Sector	Water
Sub-sector	Water supply
Technology name	Rainwater Collection
Option name	Rainwater Collection from Ground Surfaces—Small Reservoirs and Micro-catchments
Scale	Medium-scale
Availability	Available
Technology to be included in prioritization?	Yes

Background/notes

As there are water poor regions in many areas of Azerbaijan, small-scale collection infrastructure can contribute greatly to the volume of freshwater available for human use. This is especially an issue in arid and semi-arid regions, where the minimal rainfalls are usually very intense and often seasonal. As such, run-off and river flows can be abundant for brief periods and non-existent throughout the rest of the year.

Advantages of the technology:

Technology can help to store and use water during low water periods and, therefore, increase water use efficiently as the system collects water from the nearby area and keeps it from flowing into rivers or other areas or from evaporating.

Disadvantages of the technology*:*

The initial cost of these systems can be higher than other systems. Higher costs are generally associated with the costs of infrastructure and installation. Unexpected rainfall can affect the system.

Implementation assumptions (How the technology will be implemented and diffused across the subsector)	This technology covers collection, storage and use of rainwater that lands on the ground, utilizing "micro-catchments" to divert or slow run-off so that it can be stored before it evaporates or enters watercourses; and • Collecting flows from a river, stream or other natural watercourse (sometimes called floodwater harvesting). This technique often includes an earthen or other structure to dam the watercourse and form "small reservoirs" Collection and storage infrastructure can be natural or constructed and can take many forms. These include: • Below ground tanks (i.e. cisterns) and excavations (either lined for waterproofing or unlined) into which rainwater is directed from the ground surface • Small reservoirs with earthen bunds or embankments to contain run-off or river flow • Groundwater aquifers can be recharged by directing water down an unlined well Collection and storage of rainwater can provide a convenient and reliable water supply during seasonal dry periods and droughts. Additionally, widespread rainwater storage capacity can greatly reduce land erosion and flood inflow to major rivers. Rainwater collection can also contribute greatly to the stabilization of declining groundwater tables.

Impact statements (How the options impact countries development priorities)	
Countries social development priorities	• Contributes to water security priority by increasing water availability • Leads to improved living standards of rural population and sanitation • Reduces migration to urban areas from rural communities

Countries economic development priorities	Lack of adequate water supply during droughts and seasonal dry periods can halt economic development and hinder human health and well-being. Access to a convenient supply of stored rainwater can decrease travel time to remote water sources, increase agricultural productivity and reduce depletion of groundwater resources. Increasing the availability of irrigation water during the dry season, and even during short dry spells, has been shown to yield large increases in agricultural production.
Countries environmental development priorities	• Reduces use of drinking water from centralized system for other purposes • Reduces health and environmental issues related to lack of sanitation
Other considerations and priorities such as market potential	• Collected water can be used in different areas of economy
Costs	
Capital costs over 10 years	Implementation of large-scale rainwater collection programs should include a survey of current reservoir capacity and location. Satellite-based methods for tracking surface water, including radar and other methods that are not hindered by cloud cover, can reduce the costs of the survey. It is difficult to find specific data on the construction and implementation costs of rainwater collection projects. Many factors, including the scale of the project, location, etc. will strongly affect costs. The program cost for implementation in one community (40 ha or greater) may be around 60,000 USD.
Operational & maintenance costs over 10 years	There might be a need for operational and maintenance costs of about 8,000-10,000 USD per year.
Other costs over 10 years	Additional costs will be needed to provide necessary capacity building activities for local residents, which will cost approximately 6,000 USD per year per project.