

# Decentralised Wastewater Management

## Demonstration of decentralized wastewater management as measure for climate change adaptation in Jordan

### The challenge

Jordan ranks amongst the world's most water-scarce countries, while at the same time the limited water resources are being heavily overexploited. The imbalance between water needs and water availability is exacerbated by inefficient and uncontrolled resource use as well as decreasing water quality. Moreover, in the future Jordan will be severely affected by the impacts of climate change: climate models predict a reduction of overall precipitation in Jordan of up to 60 percent by the end of this century. Currently, only around 62 percent of households in Jordan are connected to the sewage system. Hence, there is a significant, untapped potential for decentralised approaches for wastewater management. Particularly in northern Jordan – the region in which most of the refugees from Syria are living – the wastewater infrastructure is not designed for the large number of refugees received. In addition, topography and fragmentation of settlements hinder the expansion of sewage systems in several areas. Industrial facilities such as olive mills discharge their wastewater in (often leaky) cesspits or it is disposed of at high costs. It is assumed that the groundwater resources are contaminated with pollutants hazardous to human health.

### Our approach

On behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) the project is supporting partner organisations in decentralised wastewater management as a measure for climate change adaptation. The project promotes the efficient use of water resources by a twofold approach. Precious groundwater resources are protected by reduced pollution of aquifers with untreated wastewater. At the same time, the treated wastewater is reused thus

substituting freshwater. Both elements lay the ground for a future that might bring even more severe climatic conditions to the region, thus potentially increasing the stress on the already limited available water resources. The geographical focus of the project is the Northern Governorates in Jordan. This region is strongly affected by the Syrian refugees influx and will most probably suffer most from climate change.

A model for operating a decentralized sewage treatment plant for domestic and industrial wastewater is being developed and implemented at a pilot site in cooperation with the Jordanian Ministry of Water and Irrigation, the Water Authority of Jordan, municipalities and industries. Methods for reusing the treated wastewater for agriculture, urban parks, and industrial recycling processes are being communicated to relevant actors and are being tested. Capacities of stakeholders in decentralized wastewater management as a measure for climate change adaptation are strengthened.

### Success factors

Stakeholders in the project area will be involved in planning and implementing activities. Cost efficient, low operation and low maintenance treatment plants will be constructed. Knowledge sharing and communication is necessary to ensure transparency and dissemination of project impacts.

Project name	Decentralised Wastewater Management for Climate Change Adaptation in Jordan (ACC Project)
Commissioned by	German Federal Ministry of Economic Cooperation and Development (BMZ)
Partner	Ministry of Water and Irrigation (MWI)
Duration	2014 - 2019



Regional training course on decentralised wastewater management

2<sup>nd</sup> page, l to r.: Opening of a pilot treatment plant by the Jordanian Minister of Water and Irrigation; demonstration garden for reuse of treated sewage