

Annex 11

Institutional Capacity Assessment and Regulatory Needs

Institutional Capacity Assessment and Regulatory Needs

This chapter is not conventionally part of ESIA studies. However, it was deemed important to include the institutional and organizational setups for the proposed project. This will be in compliance with reform program adopted by the water and wastewater sector in Palestine. This chapter will cover three main topics, i) assessment of the current organizational situation for water sector, ii) proposal of appropriate organization to operate this sector, in order to sustain the operational process as well as achieve financial independence of the sector, iii) proposal of needed capacity building activities for different stakeholders.

In accordance with the assessment of the current situation, the following questions covered:

- 1- What are the current institutions that tackle the responsibilities of the water and wastewater sector?
- 2- What are the drawbacks/barriers that hinder those institutions from performing their tasks?
- 3- What are the proposed capacity building activities?
- 4- What is the current legal framework governing the water and wastewater sector and
- 5- What are the needed regulations?

1. Introduction

The analysis of the institutional framework for this project and its sub-components was based on the main activities to be implemented. The discussion of the institutional framework took place on the PWA premises during the workshop conducted on the 15th of July, as part of the SESIA activities. The main objective of this workshop was to discuss the proposed institutional framework needed for water and recovered water collection and reuse and sludge management. Representatives from the PWA, NGOs, universities, and project consultants, PARC, Ministry of Health and *Awqaf* participated in the workshop. In addition, several in-depth interviews were conducted with the PWA, municipalities, CMWU, MoA, etc. The primary data collected was analyzed and supported by the secondary data collected from a wide range of reports, most importantly:

- Vision and Measures of Palestinian Water Authority towards Sustainability of Wastewater Reuse Distribution and Reuse Utility (WWDRU). Draft
- Institutional And Legal Framework For Wastewater Reuse Of Palestine , Technical Assistance on Wastewater Reuse and Storm water Harvesting, Palestinian Water Authority, Austrian Development Agency, July 2011, Draft
- Coastal Municipalities Of Water Utility Vision And Objectives, Booklet
- Institutional water sector review in Palestine, final report, HYDROSULT INC, Palestinian water authority, phase iii, August 2011
- North Gaza Wastewater Treatment Plant report no 3:1, Final Detailed Evaluation, April 2002
- Integrated Water Resource Management, Feasibility of Wastewater reuse, Report no. 14 June 2010 , Russell Mishel, IRG Principal, IWRM ii Project Manager, Senior Economist
- Technical and Institutional Options for Wastewater Reuse in Palestine, Al MADINA-Consultants, April 2011

This section will present the results of the assessment of Institutional Reform for recovered wastewater distribution and sludge management, including marketing related issues.

This assessment aimed at identifying the needed institutional framework that will be responsible for:

- 1- Collection of wastewater:
- 2- Water recovery and distribution
- 3- Sludge collection and distribution
- 4- Monitoring will be a crosscutting task

The analysis of institutional frame will be based on the following objectives:

- 1- Identifying the responsible bodies that are recommended to tackle the responsibilities of the above mentioned tasks
- 2- Primary performance gap analysis will be applied in order to identify the capacity building and technical assistance needs
- 3- Estimate the budget needed to bring this body into action
- 4- Alternatives will be identified for the proposed bodies
- 5- The needed legal framework to be adopted in order to strengthen the proposed entities

Due to the fact that NGESTP is mainly implemented to enhance the disposal of wastewater and to utilize the produced water for agricultural purposes, more attention was given to presenting the current status of the water sector in the Gaza Strip, including the principals for water policy, entities, responsibilities, reform program and proposed institutional reform.

The discussion of the proposed institutional framework would be incomplete if basic information about the Water Sector in Gaza is not discussed. The reform of the sector is needed in order to have a self-financed sector that is appropriately maintained and operated. The following sections covered under this chapter will illustrate the following topics:

- 1- Principal of Water Policy in Gaza Strip
- 2- Water Sector Reform Program
- 3- Proposed institutional reform
- 4- Proposed legal framework

2. Principles for Water Policy:¹

The Palestinian Authority adopted three important principles that formed a base for water sector reform:

- The water sector should be regulated by **one responsible body**, with the separation of the institutional responsibility for policy and regulatory functions from those of service delivery;
- It is intended to establish **three regional utilities** in the West Bank and one in Gaza; and

¹<http://www.pwa.ps/DesktopDefault.aspx?tabID=4127&lang=en>

- Encourage involvement of the private sector in the funding and implementation of projects.

Based on the aforementioned principles, the overall institutional framework of the water sector currently has three levels, as follows:

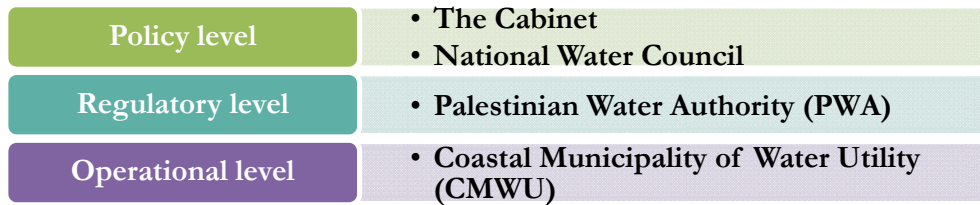


Figure 1.: Framework of Water Sector

According to the PWA, the water sector is structured based on the following principles:

- a) Separating the Operational from Regulation aspect.
- b) Dividing the institutional framework into three levels; policy level, regulatory level and operational level.
- c) Integrating the service-delivery institutions into regional water utilities at governorates level. These utilities shall be independent financially and administratively.
- d) Treated waste water is considered a water resource.

3. Description of Current Responsible Entities for Water and Wastewater Management

This section provides a snapshot of the main water sector stakeholders. They can be divided into two main groups: i) core/ key responsible entities i.e. NWC, PWA, CMWU, and ii) the inter-related institutions i.e. Ministry of Agriculture, Ministry of Health, etc.

3.1. Core/Key Responsible Entities

3.1.1. The National Water Council (Policy Making Level)

The National Water Council (NWC) is composed of 13 members and headed by President of PA. It includes five ministers (Agriculture, Finance, Local Authority, Health, and Planning), two governmental institutions (PWA, EQA), and other members representing non-government organizations. The head of the PWA serves as the secretary of the Council.

The NWC is responsible for:

- Reviewing and approving the National Water Policy
- Review and approve programs/plans to manage water resources
- Reviewing and approving water tariff, quotas;
- Reconsider the issue of private ownership of water, examine the central water projects and approve their implementation

- Enhancing regional and international co-operation on water issues.

3.1.2. Palestinian Water Authority (PWA) (Regulatory Level)

The Palestinian Water Authority (PWA) was established by Presidential Decree 90/1995 as a central public authority to serve as a regulator body for water resources management and development in Palestine. PWA is governed by the Water Law and its By-law # 2/1996 that defined its mandate as follows:

- Execute the National Water Policy as approved by the National Water Council;
- Ensure most efficient management of available water resources in Palestine;
- Seek to achieve and develop water security through optimal planning and management of water resources and explore further resources to ensure balanced management between supply and demand;
- Set standards and establish technical specifications to assure quality control of water works.
- Licensing the exploitation of water resources including the construction of water projects.
- Seek to achieve strong co-operation between PWA and other relevant parties.

Based on the article 9 of the Bylaws, the PWA shall have the following departments:

- **Administration Department** that includes three sections; Finance, Personnel, and office services.
- **Technical Department** that includes three sections; Standards, Training, and Research.
- **Organization Department** that includes three sections;
 - *Licenses & Tariffs Section*: in charge of licensing wells, disposal of wastewater, and reuse of treated water
 - *Monitoring & Inspection Section*: in charge of monitoring and inspecting of water wells, water and wastewater facilities according to standards.
 - *Customer services*: in charge of handling customers' complaints
- **Water Resources Planning Department** that includes three sections; Water Strategies & Policies, Water Information, and Hydrology. However, currently the PWA has seven directorates

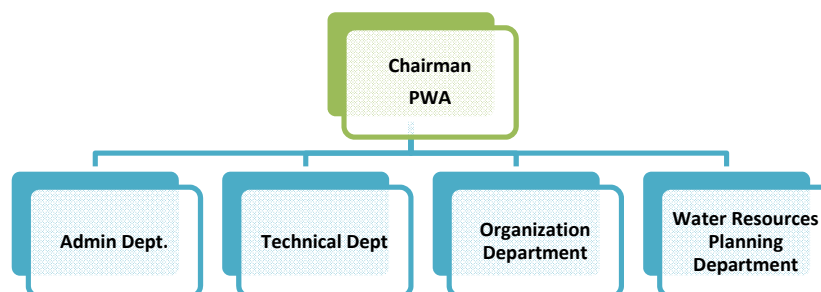


Figure2.: PWA Organizational Chart

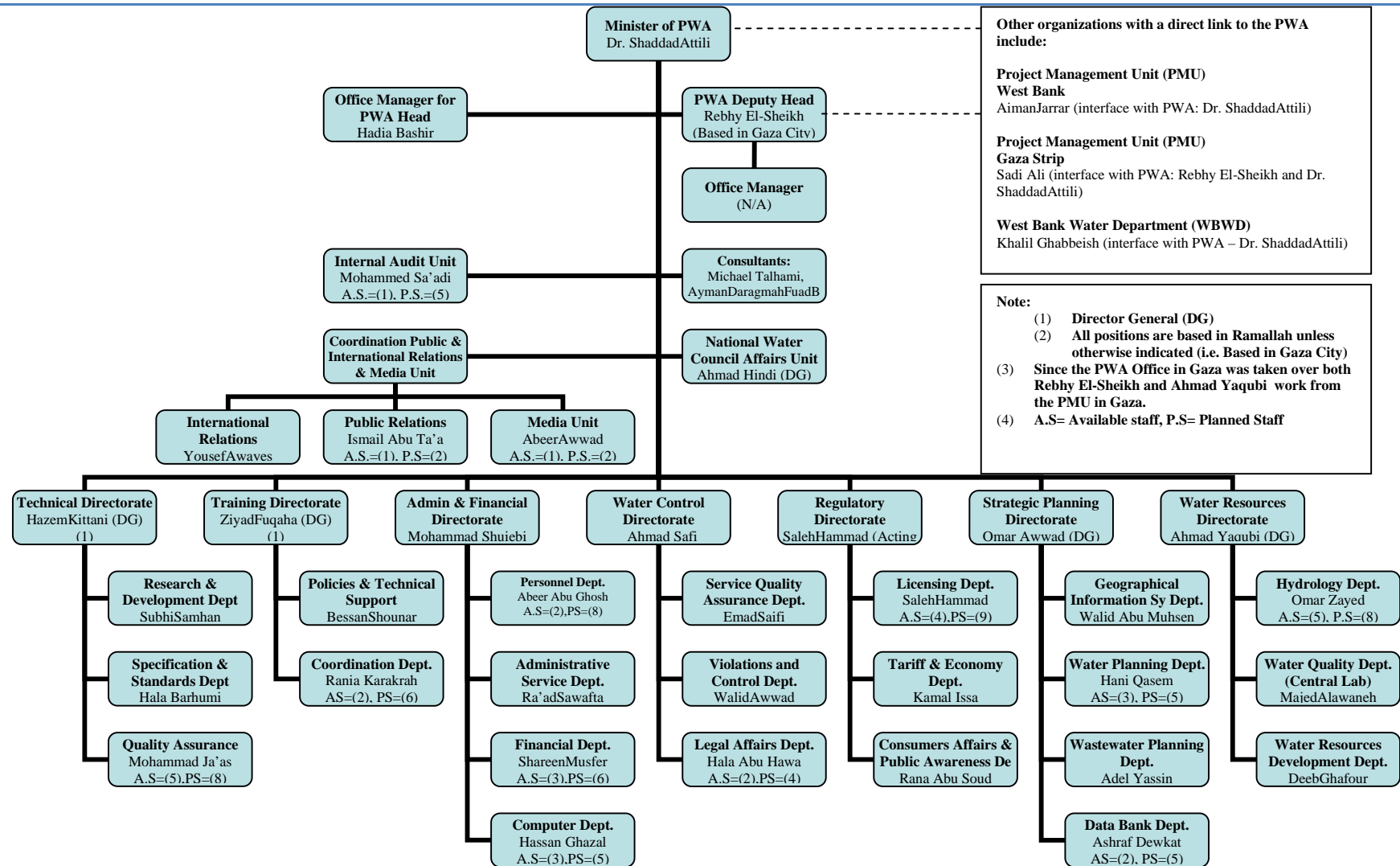


Figure3: PWA Institutional Structure

Source: PWA

Table 1: Different Departments within the PWA

Directorate	Departments
Financial And Administrative Directorate	<ul style="list-style-type: none"> • Financial • Personnel Affairs • Administrative Services • IT
Technical Directorate	<ul style="list-style-type: none"> • Standards & Specifications • Quality Assurance • Research & Development
Regulatory Department	<ul style="list-style-type: none"> • Licensing • Tariff & Economy • Consumer Affairs
Strategic Planning Directorate	<ul style="list-style-type: none"> • GIS • Databank • Water Planning • Wastewater Planning
Water Resources Directorate	<ul style="list-style-type: none"> • Hydrology • Water resources development • Water quality (Central Lab)
Training and Development Directorate	<ul style="list-style-type: none"> • Policies & Technical Support • Coordination Dept.

3.1.3. Coastal Municipalities of Water Utility (CMWU) (Operational level)

The CMWU was established in Gaza Strip as autonomous public utility based on (Law # 1, 1997 Local Government) and considered as the Operator of water and wastewater. Also, article 25 of the Water Law called to establish regional water utilities in West Bank and Gaza. The CMWU covers all Gaza Strip except Gaza and Jabalia where the municipalities still operating the water and wastewater in their area. Figure 4 below represents the 2012 organizational structures within the CMWU.

The CMWU is mandated to provide the following services:

- Water extraction, operating the services of water, wastewater, and storm drainage. Managing water resources, distribution and selling to consumers.
- Management and improvement of the wastewater and storm drainage that include treatment as per the technical standards as possible.
- Collect and invest rains
- Construction/Operation of facilities related to water and wastewater.
- Develop and implement plans to control water and environment pollution.

The CMWU is managed by a Director General and assisted by three Deputies; Technical, Planning, and Administrative. It has 210 employees spread over Gaza Strip. The Technical directorate has a “Quality Control Department” that dedicated for water quality control and Water Distillation inspection

With regard to the recovery project, CMWU is a strong candidate to operate the new project. Their potential tasks will be as follow:

- 1- Collect the grey water from dwellings and residential units
- 2- Distribute the collected water after being recovered
- 3- Verify the tariff of water collection and water distribution
- 4- Being responsible for collecting water tariff in cooperation with the Ministry of Finance

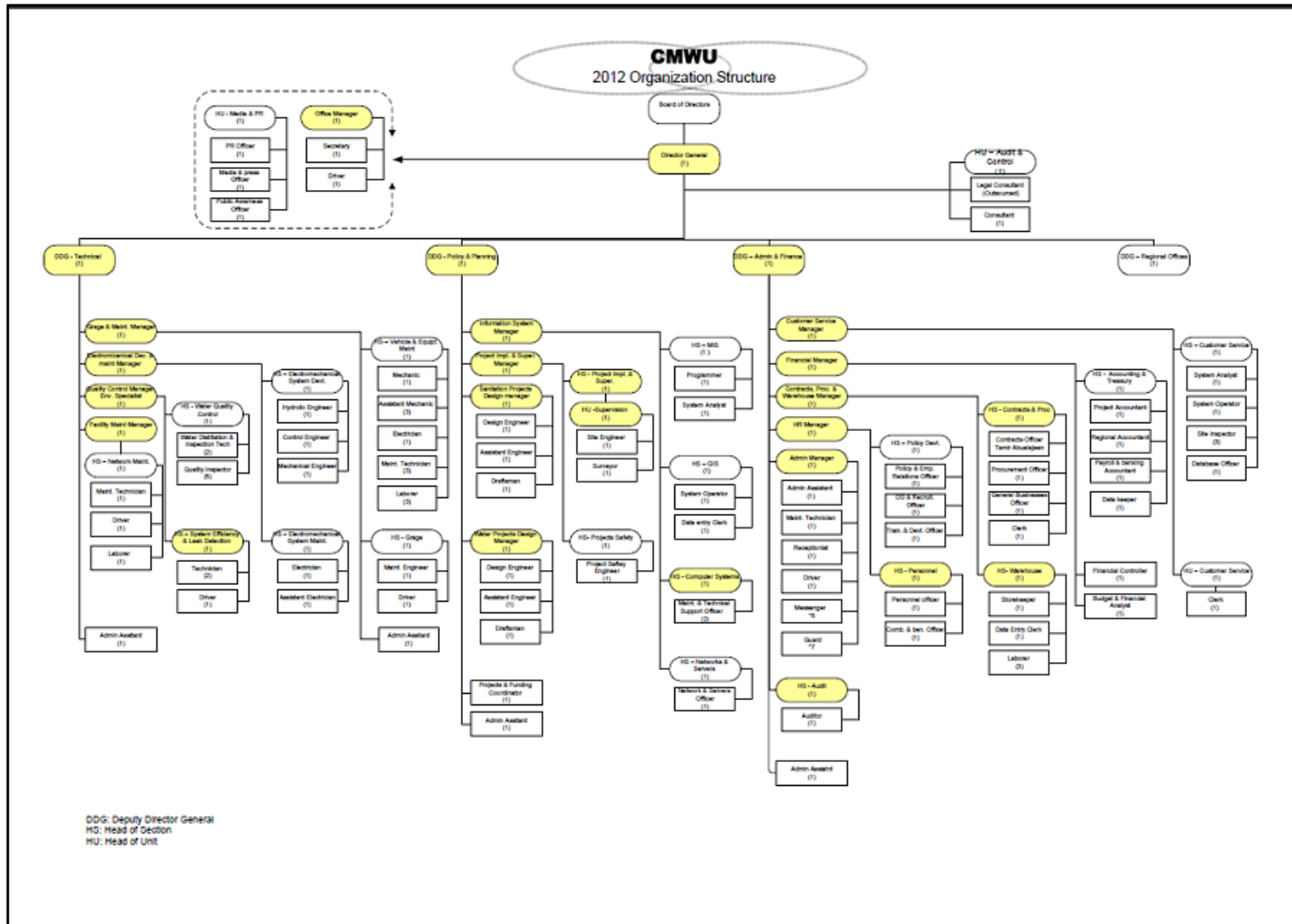


Figure4: CMWU Institutional Structure (2012)

Source: CMWU

3.2. Key Inter-related Governmental Institutes

3.2.1. Environment Quality Authority (EQA)/ Ministry of Environmental Affairs (MENA)

Since the establishment of PA, the Ministry of Environmental Affairs was mandated to take care of environmental issues in the West Bank & Gaza Strip. However, in June 2002, the Environment Quality Authority was established by Presidential Decree No. 6/2002, superseding the Ministry of Environmental Affairs. The Palestinian Environmental Law No. 7/1999 stipulating the mandate of EQA.

In the water sector, EQA is responsible for the following:

- Setting the quality standards for potable water.
- Setting the standards and practices of collection, treatment, reuse, or disposal of wastewater and storm water;
- Regulating of industrial wastewaters which are not treated by the utility;
- Setting the standards for the disposal of saline water from desalination plants;
- Monitoring the effluent discharges in valleys, streams, and coastal waters;
- Enforcing the standards, norms and guidelines; and
- Enhancing public awareness and training in environmental management.

3.2.2. Ministry of Agriculture (MoA)

The Agriculture Law #2 of 2003 stipulated the roles and responsibilities of the MoA. Article 55 of the law prohibited using the wastewater in irrigation unless was treated according to national standards.

The MOA has 11 departments, including the “**Soil & Irrigation Department**” which consists of the following sections: Soil, Irrigation, Water, Central Laboratory, and Mechanical Workshop.

The Water Section is responsible for licensing the water wells for agricultural uses, supervision of digging wells, conduct periodic testing of water, cooperate in setting water standards with PWA, MOH, and EQA.

The Central Laboratory conducts periodic testing for water, wastewater, and soil.

3.2.3. Ministry of Health (MoH)

The “Public Health Law”, number 20/2004, stipulates the responsibilities of the MoH in Article #2.

Among 16 tasks, MOH is responsible for periodic testing of potable water and also on monitoring wastewater network and treatment facilities. The MoH cooperates in setting water standards with PWA, MOA, and EQA. The MOH conduct periodic testing for water wells to ensure its suitability for human consumption.

The MOH includes 12 directorates and 12 units. The Primary Healthcare Directorate includes 18 departments, among them, the Environment & Health Department and the Laboratories engage in the wastewater/water reuse. Also, the Public Health Awareness department conducts awareness campaigns

3.2.4. Palestinian Standards Institute (PSI)

PSI was founded in 1994 as Palestine's standards organization. PSI is governed by Palestinian Standards Law #6/2000 and provides access to national and global standards, accredited testing facilities, calibration services, and certification. PSI facilitates trade and investment in Palestine by meeting the needs of business and industry for metrology, standards, conformity assessment and quality. PSI advances citizen health and safety and the protection of the environment. PSI contributed to the development of effluent reuse standards.

3.2.5. Ministry of Local Government (MoLG)

The MoLG is a leading Ministry that supports Local Government Units (LGU) capacity and resources development towards achieving citizen's welfare within a good local governance framework and practices.

The MoLG is the key link between the national government and the municipalities. The MoLG represents the municipalities and also joint service councils (JSC) in national decision making and is aware of their specific development requirements. In the water sector, the MoLG is involved in the coordination of municipal water and in some cases wastewater operations. It is also involved in processing operator license applications. The role of MoLG as local government coordinator and its experience with municipal planning makes it a strategic stakeholder in the development of a water management programme. In particular, the very high percentages of unaccounted for water and the low cost recovery situation are two areas that need to be highlighted and improved.

It is noted that the MoLG has, as part of the thirteenth Government's Programme, as one of its four tasks to: Promote Public Private Partnerships (PPPs) at the LGU level in order to support local development and enable the LGUs to achieve fiscal autonomy. This appears to open the door somewhat for water and wastewater operations to be considered in a PPP light and as a possible avenue to improving the cost recovery issue.

Historically, the MoLG and the PWA have had a strained relationship primarily around the grey area that falls between the date and content of the Water Law and the Local Government Law as it pertains to municipalities and joint service council's domestic/industrial water distribution operations.

The communication situation between the PWA and the MoLG has improved greatly of late; to the point where it was suggested by an MoLG representative that they would be willing to nominate a decision making representative to a day to day working management group that would oversee the management of the water and wastewater sector. That working management group would include equal level status between MoLG, MoA and

PWA personnel and as a group they would make strategic decision involving the overall management of water and wastewater sector service providers including WUAs.

3.2.6. Ministry of Finance (MoF)

The **Finance Minister of the Palestinian Authority** is the head of the Palestinian National Authority (PNA) that is in charge of finance. The Finance Ministry is responsible for

- Controlling financial activities of the PNA and its expenditure.
- Supervising, studying and organizing monetary funds and the economic and political analysis of financial aid directed towards the PNA.
- Supervising and controlling the private capital funds of the PNA.
- Providing the money needed for facing the government's expenditures.
- Paying the salaries of government employees.
- Managing and settling employee salaries and retirement of civil administration and compensation in accordance with the laws and regulations in force.
- Scrutinizing and overseeing all financial transactions, including accounting principles adopted legally and that follow the principles of the Ministry for accountability and transparency during all stages of its work.
- Monitoring the implementation of the provisions of financial legislation in force.

The consultant was advised that the Ministry of Finance (MoF) is now in the position of being able to focus greater effort towards the water and wastewater sector. For the past three years it has concentrated on the power sector, which was consuming a vast amount of the treasury funds in comparison to the water and wastewater sector.

3.2.7. Non-Governmental Institutes and Private Partners

3.2.7.1. Non- Governmental Organizations (NGOs)

Numerous environmental and agricultural related Palestinian NGOs have contributed to the wastewater reuse sector through implementation of pilot projects, or provision of support to farmers. It remains essential to keep them involved in further plans for this sector.

3.2.7.2. Water User Associations (WUAs)

WUAs representing the end users of treated wastewater consist of groups of farmers who have shared interests. WUAs in Gaza are generally small and loosely organized. Nevertheless, they can act as focal point for the operator of the effluent distribution systems, or O&M and billing issues.

4. Water Sector Reform Programme

Over the past three years, the PWA is leading a major sector-wide effort to reform the water sector in Palestine. The reform program started on December 14th 2009 when the Cabinet of Ministers endorsed the **“Action Plan for Reform”** aiming to define and implement a comprehensive programme of institutional and legislative reform in the Palestinian water sector.

The overall reform is expected to include the reorganization of the water sector and the institutions within, capacity building, and the revision of strategies and policies, when necessary, as a result of any change that takes place in the architectural arrangement of the sector.

The Sector Reform includes four components as follows:

1. **Institutional Water Sector Review (IWSR)** aimed to formulate a clear sector structure with clear roles and responsibilities of key sector stakeholders and also to establish a mechanism to ensure proper coordination and cooperation amongst key stakeholders.
2. A **Legislative Review (LR)**, including a **redrafting of the Water Law** to reflect the preferred arrangement retained by the Palestinian National Authority (PNA) following the attainment of a consensus on the required institutional architecture, as recommended by the IWSR. This will include a review of pertinent water laws, bylaws and regulations.
3. A **PWA Organizational Reform** that include a capacity evaluation of the existing institution, a gap analysis between the existing and desired institution, the development of roles and responsibilities for each department and position within the institution, and the revision of the National Water Plan;
4. A comprehensive program of capacity building (CB), starting with the **Technical, Planning and Advisory Team (TPAT)** for the PWA, and after the Cabinet of Ministers approval for the preferred institutional arrangement, other CB programs for each of the individual institutions in the Water Sector shall be developed.

Almost all studies related to water reform are ongoing; however they still need final endorsement from the Cabinet or from the PWA: i) The Institutional Water Sector Review, ii) Water Law was also re-drafted. The PWA had improved organizational structure. The following diagram illustrates the strategic Institutional set up for water sector in Palestine. Please note, at this stage, the set up still under the preliminary process with some achievement has been made regarding the pilot project for wastewater reuse. However, the PWA is undertaken the initiative for the wastewater reuse.

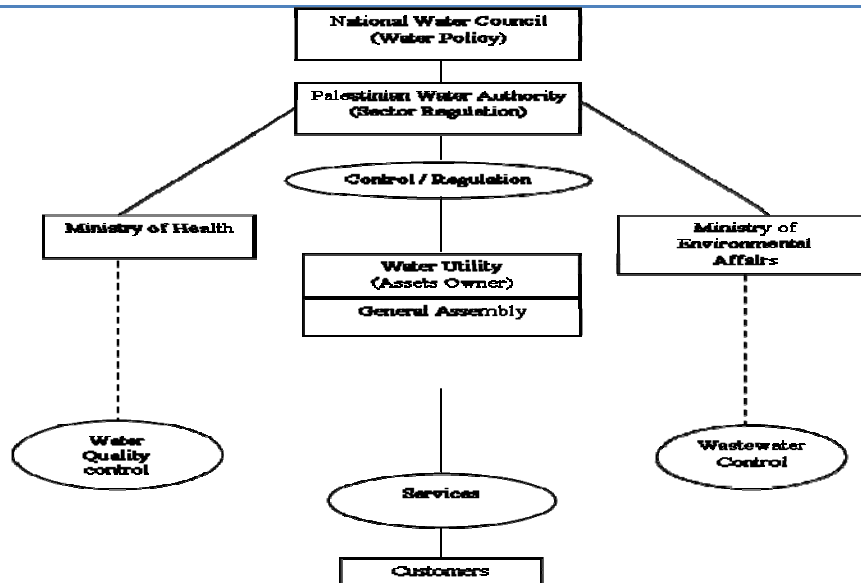


Figure5: Strategic Institutional Setup for the Water Sector in Palestine

Source: Vision and Measures of Palestinian Water Authority towards Sustainability of Wastewater Reuse Distribution and Reuse Utility (WWDRU) – Draft

The refinement of the consensus building process evolved into modifying various institutional titles and selecting the appropriate elements of the institutional arrangements. The result being: i) at the Water Governance Level, ii) A Ministry for Water Affairs; iii) An Independent Regulator reporting to the Prime Minister; iv) At the Water Management Level

The proposed reform shown in the following figure illustrates the needed organizational scheme. The figure could be briefly illustrated in the following points:

- On the level of water sector governance the Prime Minister (Cabinet) will directly work with a new ministry allocated for water and wastewater regulations, cooperating with Ministry of Agriculture and other Ministries, in addition to the donors
- Regarding water management level, the main entities responsible will be Bulk Water Utility CMWU, Municipalities, JSC, WUA for farmers with the NGOs and private sector. In addition to Water and Wastewater Sector Program Agency (PMU). They will get technical assistance by donors.
- Both Bulk Water Utility and Water and Wastewater Sector Program Agency will report to the New Ministry allocated for Water. Another reporting relation should be based on WUA's for farmers, CMWU and municipalities. They should report to the MoA and MoG
- The essential functions of a new Ministry are seen as follows:
 - Support the water & wastewater sector reform programme;
 - Prepare and implement effective policy;
 - Develop and enforce pragmatic legislation;
 - Produce and continually update strategic, technical (master) and investment plans;

- Prepare and implement a series of focused communication strategies and programmes;
- Facilitate an Integrated Water Resource Management programme;
- Be an effective Palestinian counterpart at the Joint Water Committee meetings;
- Provide technical inputs to the PLO negotiation team;
- Maintain effective and successful relations with the international donor community;
- Support community involvement and provide public awareness campaigns to the organizations in the Water Management mechanism.

The figure below summarized the proposed reformed institutional arrangement for water sector (Hydrosult Inc. 2011)

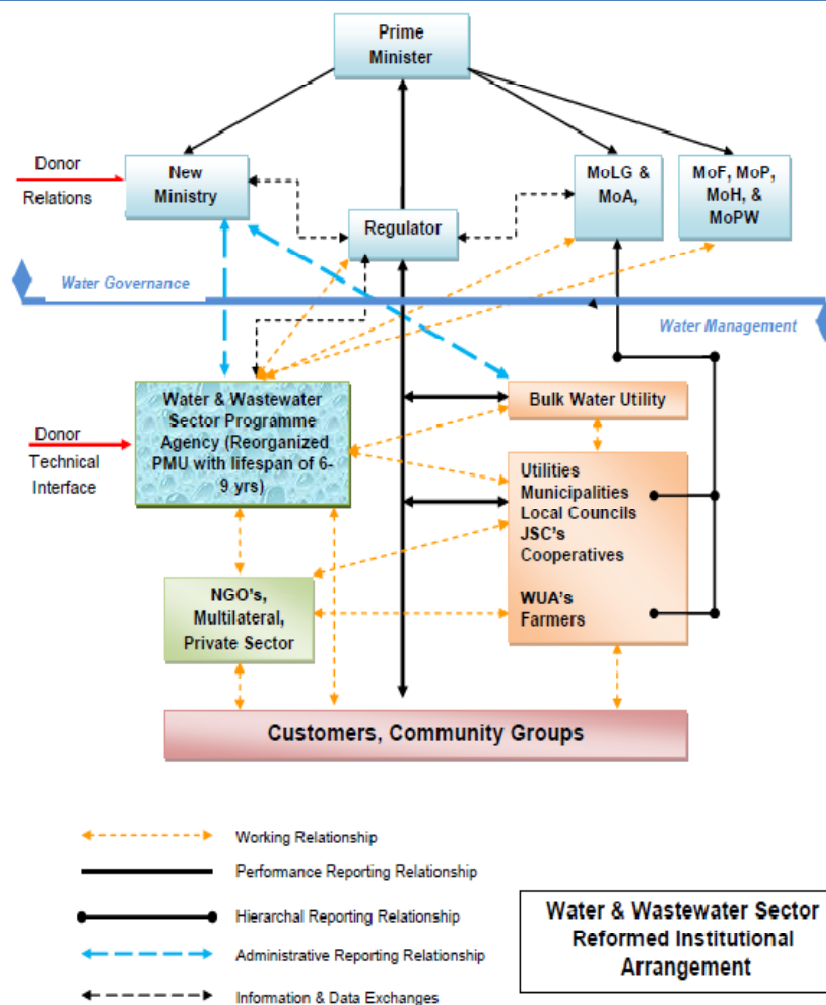


Figure6.: Water & Wastewater Sector Reformed Institutional Arrangement

Source: Institutional Water Sector Review In Palestine, Hydrosult, Inc., 2011

5. Proposed institutional framework for wastewater collection

Waste water collection is one of the fundamental components of this project. The operation of infiltration basins will be mainly based on the efficiency of waste water collection. The project tried to analyze the appropriate scenarios for efficient processing of water and wastewater.

The following points should be covered during the analysis of the entities:

- 1- The role of proposed entities in the current water collection scheme in Gaza Strip
- 2- The potential tasks to be applied by the proposed bodies
- 3- Evaluation of capacity building activities received and the needed trainings.

Based on different studies applied in Palestine, apparently the waste water collection tariff is not unified in the Gaza Strip. In addition, the fees collected do not cover the operation costs. Therefore, the proposed roles of the different entities that might be entitled to work on wastewater collection should be as follows:

- 1- Develop a legislative framework that governs the operation of wastewater collection
- 2- Develop a detailed strategy for wastewater collection tariffs that covers the operational costs, to have a self-financed sector
- 3- Identify the best strategies to collect wastewater efficiently
- 4- Monitor the process of wastewater collection

The consultant examined various options to propose the institutional needs to tackle the responsibilities of the wastewater collection process. Options were considered at various levels, described as follows:

- **The policy making level:** The Cabinet will be responsible for developing all policies related to wastewater collection in order to enhance the efficiency of this process.
- **The legal level:** As the National Water Council is the main regulatory department for water related issues, it is recommended to develop the regulation framework guided by the needs raised by the Palestinian Water Authority. In the name of improving the Water Governance position in the sector, most of the current PWA functions can be separated into two key areas, namely: functions that are seen as Ministerial in nature such as Policy, Planning, Legislation, Donor Relations, Water Resource Management, Finance and Administration, IT services, Public Awareness and Relations, Library and the Joint Technical Committee; and functions that are seen as Regulatory in nature such as, Licensing, Tariffs Setting, Water Control, and Water Laboratory. Separating the ministerial functions from the regulatory functions could involve a combination of physical and/or resource re-allocations. Within the Ministerial function the priority should be to strengthen and enhance the planning directorate and the water resource directorate. This could be closely followed by preparing Master Plans for Water Sources/Supply, and for Wastewater Collection, Treatment and Reuse; as well as developing communication plans and strategies with relevant stakeholders that are complementary to the water & wastewater sector. The development of adaptable regulatory roles, responsibilities and operational guidelines/plans should be the initial priority

- Operational level:** It was proposed that the Coastal Municipalities of Water Utilities (CMWU) should be the sole institute responsible for the collection of wastewater as they are now the responsible entity for sewage related activities. The functions could be elaborated on to include all aspects from the water source to the delivery of water service. This could include: an economic regulation model; developing compliance with public service obligations; monitoring quality of service measures; establishing pragmatic price and tariff mechanisms; improved licensing and abstraction control; looking at methods of financial accountability; benchmarking the service providers; establishing an agreed upon set of service provider performance indicators for water supply and wastewater service; and, develop a means to achieve customer satisfaction reporting².
- Monitoring level:** Two levels of monitoring were proposed. Internal monitoring should be implemented by the CMWU monitoring department, which has the full capacity for self-monitoring (laboratories, capacity building activities, etc.). External monitoring should be done by the Ministry of Environmental Affairs for environmental related standards and parameters, and by the PWA for operational monitoring.

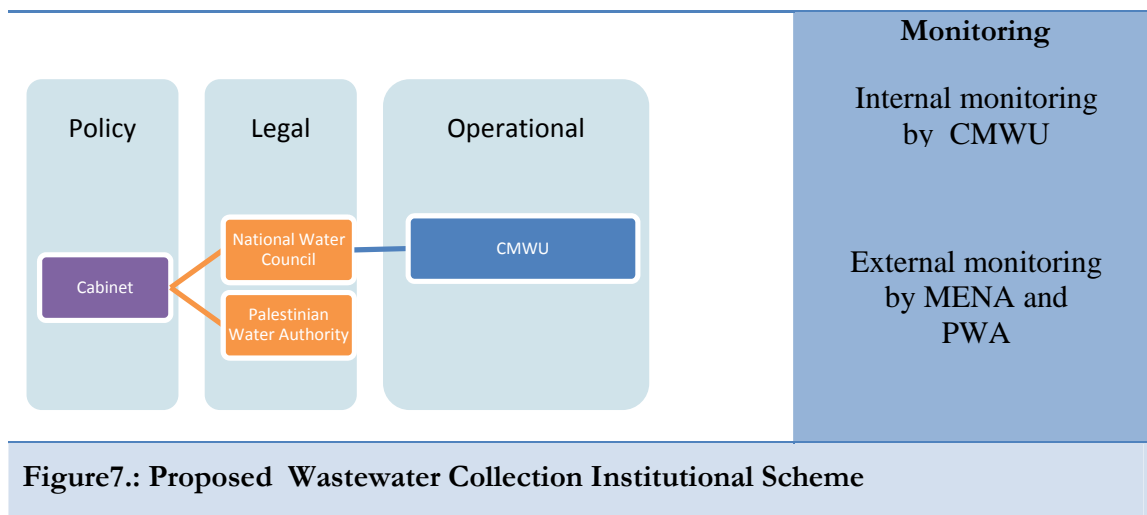


Figure 7.: Proposed Wastewater Collection Institutional Scheme

²Institutional water sector review in Palestine, final report, HYDROSULT INC, (member of Snc-Lavalin Group), Palestinian water authority, phase iii, August 2011



Table1: Proposed Capacity Building needed for Wastewater Institutions

Level	Responsible entity	Proposed tasks	Proposed Capacity building	Total proposed training days	Total cost in \$
Policy level	Cabinet	Develop the polices that arrange wastewater sector			
Legal level	National Water Council in Cooperation with Palestinian Water Authority	Finalize and prepare Laws needed to arrange wastewater collection Prepare strategy for wastewater tariff Bring Laws forward to the juridical department for endorsement			
Operational level	Coastal Municipalities of Water Utilities	5-Arrange for the collection strategy 6-Coordinate with the municipalities to adopt the new tariff 7-Support in cost collection	1- Orientation sessions for wastewater collection 2- Waste water tariff 3- Barriers facing wastewater collection and how to overcome	8 Man/ days 4 Days 8 Days	8000 \$
Monitoring for operational activities	<u>Internal monitoring</u> by the CMWU <u>External Monitoring</u> MENA should monitor the environmental related activities PWA monitor the operational activities	1- Clear monitoring strategy to be developed and applied, Monthly, quarterly and annually	1- Orientation sessions for wastewater collection 2- Monitoring and evaluation 3- Report writing 4- Documentation 5- Environmental auditing	10 Days 10 Days 4 Days 4 Days	12000 \$

6. Proposed Institutional Framework for Recovered Water Distribution

Wastewater reuse is characterized by the involvement of several departments and agencies, either governmental or private or both. Sanitation and agricultural departments are usually involved to a great extent in wastewater reclamation and reuse. The agricultural and irrigation departments have the authorization of developing the suitable practices and promoting their adoption by farmers and end-users. Other departments play an important role in order to improve the efficiency of wastewater reuse and to ensure minimum health and environmental harms.

Many studies were conducted in order to develop the appropriate institutional framework for proposed water distribution. The SESIA tried to shed light on these studies in order to develop the appropriate scenario. The following figure shows the logical framework that has been proposed by the Institutional and Legal Framework for Wastewater reuse of Palestine.

The needed roles in the proposed organizational structure might be summarized as follows³:

- Receiving (treated) wastewater from Coastal Municipalities of Water Utilities or others, performing adequate posttreatment, and supply and distribution of treated wastewater to farmers and to any other party.
- Taking all actions needed to treat, store and distribute treated wastewater according to the standards set by the competent parties and pursuant to effective laws.
- Ensuring that the distribution of treated wastewater will at all times abide the quality standards set by the competent authorities in the wastewater and sewage sectors
- Management and promotion of post treatment, storage and distribution in accordance with technical standards and with available resources.
- Owning and operation of wastewater post treatment, storage and distribution utilities and establishment of any other facilities necessary to accomplish the Council's goals.
- Making appropriate plans and putting into use any means to protect public health, and to reduce water and environmental pollution hazards.
- Importing all equipment and machinery needed for post treatment, storage and distribution of treated wastewater
- Entering into agreements with national, international and regional parties as a means of accomplishing set objectives as well as attaining any rights, concessions and licenses it deems necessary; as well as executing such agreements and making use of rights, concessions and licenses in conformity with the law.
- Investing surplus proceeds from the water and sewage sector in the manner it sees fit and in consistence with the goals of the Council subject to applicable laws.
- Engaging in any other acts decided by the Council towards accomplishing its objectives and best interests.

³ Palestinian Water Authority/Institutional and Legal Framework - 13 - DHV B.V. ALMEDANA ENFRA

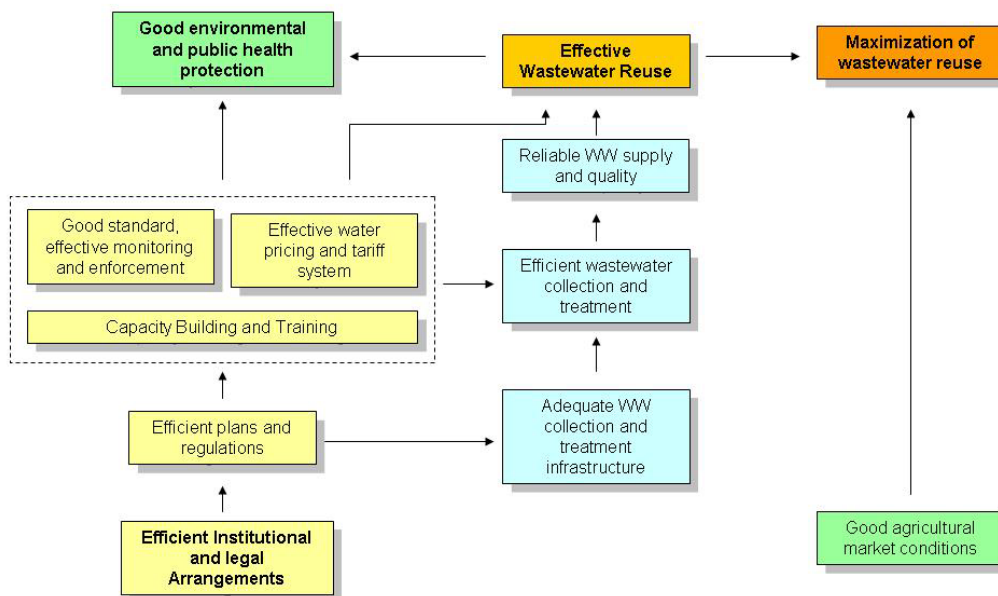


Figure 8 – Logical Framework for Maximized Reuse of Wastewater

Source: Technical and Institutional Options for Waste Water Reuse in Palestine, April 2011

The consultant assessed various options for institutional framework of recovered water distribution institutions. The main guidance for this process was the ambitious tasks that should be applied by the proposed entities. The options are proposed on the policy, legal, operational and monitoring level.

- **The policy making level:** This will be the responsibility of the Cabinet in cooperation with the juridical department
- **The legal level:** The National Water Council will be the key player to determine the needed legislations and regulatory framework for recovered water distribution. Potential support from the Juridical Department to provide legal guidance to enhance the proposed Laws.
- **Operational level:** this is a fundamental issue which has raised continuous negotiations among different institutes. Thus the consultant will mention the different proposed entities with justifications for accepting or rejecting each proposed entity. This discussion will be based on reports, meetings and the consultant's perceptions.

1. The first unsupported option is the involvement of the Palestinian Water Authority in the operational process. The PWA has evolved into what it is today, a four-in-one organization, which places it in a precarious position. It has the ability to set a tariff, directly collect the water charges established for bulk water and regulate that tariff; all of which is a definite conflict of interest. In which case who is safeguarding the citizens of Gaza in terms of receiving sufficient water at an affordability price and of suitable (potable) quality. In addition the PWA/PMU also designs wells and water

distribution systems and the PWA regulatory function approves and issues licenses. Again, a process that is a conflict of interest.⁴ These conflict situations would be eliminated if the regulatory function is separated from the political influence, and the engineering functions (PMU) are at arm’s length from the ministerial function in PWA.

2. Public Private Partnership (PPP). The private sector is not ready to play significant role to manage this scheme. However, private sector firms could work in cooperation with the CMWU.
 3. Coastal Municipalities of Water Utility (CMWU): The CMWU is mandated as “Operator” of the water and wastewater systems in Gaza Strip. The consultant highly recommends this option that involves two essential steps:
 - Modify the current mandate of the CMWU
 - Build the capacity of CMWU to provide this service.
- Finally, there is an option to create a new utility named “Wastewater Distribution Utility” to take care of the recovery water. This entity is highly recommended by the consultant and by the PWA. Having a separate unit will put limitation to any crosscutting activities that might be handled by different entities. However, this option is not yet finalized and the capacity of this entity, including financial capacity is also not yet finalized. However, accordingly, PWA will be the responsible authority to take care the recovery water distribution.
 - Monitoring level: Different levels of Monitoring should be applied according to the tasks performed. i.e Ministry of Finance will do the financial auditing, The MENA will do environmental inspections...etc

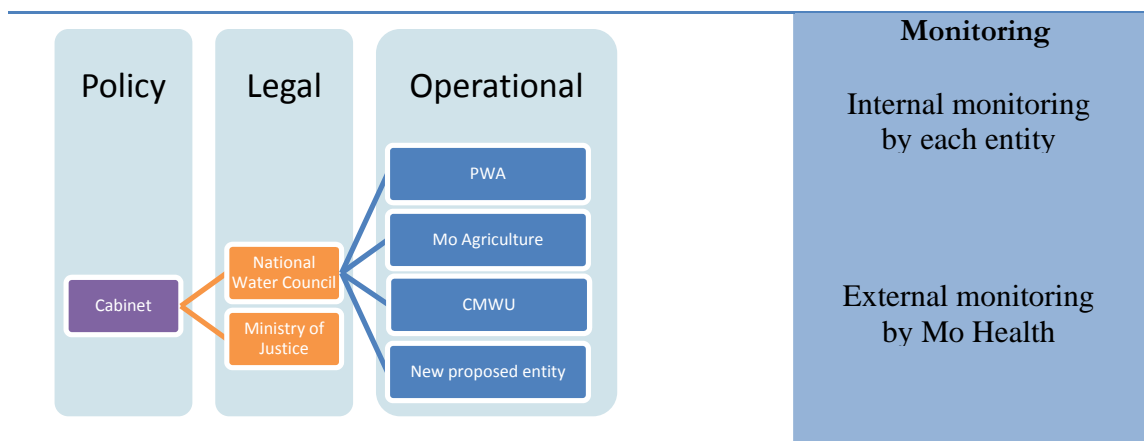


Figure9.: Proposed Recovered Water Distribution Institutional Scheme

⁴Institutional Water Sector Review In Palestine, page 17

Table 2: Proposed Capacity Building needed for Recovered Water Institutions

Level	Responsible entity	Proposed tasks	Proposed Capacity building	Total proposed training days	Total cost in \$
Policy level	Cabinet	Develop the polices that arrange water sector			
Legal level	National Water Council	<p>Legislation and national policies: generally this is performed by the National Water Council, and Cabinet of Ministries who will be held responsible by an independent and democratically elected parliament. At this level cross cuttings with other national interests are to be made, including integrated water resources management policies, public health and environmental policies, etc.</p> <p>Plans and Regulations: this includes elaboration the national legislation and policies on the operational levels (below levels 3, 4 and 5). This plans and regulations shall be practical, implementable and should enable effective monitoring and evaluation.</p>			
Operational level	Palestinian Water Authority	<ul style="list-style-type: none"> ○ A steering committee formed from PWA, MoA, CMWU, PS will be established for the operation of the process. 	<ul style="list-style-type: none"> ○ Orientation session regarding recovered water distribution 	10 Days	32000\$
	Ministry of Agriculture	<ul style="list-style-type: none"> ○ The new entity allocated for water distribution will be responsible for : <ul style="list-style-type: none"> - Proposing recovered water tariff 	<ul style="list-style-type: none"> ○ Community 	10 Days 20 Days	

Level	Responsible entity	Proposed tasks	Proposed Capacity building	Total proposed training days	Total cost in \$
	Coastal Municipalities of Water Utilities and the Proposed new entity	<ul style="list-style-type: none"> - Distribute recovered water - Highlight groups entitled for subsidy - Provision of orientation sessions to the farmers - Collect treated water coast 	<ul style="list-style-type: none"> ○ mobilization ○ Marketing and management skills ○ Barriers facing recovered water, case studies ○ Tariff strategies for recovered water ○ Documentati on ○ Book keeping and auditing ○ Periodically performance gap analysis to propose the needed training 	<ul style="list-style-type: none"> 15 Days 10 Days 10 Days 10 Days 	
Monitoring for	<u>Internal monitoring</u>	1- Clear monitoring strategy to be developed and applied, Monthly,	1- Orientation sessions for	10 Days	16400 \$

Level	Responsible entity	Proposed tasks	Proposed Capacity building	Total proposed training days	Total cost in \$
operational activities	by the each entity	quarterly and annually 2- Budget should be monitored by MoF	water distribution	10 Days	
	<u>External Monitoring</u>		2- Monitoring and evaluation	4 Days	
	MENA should monitor the environmental related activities		3- Report writing	4 Days	
	PWA monitor the operational activities		4- Documentatio n	8 Days	
	MoF monitor the budget and collection fees		5- Environmental auditing	10 Days	
				6- Accounting and financial auditing	

7. Proposed institutional framework for sludge management

Sludge production and disposal are entering a period of dramatic change, which has been driven mainly by International Funding Agencies around the world. The implementation of the NGESTP is predicted to result in a high volume of sludge. Disposal to landfill has become virtually impossible. Further increases in sludge production can be expected due to the implementation of the project and the natural increase of population. Seemingly the Palestinian Authority has not developed an institutional framework to deal with the sludge. In addition, the “*know how*” needed to deal with the sludge is not well identified in the Gaza Strip. Thus the proposed institution will be based on the needed responsibilities. The main objectives of the proposed entity for sludge management are:

- Maintain cost-effective and secure methods of sludge disposal whilst
- Engender public confidence in sludge as a natural fertilizer.

This entity will address challenges that might be faced in sludge distribution with a holistic approach. Rather than tackling each issue individually, this new sludge management concept takes sludge production, treatment, downstream processing including effluent treatment, sludge derivative application, and the environment as an integrated system. It focuses on the areas of greatest challenge and issues of real concern, which require innovative approaches.

- **The policy making level:** the Cabinet will be the responsible entity to identify the policies of sludge management in Gaza
- **The legal level:** The Ministry of Agriculture is the potential entity to develop the sludge related legal framework, as they are fully aware of sludge, hazards of using sludge, and potential treatment for the sludge. The development of a new complete law for sludge treatment will be put under the water law, as both sludge and wastewater systems will be operated according to the water law. Therefore, coordination between the Ministry of Agriculture and National Water Authority will be useful to the project
- **Operational level:** Running the project under the Ministry of Agriculture will raise a conflict of interest between regulation and operational responsibilities. Therefore a steering committee for sludge management will be a feasible option. In addition, the new entity allocated for water distribution will be responsible for sludge management. This entity is highly recommended by the consultant and by the PWA. Having a separate unit will put limitation to any crosscutting activities that might be handled by different entities. However, as it is mentioned above, the new entity is under the finalization. The capacity and the financial capability will be depending on the conclusions and recommendations of the study.
- **Monitoring level:** Internal self-monitoring will be the responsibility of a representative from each institution. It is essential that external monitoring be done by inspection from MENA and MoH, in addition to Palestinian Society for Consumer Protection.

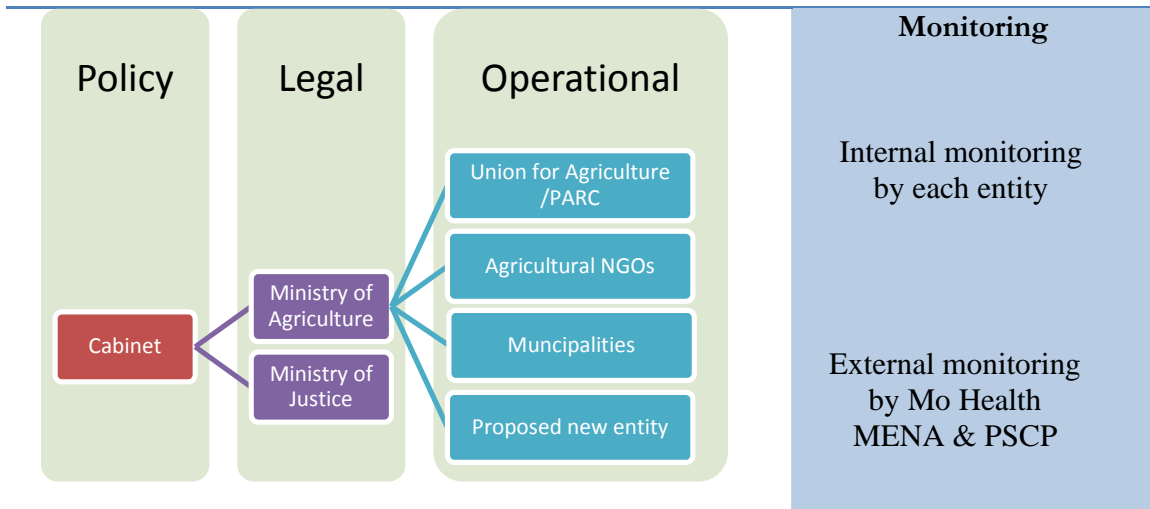


Figure10: Proposed Sludge Management Institutional Scheme

Table3: Proposed Capacity building needed for Sludge Management Institutions

Level	Responsible entity	Proposed tasks	Proposed Capacity building	Total proposed training days	Total cost in \$
Policy level	Cabinet	Develop the polices that arrange water sector			
Legal level	Ministry of Agricultural in cooperation with Ministry of Justice and National Water Authority	They will work together to finalize the legal framework for sludge distribution			
Operational level	Union for Agriculture	<ul style="list-style-type: none"> ○ A steering committee formed from the different organization will be established for the operation of the process. 	<ul style="list-style-type: none"> ○ Orientation session regarding sludge and benefits of sludge as fertilizers 	20 Days	40.000\$
	Palestinian Agricultural Relief Committee			15 Days	
	Ministry of Agriculture	<ul style="list-style-type: none"> ○ The new entity allocated for sludge management will be responsible for : 	<ul style="list-style-type: none"> ○ Community mobilization 	20 Days	
	Municipalities and new entity	<ul style="list-style-type: none"> - Proposing pricing mechanisms for sludge - Trading and distribution of sludge - Highlight groups entitled for subsidy - Provision of orientation sessions to the farmers 	<ul style="list-style-type: none"> ○ Marketing and management skills ○ Barriers facing sludge merchandizing case studies ○ Pricing strategies for sludge 	20 Days	
				10 Days	

Level	Responsible entity	Proposed tasks	Proposed Capacity building	Total proposed training days	Total cost in \$
Monitoring for operational activities		<ul style="list-style-type: none"> - Mobilize the farmers to use the sludge - Sell sludge in the allocated places for sludge distribution 	<ul style="list-style-type: none"> o Documentation o Book keeping and auditing o Periodically performance gap analysis to propose the needed training 	10 Days	
	<u>Internal monitoring</u> by the each entity	1- Clear monitoring strategy to be developed and applied, Monthly, quarterly and annually	1- Orientation sessions for sludge benefits and hazards	10 Days	20000 \$
	<u>External Monitoring</u> MENA should monitor the environmental related activities	2- Budget should be monitored by MoF	2- Monitoring and evaluation	5 Days	
	Palestinian Society for Consumer Protection		3- Report writing	5 Days	
	MoF monitor the budget and collection fees		4- Documentation	10 Days	
	MoH monitors health related issues		5- Environmental auditing	10 Days	
			6- Accounting and financial auditing		

8. Proposed Legal Framework for Recovered Water and Sludge Management

Analyzing the legal framework governing wastewater treatment and distribution in addition to sludge management is crucial for identifying the institutional framework. The current legal framework was discussed and covered in detail in Chapter 3. Therefore this section will focus on the main legal framework, trying to fill the gaps in the current law by proposing some essential laws needed for this sector.

The vision, goals, policy and strategic principles for the management of the water sector were developed following the establishment of the Palestinian Water Authority (PWA) in 1996. The National Water Policy is based on the principles of sustainable development, and was developed to guide the structure and tasks of water sector institutions and the water sector legislation. In particular, the Policy:

- declares that all sources of water are public property;
- recognizes that water has a social, an environmental and an economic value;
- direct that water sector management shall be carried out by one responsible body, with clear separation of policy and regulatory functions from service delivery functions.

A Strategy for Water Management in Palestine was later issued by PWA in 1999. Strengthening national policies and regulations, and enforcing water pollution control and protection of water resources, feature among the eight key elements of the Strategy. In particular, the strategic need is seen to “improve the legal framework by introducing new rules and regulations that provide incentives and enforcement mechanisms” (Key Element No.2). In addition, “legal regulatory and institutional instruments will be developed to enforce pollution control and protection of water resources through coordinated efforts with relevant institutions” (Key Element No.6).

The Palestinian Authorities issued many laws and decrees that formulate the legal and institutional framework for water sector at large. The main laws are:

Table 4: Legal Framework for Water Sector

Law	Summary of the main articles
Palestinian Water Authority, Law No 2/1996	The Water Law formulates and issued on July 17 th 2002. It formulates the mandate of all relevant water sector organizations to develop and manage the water resources and increase its capacity, improve its quality and protect the water resources from pollution and depletion. Furthermore, Water Law established the institutional framework that governs the water sector. According to this law, the <i>Water National Council</i> and the <i>Palestinian Water Authority</i> are the prime institutions in the water sector.
The Agriculture Law, No.2/2003	The Agriculture Law was issued on August 5 th , 2003. The article 55 of the law stated that “it is strictly prohibited to irrigate agricultural crops using wastewater unless treated in accordance with the national standards adopted by the competent technical authorities”.

Law	Summary of the main articles
<p>The Public Health Law , No 20/2004</p>	<p>The Public Health Law was issued on December 27th , 2004.The law stipulates clearly the role and responsibilities of the Ministry of Health (MoH). According to article #2, the MoH is responsible for 16 items that include but not limited to:</p> <ul style="list-style-type: none"> • Periodic testing of potable water to ensure its suitability for human consumption. • Licensing of facilities that collects, process and dispose the waste. • Health supervision of all sewage and wastewater treatment plants. <p>The article 43 of the said law prohibits the use of wastewater for fertilization of agricultural land, irrigation of field crops, except in accordance with the conditions and regulations set by the ministry in coordination with the concerned authorities</p>
<p>Environment Law, No.7/1999</p>	<p>The Environment Law was issued on December 28, 1999. According to article 29, the Ministry of Environment (later named <i>Environment Quality Authority</i>), in coordination with the competent authorities sets the necessary standards and criteria for how to collect and process or re-use or disposal of wastewater and rainwater properly compatible with the preservation of the environment and public health. The article 30 prohibits for any person to discharge any solid, liquid or other except in accordance with the conditions and standards prescribed by the competent authority.</p>
<p>The Water Law, No.3/2002 (and proposed amendments)</p>	<p>The Water Law No. 3 of 2002 has to be considered as the basic legislation for any activities related to water sector. This law comprises of all regulations that govern water in the Palestinian territory and Gaza Strip. The following are some of the important articles that will regulate the project:</p> <ul style="list-style-type: none"> • Chapter 2 (Article 6) According to this law an organization should be established under the auspices of the Palestinian Authority in order to be responsible for water sector and should be named as Water Authority. • Chapter 2 (Article 7) discusses the responsibility of water authority • Chapter 5 (Article 18-20) discussed the licenses and tariff mechanisms • Chapter 7 (Articles 25-27) that discusses the water utilities roles and responsibilities. • Chapter 8 (Articles 29-32) environmental protection for the water sources. • Chapter 9 (Article 33-35) related to inspection and monitoring for water quality

The discussion of the legal framework drew the attention to the importance of having the following legislation:

- 1- The most important law should cover the financial implications (water collection and recovered water tariff). The importance of this law derives from the importance of having a sustainable utility for water management. With no financial support, the proposed utility and sector reform will not be sustained. In addition, independent (self-financed) projects reduce the burden on the state budget
- 2- The second main regulation needed is one that tackle sludge collection, treatment, or dumping and sludge management. Sludge represents a completely new sector, which should be organized and well regulated in order to benefit from it.
- 3- Identifying the responsibilities of different entity for each legislation is crucial in order to warrant the commitment of different institutions and their dedication to the project according to the articles of Laws.
- 4- A detailed Law that criminalizes the usage of untreated water should be set in force in order to put limitations on unorganized usage of water