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The Water Sector Audit Unit (WSAU)

In May 2008 the WSAU was formally established within the PMU through decision of the Executive Management Board chaired by the Minister of Water and Irrigation. The WSAU has been charged with responsibility to roll out performance indicators country-wide, to monitor performance of all private and public water utilities and to provide advice in this regard. The role of WSAU will be further developed towards sector regulatory functions.

The activities of WSAU aim at protecting interests of all water users and should support the water sector institutions in ensuring further development of the water utilities towards business oriented entities focusing on operational efficiency for the benefit of all customers.

Since its formation WSAU has made several steps towards fulfilling its purpose as a forerunner for an anticipated full-fledged water regulator. The objectives of such future regulator is to ensure that water and wastewater services are delivered at fair and reasonable tariffs, to protect the short-term and long-term interests of customers, to ensure that customers receive the expected Levels of Service (LoS), to ensure the financial viability of service providers, and to provide certainty for sector investments.

PMU Al Meyyah staff members worked closely with the experts provided through the Technical Assistance Contract (IPA Energy +Water Consulting) to produce several strategic documents that outlined the development path for WSAU, elaborated on its mandate and responsibilities, and described its intended relationships and forms of interaction with different stakeholders inside and outside the Jordanian water sector.

Primarily, PMU/WSAU has ambitiously continued the development of the Performance Indicators (PIs) and Benchmarking system. Performance Indicators are a set of characteristic parameters that have been utilized to describe the operational, financial, and technical status of water service providing entities, based on measuring the variables that define an indicator. Indicators shall assist in pointing to causes of problems and deficiencies, facilitate development of improvement measures, and indicate with time the effect of the measures undertaken.

In that direction, PMU/WSAU has further refined and fine-tuned the set of adopted indicators, through testing and assessing their applicability, as per



The Water Sector Audit Unit has endorsed a bright and informative new logo that stresses the importance of its monitoring and auditing activities of water service providers in Jordan.

The logo reflects WSAU as a dynamic, contemporary and progressive organization in the country. The blue water drops are evident in the logo to depict that water is at the heart of WSAU's mission. The black color is employed to reflect a firm and solid image of WSAU as a professional and dedicated body. The white arrow is utilized to clearly communicate WSAU's dynamic role in improving performance of water service providers through close monitoring and auditing, whereas the fonts used represent consistency and simplicity.

prevailing conditions and constrains in the sector. Derived and tailored from the extensive set of 138 Performance Indicators of the International Water Association (IWA), the current PIs system in PMU/WSAU holds around 35 indicators, which are open for expansion in the future, and are grouped into seven main categories, namely: Water Resources, Personnel, Physical Components, Operational, Quality of Services, Financial, and Wastewater. The system has been utilized so far to produce several annual and semi-annual performance reports for Aqaba Water Company (AWC) and Jordan Water Company - Miyahuna, while other service providing utilities in governorates will be progressively covered by the system. The development of the Performance Indicators and Benchmarking System and the Monitoring and Auditing protocol will be continued.

A New Era in the Management of Water in Jordan

An Environmentally Friendly Wastewater Treatment System in the Amman-Zarqa Area

Samra WWTP is a great benefit for the Jordanian environment thanks to its efficient biological and tertiary treatment, its biogas reuse system, its hydropower plants, its ventilation air treatment units and its sludge treatment process.

Samra plant has treated more than 56 MCM in 2008, and has produced effluent with high quality in terms of BOD5, TSS, COD and Nitrogen which were all less than 20 mg/l while Jordanian standards require 60 mg/l. Compared with the situation prior Project implementation, where the BOD5 was reaching 3 times the allowable standard value, this significant improvement highly reduces the groundwater pollution and the hyper-eutrophication of King Talal Reservoir day after day.

Moreover for farmers located in the Jordan Valley, who use the King Talal Dam water to irrigate fruits and vegetables, this improvement of the water quality is a synonym for less maintenance for their irrigation system (clogging of emitters) and so of higher revenues. In addition, a new pipe has been recently constructed at the outlet of Samra Plant, in order to convey treated wastewater to local fodder producers who use untreated raw wastewater until today. Switching from irrigating with raw water to treated water will improve public health in the area.

Samra Project marks the beginning of a new era in the management of water in Jordan

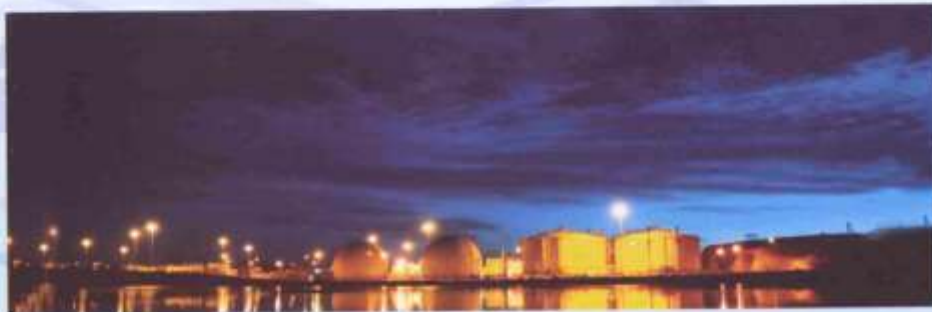
and in the region through the use of the biogas and the hydraulic potential energy produced by its hydropower plants. With 37,000 MWh of renewable energy used in 2008, Samra WWTP is a quasi self-sufficient treatment plant. This improves the economic fundamentals of the Project of course, but at the same time it is a model in sustainable development projects through reduced reliance on fossil resources and a reduction of greenhouse gas emissions in the atmosphere. With the approval of the local authorities, the Project was presented to the United Nations in order to recognize it as a Clean Development Mechanism Project.

The Carbon credits revenues which will be shared between the Government of Jordan and the Project Company, will contribute further to the improvement of the project financial fundamentals.

Last but not least, the Project is now strongly focusing on the valorization of the 100 tons of sludge produced every day by the Plant. At the beginning of 2009, two approaches are being developed.

On the one hand the Project is launching experimental plots where different kinds of fodder crops will be planted directly in the biosolid in order to transform it into compost. Both fodder and compost could be valorized on the demanding local market. Collaboration with local academic and non-academic institutes will enhance the value of this small-scale pilot project.

On the other hand, the Project is cooperating



with a nearby cement factory newly constructed (AR Rajihi Co.) that is highly interested in using the sludge as an alternative fuel. The implementation of this approach, which consists of reusing the sludge produced by the plant as fuel, would be again a first in Jordan, and shows once more that Samra Project is a unique project.

Hence, in a world where, i) saving of fossil resources, ii) protection of potable water and

access to it, iii) reduction of toxic gas emissions in order to avoid destroying the ozone layer, which become the most important environmental challenge, a project such as As-Samra, with its numerous benefits and strengths, appears as a sustainable development project which provides great contribution in facing those challenges, and shows a good image of the Kingdom in the region and around the world.

The PMU and the Water Scarcity Problem in Jordan

It is well known that the country of Jordan suffers a severe water scarcity problem, with an increasing demand for water resulting from escalating population growth and economic development. Most of traditional water resources in the country are fully utilized, and even non-traditional resources are being processed and put into operation such as the brackish waters of the Zara-Maeen Project. In addition, the Government of Jordan has no choice but to approach high cost projects like the Disi Conveyer Project, and ultimately implement the Red Sea – Dead Sea Project.

Through its various business activities, the PMU plays a significant role in moderating the water scarcity problem in Jordan. Through monitoring and reporting on the performance of water utilities in governorates, these utilities are progressively lead into improving their management and utilization of the more and more precious resource water, and at the same time maintaining cost efficient operations that allow for reasonably low service tariffs, and upholding acceptable quality of services (e.g., reliability of supply in terms of quality and quantity delivered in the agreed time pattern and so on).

More specifically, through its ambitious Non-Revenue Water (NRW) management program and the various Water Loss Reduction (WLR) projects, the PMU has been assisting water utilities over the last several years in alleviating the NRW problem through combating illegal uses of

water as well as reducing physical losses of water due to leakages in water networks infrastructure, resulting in significant savings in water quantities for actual consumption.

On the other hand, the PMU has been involved in the financial closing, design, implementation, commissioning and testing, and up to the operations of As-Samra Wastewater Treatment Plant. With regard to the water scarcity problem, the Plant enables strict control on the treated and discharged water so as to comply with Jordanian and international standards for agricultural use, and provides such significant quantities of irrigation water to farmers in the Jordan Valley and thus freeing the fresh water resources of the Valley for domestic uses in Amman and Balqa governorates.

Finally, the PMU has become recently part of the MWI Emergency Committee that is charged with finding solutions to overcome the severe water shortage problem anticipated in the coming summer season, especially after an exceptionally dry winter season, through exploring additional water resources as well as the reallocation of existing resources.



PMU Expertise In Support of the Water Sector

The PMU Al Meyyah has become an important tool for the Ministry of Water and Irrigation, Water Authority of Jordan and the Jordan Valley Authority contributing to various strategic activities, such as development of the Jordan water strategy and the related action plan, and revision of the water sector legislation. Recently the PMU has become part of the Ministry's Emergency Committee that is charged with finding solutions to overcome the severe water shortage problem anticipated in the coming summer season, after the dry winter season, through exploring additional water resources as well as the reallocation of existing resources.

The water sector institutions continued utilizing the PMU staff during the year 2008 in various tasks, including:

Development of the Jordan Water Strategy 2009 – 2020:

- Promoting the positioning of the PMU, in the final report of the Jordan Royal Water Committee, as the recognized future regulatory body for the water sector.
- Participating in the development of the WAJ strategy for the years 2008 – 2012.
- Participating in the strategy revision for the King Abdullah II's Government Excellence Award.
- Participating in evaluation of the water sector restructuring options (The ministry of Public Reform).
- Participating in the development of the Water Sector Information Technology Master Plan.

Planning Tools Development:

- System development for the prioritization of capital investment projects for the Ministry of Water and Irrigation.
- Participation in the Financial Planning Committee for the Water Authority of Jordan (WAJ).

Private Sector Participation:

- Finalizing the Request for Proposals (RFP) for Jordan Water Company - Miyahuna strategic partner.
- Participating in the evaluation of proposals and assessment of risk for the desalination plant (under BOT) in Aqaba.
- Participating in all tendering procedures for the Disi/South – North Water Conveyor Project of value about 1 billion USD, including preparations of documents and negotiations.
- Preparing documents for the private sector involvement in sludge dewatering in five treatment plants.
- Managing, supervising, and monitoring of As-Samra Company Partnership project WWTP during operational phase. The total value of the project is 120 M JD Contract Price.
- Review of the Request for Proposals (RFP) for the Deep South Private Sector Participation (PSP) contract.
- Review and preparation of Terms of Reference (ToR) for Miyahuna Non-Revenue Water pilot contract.
- Initiation of proposals for the Water Loss Reduction Projects in Zarqa, Karak, and Northern Governorates.

Millennium Challenge Corporation (MCC) projects:

- Participating in the application process and work to meet the eligibility criteria for the grant of approximately USD 400 000 provided to the water sector in Jordan by the USA through the MCC.
- Participating in studies leading to identification of projects.

Training and Capacity Development for WAJ staff and trainees from regional water agencies:

- Non-Revenue Water (NRW).
- Geographical Information Systems (GIS).



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