

RAINWATER HARVESTING SYSTEMS

A DECENTRALIZED SOLUTION TO AKKAR'S WATER SCARCITY

EFFECTIVE, SIMPLE & SCALABLE



WHAT IS THE CURRENT SITUATION FOR HOUSEHOLDS & FARMERS IN AKKAR?

Like many regions in Lebanon, currently the Al Ostuan River Basin in the Akkar region suffers from water mismanagement issues due to overuse of the surface water, challenges in the accountability and governance of the service provision as well as lack of public awareness. Public water supply is provided by the North Lebanon Water Establishment (NLWE) Qoubayat and Halba Branches, but not covering all the villages in the Basin. As a result, a high number of private wells are used with no public control over the abstracted volumes, which has led to negative environmental impacts, such as the degradation of the groundwater resources and declining groundwater levels (SISSAF, 2017). The lack of Wastewater Treatment Plants (WWTP) and the direct discharge of urban wastewater into the river also led to high pollution in the river and caused severe environmental damage, as well as presents a risk for irrigated crops. Integrated water resources management plans or other policy instruments are lacking, and management is not based on pro-active and preparedness approaches.

The primary water demands in the Al Ostuan basin are for urban and irrigation purposes, accounting for ~35% and ~62% respectively. Only about 38% of the water needs are covered by the water availability and supply in Al Ostuan. This unmet demand is mainly attributed to the irrigation: ~13.8 million m³/year on average.

WHAT IS THE SOLUTION?

Since 2019, ACTED has been supporting farmers and Public Schools in Akkar to effectively capture and re-use a cost-less water source during winter: rainwater.

To raise awareness about the benefits of installing Rainwater Harvesting Systems (RWH) on greenhouses and schools, ACTED trains 278 men and women from the local and refugee community at the Al Oustan River Basin on how to install the systems, as well as on water management and climate change.

The trained beneficiaries are then provided with income to install 69 RWH systems. The RWH systems are being installed in 45 greenhouses and 24 public schools which are designed and constructed in line with the guidelines developed by the Ministry of Environment and UNDP.

To further promote community water management, ACTED is currently providing training to vulnerable women on domestic household water management, water quality and climate change. 417 female cash for workers from the local and refugee community are conducting household-level water audits and distributing 7,920 water efficient fixtures to reduce household water use and costs, and are remunerated accordingly.

"This project gave me job opportunity; I was in massive need for it. Also, many farmers other than the ones selected for the programme have contacted me to try help them implement the RWH system in their farms. Such a project will help the farmers and the community to save money and rely on reliable sources of water."

Ibrahim, programme participant in Tal Abbas Gharbi, Al Oustan River Basin, Akkar



WHAT ARE THE BENEFITS OF RAINWATER HARVESTING?



Saving around 7% of the amount of electric energy usually needed to pump water from an aquifer well, ground or underground tank



Decreased groundwater pumping, and improved climate security



Saving approx. 25% of the annual cost of water for farmers by providing a free water resource during winter*

*ACTED Technical Expert estimation - January 2022

WHAT HAS ACTED DONE TO ADDRESS WATER SCARCITY IN AL OSTUAN?



CAPACITATING ADDITIONAL FARMERS TO EFFECTIVELY CAPTURE AND RE-USE RAIN WATER

Additional support is being provided to expand the geographical reach of the rain water harvesting system across the river basin, via the installation of **45 RWH systems in greenhouses** and provision of training to farmers on the **operation and maintenance** of the systems through ACTED's expert team of engineers. RWH O&M is a simple practice that, when trained, can be applied by individuals without technical expertise.

CREATING ECONOMIC OPPORTUNITIES IN THE COMMUNITY

ACTED is currently facilitating **training & income** generation activities for **vulnerable men & women (refugees and host communities)** to engage in the **installation** of the RWH systems, **communications** and behavioral change (household and community water management, including installation of water saving fixtures).

CITIZEN-DRIVEN CLIMATE ACTION TO REDUCE WATER USE

The trained participants are delivering household and community-level **water-wise sessions** in their community, focusing on topics such as water use & conservation, waste management, and climate change. During the household sessions, the participants are providing and installing **water efficient fixtures** to reduce water consumption in **7,920** households.

INCREASING COORDINATION BETWEEN STAKEHOLDERS

With the support of LEWAP, in early 2023, ACTED will host a workshop in the project location, that will **bring together local WASH actors platform** to share learnings of the implementation of the program, feedback from the beneficiaries as well recommendations for improved future programming.

ACTED'S IMPACT

45 out of **45**
RWH systems installed in
greenhouse to date

24 out of **24**
RWH systems installed in
public schools to date

13,586 individuals
including students and staff
will have access to water on school
premises.

680 individuals
including farmers' family members and employees
will benefit from the RWH systems
installed in greenhouses.

ACTED'S ADDED VALUE



building the capacity of
local and national water
service providers since **2013**



working with the Water
Establishments to improve
integrated water **management**



tackling the most urgent
water and sanitation
infrastructure needs



innovating
(rainwater harvesting,
waterwise training)



engaging communities and
building their water
awareness



capacitating local communities
to **understand** water-related
rights and duties