

Case Study: **Afghanistan**

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PROVIDING SOLAR POWERED WATER SUPPLY SYSTEMS TO PROMOTE SAFE DRINKING WATER AND HYGIENE IN MAIDAN WARDAK PROVINCE OF AFGHANISTAN



■ Background

Afghanistan is affected by manmade and natural disasters, which have caused a significant displacement of people. People often move from their place of origin to cities and are settled in areas where access to safe drinking water is limited. In 2020, only 47.5 per cent of the population had access to basic drinking water services and 38.1 per cent had basic hygiene services¹. As a result, water-borne diseases such as diarrhoea and cholera threaten people's lives, including that of children.

Maidan Wardak was one of the most affected provinces by conflict and drought in 2021. More than 2,000 families were displaced to the Northern part of Maidan Wardak City where access to WASH facilities was limited. Of these families, 560 (3,864 individuals) ended up living in Hewad Mena village. Most of these families are either returnees from Pakistan or are Internally Displaced Person (IDPs) from different conflict-affected districts of Maidan Wardak, Ghazni, Nangarhar and Laghman Provinces. These populations are the most vulnerable in the province due to their poor economic conditions.

The area has access to limited water sources due to recurrent drought. People either collect water from the few available water wells (located between 200 meters and 600 meters distance of the premises) or

¹ Joint Monitoring Programme, 2020

use purchased water. This limited access to water and poor awareness about hygiene practices caused several waterborne diseases.

Community representatives from Hewad Mena village requested support from the Provincial Rural Rehabilitation Directorate (PRRD) and Danish Committee for Aid to Afghan Refugees (DACAAR) to improve their access to safe drinking water and hygiene promotion. PRRD and DACAAR approached UNICEF to partner on this request. UNICEF activated its partnership with DACAAR to provide safe drinking water and organize hygiene promotion sessions to the people in Hewad Mena.

■ Strategy and implementation

UNICEF is the leading United Nations child rights mandated organization working with the de facto authorities of Afghanistan and other implementing partners to fulfil every child's right to water. UNICEF Afghanistan's WASH programme is in line with global UNICEF WASH policy and priorities and contributes to the achievement of the Sustainable Development Goal (SDG) 6 (having a strong focus on SDG 6.1 and SDG 6.2). UNICEF Afghanistan's Country Programme document for 2015-2022 prioritizes access to sustainable WASH facilities to address the needs of vulnerable children and their families. To achieve its objective UNICEF supports emergency and development partners to deliver WASH services to deprived and vulnerable communities in Afghanistan. The provision of safe drinking water through sustainable options is a key priority for the de facto authorities and UNICEF is supporting partners to provide safely managed drinking water to people on their premises. In July 2021, UNICEF began the implementation of the water supply project in Hewad Mena, which was completed in March 2022.

The project consists of two main components and several activities:

The provision of safe drinking water:

1. Completion of technical assessment
2. Get community consent on project implementation and their contributions
3. The signing of an agreement with partners
4. Drilling of a water well with a depth of up to 160 meters
5. Construction of a water reservoir (40 m³)
6. Installation of a solar pump and a solar-powered system
7. Installation of 400 household connections with water meters
8. Establishment of a water management committee at the community level
9. Training and equipping of a mechanic with the required skills and tools
10. Handing over of the project to community and municipality.

The promotion of hygiene education:

1. Organizing hygiene promotion sessions
2. Household visits
3. Distribution of hygiene kits, soap bars and dust bins.

The project was completed with the close coordination and cooperation of Maidan Shar municipality, PRRD and community representatives. As the municipality did not have technical staff, the PRRD technical team

was assigned to regularly monitor project progress and submit their reports to the involved stakeholders. In addition, the project was monitored by a third-party monitoring team and UNICEF-supported engineers and officers.

■ Progress and results

The project outputs and results for safe drinking water are as follows:

1. Technical WASH assessment completed
2. Bore well drilled at the depth of 160 meters
3. A 40 m³ concrete water reservoir constructed on the hillside around 1 km away from the bore well
4. 22 kW water pump and 26 kW solar power system installed
5. 400 household connections with water meters built
6. Water distributed through main and sub pipes (1.9 km length)
7. 3,864 people (1,902 men, 1,962 female) got access to safe drinking water on their premises
8. A water management committee was established and is functional. People assigned a mechanic and begin paying his service wage
9. The mechanic was trained and equipped with the required skills and tools
10. Handing over of the project to community and municipality.

The project outputs and results for hygiene promotion are as follows:

1. Representatives from 560 families attended hygiene promotion sessions
2. Hygiene promoters organized at least three rounds of household visits
3. 560 hygiene kits were distributed to and used by 560 families
4. 560 families received three rounds of soap bars
5. A sanitation campaign was organized, and 560 dustbins were distributed to the targeted beneficiaries.

One of the indirect results of the project was children were able to concentrate more on their studies and complete their homework without worrying to fetch water. Furthermore, families were able to save money due to the availability of water on their premises; this in turn supported them to spend the saved amount of money for the procurement of other essential items. In addition, the project positively changed the health status of the families and targeted families reported a significant reduction in water-borne disease.

■ Lessons learned

- 1) **Community participation is very important:** Need and potential-based WASH interventions and community-based engagement are important for having substantial water supply projects. Effective application of community participation approaches requires commitments and engagement of implementing partners. It is important to seek community engagement during the design, planning, implementation, and monitoring of water supply projects.
- 2) **Installation of water meters at the household level supports efficient use of water:** Water meters not only monitor water consumption but also saves money incurred by more attentive water use. Water meters promote equity because families pay as per their actual water consumption instead of paying a fixed amount at the household level. Implementation of solar-powered water supply

networks with the installation of water meters proved to be an effective way to ensure sustainability of the project and efficient use of water.

- 3) **Groundwater recharge should be integrated as a part of water supply networks:** Using groundwater for safe drinking water should be strengthened with groundwater recharge measures as due to decreased rainfall, drought, deforestation, urbanization, and climate change the infiltration rate of water is often reduced. Groundwater recharge should be integrated into de facto authorities and humanitarian actors' agendas and concrete actions need to be taken to ensure overextraction through new systems, risking further water scarcity in the targeted area.

■ Way forward

- Afghanistan has the potential to scale up solar technology used for the provision of safe drinking water. The country has potential, with up to 300 sunny days/year, to scale up solar-powered water supply networks at the national level. Development actors including de facto authorities, UN agencies and international organizations need to support this initiative.

Related links:

- [Afghanistan Living Conditions Survey 2016-17](#)
- [Afghanistan National Maternal and Newborn Health Quality of Care Assessment 2016](#)
- [Rural Water, Sanitation and Hygiene Overview](#)
- [Assessment of solar energy potential and development in Afghanistan](#)

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