التعاون الألماني
DEUTSCHE ZUSAMMENARBEIT

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In cooperation with:

Wastewater Treatment, Reuse and Water Supply

Improving the performance of selected water sector institutions in Jordan

The challenge

The Jordanian water sector 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. The sector also faces high water losses around 54%. Climate change is expected to increase irregular precipitation patterns, leading to less available freshwater.

Efficient and sustainable management of water resources is a high priority for the Government of Jordan. These resources include treated wastewater for reuse as recommended in the National Water Strategy 2023-2040: "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 project "Wastewater Treatment, Reuse and Water Supply" (WTR) is to improve the institutional and human capacities in the water and wastewater sector, enabling the optimal use of water resources in Jordan.

The first field of activity aims at strengthening the Water Authority of Jordan's (WAJ) oversight of the wastewater treatment plants operated by the three water utilities in Jordan. This is supported by the institutionalisation of the quality management system "Technical Sustainable Management" (TSM) and the adaptation of key performance indicators for wastewater treatment plants.

The second field of activity aims at strengthening the organisational capacities of the water utility "Yarmouk Water Company" (YWC) to improve operation and maintenance of wastewater treatment plants.

The third field of activity aims at improving the human and technical capacities in wastewater treatment plants, updating standard operating procedures, and job descriptions. This will help to recognise operational and maintenance needs faster, shorten reaction times, and complete daily tasks more effectively. In addition, wastewater management in the Azraq Refugee Camp will be enhanced by the construction of a wastewater treatment facility with treated wastewater available for re-use in agriculture.

The fourth field of activity aims to support the water utility "Miyahuna" in reducing technical and administrative water losses by developing a detailed tertiary level water infrastructure plan and enhancing the water metering systems in selected areas.

The fifth field of activity aims to improve the technical and management capacities of the water utility "Aqaba Water" to optimise the management of their water infrastructure in the Al-Karak governorate, increase operational efficiencies and reduce water losses.

Project name	Wastewater Treatment, Reuse and Water Supply (WTR)
Commissioned by	German Federal Ministry for Economic Cooperation and Development (BMZ), co-financed by the European Commission
Project region	Jordan
Partner	Water Authority of Jordan (WAJ)
Duration	2020 – 2025

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 administrative losses.

Contact person

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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 quality management system TSM is institutionalised within a dedicated TSM unit at WAJ. The results of the unit's independent inspections provide WAJ with better oversight over the wastewater sector and a solid basis for transparency in decision-making and further development. From 2022 to 2024, 20 full TSM inspections were completed in wastewater treatment plants across Jordan. In YWC, the Regional Technical Service Center was established, which is now providing tailored and bundled maintenance services to the wastewater treatment plants of the northern service area.

In addition, operational optimisation measures reduced electricity consumption by 17% in nine YWC wastewater treatment plants.

In the field of water supply, the Al-Karak governorate reduced its water losses by 16 % and increased the collection of billed water charges to 94% over the span of two years. With the support of the project, the contract management unit for the southern governorates completed a holistic organisational change process, which enabled "Aqaba Water" to fully integrate the management of three new governorates into its operational and management procedures.

In the Balqa governorate, four additional District Metered Areas have been introduced to better monitor water consumption, and the collection rate in the Salt operating area increased to 85%. To further reduce water losses, 25,000 mechanical household water meters were replaced by digital meters, and staff were trained in better operation and maintenance practices.

Impact in faces

"Before the implementation of TSM at the Wadi Hassan Wastewater Treatment Plant, coordination between key staff was weak. TSM has improved the performance by introducing preventive maintenance which is reflected in lower 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 employee motivation and greater self-confidence.

We have also increased the quality of the treated wastewater due to proper operational procedures. Now, it is easier to assign and know the tasks of each employee – our work is much better organised".

Eng. Mohammad Twati, Manager of the Wadi Hassan Wastewater Treatment Plant

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