

REDUCING NON-REVENUE WATER AND ENERGY CONSUMPTION WITHIN YARMOUK WATER COMPANY'S SUPPLY AREA

concept note
water supply & management



The equitable and sustainable use and distribution of water resources is a global challenge and failures in it drive conflicts and displacement around the world. They also threaten the living conditions and livelihoods of refugees and host populations alike.

In contrast to the prevailing image of refugees-in-camp contexts, over 60 percent of the world's 21 million refugees live in urban settings. While donors and aid agencies provide many of the same services to the refugees in these settings, refugees depend primarily on existing public infrastructure and services for support, most particularly water and sanitation services.

PARTNERS: DANISH REFUGEE COUNCIL / VIBORG MUNICIPALITY



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REDUCING THE AMOUNT OF NON-REVENUE WATER (NRW) WITHIN YARMOUK WATER COMPANY'S (YWC) SUPPLY AREA TO IMPROVE SUSTAINABLE ACCESS FOR REFUGEES AND JORDANIANS ALIKE.

Jordan is one of the most water stressed countries in the world¹ and has one of the lowest water resource availability rates per capita. Water scarcity has historically posed a serious challenge in face of waves of forced migration from Palestine, Iraq and, most recently, with the arrival of an estimated 1.2 million Syrians into Jordan since 2011, water availability has decreased from 3,600 m³/capita in 1946 to 123 m³/capita in 2014.

Water availability and delivery frequency is one of the primary drivers of tensions between Syrian refugees and Jordanian host communities. Around 50 percent of Jordanians and Syrians considers that it has caused tensions in their community. Some 70 percent of inhabitants in Yarmouk Water Company's (YWC) service area fail to receive the Government-standard 100L/day benchmark - a reality that incentivises private water trucking from illegal wells.

While high-profile supply side solutions are starting up - including the Red-Dead Sea desalination and pipeline project - smaller scale, sustainable use and collective action responses must be developed on the demand side. Equitable distribution and localised monitoring and community outreach activities have the ability to make use of refugee and Jordanian labour while working to alleviate the negative social narratives around refugees.

Finally, in the National Water Strategy 2016 – 2025, the Jordanian government has set a target of a reduction of NRW of 3 – 6 percent per year with a national targeted reduction of 25 percent by 2025.

DETAILS

The YWC's supply area through Northern Jordan (*Irbid, Mafraq, Ajloun and Jerash governorates*) covers an estimated 2.7 million inhabitants, including nearly 600,000 Syrians. The company estimates that the water usage has increased by 40 percent since the influx of Syrian refugees and demand is greatest in the urban Greater Irbid Municipality (GIM) where Syrians make up around a quarter of the estimated 1 million inhabitants.

In face of the water scarcity and increasing demand, efficient use and distribution is crucial.

In 2014, the average extracted (pumped) water in Jordan was 126 litres/capita/day and households received an average of 61 litres/capita/day. Losses due to physical and administrative gaps is a major issue across the country - as high as 48 percent in 2013.

Within the YWC service area, that average ranged from 30 percent in Irbid from to 75 percent in Mafraq.

The scope of this case will be to select a smaller area within YWC's supply area in the Greater Irbid Municipality in order to test a series of possible to reduce NRW and related energy consumption. The selected area will serve as a pilot project and the experiences can then be transferred to other areas of YWC's supply area and beyond.

Best practice is likely to vary from area to area depending on elevation, drainage conditions, permeability, water demand, physical conditions of pipes, size of network, density of consumers, etc. but could include elements addressing;

- technical leak detection, repair training and team workflow organisation;

- community-led monitoring and accountability mechanisms related to water use and revenue collection processes;
- reporting and handling unauthorised connections and wells;
- energy-saving infrastructure improvements or alternative energy sources.

WHAT IS ALREADY BEING DONE

In some areas of YWC's supply area, the transition lines are being changed with support from KfW and GIZ (*German aid*).

Some staff have been allocated to detect leaks and pipe bursts but they are covering a very large area.

In 2013, the Ministry of Water and Irrigation initiated a campaign aiming to stop all illegal uses of water including closing illegal groundwater wells.

WHO COULD USE THIS

- all water companies in Jordan and outside Jordan – NRW is a global challenge;
- qualified Industrial zones with own water supply in Jordan;
- refugee camps with own water supply.

VIBORG MUNICIPALITY AND DANISH REFUGEE COUNCIL CAPACITY, CONTRIBUTION AND STRATEGIC FOCUS

Danish Refugee Council – Jordan:

- office in Irbid with experienced community mobilization teams and strong partner networks;
- community mobilization, awareness and outreach campaigns;

- capacity to coordinate, mobilize and monitor employment intensive campaigns involving vulnerable refugees and host community members.

Viborg municipality:

- over the last 5 years Viborg municipality has build up an extensive network in Greater Irbid Municipality in particular and in Jordan in general;
- extensive experience with international capacity building projects (*not works projects*) within the water sector;
- own experiences from running a successful utilities company in Denmark
- own experience with reducing non-revenue water to an absolute minimum in Denmark.

EXPECTATIONS TO PARTNERS

Partners must

- have the capacity, resources, experience, knowledge and commitment to implement the project. Partners should complement each other in order to deliver a complete and sustainable solution to the challenge;
- be able to offer ideas of how existing or new solutions may be adapted or tailored to help reduce the amount of NRW and reduce energy consumption within the YWC;
- have an understanding of and openness towards other cultures and traditions;
- be willing to work within a sensitive context in which refugee rights and protection concerns must be kept in focus.

KNÆK KODEN TIL NØDHJÆLPSMARKEDET deciphering the relief aid market



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A recent report from Global Humanitarian Assistance shows that the global humanitarian aid market has reached a yearly turnover of 24.5 billion USD. But the humanitarian aid organisations are increasingly challenged in providing the needed solutions. Closer collaboration with the private sector and researchers is needed in order to meet the challenges ahead.

In partnership between the Danish Industry Foundation and access2innovation the project "Knæk Koden til Nødhjælpsmarkedet" (Deciphering the Relief Aid Market) sets out to establish a Danish innovation platform enabling humanitarian organisations, private sector and academia to efficiently develop and commercialise needed solutions.

This will be accomplished by supporting Danish Red Cross, DanChurchAid and the Danish Refugee Council to map out concrete business opportunities within renewable energy, agri-business, water management and ICT as the basis to team up with private sector companies as well as the universities in Aalborg and Copenhagen in order to develop sustainable solutions for the humanitarian aid.

With financial support from the Danish Industry Foundation the project is facilitated by the access2innovation association