



Project: Water Replenishment in the Upper Basin of the Samalá River

The Upper Basin of the Samalá River located in the department of Quetzaltenango faces serious water stress due to the combination of environmental and human factors due to deforestation, water pollution and overexploitation of water sources. These problems have a negative impact on access to and availability of water for human consumption, agricultural production and ecological imbalance in the region.

In particular, in the municipality of San Juan, Ostuncalco has been identified with a high water vulnerability. According to the Systemic Vulnerability Map of Guatemala (IARNA-URL, 2020), this territory presents critical conditions due to the reduction of flows, contamination of water sources, and lack of adequate infrastructure for storage and treatment of water resources. In addition, the average availability of renewable water in the upper Samalá River basin is approximately 1,000 m³ per person per year, below the threshold of 1,700 m³/inhabitant/year established as the minimum necessary to meet basic needs (IUCN, 2020). This confirms the existence of severe water stress, with direct impacts on the quality of life of the communities.

The situation is even more worrying in San Juan Ostuncalco, where chronic malnutrition reaches 48.5% (SIINSAN), one of the highest in the country. The lack of access to safe water and adequate sanitation has a direct influence on this problem, as it limits hygiene conditions and increases the incidence of water-borne diseases. In this context, urgent actions are required to improve the availability and quality of water, guaranteeing equitable and sustainable access for the most vulnerable population.

In this context, the project proposes an intervention under the Water Replenishment approach, which seeks to replace more water than is consumed. It will focus on three key areas: 1) Protection of water sources and associated water recharge areas, through reforestation in strategic areas and soil conservation, as physical protection measures, 2) Improvement of water access infrastructure through the installation of rainwater harvesting and storage systems in health centers, and, 3) Strengthening of community water and sanitation management, through training for Water and Sanitation Committees (CAS) and municipalities, promoting the operation and maintenance of water systems and disinfection.

HELVETAS' experience in WASH projects in rural communities in Guatemala and other countries guarantees the effectiveness of the interventions. The organization has successfully worked on the construction and improvement of water system infrastructure, promotion of hygienic practices and basic and environmental sanitation (wastewater and solid waste), inclusion of the gender and social equity approach, and capacity building of community structures responsible for water management (CAS) and municipalities through the Municipal Water and Sanitation Offices (DEAGUAS).

GENERAL OBJECTIVE

Contribuir a la reposición de agua en la Cuenca Alta del Río Samalá, mejorando la disponibilidad, calidad y gestión para beneficio de las comunidades y autoridades locales.

SPECIFIC OBJECTIVES

1. Implement measures to restore and protect critical areas of water recharge through reforestation.
2. Implement rainwater harvesting and storage infrastructure in a health center, ensuring designs adapted to local conditions.
3. Train communities and their water and sanitation committees (CAS) in water system management, operation, and maintenance and raise awareness about water disinfection and solid waste management.

- Promote social and gender inclusion in community water management, promoting the equal participation of men and women.

IMPLEMENTATION METHODOLOGY

To address the problems and challenges identified in the upper basin of the Samalá River, the project implemented a series of activities around the following components:

- Inter-institutional and community coordination.** A coordination strategy was established with several local actors, which made it possible to guarantee the relevance of the interventions, among the key actors involved are: The Water and Sanitation Commissions (CAS) in the process of diagnoses, work days and follow-up; The Municipality of San Juan Ostuncalco, through the Directorate of Protected Areas (DAP), the Directorate of Water and Sanitation (DEAGUAS) and the Office of Plumbing, Educational and Teaching Centers (primary level-course of Natural Sciences), CONAP and CONRED forestry brigades for the reforestation days and the Environmental Sanitation Inspector (ISA) of the MSPAS for the evaluation and prioritization of health centers to install storage systems.
- Protection of water sources for human consumption;** Among the actions that were carried out, the following stand out: a) The reforestation of 1.8 hectares in recharge areas identified in municipal and communal forests and with species of alder, cypress and pine, b) The construction of physical protection works; The circulation of fountains with concrete posts and galvanized mesh, protection and sealing of the cover, reconstruction of catchment and cleaning of solid waste in three water sources was carried out.
- Installation of water storage systems in health centers:** Two water storage systems were installed in two health centers (Los Alonzo and Agua Tibia), prioritized in conjunction with personnel from the San Juan Ostuncalco health district of the MSPAS and using detailed technical designs according to the conditions that were identified in each place.

For the scope of these activities, coordination sessions were held with staff of the health center and in the communities with community authorities to carry out the evaluation, preparation of budget, purchases and the implementation of the work according to the evaluation.
In total, 4 storage containers were installed, 2 in each health center, with an approximate capacity of 5,000 liters each, for a total of 10,000 cubic meters of storage. Likewise, the staff of the health center (nurses, supervisors) were trained in the maintenance and proper use of the water storage and disinfection facilities with calcium hypochlorite.
- Improvement in community storage tanks:** Measures were implemented to protect the infrastructure and improve water quality in three water storage tanks that have a total storage of 970 m³ of Pueblo Nuevo village, Varsovia village and Urban Center of San Juan Ostuncalco, among the actions carried out are the perimeter circulation with galvanized mesh and prefabricated wall and construction of counter-ditches, the protection of the walls with swirl. These activities were coordinated with DEAGUAS and the Plumbing Office, CAS and beneficiaries.

- Training and awareness:** Training workshops were held on water management based on the ASH model (water, sanitation and hygiene) with DEAGUAS, the Plumbing Office and the Public Service Office of the municipality; on the Administration, Operation and Maintenance of water systems at CAS and with Staff and elementary school students on the Environment and the importance of reforestation. Participatory methodologies, audiovisual materials and practical guides were used.

Dynamics on the human right to water and sanitation (DHAS) were included in developing community action plans.

- Monitoring tools:** Throughout the project, tools such as KoboCollet were used for field data collection, technical assessments, and follow-up forms. The information was systematized and visualized through Power Point presentations and dynamic dashboards in Power BI.

FAST FACTS

Geographical location:

The project will be developed in the Upper Basin of the Samalá River, covering the municipality of San Juan Ostuncalco in the department of Quetzaltenango

Phase and duration: 3 months

Start date: April 2025

End date: June 2025

Budget by phase: \$ 44,000.00

Key players and partners:

- Municipalities through their different offices: Municipal Offices of Water and Sanitation (DEAGUAS), Directorate of Protected Areas (DAP); and Plumbing Office,
- Educational and Teaching Centres (primary level-course of Natural Sciences).
- National Council of Protected Areas (CONAP)
- Forestry brigades of the National Coordinator for Disaster Reduction (CONRED)
- Environmental Sanitation Inspector (ISA) of the Ministry of Public Health and Social Assistance (MSPAS)
- Water and Sanitation Committees (CAS).

Donors:

- DIAGEO/Añejos de Altura



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