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Emerging Learning Brief Strengthening Local Governance of Watershed Management for Water Supply and Irrigation in the Dry Corridor of Honduras

The Program

Under the Dry Corridor Alliance Program (ACS-USAID), the Government of Honduras and USAID aim to reduce extreme poverty and malnutrition in rural areas of Honduras. Since 2017, Global Communities has been implementing the “Watershed Management and Conservation” component of ACS-USAID in the departments of La Paz, Intibucá and Lempira (see Figure 1), working with national government agencies, local and regional governments, communities and water organizations to address weak management of watersheds, which often results in severely deforested lands. The Project provides grants to communities to reduce rates of degradation and reforest the watersheds, providing sustainable access to water for consumption and irrigation. Global Communities also provides technical assistance to strengthen the capacity of local communities and organizations to manage water resources. This Learning Brief describes the Project’s participatory approach, shares results to date and identifies key emerging lessons that will help to strengthen the Project moving forward.

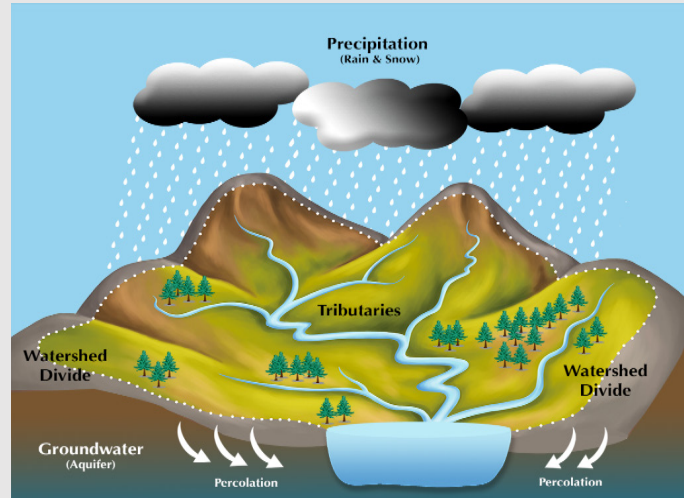
Key Emerging Lessons

- Building a shared vision and action plan between all water users and local governments leads to buy-in and long-term commitment from all parties to carry out watershed management and restoration actions;
- Connecting public agency officials, field staff, local leaders, local governments and water organizations ensures that all parties understand their roles and can create synergies to sustain long-term protection and restoration efforts;
- Investing in water supply improvements that benefit the whole community first, and then more specific populations (farmers, individual households, businesses etc.) helps avoid conflict;
- Incorporating small investments into the early watershed planning process builds consensus and trust, motivating the engagement of the whole community;
- Capacity building of under-represented groups, such as women and youth, empowers them in decision-making positions in local water organizations.

What is Watershed Management?

A watershed is an area of land containing a set of streams and rivers that all drain into a single larger body of water, such as a river, lake or ocean.

Watershed management is the process of creating and implementing plans, programs and projects to sustain and enhance watershed functions that affect the plant, animal and human ecosystems within the watershed boundary. Communities often seek to manage watershed features such as water supply, water quality, drainage, storm water runoff, water rights and the overall planning and utilization of watersheds.



The Problem

The Dry Corridor of Honduras, part of the larger Central American Dry Corridor extending from Southern Mexico to Panama, is particularly vulnerable to climate variability and change. Conditions are not projected to improve in the coming years, with the looming threat of rising temperatures, decreased rainfall and increased flooding. In a region with high rates of poverty, economic inequality, and an economy dominated by subsistence farming, the ability to mitigate and adapt to these circumstances will be vital to survival. Food security, health outcomes, economic opportunities and environmental resilience are all on the line. Water availability, watershed management and forest conservation are among the most pressing challenges facing the Dry Corridor; they are also the most critical factor for maintaining agricultural productivity and, by extension, alleviating rural poverty. Fluctuations in available ground and surface water are common due to annual rainy season patterns and weather variability. This means that adequate water storage and management are essential to ensuring sufficient and consistent volume and quality for consumption and irrigation. Prevailing agricultural practices, including the use of agrochemicals and free roaming of livestock, can jeopardize the integrity of water sources due to chemical and animal contamination. Similarly, construction projects like roads can force sediment into water sources, adversely affecting water quality and damaging ecosystems.

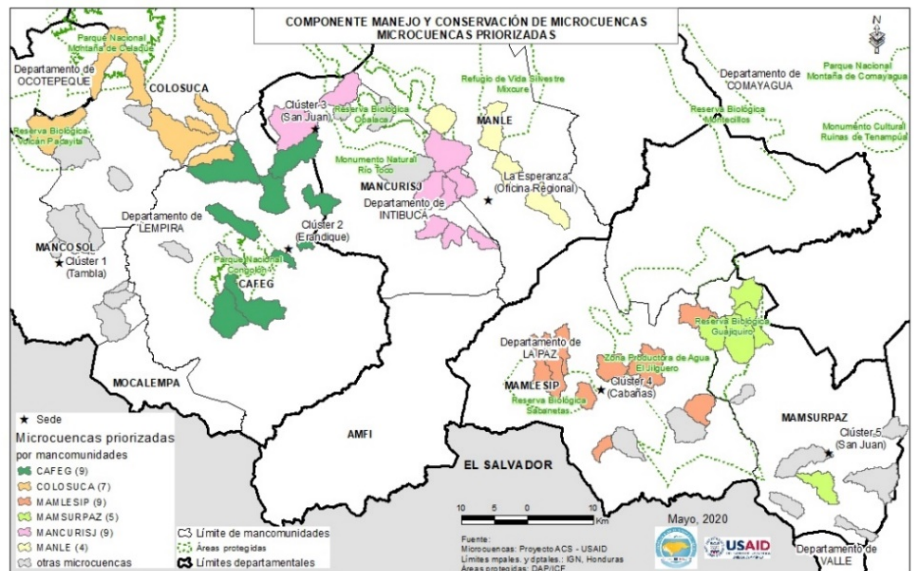


Figure 1: Global Communities is implementing watershed management activities in three departments in the Dry Corridor of Honduras.

The Solution—Global Communities’ Participatory Approach

Global Communities’ participatory approach to improved and sustainable water resource management is grounded in a commitment to empowering local communities and creating and strengthening local alliances. Global Communities convenes and facilitates collaboration among a range of actors, including national water and natural resources management agencies, regional inter-municipal entities (mancomunidades), local governments, communities and community organizations. During planning workshops and field visits, stakeholders identify watershed problems, analyze potential actions and prioritize them. Global Communities’ technical teams work hand-in-hand with community leaders, municipal staff, local NGOs, the National Institute for Forest Conservation (Instituto de Conservación Forestal - ICF), the National Water Regulator (Ente Regulador Agua Potable y Saniamiento - ERSAPS) and mancomunidades to develop action plans to guide the priority watershed interventions along with community implementation grants for micro-watershed management.



Community members during participatory micro-watershed problem mapping and analysis in Erandique (left) and in Yamarguila, Intibucá (right).

Description of the Components of the Watershed Management Program

Building a Shared Vision & Action Plan – Paired with Initial Water Resource Management Community Implemented Grants

Watershed restoration and management require a long-term commitment from all public and private water users and local governments. Global Communities’ strategic approach includes facilitating the process of building a shared vision and action plan in which water users and communities play a central role, supported by their local governments, regional government agencies, NGOs and national-level public agencies. This builds consensus and trust, motivating the participation and learning of the entire community while solving its most urgent water supply problems. A key element of this strategy has been to implement small but high-impact community grants during the planning process. These grants fund water infrastructure investments, such as improving water intakes, repairing degraded transmission pipes, water filtration or chlorination systems, and repairing or constructing water tanks.

Empowering Women and Youth to Participate in Water Administration and Governance

During the planning process, Global Communities organized seven local theater events composed of municipal and community leaders, including women and youth. These events had three intended goals: to raise public awareness about the need to use water more efficiently, to protect water sources, and to encourage women and youth to assume decision-making positions in water organizations. New youth theater groups were formed, trained, and provided with basic theatrical equipment. Local organizations, including water boards and irrigation groups, were trained in thematic areas ranging from basic organizational functioning, bookkeeping, water system operation and maintenance, water source environmental management, analyses of required water fees, and financial administration.



Water boards and municipal staff in La Chorrera micro-watershed, Tambla, Lempira in MANCOSOL show their improved water intake



Tegucigalpa Theater Workshop Association performing the Play “Casamiento,” in San Marcos de Caiquín, Lempira, as a way to increase women and youth participation water administration and governance (left), while women participating in water supply system operation & maintenance training.

Working Toward Watershed Protection and Restoration

Many watersheds in the Honduran Dry Corridor are affected by deforestation and environmental pollution. During planning and implementation processes, Project field teams raised public awareness about the importance of protecting and restoring water flow quality and quantity. In coordination with the US Forest Service, forest protection committees were organized, trained and provided with basic forest fire protection tools. To promote long-term watershed protection and restoration, 17 permanent local nurseries were built through co-investment with local governments and with the active participation of irrigation and water boards. This led to the production and planting of more than 400,000 trees in water recharge zones.

Pollution Mitigation and Improved Management of Water Source Areas

Preventing water pollution is a widespread need throughout the Project’s target area. Global Communities addresses environmental mitigation and pollution prevention by supporting communities in activities such as constructing water infiltration ditches to treat grey water, installing latrines and building improved stoves to reduce fuelwood use. In water recharge areas, activities have included constructing infiltration ditches to reduce runoff, constructing stone walls to control erosion and the resulting sediment and fencing water intakes to reduce damage from animals and other threats.



Infiltration ditches under construction by water users of the San Marcos de La Sierra community, El Platanar micro-watershed, Yamaranguila Intibucá (left). Irrigation groups and water board members of San Antonio Valle, Erandique building a series of stone walls to control erosion and sediment, La Chorrera micro-watershed (right).



As part of a private-public partnership for ecosystem conservation, community groups receive equipment and tools for forest fire protection (left). Water and irrigation board members receive nursery plants in Erandique, Lempira (right).

Strengthening Climate and Water-Monitoring in a Drought-prone Area

Although the Honduran Dry Corridor is greatly affected by climate change and variability, water users and farmers still lack daily weather and water flow data and other information to make informed management decisions. The Project established a network of 32 micro-watersheds equipped with basic climate sensors to measure rainfall, temperature and relative humidity. The Project also established three demonstration or model micro watersheds in La Paz, Intibucá and Lempira (one per department). The watersheds are equipped with sophisticated equipment, including three remote transmission weather stations and nine water level sensors (data loggers) for continuous data collection. These model micro-watersheds will serve as training and research sites for climate, hydrology and water quality water for students from three major Honduran universities (Zamorano, UNA and CUROC).

The water boards and small farmers that depend on irrigation also lack accessible, low-cost services for water quality analysis. In response to that need, in association with mancomunidades, water service providers and NGOs, the Project established ten water quality laboratories equipped and ready to perform basic water quality analysis to comply with Honduran water law and regulations. To improve water management and governance, municipalities participate in collection, handling and analysis of data on land use, water quality and quantity, the location of water intakes, and pollution sources.



Field teams receive technical training on the use of water quality equipment, which was later transferred to each mancomunidad (left). On the right, a prototype of a remote transmission climate station to be installed in three demonstration micro watersheds.

Measuring Success

The Project's success hinges upon its ability to demonstrate improvement of biophysical conditions in the watersheds and incorporation of best management practices in target areas of implementation. Expected Project results include:

1. Strengthening governance and management of the water supply in targeted river micro-watersheds.
2. Reducing deforestation, improving forest coverage and promoting financial investments in biotechnical and hydrotechnical works in micro-watersheds and their priority ecosystems.
3. Establishing systems for follow-up and monitoring of water flow and quality, and environmental conditions.
4. Improving water flow and quality of the river micro-watersheds served.



Micro-Watershed Management and Conservation Results through Early 2020

- **106,000** hectares of land are now under improved management practices with local support;
- **65** micro-watershed management plans have been developed and implemented in high-priority areas via participatory planning processes;
- **65** micro-watersheds had three or more investments to promote restoration and conservation of ecosystems;
- **306** local water management organizations have been strengthened, **46** of which are irrigation groups;
- **35** water source areas in micro-watersheds have been legally declared water production areas;
- Women compose **30%** of the water committees or watershed boards;
- **35** municipalities have increased capacity to collect and use data for micro-watershed management;
- **35** municipalities have increased capacity to work with communities to implement micro-watershed management plans;
- **4** public-private associations were created to support ecosystem conservation activities;
- **3** national universities involved in long-term climate and water flow monitoring in demonstration watersheds;
- **7** ecosystem conservation schemes designed and implemented;
- **36,000** families benefited from improved water supplies and recharge area restoration.

Lessons Learned

- Building a shared vision and action plan between water users and local governments leads to greater buy-in and long-term commitment from all parties.
- Connecting public agency officials, field staff, and local leaders from the Instituto de Conservación Forestal (ICF) and the National Water Regulator (Ente Regulador Agua Potable y Saniamiento - ERSAPS), local governments, and water organizations is necessary to ensure that all parties understand their roles and can create synergies to sustain long-term protection and restoration efforts.
- Incorporating small, high-impact investments into the watershed planning process (for example, repairing water intakes & degraded transmission pipes, installing water filtration; chlorination; repairing or building water distribution tanks, etc.) builds consensus and trust, and motivates the participation and learning of the entire community. Investing in water supplies that benefit the whole community first and then later addressing more specific water needs for farmers, individual households, businesses etc.) is important in order to avoid conflicts and assure improved governance.
- Field implementation should address community water access (improving quality and quantity) while simultaneously strengthening local capacity to manage water resources and raising public awareness about efficient water use and protection.
- Community events such as theatre performances are effective in raising public awareness about the importance of efficient water use and protection of resources.
- Training members of underrepresented groups, such as women and youth, raises their self-esteem and empowers them to assume decision-making positions in local water organizations.
- When planning field investments and activities, seasonal demands on people's time—such as coffee harvesting, crop planting & maintenance—should be considered, since they may make it difficult to attract broad community participation.
- Although challenging, connecting and creating synergies among national government agencies, local governments and local organizations in water resource management is key to improving resource administration and governance.

This knowledge product was written by Dr. Luis Caballero (Deputy Chief of Party of the Honduras Watershed Management program), Laura Stephanadis (Program Manager) and, Eddy Perez (Global Technical Director for WASH) and was reviewed by Olman Rivera (Chief of Party for the Honduras Watershed Management Program) and Eva Mejia (Country Director for Global Communities Honduras). For more information, contact Eddy Perez (eperez@globalcommunities.org).

Global Communities is an international non-profit organization that works closely with communities worldwide to bring about sustainable change that improves the lives and livelihoods of the vulnerable. Development is not something we do for people; it is something we do with them. We believe that the people who understand their needs best are the people of the community itself.

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