides guidance on planning and policies in wastewater management.

WAJ has recently established a Water Reuse and Environment Unit, which coordinates efforts in management and promotion of safe and sustainable reuse of treated wastewater. This Unit is responsible for negotiation and signing of agreements between WAJ and farmers, industry and the commercial sector for the use of treated wastewater (see Chapter 7 below). The Unit coordinates closely with the “National Coordination Committee for the Reuse of Reclaimed Water and Environment”.

A Temporary Law (No. 62 of 2001), which Parliament later ratified, amended the WAJ Law to allow for private sector participation in water and wastewater management. This Law allows WAJ to delegate management authority or lease any WAJ functions to a public entity or private company (see box for full text.)

In anticipation of increasing private sector participation in water and wastewater services in the Northern Governorates, WAJ has decentralized planning and management of services to the **Northern Governorates**

Water Authority (NGWA), which covers the Governorates of Irbid, Jerash, Ajloun and Mafrq (including North Badia). This includes North Shouneh, which is one of the communities selected for the Small Communities Project. Originally, WAJ planned to tender a management contract for the NGWA, but this has not taken place, as of December, 2004. NGWA has invited companies to submit Expressions of Interest to serve as Management Consultant to assist in improving its service delivery and strengthen institutional development (NGWA website 2004).

The WAJ Law (Article 23.2) provides for the establishment of a “Water Department in all parts of the Kingdom” which shall “... **have a Water Council composed of representatives from the governmental and private sectors concerned with water and public sewerage. This is to allow citizens and local authorities to participate in deciding priorities regarding water and sewerage projects and plan for their implementation.**” The project team will continue to examine the evolving status and activities of this Water Council throughout the preparation of the feasibility study.

The **Jordan Valley Authority** is responsible for socio-economic development of the Jordan Rift Valley, including water resources development and irrigation management. In the past, the JVA was responsible for all aspects of development. Parliament amended the JVA Law in 2001 with the intention of moving some of those responsibilities to line ministries and creating a vision for a “new JVA” with greater focus on bulk and retail water management and distribution, land development and tourism.

Amended JVA Law of 2001

Article 3.e.2: The Authority may, by a decision of the Cabinet of Ministers upon recommendation from the (JVA) Board, entrust any of the projects it has implemented or is in the process of implementing or is managing, to any entity from the private sector whether by leasing, management or operation, in accordance with the effective laws and regulations. As for property transfer, irrigation projects and water resources development projects are excluded from such transfer.

Article 6: It is possible that the authority upon a resolution to be issued by the Cabinet Ministers and recommendation from the (JVA) Board handover any project it has implemented or is implementing, from what falls under its responsibilities according to this law, to any Ministry or Governmental Department or Public Agency or Municipality, that is excluding Water Resources Development Projects and Irrigation Projects in the Valley.

Article 28 of WAJ Law No. 18 of 1988, as Amended by Temporary Law No. 62 (2001)

- a. The cabinet has-upon the minister's instructions-the capacity to delegate or contract out any of WAJ's duties or projects, or the execution of one of the project's phases or parts, to any other party whether from the public or private sector, or to a shareholding company or companies with limited liability wholly owned by WAJ, or its capital partially owned by WAJ. It may be possible for this to include the transfer of the management of such projects or their lease or transfer of ownership to any of the aforesaid parties according to certain conditions and for periods to be specified in the contract agreements to be made with such parties for this purpose, provided the laws pertaining to the lease and transfer of ownership are abided by.
- b. It shall be possible in the cases of making agreements to transfer the projects' management or to lease them, for the cabinet decision to include granting the contractors' personnel the same authorities for contract execution purposes, as those for WAJ personnel under current regulations.

The JVA Law (see box) allows the JVA to lease or transfer management authority of any JVA function to the private sector, any government agency or municipality. The JVA can also “handover” any of its projects to the same entities – with the exception of “water resources development projects and irrigation projects.” The implication of this provision is that JVA is unable to “handover” ownership of such projects, but is able to delegate management responsibility. This is still a relatively new change in the law and the project team will continue to review evolving practice and the JVA's interpretation going forward.

The Amended JVA Law also states that, “No ministry or government or semi-government agency is allowed to perform any construction activities in the Valley without permission from the Authority except works of operation and maintenance.” The JVA also has the authority to expropriate any land for irrigated agriculture (Article 24k).

Until recently there were no wastewater treatment plants in the Jordan Valley serving residential users. Therefore, there was no cause for discussion over jurisdiction of WAJ and/or JVA over wastewater management, or implementation of the revised WAJ and JVA Laws, which allow for PSP. In 2004, the Canadian International Development Agency (CIDA) completed construction of a septage treatment and reuse project in Tell Al Mantah in the Jordan Valley. JVA was the main partner, with WAJ providing support. The JVA and WAJ officially and jointly gained control of the project in November 2004. According to the CIDA Project Coordinator, the JVA considers that the reuse activity should be under its supervision, since it is a development activity, with WAJ managing the treatment plant itself (Nabil Anshasi, personal communication).

WAJ requested its attorney to render a legal opinion on WAJ and JVA jurisdiction over WWTP in the Jordan Valley. The attorney concluded that Dead Sea hotels planning to build a joint wastewater treatment plant should coordinate with WAJ, not with JVA (Abdul Halim Awad, personal communication). The current status of that project and the agency that is responsible for coordination with the hotels have not been confirmed. It does appear, however, to be an area for discussion and possible conflict, in that the private sector cannot attain control of JVA property “in the case of water resources development and irrigation projects.” Treated wastewater is by policy considered a water resource, and utilization of TWW includes irrigation activities; JVA also still has overall responsibility for development within the Jordan Valley. Therefore, the JVA is an important project stakeholder, especially concerning the management of treated wastewater reuse.

The **Ministry of Agriculture**, through the Temporary Agricultural Law of 2002, is responsible for ensuring compliance with standards and rules on the use of treated wastewater in irrigation. Under this law, instructions and conditions were issued concerned with usage of treated wastewater, saline water and brackish water. In practice, the MOA does not do extensive testing of wastewater quality, although it does some soil testing. Its main concern is the effect of TWW on farming i.e. soils and crops.

The main concern of the **Ministry of Health** is protection and safety of public health. The Public Health Law gives MOH the authority to monitor and regulate wastewater discharge, design of wastewater facilities. It also prohibits septage tanker from discharging sewage and septage unauthorized locations.

Chapter 4 below will cover quality monitoring and surveillance by MOH, WAJ and the Ministry of Environment. Various committees responsible for wastewater management and reuse have MOH representatives. Additional concerns of MOH are protection of crop quality, and of agricultural workers, their families, and people living near reuse areas.

The recently established **Ministry of Environment** (previously the General Corporation for Environmental Protection) has a mandate to protect the environment, *inter alia* through water, wastewater and soil quality monitoring. All committees concerned with wastewater treatment and reuse have MOE representation, although to date that Ministry does not have full capacity to carry out monitoring and enforcement functions.

Public Health Law No. 54

Article (34):

“The Ministry [of Health] shall be entitled to supervise all wastewater networks in accordance with the regulations enacted for that purpose, and to issue orders for the preservation of health.”

Article (53):

- A- The ministry shall, in coordination with the relevant authorities and in conformity with its own legislations, control the Sewage water, the Sewage networks, the internal installation, and the treatment stations, in order to ensure the availability of health conditions therein and guarantee that no harm would thereby be caused to the public health.
- B- If it becomes evident to the Ministry that the Sewage water, the networks, the installations, or the treatment station constitute or may constitute a threat to public health, then it must take all the necessary measures to prevent the occurrence of the anticipated detriment to health.

3.3 GOVERNMENT AGENCIES WITH ROLES IN LOCAL GOVERNANCE

There are three types of government agency involved in planning and management of services and development at the local level:

- The Administrative Governor and his staff, who represent the King and the Government through the Ministry of Interior.
- Municipalities, village councils and common service councils, who report to the Ministry of Municipal Affairs, except in the case of the Greater Amman Municipality which reports directly to the Prime Minister.
- Governorate departments of **line ministries** (water and irrigation, health, agriculture, etc.) These departments generally have limited decision-making power at governorate or municipal level. Financial management and budget control is controlled at the national level.

The Administrative Governor is the ultimate authority in the Governorate. He is responsible for security and controlling service delivery in cooperation with concerned line ministries. There are 12 Governorates in Jordan. The Cabinet of Ministers appoints the Governors. Two councils assist each Governor:

- The Executive Council, which is comprised of local representatives of different ministries
- The Advisory Council, which is comprised of Parliament members, mayors of municipalities, NGOs and trade unions.

The Advisory Council does not have decision-making power. However due to its composition, it allows for some input of local leaders (politicians, mayors, NGO officials, etc.) in development planning.

Village Councils represent each area with population of 2,500 or less. According to Village Administrative Law No. 25, a village is “any place recognized by the Minister of Municipalities to be a village or tribal settlement”. The Governor assigns council members to represent local residents, and always include traditional chiefs. By law, the Governor controls all activities and decisions of the Council.

Common Service Councils combine the resources of several villages and/or municipalities for a shared specific task (for example, administration of garbage disposal sites or public schools).

According to the Director of O&M for Sewerage Systems in WAJ, to build a new WWTP without delays or resistance it is crucial to garner local support. (Rushaideh, personal communication). In choosing a site for a new WWTP, WAJ conducts a 3-4 month consultation process consisting of frequent meetings with local leaders, including the mayor, the Village Council, and other influential leaders. The process considers these bodies’ views although, according to regulation, they have no formal role in the process. (Rushaideh, personal communication).

The Municipalities Law (No. 59 of 1955) states that the “Municipality is a civil institution with financial autonomy”. Article 41 of the law gives municipalities power to manage almost all aspects of services and development, “subject to other laws”. Thus, any subsequent law, for example, WAJ Law of 1988, which gives another government agency authority, supersedes the Municipalities Law.

In practice, municipalities have had limited decision-making power or financial autonomy. However, reforms commenced in 2002 to strengthen local governance have included:

- Adjustment in size of municipalities, with merging of small and neighboring councils, reduction in the number of village councils and creation of some new municipalities. The total number of municipalities has gone from 350 to less than 100 in the last two years.

- Conducting elections for half of the Municipal Council. The other half is appointed by the MOMA.
- Increasing municipal ability to generate additional revenue through, for example, an increasing share in the fuel tax, and increased local building taxes.
- Allowing some municipalities, with authorization from the Ministry of Finance (MOF) , to collect water and wastewater tariffs.

Municipalities still have very limited capacity to plan and manage sustainable and financially viable development projects. Their total spending is less than 6% of total government spending, a figure considered low in comparison to 20-30% in other developing countries. Their sources of revenue are still limited and central government controls all local revenues.

In practice, the Administrative Governor still has ultimate authority in development and financial matters, in coordination with central government. The level of partnership between government and non-governmental organizations (NGOs) is still relatively low.

3.4 GOVERNMENT AGENCIES WITH DEVELOPMENT ROLES

The **Ministry of Planning and International Cooperation (MOPIC)** manages the **Socioeconomic Transformation Plan (SETP)**, which aims to reduce centralized management of development activities. This devolution of power delegates greater administrative and political autonomy and development mandates to the governors. In the MOPIC, the **Enhanced Productivity Program** works to improve local level management of development activities, including capacity building for governorates, municipalities, community based organizations and NGOs. According to the MOPIC website, the philosophy that the government "...has a decisive role to play in *facilitating* the ability of all Jordanians to improve their lives, particularly the less-developed and underprivileged communities....with the government playing the role of enabler and supporter" influenced the ideas behind the EPP (www.moipc.gov.jo).

The EPP supports a variety of programs, including:

- The Rural Clusters program, managed by several international NGOs in different parts of Jordan. This program includes a reportedly successful activity in Shobak, which the Small Communities Project serves. The mechanism for working together is an association, according to the MOPIC description.
- The Strengthened Jordanian NGOs Program to improve the ability of community based organizations to assist their constituents.
- The Community Infrastructure Program in which development experts from NGOs and the private sector will provide capacity building services to assist Governorate staff in preparing competitive bids for local development projects.

These various plans and programs aim to strengthen management in Governorate administrations (MOI) and municipalities (MOMA). Continuing investigation in parallel with the preparation of the feasibility studies will clarify the roles, responsibilities, and decision-making powers of these government bodies.

Parliament has established the **Jordan Cooperative Corporation (JCC)** to support the formation of cooperatives. Legislation governing cooperatives allows individuals to establish them, and to undertake activities of their own choosing. JCC registers all cooperatives and provides them with technical assistance. The rules and regulations of cooperatives are complex, and a clear legal framework is in place to support them; but the actual process of registration can be tedious and lengthy. Several farmers' cooperatives for irrigation water management established themselves in the Jordan Valley with the assistance of the GTZ-funded Water Management for Irrigated Agriculture Project. The JVA considers these successful associations as models for future management of irrigation in the Valley (GTZ, 2004).

The **National Resources Authority** is responsible for protection of underground water resources and therefore is involved in site selection for wastewater treatment plants.

The project team considers the above government agencies to be most relevant to WWT&R activities. Throughout the preparation of the feasibility studies and the drafting of institutional agreements, the project team may identify and consult with other stakeholder agencies.

3.5 NON-GOVERNMENTAL ORGANIZATIONS

3.5.1 TYPES OF ORGANIZATIONS

Numerous non-governmental organizations (NGOs) play a role in development in Jordan. Activities of some of them support the water, wastewater and agricultural (water reuse) sectors; others are more involved in local capacity building across sectors. NGOs working through local government have been instrumental in establishing local-level organizations to support development activities. These organizations can take a variety of legal forms, such as:

- **Societies** – registered with the Ministry of Social Development (MSD). Regulations vary for the different types of societies (charitable, youth, cultural, “ordinary”, etc.). Further investigation is needed to determine their specific roles and the ease (or difficulty) of their establishment. (For example, according to an informal consultation with a legal expert, the Ministry of Interior in fact has the power to license, register and supervise Ordinary Societies—even though MSD registers them.)
- **Non-Cooperative Specialized Agricultural Societies** – registered with the Ministry of Agriculture, based on the Agricultural Law of 2002. To date no society of this type exists, however.
- **Associations** – are established at national level for certain professions, but as noted above, they also exist at the local level through the Enhanced Productivity Program.
- **Cooperatives** – as described above, cooperatives are linked with the quasi-governmental Jordan Cooperative Corporation. In practice, at local level, they operate independently from both the JCC and the government, just as do other societies and associations.

The project team will work with stakeholders to determine whether existing organizations could or should manage the WWT&R activities. If we collectively agree that new organizations should emerge to manage WWT&R activities, stakeholder participation will contribute significantly to defining the appropriate organizational framework.

3.5.2 EXAMPLES OF RELEVANT NGOS

The list below, though not exhaustive, identifies key NGOs that are carrying out (or have carried out) activities germane to the Small Communities project. Lessons learned from their activities may be relevant. Further investigation will be needed at the feasibility stage to identify these lessons, and to identify locally active NGOs in the selected communities.

The **Royal Scientific Society** (RSS) is a non-governmental organization that conducts routine water, wastewater and soil monitoring and surveillance for different government bodies and the private sector. Although mainly working on a contract basis, the RSS is also a partner with government in research and implementation on projects related to standards, monitoring and surveillance.

The **Jordan Badia Research and Development Programme** (JBRDP) was involved in planning and management of a water reuse pilot project in Wadi Musa, which is close to the selected community of

Shobak. The JBRDP chose to work through an association of retired military personnel, as this NGO is unbiased, experienced, and representative of the general population.

The **Royal Society for the Conservation of Nature** (RSCN) has experience throughout Jordan in working closely with communities to establish commercially viable, yet environmentally sound development projects. The RSCN has a strong presence in Azraq, where it has worked closely with the local community in establishing two reserves. One of them, a wetland reserve, has been successful in partially reclaiming wetlands.

The **Jordan Farmers' Union** is the counterpart for the water reuse component of the Tell Al Mantah wastewater treatment and reuse project in the Jordan Valley. It is widely represented in the Valley, but does not have the full trust of many farmers.

The **Jordanian Exporters and Producers' Association** is working closely with MOH and MOA on establishing regular microbiological testing of products irrigated by treated wastewater. The organization is also active in developing government policies related to agriculture and irrigation.

3.6 PRIVATE SECTOR PARTICIPATION

As a matter of national policy, the government encourages private sector participation (PSP) in the water sector and other sectors to increase efficiency of service delivery. In the area of wastewater collection, treatment and reuse, there are several examples of PSP in Jordan.

Septage tankers collecting septage from households are generally operated by the private sector, although a few are operated by municipalities. Chapter 6 below provides more detail on their day-to-day operations. Some tankers are owned and operated by a single individual; others are operated by truck drivers working for a registered company.

In Amman, the LEMA Company has a management contract to treat and supply water to the Greater Amman Municipality, and to collect and treat wastewater at As Samra WWTP. The Water Reuse and Environment Unit of WAJ, which manages wastewater reuse throughout the country, is responsible for management of the sale of treated wastewater to farmers from As Samra WWTP.

A Memorandum of Understanding (MOU) between the Aqaba Special Economic Zone Authority (ASEZA) and the Water Authority of Jordan, with the approval of the Council of Ministers, established the Aqaba Water Company (AWC) in mid-2004. It is a limited liability company formed to provide water and wastewater services in the Aqaba Special Economic Zone (ASEZ) and the Aqaba Governorate., with all shares currently owned by the government. Legally, AWC can in the future be transformed into a private or public shareholding company in accordance with the Companies Law. The exact roles and responsibilities of AWC and ASEZA in TWW management are still under discussion.

The Northern Governorate Water Authority has been testing the concept of “micro-PSP”, which is defined by the NGWA website as “...outsourcing of clearly identified business processes in operation and maintenance of water supply and wastewater disposal”. Outsourcing to date has included customer billing for one area of NGWA.

Future plans for PSP in the water sector are under discussion, and could include management contracts or other PSP mechanisms in Governorates where the communities covered by the Small Communities Project are located. The project team will continue to monitor these developments in its planning for institutional management of wastewater treatment and reuse.

4 STANDARDS, MONITORING AND SURVEILLANCE

4.1 STANDARDS

At present, there are three approved sets of standards relating to wastewater treatment and reuse in Jordan:

- Jordanian Standards for Reclaimed Domestic Water -- No. 893/2002
- Sludge – Uses of Treated Sludge in Agriculture -- No. 1145/1996
- The Jordanian Standards for Industrial Waste Water -- No. 202/1991

MWI policies call for continual review and upgrading of these standards as necessary. Various institutions and projects are reviewing the relevant standards. Likewise, under the Small Communities project, the contractor team will need to work with WAJ and its partners to examine the appropriateness of the existing water reuse standards and the eventual need to revise such standards for wastewater treatment and reuse systems for small communities.

The standard for use of treated sludge outlines two levels of treatment, quality standards and allowed utilization. WAJ laboratory staff indicate that these standards are not fully relevant to Jordan and that they will likely change in a few years. The International Development Research Centre (IDRC) is conducting a detailed analysis looking towards a revision of the standards and WAJ laboratory staff are confident that within a few years the government will approve a new set of sludge standards. The KfW Water Reuse Project is also reviewing the standard.

Various donor projects are supporting the development of additional guidelines and regulations. The GTZ-funded Reclaimed Water Project (RWP) has developed irrigation water quality guidelines for brackish water or water that may have mixed with TWW. They do not apply to non-diluted treated domestic wastewater. The RWP is also working on **Product Quality Guidelines** covering products irrigated with TWW.

The USAID-funded Watershed Management Project is developing **Watershed Guidelines and Regulations** to, among other things, establish protection zones shielding springs and other water sources from wastewater and runoff containing agricultural and other pollutants.

According to a Center for the Study of the Built Environment (CSBE) report on graywater reuse, “The Jordanian regulations governing household plumbing are the *Sanitary Wastewater System Code*, and the *Water Supply Code* (Ministry of Public Works and Housing, 1988). These codes provide guidelines for the design and installation of plumbing systems on domestic properties, which the concerned municipalities should be monitoring. The Sanitary Wastewater System Code provides guidelines for internal and external drainage and wastewater systems, and extensive design guidelines for septic tanks. It requires building managers to discharge wastewater into the municipal drain where possible, and failing this, to a septic tank. In practice, however, these building codes are rarely enforced.

The Reclaimed Domestic Water Standard is the main guide for WAJ in planning new WWTPs. It outlines quality criteria for five levels of use of treated wastewater:

- Discharge of water to streams or wadis or water bodies
- Artificial recharge of groundwater aquifers

- Irrigation of vegetables that are cooked prior to consumption; and also for parks, playgrounds, and roadside vegetation within city limits
- Irrigation of fruit trees; and of landscapes and roadside vegetation outside of city limits
- Irrigation of field crops, industrial crops and forest trees.

A KfW-funded feasibility study on Water Reuse (GITEC/AHT, 2004) provides a detailed analysis of the standard, including a comparison of the current and the old (1995) standards. Below are the points relevant to the Small Communities Project:

- “Since the wastewater treatment plant owner cannot know how people will use the treated effluents, the standard forces him to produce water that meets the strictest requirements for use in irrigation of vegetables that are cooked prior to consumption. The project team believes that this ambitious target for domestic wastewater purification could entail substantial and unnecessary treatment costs.
- Both standards (1995 and 2002) prohibit the use of reclaimed water for irrigation of vegetables that are eaten uncooked. The older standard included examples. The new one does not. This may be an oversight. However, the draft of “Treated Waste Water, Saline Water & Brackish Water Usage in Irrigation - Instructions & Conditions” lists some crops that can use treated wastewater.”

For the Small Communities Project, if the communities do not plan to grow produce requiring the highest quality of TWW, the project team will work with the stakeholders to determine the actual quality of wastewater effluent required from the WWTP. This will require considerable attention to monitoring and surveillance not only of the effluent itself, but also of reuse practices.

4.2 MONITORING AND SURVEILLANCE

The MOE Law, WAJ Law, and MOH Law all assign their respective institutions with responsibility for water and wastewater quality monitoring. MOE is concerned with environmental protection to ensure public health and long-term environmental sustainability. WAJ is most concerned with protecting water resources, also for public health. Public health concerns are a primary concern of the MOH, and its focus is mainly on testing of microbiological parameters. The MOH and WAJ communicate and coordinate closely on monitoring and surveillance plans, results and responses to those results. The MOH can close down any wastewater treatment plants operated by WAJ or any of its agents (i.e., LEMA or AWC). It can also close down any private plants it deems are a danger to public health.

In practice, the WAJ monitors wastewater treatment plants connected to the sewer system. For those who recycle their own wastewater, monitoring levels depend on perceived risk. If on-site WWTPs have no connection to the sewer system, the Ministry of Environment takes monitoring responsibility, although WAJ laboratory personnel reported that they do most of the actual testing for the MOE.

Other government agencies are also involved, but to a lesser extent. According to the GTZ-funded reclaimed water project, “At present a wide range of Jordanian governmental and non-governmental organizations are involved in wastewater management, use of reclaimed water, as well as related environmental and health activities. Existing institutional problems are mainly related to the multitude of institutions involved with any possible inherent weaknesses, insufficiently defined responsibilities, as well as insufficient coordination between the institutions.” (Ziegelmayer and Jaber, 2003)

The abovementioned paper lists the various types of testing and which agencies are involved (see box). The KfW Feasibility Study (2004) provides a detailed analysis of the current water quality monitoring and surveillance system. It calls for an independent institution to monitor TWW quality.

For purposes of the Small Communities Project, it is important to ensure that the responsible authorities contribute to planning wastewater treatment and reuse and soil monitoring and surveillance programs.

Monitoring and Surveillance Concerns of Various Institutions

Effluent quality monitoring:

- MWI – has central database of all water/wastewater quality monitoring
- WAJ Laboratories
- LEMA, AWC, NGWA
- WWTP operators do regular testing of basic parameters
- MOH (public and private WWTP)
- MOE

Irrigation water:

- Irrigation water – JVA
- Suitability of TWW for certain crops – MOA
- Environmental control – MOE

Groundwater monitoring

- Regular monitoring - WAJ
- Safe potable water sources - MOH
- Environmental protection – MOE

Soil monitoring:

- Protection of soil - JVA
- Field lab analysis related to agricultural production – MOA
- Environmental protection – MOE

Crop monitoring:

- Protection from disease caused by wastewater – MOH
- Protection of human and animal health – MOA
- Crop quality for export - MOTI

(Adapted from Ziegelmeier and Jaber, 2003)

5 PRICING ISSUES

The Ministry of Water and Irrigation, subject to the approval of the Council of Ministers, sets tariffs for water supply, wastewater collection, and use of treated wastewater. WAJ collects tariffs in all cases excluding:

- Amman, where LEMA collects tariffs on behalf of WAJ;
- A few municipalities, which have Ministry of Finance authorization to collect tariffs on behalf of WAJ. According to the WAJ lawyer, this is a new role for municipalities under the recently amended Tax and Property Law (Awad, personal communication). The Ministry of Finance gives this authorization based on an assessment of the municipality's financial management capabilities. Although this entails increased responsibilities for municipalities, it does not provide them with any additional revenue.
- The Aqaba Special Economic Zone, where the Aqaba Water Company (AWC) collects tariffs and retains all receipts. The AWC has the most independent financial control over water and wastewater services, but still must have the approval of the Council of Ministers to raise tariffs.

WAJ sets tariffs for septage tankers at JD 20 per month for dumping their septage at WAJ WWTPs, regardless of the tanker size or how often they discharge at a WWTP. Consumers pay between JD 10 and JD 30 to the septage tanker drivers for emptying their cesspits. The price is a matter of negotiation between tanker drivers and individual consumers. Not only do the usual factors of family size and water consumption determine the frequency of emptying, but also the amount of seepage from pits. In North Shouneh, for example, where there is little seepage, households pay approximately JD 13 per month, with the tankers dumping septage in nearby wadis (this practice was stopped by order of the mutesarref in December 2004). However, if the tankers were to dump septage at the Akaidier Treatment Plant, the approved (but distant) location, the cost would be as high as JD 65 per month. WAJ charges JD 55 to households if their septic tanks overflow, but many cannot afford the fees for emptying them (ECODIT/IRG, 2004).

Wastewater fees for households connected to sewer lines include an initial charge based on house size and type, monthly charges as a percentage of the water bill (approximately 12%) and an annual fee. The municipality collects the annual fee as part of its property tax; the WAJ or its agents (LEMA and AWC) collect other fees.

The national price for treated wastewater for irrigation is 10 fils/cubic meter and is set with the approval of the Council of Ministers. The price for industry is not controlled by legislation; it is a matter of negotiation between WAJ and the specific industry. In Aqaba, the Jordan Phosphate Mining Company (JPMC) in Aqaba has agreed to pay 700 fils/cubic meter for TWW once the new Aqaba WWTP is operational (WAJ-JPMC MOU, 2003). At the national level, numerous papers, conferences and studies have discussed the issue of increasing the tariff for treated wastewater to contribute to WWTP O&M costs. In many areas, however, the price for extracting irrigation water or buying government-supplied irrigation water (e.g., the Jordan Valley) is extremely low. Therefore, buying TWW will be attractive mainly in areas where farmers feel they do not get enough water for existing farms, or where people can establish new farms.

Water prices vary considerably throughout the country and for different uses. For piped domestic water, the price in Amman is higher than the rest of country. Tariffs, in both Amman and elsewhere, are set according to consumption level. A flat tariff covers the first 20 cubic meters per quarter. A graduated tariff on higher levels of consumption discourages wasteful water use. For sewerage wastewater, there are three prices: one for Amman, one for Zarqa, and one for the rest of the country.

Ministry of Water and Irrigation, Utility Policy, 1998

The water tariffs mechanism shall be considered as a tool to promote cost recovery of water projects. However, profitable undertakings in industry, tourism, commerce and agriculture shall be made to pay the fair water cost. Moreover, the Ministry will attempt to set differential prices for water based on water quality, the end users, and the social and economic impact of prices on the various economic sectors and regions of the country. The Ministry will also attempt to regularly review and adjust water tariffs based on the costs of supply, operations, and the comprehensive analysis of economic data.

The Ministry of Water and Irrigation policy (see box) in its action and investment plans, provides for:

- Differential pricing for different qualities of water and different end uses
- At a minimum, pricing of water, sewerage and treated wastewater sufficient to recover operations and maintenance costs.

This is compatible with the Small Communities Project's goal of recovering the operating costs of the WWT&R system.

The USAID-funded FORWARD project, the Water Resources Policy Support Project (WRPSP) and the KfW Feasibility Study on Water Reuse conducted

studies on water and wastewater tariffs. All of these studies agree on the following principles:

- Differential tariffs for irrigation water are needed to ensure that farmers are willing to use water of lower quality, thereby freeing up fresh water for domestic use.
- Although the price of irrigation water in the Jordan Valley was raised recently, it is still far below the level required to encourage farmers to conserve water by irrigating less or by switching to treated wastewater.
- Viable tariff plans require additional studies of subscriber "willingness to pay."
- Industrial consumers should be required to pay high rates. (This is in fact happening in Aqaba, where the Jordan Phosphate Mining Company has agreed to pay 700 fils/cubic meter.)

Work continues on developing a tariff structure that will ensure cost recovery. However, implementation of such tariffs are very sensitive from a social perspective and many expect that any change will be gradual, as no detailed plans exist

In the management of its WWTP, WAJ has not implemented tariffs that recover O&M costs. In its feasibility study, the Small Communities Project will develop recommendations for treated wastewater tariffs. If these are compatible with nationally approved tariffs, it will facilitate implementation easier. If not, then the project team will need to work closely with the local community to get approval of tariffs and with WAJ to obtain all necessary approvals for tariff changes.

6 SEPTAGE COLLECTION AND REGULATION

Most cesspits in Jordan are just that – cesspits, not septic tanks. Septage seeps into the groundwater, posing a potentially severe hazard to public health and the environment. The estimated cost of building a proper septic tank in one community surveyed is about JD 600 (ECODIT/IRG, 2004). Most households in fact prefer a cesspit that allows seepage, as this reduces the frequency of emptying and associated costs.

Privately owned tankers collect most septage, but there are a few municipalities that own tankers. Shobak is one municipality that sold its tanker because it was losing money. The individuals and companies managing septage collection determine collection prices. WAJ registers and regulates all private tankers, permitting each tanker to dump an unlimited number of times for a fee of JD20 per month; but at only one specific WWTP (see box). A few years ago, WAJ attempted to establish a schedule of fees based on tanker volume. Under pressure from tanker drivers, however, they reverted to the set fee of JD20 per month regardless of volume.

In its role as regulator, WAJ requires WWTP operators to report when tankers authorized to use them fail to dump septage for a specified period. WAJ then investigate the septage tanker activities to ascertain that the tanker is not violating of its permit by dumping at another site.

1989 Instructions, No. 4, WAJ - Instructions and Conditions for Septic Tanker Operations

Key duties, responsibilities, and restrictions on septic tanker operators include:

- Keep daily records of quantities, locations pumped from and number of trips
- No disposal of industrial discharge at WWTPs
- Registration at specific WWTP required:
 - JD 100 security deposit paid at WAJ Central Treasury (to cover fines, payment of monthly fees, or stopping work without prior notice to WAJ)
 - JD 20/month for dumping at WWTP or other designated/authorized location
 - Dumping only allowed at specified WWTP with evidence of payment of monthly fee or registration
 - Inspection can be done by Septage Monitors
- Must notify WAJ if stops working or changes location
- If “not found” (i.e., do not dump at registered site) for two months, cannot resume without a new application to WAJ Governorate office

7 WASTEWATER REUSE

WAJ manages all contracts for reuse of TWW. The tariff for farming was set at 10 fils/cubic meter to encourage farmers to use the TWW. The Water Reuse and Environment Unit have signed agreements with 68 farmers, the Ministry of Agriculture, the Petra Regional Authority (for a farmers' group in Wadi Musa), one with ASEZA, and the Jordan Phosphate Mining Company.

There is an overall guide for agreements, as well as individual agreements with all individuals and organizations using TWW. Appendix C contains an initial, informal translation of the key points of these agreements. General terms of agreements include:

- Provision for TWW quality monitoring, and soil and plant analysis.
- Restrictions on agricultural uses, with various provisions to protect safety of nearby sites and the crops themselves.
- No use of TWW for sprinkler irrigation or in fisheries during times of high winds.
- TWW piping requirements.
- TWW price (10 fils/cubic meter as set by the Council of Ministers) and procedure for adjustment, if necessary.
- Requirements for detailed information on agricultural practices, cropping patterns associated with TWW and other general farm activities, including identification of product and price at each location.
- Liability of farmers for damages resulting from TWW use.
- Provisions enabling WAJ to reduce or completely stop providing TWW without prior notice and without any liability
- Provisions enabling WAJ to cancel a contract for any breaches, after giving 7 days notice to rectify the situation
- Provisions absolving WAJ of any responsibility for the quality or for changes in the quality of TWW provided; farmer can request and look at agriculturally-relevant TWW analyses if these are available
- Farmer's liability to pay for any damages / harm to third parties, or to WAJ if the concerned third party to WAJ for compensation.

All agreements have similar terms, with a standard amount of TWW agreed upon based on land area. Until recently, many farmers were only paying one fil/cubic meter; but according to the WREU, they have not objected to the recent increase to 10 fils/cubic meter (Rashdan, personal communication).

8 RELATED PROJECTS AND INITIATIVES

The key to success of the institutional aspect of the Small Communities Project will be local level management, with input from community, municipalities, line ministries and NGOs. The concept of community level management, even by municipalities, of development projects is relatively new in Jordan. However, some projects have experimented with it and the project team intends to learn from further examination of these projects during the feasibility study. Even projects that are not in the water sector can provide useful information about how to strengthen the capacity of community-level organizations.

A partnership of the public sector, the private sector and NGOs has established '**Knowledge Station**' Technology Community Centers as part of a wide-ranging initiative designed to promote access to technology resources and training for Jordanians throughout the country. Knowledge Stations are managed and operated by local communities and are hosted by youth clubs and other voluntary and charity organizations. North Shouneh, Shobak, and Azraq all have Knowledge Stations. The Community Mobilization Section of the Knowledge Station project is conducting fieldwork to assess the needs of users in each community. These studies will precede activities designed to link social and economic development. Information from these studies in the selected communities will prove useful to the Small Communities Project.

The **Jordan Hashemite Fund for Human Development** provides support to development projects throughout the Kingdom, including support to local NGOs, such as the Shobak Centre for Human Development, located in one of the communities selected for the Small Communities Project.

The experience of the GTZ-funded **Water Management and Irrigated Agriculture Project**, which supports farmer user associations in close coordination with JVA, should be reviewed in light of the fact that North Shouneh is located in the Jordan Valley.

The CIDA-funded Jordan Valley Integrated Waste Management project, commonly known as **Tel el Muntah**, consisted of the design, construction and the initial operation and management of a wastewater treatment facility near the town of Deir Allah. The facility has the capacity of treating 400CM per day of septage, serving directly the populations of the town of Deir Allah and the surrounding communities totalling about 30,000 people. The project goal was to develop a model of a low cost wastewater treatment and reuse operation with cooperation between government (JVA) and the local community. The project included a Community Participation Program (CPP) to help develop the capacity of the local community and facilitate their involvement in all stages of the project. According to both the Project Manager and project staff, the main success of this project was in the community participation component; but there were some difficulties in the broader institutional and technical issues (Nabil Anshasi, 2004). CIDA officially turned over the WWTP and reuse project to JVA and WAJ for joint management in November 2004. The successes and difficulties of this project, especially its institutional aspects, will provide valuable lessons to the Small Communities Wastewater Project.

9 COMMUNITY PARTICIPATION

9.1 OVERVIEW

The project will ensure that there is full commitment and active involvement of national and local level stakeholders. This is the essence of community participation. However, community participation is not a widespread, or even generally accepted, practice in Jordan, especially in the centrally managed water sector.

In addition to ongoing discussions with officials and community members, the Small Communities Project Kickoff Workshop held in December 2004, as documented in the first annual work plan, directly addressed the importance of broad-based stakeholder participation. Officials from each of the three communities under consideration (Shobak, North Shouneh, Azraq), as well as JVA, WAJ, USAID and the project team, participated in the workshop. Most of the second day was devoted to the subject of community participation. Working group and plenary discussions addressed the following questions:

- What is community participation and why is it important?
- What are appropriate approaches to community participation in the selected communities?
- What practical steps require action to implement community participation?

In this chapter, we assess:

- the potential for community-based management and WAJ/JVA buy-in, and
- suggested approaches for community participation in each selected community.

All conclusions below are only preliminary, based on workshop discussions, informal discussions with Small Communities Project staff who have visited the communities, and prior experience and observation of community participation in Jordan. The feasibility study will further develop and refine approaches for each community and at the national level.

9.2 STAKEHOLDERS' UNDERSTANDING OF COMMUNITY PARTICIPATION

Community participation takes different forms from project to project and among different communities and activities. During the kickoff workshop, it was clear that some participants understood community participation as providing information to the community. Others have had the experience of actually involving the community in planning and implementation of a project.

Community participation, as understood by the participants, includes the following components and benefits:

- Community understanding of the project and, therefore, its risks and benefits
- Community understanding of the project so that they can contribute to its implementation and/or sustainability
- Exchange of ideas with the public for better understanding and general acceptance
- Financial, moral, and intellectual contribution of the community for the benefit of all
- Day-to-day involvement of the community (including NGOs and community-based organizations) in various aspects of the project, including:

- Site selection
- The choice of reuse activities
- Acceptance of septage pumping
- Involvement of the private sector, i.e. investments (by “large investors”) on behalf of the community (*i.e.*, PSP)

In the Small Communities Project, the key questions are:

- Who is going to be involved in designing, managing and monitoring the facilities?
- What will be the roles of and relationships among the different parties involved?

9.3 POTENTIAL FOR COMMUNITY PARTICIPATION

There is no “correct” level of community participation. Each project and each community is unique. Community participation is a means to an end, and the level of participation ranges from consultation with community members, to full participation of all sectors of the community in a project.

In the Small Communities Project, community participation is a means to demonstrate and ensure commitment and to support project sustainability – i.e., the local community will accept responsibility for institutional arrangements covering plant operation and maintenance of WWT&R and will finance the costs without central government subsidies. The level of participation will vary from community to community, depending on community size, the perceived need for the project, community dynamics, and the attitudes of government officials in each area. Preliminary assessment based on the workshop indicates that there is great potential, but limited actual experience, for participation at the community level. The project team will place additional effect at this level. Further work at the community level will enhance to opportunities for the project to realize its full potential.

At the national level, participants, including WAJ staff, felt that there was a need to educate WAJ, especially decision makers, about the need, potential and tools for community participation. Support from decision makers in WAJ and JVA, and at the governorate level, especially the Administrative Governor, will be among the target groups for further awareness initiatives in order to gain their support.

In the **Shobak** area, the municipality has ISO 9000 management certification, which indicates high administrative capability and performance. There are several community-based projects, setting good precedents for community involvement in development. The Shobak area under consideration by the project also includes several small villages, which by virtue of their size means that community members would have greater input into any community decisions on an informal basis.

In **North Shuneh**, a town of 50,000 people, one might consider that the potential for community participation is more limited, due to the sheer numbers of people involved. However, during the community selection survey, municipality and community members expressed their great desire for the project due to continuing health and environmental problems associated with wastewater management. The fact that the community members need and want this project will help to encourage community participation.

In North Shouneh, there are also several active community organizations, such as the Waqqas Cooperative, which runs a successful dairy and other food products initiatives, providing revenues to the community. There is also an active Knowledge Station to help develop community-based activities. In addition, the JVA and WAJ both have experience in community involvement in the Jordan Valley, through the Tel Al Muntah project and the Water Management for Irrigated Agriculture (water users’ associations) project.

Azraq, through its work with the Royal Society for the Conservation of Nature, has the most experience with community participation. In fact, according to the Community Selection Survey, there is potential for local

conflicts between communities/sects, competition among stakeholders for plant O&M (RSCN vs. Municipality) and for water reuse (RSCN vs. farmers). One Azraq municipality staff member also works with the RSCN, through which she gained valuable experience in the methodologies for community participation. Thus, both the municipality and the citizens have hands-on experience with community participation.

The challenge in Azraq may be to convince the general community that their active participation will be to their benefit. At this time, their septic tanks seep into the ground and they do not have high emptying costs. While this damages the groundwater aquifer, which supplies drinking water to Amman, it has minimal affect on Azraq residents.

9.4 SUGGESTED APPROACHES TO COMMUNITY PARTICIPATION

Participants proposed that at local level all groups representing civil society and government (see box) should participate. Some only need status reports; others must be full project partners. National level representatives of government agencies other than MWI (i.e., WAJ and JVA), such as MOH, MOA, and MOE must also be engaged in the process.

Successful participation will require the project to provide critical information to the right groups and facilitate good communication among project stakeholders. One of the main concerns that stakeholders expressed in the workshop was the exact format and process of coordination and communication with project staff, and with other stakeholders. Community participation takes time. The challenge will be to ensure participation without in any way delaying project implementation.

During 2005, the project team will work with key officials to develop an integrated communication and participation plan. The plan will address stakeholder information needs and build on an assessment of their potential roles and responsibilities. The plan should define the optimal strategies to assure active community participation, including public awareness programs, education, capacity building, and linkages to facilitate community participation at the national level. The role of the project in facilitating community participation beyond 2005 will also be included.

The plan will incorporate specific recommendations on approaches made by workshop participants, including:

- **Designate a contact person** and back-up contact in each community to ensure smooth, dependable coordination and communication.
- **Educate the community** on the concept and techniques for “community participation” at all levels of decision making from the Minister on down. This is critical to the success of the project. It is essential that we communicate the importance, procedures, applications, and implications of community participation with respect to this project
- **Work on clarifying roles and responsibilities.** This too is a key to project success. The consultant is a critical coordinator and technical guide for the involved parties, although other individuals and agencies will, of course, have the responsibility for (and the benefits of) achieving the goals of the community.

PROJECT STAKEHOLDERS

(as identified by participants in the kickoff workshop)

- Administrative Governor
- Municipality officials
- Local citizens
- Religious leaders
- Official community representatives
- Mukhtars
- Tribal leaders
- Tanker owners and drivers
- Representatives from national-level committees and organizations
- Representatives from related ministries

Consultation and consensus building on roles and responsibilities will be essential to determine the final institutional arrangements for management of WWT&R at the local level.

- **Define a central role for the Administrative Governor** (mutesarrif) in supporting the project. The project team has already met with involved governors to plan the project (see next point).
- **Undertake other specific communication activities, e.g.:**
 - **Convene an open community meeting** to define the composition of a local steering committee; these meetings have already taken place in Shobak and North Shuneh.
 - **Produce a project brochure** as soon as possible
 - **Produce a project video**
 - **Hold an open day for** farmers, schools, etc., to broaden community understanding and commitment
 - **Continue consultations** with individuals and groups.
- **Conduct surveys and other information gathering initiatives.** This will be the first opportunity for involvement of many stakeholders, and therefore is the beginning of the process of building stakeholder commitment and buy-in to the project. Surveys and other information gathering activities, carried out as part of the community selection process, will continue during the feasibility study. All agencies, projects, companies, NGOs, and individuals mentioned in this report will be consulted for the feasibility study. They will provide input in formulating the study questions and will participate in obtaining the answers. This will be an important commitment- building step that will enhance their ownership of the project, maximize transparency and bolster confidence in the outcomes.
- **Develop collective agreements** to be signed by key stakeholders to ensure clear delineation of roles and responsibilities.

10 CONCLUSIONS AND NEXT STEPS

10.1 INSTITUTIONAL ROLES AND RESPONSIBILITIES

Table 1 summarizes the various roles of government institutions in water and wastewater management, including water and wastewater quality monitoring and surveillance. Many of these institutions are important stakeholders in the project. The private sector and NGOs also have a role to play. The next project stage will focus on identifying local-level institutions that can assume responsibility for the management of WWT&R in order to ensure long-term sustainability.

At the national level, WAJ is the main government counterpart for the Small Communities Project. However, the North Shouneh area considers the JVA as a key partner, due to its critical role in water resources management and reuse. In the Tell Al Muntah project, WAJ owns and manages the wastewater treatment plant; JVA coordinates with a farmers' group on management of the reuse activity. In the Small Communities Project, management will be through local organizations. This will require continuous coordination with WAJ (and also with JVA in the case of North Shouneh) to define institutional responsibilities.

Various institutions and projects are reviewing the relevant standards. There is no need for the project to duplicate these efforts, only to be aware of them and any planned changes. Project personnel will consult with the responsible authorities in planning wastewater and soil monitoring and surveillance programs.

The Administrative Governor (or his representative) is the key representative of the King and plays a pivotal role in mobilizing the local community. He coordinates closely with line ministries at local and national level, and with local authorities and interest groups. The project will keep him informed and involved in the project in order to ensure full support.

The role of local government is undergoing rapid changes due to government policy of promoting decentralization. There will be further investigation to clarify evolving roles, responsibilities, and decision-making powers of municipalities and of the Administrative Governor at local level. National and local-level studies will continue on the most appropriate legal and institutional mechanisms for community-level management of wastewater treatment and reuse.

Table 1: Government Institutions with Potential Role in Small Communities Project

Institution	Current role
Council of Ministers	Approves water/wastewater/treated wastewater tariffs, by-laws, and any contracts JVA or WAJ may enter to transfer functions to independent private or public sector entities.
Ministry of Water and Irrigation	Water resources planning
Water Authority of Jordan (MWI)	Water and wastewater management, including reuse of TWW, supervision of septage tankers, construction, operation and maintenance of WWTPs, water and wastewater quality monitoring
Water Council	According to WAJ Law, should be established at local level
Jordan Valley Authority (MWI)	Jordan Valley development, including water resources development and irrigation (applies to North Shouneh only)
Northern Governorates Water Authority (WAJ/MWI)	Water and wastewater management in Northern Governorates (covering North Shouneh)
Wastewater Management Committee (MWI, private sector, universities)	Advises on policy and planning for wastewater management

Institution	Current role
Ministry of Health	Water and wastewater quality monitoring, supervision of wastewater treatment plants, public health protection from wastewater reuse (workers, residents, and consumers of crops)
Ministry of Agriculture	Agriculture – compliance with standards and rules on use of TWW in irrigation – also oversees Non-Cooperative Specialized Agricultural Societies
Ministry of Environment	Environmental protection – including water and wastewater quality monitoring
Jordan Institute for Standards and Metrology, Ministry of Trade and Industry	Issues standards
Ministry of Interior	Ultimate authority at Governorate level – responsible for security matters, development – also licenses and supervises Ordinary Societies
Village Councils (MOI)	Development at village level
Common Service Councils (MOI)	Coordinate service delivery among group of villages/municipalities
MOMA (Municipalities)	Coordination with WAJ/JVA on water and wastewater planning and implementation/enforcement of building codes. In some areas, tariff collection.
Ministry of Planning and International Cooperation	Capacity building at municipality and local community level
Jordan Cooperative Corporation	Cooperatives register with JCC and receive support
Ministry of Social Development	Registers Ordinary Societies
National Resources Authority	Site selection for WWTP

10.2 MANAGEMENT TRANSFER TO LOCAL LEVEL INSTITUTIONS

If possible, it would be in the interests of all project stakeholders to ensure that institutional arrangements do not require legislative or regulatory changes in the short term, thus avoiding a controversial and time-consuming task. The legal structure exists for transfer of management responsibility. The project team has concluded that all likely institutional structures and agreements required to assure the success of the Small Communities Project can readily be structured to conform to all existing laws and policies.

WAJ and JVA Laws allow for the transfer of management responsibility for wastewater treatment and reuse (i.e., irrigation) to either other public sector agencies (such as municipalities) or the private sector. There are precedents for such transfer of management authority for wastewater treatment (Aqaba Water Company and LEMA), wastewater reuse (Wadi Musa and Tell al Muntah), and for private sector development of their own wastewater treatment plants (industry and hotels).

WAJ Law allows transfer of assets for water resources management, but only under very specific circumstances. JVA Law does not allow transfer of assets for water resources management or irrigation. Therefore, for the Small Communities Project, the project team proposes to aim for the transfer of management responsibility only, not ownership of the project.

10.3 NEXT STEPS

Appendix C lists further questions that the feasibility study will ask to assist in the process of identifying local stakeholders, clarifying their roles, and ensuring close coordination with appropriate authorities at the national level. The feasibility study is useful, as not only an opportunity to collect information, but also to increase stakeholder involvement in and commitment to the project.

During the feasibility study and beyond, the Small Communities Project will keep abreast of developments in revision and creation of new standards, water and wastewater pricing, and private sector participation. The roles and responsibilities at national and local levels will need extensive consultation and consensus building.

The Small Communities Project will provide recommendations on sewerage and treated wastewater tariffs in the feasibility study. If these are compatible with nationally approved tariffs, it will make the process of implementation easier. If not, then the project team will need to work closely with the local communities involved to get approval for tariffs and with WAJ to ensure all necessary approvals are obtained for tariff changes.

APPENDIX A: CONTACTS AND REFERENCES

CONTACTS

Mazen Abu Sa'ad, Director, Central Subscriber Directorate, WAJ

Helena Al-Naber, Environmental Analyst, Environment and Natural Resources, UNDP Jordan

Nabil Anshasi, Director, Canada-Jordan Program Support Unit and Project Team Leader

Ruby Assad, Former Project Officer, EPP, MOIPC

Abdel Halim Awad, Legal Advisor, WAJ

Osama Al Moghrabi, Head, Division of Information and Cost Recovery, Central Subscriber Directorate, WAJ

Mohammad Mansour, Director, Studies, Planning and Design Directorate, WAJ

Ahmad Oleimat, Head of Monitoring and Environmental Assessment Section

Chitra Parameswar, Chief of Party, CDM Watershed Protection Project

Ahmad Rushaideh, Director of Operation and Maintenance of WWTP and Sewerage Systems

Jamal Rashdan, Head, Agriculture Section, Water Reuse and Environment Unit, MWI

Nawal Sunna, Director of Laboratories and Quality Department/WAJ

Hatem Tieby, Consultant, Former Director EPP, MOPIC

Informal discussions at workshops with government and non-governmental experts in water, wastewater, and legal issues, and attendance at meeting with H.E. Minister of Water and Irrigation Dr. Hazim El Naser, H.E. SG Munther Khleifat and other senior MWI/WAJ/JVA staff

Informal discussions with lawyers familiar with Municipality Law and establishment of local level organizations

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APPENDIX B: WASTEWATER REUSE AGREEMENTS

SUMMARY OF TWW REUSE AGREEMENT FORMS

WATER REUSE AND ENVIRONMENT UNIT, WAJ

(Unofficial, partial translation by Project staff)

- General Conditions & Forms for TWW Reuse from the Environment & Reuse Unit
 - General Conditions
 - Allowing TWW for reuse in irrigated agriculture, industrial cooling processes, roads and other general civil works
 - Reference to JS, WHO & FAO standards
 - Requirement for regular TWW quality monitoring
 - Restricted use w/o allowing environmental pollution or public health hazards
 - Specific protective clothing and not to allow pooling of TWW on the farms
 - Prohibits use of sprinklers
 - Requirement to construct (soil) ditches/reservoirs for TWW storage in times of non-use, storing for short periods of time only
 - Advising TWW not to be used in greenhouses
 - Prohibiting use of TWW for fisheries during times of high winds
 - Specific Conditions
 - Obligation to convey TWW from the site with closed piping according to standards....
 - Setting the price for TWW at 10 fils/m³ according to the Ministerial Committee decision, allowing this to be changed if needed
 - Submit deeds etc.; consent of all partners, health officials and/or Municipality to use TWW
 - Fodder, crop restrictions and not to grow anything eaten raw
 - Requirement to conduct soil and plant monitoring and analysis
 - Provide detailed information on cultivation practices, cropping patterns associated with TWW and other general farm activities, including what is being sold, where and for how much: keep records of these
 - Not to harm and liable to compensate harm done to others or as a result of TWW

- Payment of TWW charges to WAJ or its field headquarters in lump sum or separate payments
- Must pay cash or cashiers check as a security deposit upon contract signature according to the specific terms set out
- Quantities of TWW provided can be reduced or completely stopped by WAJ without prior notice and without any liability
- Contracts are time-limited and can be renewed or terminated by either party provided 3 months notice
- All taxes, fees etc. associated with the contract are born by the user
- Pipes cannot cross lands of those who object and pipes must be allowed to cross the users land if needed if another party wants to also use the TWW
- WAJ can cancel the contract for any breaches, giving 7 days notice to rectify the situation
- Irrigation expansion is not allowed w/o prior WAJ approval
- TWW irrigation must stop 2 weeks before cultivation
- Objectives of using TWW are minimize environmental problems and pollution
- Plant and Soil Monitoring Program: Plant Analysis Form
A 12 x 21 Table (10 samples and comparison values) for various plant nutrients (N-P-K & minerals), heavy metals and toxic ions – 17 test in total
- Plant and Soil Monitoring Program: Plant Analysis Form
Two 12 x 35 Table (10 samples and comparison values) for various soil chemical (including heavy metals) and physical properties – 30 test in total
- January 2002 TWW&R Contract Between WAJ and the BRDP (Wadi Musa)
Brief summary of relevant articles not included in or that differ from those in A. above
 - WAJ is responsible for piping, pumping etc. from WWTP to end-users
 - Payments are made according to WAJ meter readings at the WWTP; JBRD can install its own meters at the user-ends if it wants
 - 10 fils/m³ paid once a year to WAJ Governorate, price can be changed w/ a decision from the Ministerial committee
 - JBRD oversees operation of irrigation distribution network
 - WAJ can reduce or stop TWW delivery if needed and without liability
 - Monitored for health and environment by relevant agencies as needed and must abide by what they or WAJ require as a result
 - JBRD to annually provide WAJ with its study/assessment reports
 - 5 year (based on JS 893/2002), renewable annually, JBRD can hand over to Wadi Musa Authority if its project stops

- October 2003 TWW&R Contract Between WAJ and Private Farmer (As-Samra WWTP)

Brief summary of relevant articles not included in or that differ from those in A. and B. above

- Farmer to convey TWW from location determined by WAJ and is there on responsible for O&M, environment, payment of electricity, cost of piping and pumps, etc.)
- Two annual payments at 10 fils/m³
- Will be supplied with 3m³/Dn on average for 26.8 Dn
- Responsible to put up warning signs on pipes etc. leaving the WWTP
- Will grow fodder all year round
- Prohibited from growing vegetable eaten raw or cooked – WAJ can confiscate w/o warning or any liability if done
- If Olives, woodland or fruit trees are irrigated with TWW, WAJ is not held responsible for anything
- Irrigation methods do not result in flows to wadis or out of the property – if fails, then WAJ can cut-off TWW w/o prior warning and farmer will be liable
- WAJ bears no responsibility for the quality of or changes in the quality of TWW provided; farmer can request and look at agriculturally-relevant TWW analyses if these are available
- Farmers is liable to pay for any damages / harm to 3rd parties or to WAJ if the 3rd party goes to WAJ
- A 150 JD security deposit, the value of which is revisited upon contract renewal
- If farmer does not allow piping to cross through lands for others, WAJ can cancel the contract
- WAJ can alter the quantities supplies or stop them completely w/o any prior notice and without the farmer being able take WAJ to court
- Farmer must provide a performance bond / security deposit which WAJ can draw upon w/o any prior notice if the farmer breaches any contract rules, laws or is fined
- WAJ can cancel the contract giving 7 days notice if there are any breaches and w/o having to go to any courts and w/o any liability
- The contract is not effective until the farmer fulfills all his obligations
- A 1 year, renewable contract, that can be cancelled by either party given 3 months notice – farmer will however must continue to pay for the average quantities of TWW until contract expiry date

Additional conditions

- ...sand ditches to prevent overflows
- electricity meters for pumping and electricity / fuel usage restrictions and payments on the farmers
- Same as *letter m.* above, but also includes any partners of the farmer

APPENDIX C: POTENTIAL QUESTIONS FOR THE FEASIBILITY STUDY

This appendix provides a guide for more detailed investigation needs during the feasibility study in each selected community. It includes questions and concerns specific to legal, institutional and policy issues. It is a guide for further discussion with project stakeholders to ensure key issues are covered and key questions answered. Investigation of the various issues raised here will be a function of Small Communities Project resources going forward. The consultant has attempted to make this list of questions and issues as complete as possible and, in the course of performing this study, we identified more institutional issues, ambiguities, and areas for further investigation than were anticipated when the project began. Given these additional areas for further study, the project team will have to evaluate the evolving institutional, legal and policy environment very carefully as the feasibility study progresses in order to prioritize the commitment of limited project resources with respect to the many additional issues below.

Information gathering is an opportunity for stakeholder involvement, and therefore building stakeholder commitment and buy-in to the project. All agencies, projects, companies, NGOs, and individuals mentioned in this report are possible stakeholders. Obtaining their input in both developing the questions and finding the answers will be an important step towards gaining their confidence and commitment.

SPECIFIC TOPICS TO ADDRESS

LEGAL ISSUES

The project team should work with WAJ, JVA and an independent lawyer to develop a common understanding of the implications of different institutional arrangements for management of wastewater treatment and reuse projects, particularly:

- JVA-WAJ jurisdiction and overlap
- Local level organizations (societies, cooperatives) which are most appropriate (possibly RSCN for Azraq)
- Municipalities – what they can and cannot do in the of view of WAJ/JVA

At national and local level, it is necessary to further investigate and clarify the implications of legal jurisdictions and actual practice, including a targeted update from MOMA and MOP on decentralization and capacity building for municipalities.

Laws – Obtain MOE Law, translation of Municipalities Law, Law of Ordinary Societies and Law of Non-Specialized Agricultural Societies, Building Codes on Wastewater System and Water Supply (for septic tanks and septage management)

Note: In preparing the initial project budget, no one foresaw the need to include an independent lawyer for this activity. That need is now obvious. Going forward, the project team will proceed on a best efforts basis to adjust the composition of the team to mean the changing needs of the project within the budgeted LOE. Certain areas of investigation may have to be either significantly curtailed or abandoned, depending on their perceived relative contribution to the successful accomplishment of the goals of the Small Communities

Project. The project team will collaborate very closely with USAID at each decision point that affects the scope of the study to develop a consensus.

INSTITUTIONS

Confirmation of existence (or not) of Village Councils, Common Service Councils and/or Water Councils in selected communities and analysis of their roles, effectiveness, and importance to sustainable WWTP&R solutions.

Targeted institutional assessment of legal, technical, managerial (esp. finance management), decision-making power of institutions:

- Municipalities
- WAJ at Governorate level
- Any NGOs active at local level in study areas
- Village Councils
- Common Service Councils

For North Shouneh, the roles of JVA and NGWA will need additional clarification:

- Consult further with CIDA Tell Al Muntah project staff on their experience with institutional issues
- Consult WAJ, JVA and independent lawyers as needed
- Role of NGWA in relation to WAJ – need to ensure coordination
- Relation of North Shouneh Small Communities Activity and KfW-funded North Jordan Valley TWW reuse activity

PRICING

Get copy of Council of Ministers letter or decree setting TWW price

National Water Master Plan (2003)

There is no current definitive plan to raise tariffs for water/wastewater, but the project will need to keep up to date on discussions and decisions on this subject through WAJ counterpart and contacts with personnel associated with related technical assistance projects

Standards, monitoring and surveillance

Verify that English version of reclaimed water standards is accurate.

Keep up to date with other projects, which are addressing standards, both current standards and developing new ones – GTZ, KfW, CDM (Watershed Management) – also systems of monitoring and surveillance, role of MOE

TANKER OPERATION

Existing tanker operators – detailed investigation into who they are, who manages the tankers, who are the decision makers – municipality vs. private sector (efficiency, dumping location, reliability, cost?)

Tankers, according to the instruction, must keep daily records of quantities; locations pumped from and number of trips. See if these are available and review.

Tankers are not allowed to operate or dump without evidence of payment of the monthly fee or registration – investigate situation of Septage Monitors – are there enough, are there any in project communities? Meet them and include them in project discussions.

JD 20/month for dumping at WWTP or other designated/authorized location - what would be another designated/authorized location?

It may be difficult to predict exactly amount of septage that will come into plants because once one is built, tankers might come from further than target group area. Investigate further.

Instructions on septage collection – under which law or regulation was this issued? What is the timeframe of these agreements? How in practice does this work? (Conduct “observation study” of tankering, one in each study area?) Investigate practice, individuals and companies in each study area. Include them in project meetings, stakeholder events. Assess their willingness and ability to be project partners.

WATER REUSE

Full translation of a few additional contracts with farmers and further analysis, including field visits, of how these work in practice. Focus on a few individual farmers, and on Wadi Musa and Tel el Muntha.

Various points of clarification from TWW contracts are needed

PREVIOUS EXPERIENCE WITH COMMUNITY LEVEL MANAGEMENT AND PSP

Review existing PSP activity – private company, public liability company, management contracts, and micro-PSP in NGWA

Subject to existing resources, review existing experiences, successful or not, in community level management. Review 5-10 in broad terms, then select 2-3 for more in-depth analysis of what worked, what did not work – do not rely on project staff or project reports. Time must be allocated (within reasonable limits) to dig a little deeper through one or two field visits. Possible experiences/projects/organizations to study:

- Tell Al-Mantah, Komex/CIDA
- Wadi Musa Reuse Pilot, BRDP/PA/CDM
- RSCN community-level activities
- GTZ farmer participation
- GTZ rural development activities
- Jordan Hashemite Fund
- EPP/Rural Clusters Project

COMMUNITY LEVEL INFORMATION

Village level decision-making –status and composition of Village Councils, Common Service Councils and/or Municipal Council

Previous experience with community involvement – in-depth analysis of which community activities worked, which did not...determine the critical success factors, state lessons learnt from the failures. The Rural Clusters Program in Shobak and Knowledge Station project in all communities would be a valuable case study.

Assessment of level of trust and confidence in:

- Municipality

- WAJ
- JVA (in case of North Shouneh)
- Locally active NGOs
- Government in general

Community relations – tribal groupings and relations (There is a study by Mohammad Tarawneh on the tribal system in the Petra region that is a good example of the type of issues to address. The study is located in the Water Reuse and Environment Unit library)

What price are people willing and able to pay for septage removal and for treated wastewater?

Land ownership issues relating to WWTP sites and agricultural use

What is the impact on the project of possible changes in leadership/ people/staffing in the communities?

What effect would upcoming elections have on the project, and how do we respond to changes at all levels?

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