

Wastewater Treatment, Reuse and Water Supply

Improving the performance of selected water sector institutions in Jordan

The challenge

Jordan faces several challenges due to its severe water scarcity. The demands of agriculture, industry, and the fast-growing need for drinking water exceed the available renewable water resources by far. On top of that, current climate forecasts predict an increase in fluctuating precipitation patterns. Freshwater availability in Jordan is thus expected to further decline.

Efficient and sustainable management of water resources is a high priority for the Government of Jordan. Importantly, these resources include treated wastewater for reuse as recommended in the National Water Strategy (NWS) 2016-2025: “As available freshwater resources become increasingly limited, treated wastewater will play an increasingly important role.” Within this strategy, Jordan is committed to reuse 91% of its treated wastewater in agriculture and thus reallocate freshwater for domestic purposes.

Our approach

The objective of the GIZ module “Wastewater Treatment, Reuse and Water Supply” (WTR) is to improve the performance of selected water sector institutions in Jordan.

The first field of activity aims at strengthening the oversight function of the Water Authority of Jordan (WAJ) with respect to the wastewater treatment plants operated by Yarmouk Water Company (YWC), improving wastewater management of WAJ and YWC by supporting the sustainable integration and digitalization of the Quality Management System “Technical Sustainable Management” (TSM), adapting key performance indicators (KPIs), and developing their employees' competencies.

The second field of activity aims at improving the organisational capacities of YWC for the effective and efficient operation of wastewater treatment plants, developing the capacity of technical

staff of YWC by implementing professional human resource development measures, and improving the utility performance by implementing a computer-based enterprise resource planning system into the wastewater sector.

The third field of activity aims at improving the human resource, organisational and technical capacities of wastewater treatment plants, updating standard operating procedures, and updating job descriptions. Strong practical and long-term technical and process advice to improve the treatment of wastewater on-site will create routines, experience, and self-confidence. Operational and maintenance needs will be recognised faster, reaction times shortened, and the daily tasks completed more effectively.

The fourth field of activity aims to support the water utility “Miyahuna” in improving the conditions of technical and administrative implementation by developing a water infrastructure master plan and enhancing the water metering in selected areas.

The fifth field of activity aims to improve the technical and management capacities of the water utility “Aqaba Water Company” to optimise the management of their activities in Al-Karak governorate by applying an “Enterprise Resource Planning” (ERP) system and rehabilitating the water infrastructure.

Project name	Wastewater Treatment, Reuse and Water Supply (WTR)
Commissioned by	German Federal Ministry for Economic Cooperation and Development (BMZ)
Project region	Jordan
Partner	Ministry of Water and Irrigation (MWI)
Duration	2020 – 2024



Left: Wadi Shallalah Wastewater Treatment Plant in Irbid Governorate

Right: Replacement of old mechanical water meters with ultrasonic meters have a direct impact on decreasing the admirative losses



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Left: Drone image for Wadi Shallalah Wastewater Treatment Plant in Irbid Governorate

Right: Repair of a leaking water pipe in Balqa region

Impact in figures

In the field of wastewater management, the digitized quality management system TSM is sustained, and a key performance indicator system is adapted to enhance the performance of wastewater treatment plants. This enables WAJ to have better oversight of the wastewater sector, as well as provides the wastewater sector with a solid basis for transparency in decision-making and further development.

Targeted capacity development on both the institutional and the individual level, and proper management of wastewater treatment plants improve performance and enhance the availability of treated wastewater of high quality for agricultural or industrial purposes according to Jordanian standards. So far, TSM is introduced into YWC's wastewater treatment plants. Seven wastewater treatment plants follow TSM standards. During the project duration, the system will be also introduced to wastewater treatment plants of Miyahuna and AWC. The project aims to certify nine wastewater treatment plants twice in sequence to assure operational sustainability. In addition, the project interventions will lead to a decrease in electricity consumption by 15% through operational optimisation.

In the field of water supply, the project is supporting water institutions including Miyahuna and AWC in reducing technical and administrative water losses by 10% in Al-Karak, Ain Al Basha and Salt operating areas within the project duration. This will be achieved, among others by introducing another four District Metered Areas (DMAs) in Balqa governorate to better monitor water consumption, replacement of 25.000 mechanical water meters on household level, as well as improved operation and maintenance.

Impact in faces

“Before the implementation of Technical Sustainable Management at Wadi Hassan wastewater treatment plant, there was weak coordination between key staff. The implementation of the TSM system has improved the performance through the introduction of preventive maintenance which is reflected in maintenance costs. Working in a safe environment by adhering to occupational health and safety standards, and protecting the employees from injuries, has led to higher motivation of employees and increased self-confidence.



Also, the quality of the treated wastewater has been increased due to proper operational procedures. Further, a better organisation of work, and assigning tasks, and knowing the tasks of each employee have been achieved”.

Eng. Mohammad Twati, Manager of Wastewater Treatment Plant

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