**Rainforest Flow's WASH Learning + Research Center trains indigenous water and sanitation committee members to be leaders of their communities.**

**WORK**

**Rainforest Flow** develops integrated  WASH (water-sanitation-health) programs in collaboration with rainforest communities.  Our work is centered in Manu Biosphere Reserve in the Peruvian Amazon, a [UNESCO World Heritage site](https://whc.unesco.org/en/list/402/).

Rooted in more than 20 years of scientific and anthropological research, and hands-on field experience, our multicultural team works closely with indigenous families to bring sustainable clean water, sanitation, and health programs to remote communities.

Our work in the Amazon Rainforest contributes to fulfilling goals set by the [United Nations](https://www.un.org/sustainabledevelopment/sustainable-development-goals/) to ensure availability and management of sustainable water, sanitation and hygiene for all. In recent years, we have witnessed up close how climate change has impacted water security in indigenous communities. Established water catchment systems have lost capacity during the intensifying dry seasons, while extreme rainfall events in the wet season have damaged water infrastructure. We are constantly working to address these challenges in the field while building capacity and resilience among Indigenous water committee members.

Working in these remote regions involves strenuous travel on mountain roads, raging rivers, narrow streams clogged with fallen trees, slippery cliffs, and muddy footpaths. Poisonous snakes, predators like jaguars and pumas, tropical diseases, and legions of biting insects are some of the dangers and challenges that our team encounters during their workday.

**WE MAKE DRINKING WATER SAFE**

Population growth, rustic living conditions, and fecal contamination make water sources in rainforest villages unsafe to drink. Harmful bacteria and parasites cause malnutrition, chronic gastrointestinal illnesses, skin infections, and high infant mortality rates.

**Rainforest Flow changes that.**

We engage the entire community to build eco-friendly gravity flow water systems, that use [slow sand filtration](https://rainforestflow.org/wp-content/uploads/2021/10/Slow-Sand-Filtration-Website-PDF.pdf) to deliver clean, safe drinking water to homes and schoolhouses in the village.

A community-elected Water + Sanitation Committee builds, repairs, and maintains the system over the long term. Every family in the village takes part in the construction and maintains their own tap stands and sinks.

Community engagement doesn’t stop there. All families contribute a small monthly usage fee to maintain the water and sanitation systems and compensate their W+S committee members. These practices instill a sense of community ownership, pride, and independence.

Rainforest Flow has achieved success in delivering WASH programs to this remote part of the world where others have failed.

Our systems are to accommodate population growth, community expansion, or migration.

**WE BOOST WELL BEING**

In the developed world, fatal diseases caused by poor hygiene have been eradicated. In rainforest villages, these preventable diseases are a leading cause of death, especially in children under the age of five.

Rainforest Flow health educators and anthropologists take a comprehensive approach to saving lives. Our programs are adapted to local culture, language, and environmental conditions.

**We Strengthen Families.**

We visit every home in our project villages to meet with family members. We teach basic hygiene, strengthen family health and demonstrate maintenance practices to keep their sinks clean and the water flowing.

**We Start Young.**

Working alongside teachers at the village schoolhouse, we use art, science storytelling, and other creative ways to teach children about handwashing, toilet use, sanitation, and age-appropriate health information.

**We Empower Women.**

We reinforce the importance of personal hygiene and pre- and post-natal care to women in the villages. This empowers women and children to achieve healthier future generations.

By delivering clean water to households, we also ensure that women don’t have to walk long distances to haul unsafe water home to drink, cook and bathe with.

**We Create Health Agents.**

As villagers incorporate improved hygiene practices, we train some to become health agents. Rainforest Flow pays village health agents to spread the word in their villages and surrounding communities while strengthening the local economy.

**We Test.**

Our health team teaches W+S Committee members to test for harmful bacteria in local water sources using a portable microbiology lab generously donated by Hach USA. This essential testing and teaching tool allows villagers to understand sources of contamination and monitor the safety of their water.

**WE BUILD BATHROOMS**

When we began our work in 2003, parasites, anemia, and gastrointestinal diseases were rampant. Water and sanitation projects left behind by others brought contaminated water to households and dumped waste at village homes, the school playground, and into village water sources.

Rainforest Flow put an end to that.

**Rainforest Flow builds eco-friendly bathrooms at village homes and schools in harmony with the environment. We collaborate with members of the community to ensure sustainability.**

We use local materials whenever possible to build sturdy, practical, and beautiful structures.

The bathroom septic system uses biodigesters to naturally decompose waste without contaminating the environment.

These bathrooms are private, well ventilated, and have separate sides for boys and girls.

To help to reinforce daily hygiene, we build sinks near the bathrooms.

**We Create WASH Leaders**

Rainforest Flow works with community members to create and train a Water and Sanitation Committee (W + S) in each village that we work in.

The W + S Committee manages water and sanitation projects in their own villages. They oversee the project from start to finish, from gathering and transporting materials to building and maintaining structures.

W + S committees are also trained to use a portable [Hach microbiology lab](https://rainforestflow.org/wp-content/uploads/2021/10/HACH-MEL-Portable-LabWebsite.pdf) to monitor bacteria levels in water to ensure that it’s safe to drink.

Members of the W + S Committee regularly check the infrastructure and make house visits to promote family health. Some of these self-motivated leaders have parlayed their training into paid employment in the regional workforce.

**THE CENTER**

Rainforest Flow has developed a network of experts and local and international partners who collaborate to teach hands-on workshops for indigenous leaders, government representatives, scientists, and students.

The next step in our vision is to build the Rainforest Flow WASH Global Training and Research Center in the Manu Biosphere Reserve and develop a comprehensive WASH curriculum.

The Center will be a clearinghouse for collaboration, technical solutions, capacity building, and research, allowing us to share and scale up our successful, field-tested programs globally. Online learning will also be offered.

The WASH curriculum will be integrated with forward-looking research and programs addressing sustainable forestry management, indigenous health and healing, renewable energy technologies, and relevant topics.

**A meeting place for indigenous leaders, scientists, and policymakers and a hub of multicultural knowledge exchange, the Rainforest Flow WASH Global Training and Research Center will benefit rainforest people from around the world.**

We will train the next generation of indigenous leaders, engineers, and health and environmental professionals to replicate and adapt these technologies to their communities.

Until our permanent Center is built, the Rainforest Flow team will continue to train and inspire through community visits and hands-on workshops at our learning annex in the Huacaria community.

Once the Center is built, Rainforest Flow will offer on-site consulting services on WASH-related issues for government and health agencies, NGOs, engineers, technical training schools, and ecotourism enterprises.

**The keys to our success are community engagement and long term commitment.**

**PROGRAMS**

Rainforest Flow ensures that village families participate in all phases of planning, construction, and maintenance of water and sanitation systems. Once construction is complete we spend at least five years following up with hygiene education, systems training and maintenance, and health monitoring to ensure long-term health advances and program sustainability.

Here is an overview of our programs:

**Clean Water**

We deliver clean, safe water to indigenous people in rainforest villages. We capture the water from natural springs and purify it using rock and sand filters in portable geomembrane treatment tanks. Where topography permits, we distribute water by gravity feed to homes, schools, and health posts. In flatter terrain, we build rainwater harvesting systems to supply safe water.

**Water + Sanitation Committees**

We provide ongoing technical training to the village Water + Sanitation Committees (W+S). In time, villagers learn to maintain, repair, and expand their water and sanitation systems on their own, guaranteeing the sustainability of the program. Community members also learn to monitor water quality using the [Hach portable microbiology lab](https://rainforestflow.org/wp-content/uploads/2021/10/HACH-MEL-Portable-LabWebsite.pdf), which helps to ensure safe drinking water.

**Sinks + Greywater Drains**

W+ S Committee members and families work with us to gather rock, sand, wood, and other natural materials from forests and rivers. Together we build durable, practical sinks at homes and village schoolhouses. The sinks are built with underground greywater drains to avoid environmental contamination.  We teach families and schoolchildren how to maintain their sinks and drains.

**Sanitation**

We build eco-friendly bathrooms with biodigester waste management tanks that do not contaminate the ecosystem. School bathrooms are well ventilated, easy to clean, and have separate sides for boys and girls. We are now piloting individual household bathrooms using the same technology.

**Health + Hygiene Education**

We provide hygiene education, coronavirus prevention, and health monitoring to village families and schoolchildren. Community members who take a special interest in our program are trained as Health Promoters who monitor health and hygiene in their villages and share information with nearby villages.

**Health Studies**

Our health and anthropology team conducts baseline studies to monitor long-term health and social impacts. We track parasites, anemia, malnutrition, and gastrointestinal diseases before and after our intervention. This data helps us to measure health outcomes, adapt our programs, and inform health and government agencies.

**OUR COMMUNITIES**

**HUACARIA**

The most dangerous intestinal parasites in children and adults decreased by 94% within three years of Rainforest Flow working with the village of Huacaria.

Rainforest Flow began its work in the village of Huacaria. Located at the foothills of the Andes, eight hours down a single-lane mountain road from the city of Cusco, Huacaria is home to three indigenous ethnic groups; the Matsigenka, Huachiperi, and  Quechua.

When we arrived in Huacaria in 2003, the villagers —  from infants to elders — suffered from frequent gastrointestinal illnesses, parasites, anemia, malnutrition, and skin diseases from bathing and drinking contaminated water. At the time, the village had a tap water system that delivered contaminated drinking water to village homes. The school had a rustic latrine that dumped waste near the school playground.

Huacaria is where Rainforest Flow tested and piloted our proprietary slow sand filtration water purification systems. We overhauled the village water system and built our first eco-friendly bathrooms and sturdy home sinks. We also partnered with local health agencies and school teachers to develop an integrated culturally appropriate health education program.

Given its relative accessibility, Huacaria serves as Rainforest Flow’s Teaching Annex for experiential learning for indigenous leaders, government representatives, health and WASH professionals, and students,

**TAYAKOME**

Hygiene-related intestinal parasites in children and adults decreased by 80% within five years of Rainforest Flow working in Tayakome.

Rainforest Flow began working with the indigenous Matsigenka people of Tayakome in 2009. Located in the restricted zone of Manu National Park, access to this village is limited to scientists, medical personnel, and a handful of NGOs.

The people of Tayakome hunt, fish, and gather wild foods from the forests and rivers. They grow manioc, sweet potatoes, bananas, squash, and dozens of other fruits and vegetables in their gardens. The women weave traditional clothing from hand-spun cotton grown in their gardens.

The people of Tayakome and their neighbors in the village of Yomybato own and operate [**Casa Matsigenka**](https://www.casa-matsiguenka.com/contacto), an ecotourism lodge, located in the tourism zone of Manu National Park, which provides income that is shared communally.

Our health and anthropology team continues to monitor the impact of our work in  Tayakome. Programs are continuously adapted to meet the needs of this village in a culturally appropriate way.

Rainforest Flow maintains a  partnership with the regional health ministry and the local health post to respond to the village’s health needs.

**SHINTUYA**

Intestinal and skin-related issues in adults and children decreased by 89% within the first year of Rainforest Flow working in Shintuya.

The Harakmbut indigenous people of Shintuya have maintained their language and culture despite 70 years of forced assimilation by missionaries, loggers, and goldminers.

Located on the upper Madre de Dios River in the Manu Biosphere Reserve, Shintuya clusters around a Dominican missionary settlement built in 1954. The 220 people of Shintuya are direct descendants of the estimated 2,500 people decimated in the 1940s during evangelical missions by Catholic priests who carried diseases that their immune systems couldn’t tolerate.

In 2020, Rainforest Flow initiated a WASH program in Shintuya, as a part of COVID prevention in the region.

Before we arrived in Shintuya, an existing government water and sanitation system had collapsed. Unsafe stream water was being delivered directly to household taps. Their concrete sinks were deteriorated and unhygienic. Wastewater from the septic system had overflowed into the nearby river being used for bathing, washing, and drinking. Diarrhea, skin fungus, and weak immune systems threatened the health of the people.

In partnership with the families, local health personnel and schoolteachers, our three-year commitment in Shintuya includes ongoing hygiene education activities for children and families and continued monitoring to evaluate health outcomes. The water and sanitation committee also receives ongoing technical and vocational  training to support long term project sustainability.

**YOMYBATO**

Waterborne intestinal parasites in children decreased by 93% within three years of Rainforest Flow installing a water purification system In Yomybato.

Responding to an urgent request from local health officials, we began our work in the remote village of Yomybato, deep in the heart of the restricted zone of Manu National Park, in 2012.

From Cusco, the trip to Yomybato is ten hours by truck down the Andes and through the cloud forest, followed by a five to ten-day trip by boat, depending upon the water levels of the river and streams.

The children in Yomybato suffered from gastrointestinal illnesses, parasites, malnutrition, and anemia due to contaminated water and inadequate hygiene and sanitation.

During the dry season, most of the streams where villagers collect water for cooking, washing, and drinking dry up, creating sanitation challenges. To address this seasonal scarcity, we piloted a rainwater harvesting system to augment the water supply from the slow sand filters.

The Matsigenka people of Yomybato hunt, fish, and gather wild food from the rainforest and grow fruit and vegetables in their gardens. Along with the people of Tayakome, they manage the [**Casa Matsigenka**](https://www.casa-matsiguenka.com/contacto), ecotourism lodge.

**LOUIS TERRY**

Incidence of diarrhea in children and adults dropped by 75% within 31 days after Rainforest Flow installing a water purification system in November 2022.

Rainforest Flow began working in the Shawi village of Louis Terry in 2022 in the vicinity of the small town of Shucushyacu on the Huallaga river, our first project in northern Peru. With a population of over 26,000 people, the Shawi (or Chayahuita) are the fourth largest indigenous group in the Peruvian Amazon.

The Shawi are extremely proud of their language, culture and regional reputation as feared warriors. Yet at the same time, most are Evangelical Christians who extoll the virtues of peace, love and community harmony.

Louis Terry is a small community of about 120 people who moved to their current location from the overcrowded Shawi district of Balsapuerto over the past three decades in search of land, economic opportunities and better health conditions.

The only water source for the community was a small stream alongside the dirt road to Shucushyacu. Intestinal parasite infections in Louis Terry were much lower than what we have typically found in other project communities. This low incidence of intestinal parasites is certainly due to the rigorous hygienic practices in Shawi households. Nonetheless, their use of contaminated water contributed to chronic diarrhea which affected roughly 1/3 of the population and 87% of all households during our initial study, leaving 46% of children with anemia.

Building on our previous experience in Manu Biosphere Reserve, Rainforest Flow adapted our W.A.S.H. systems to this new cultural and geographical region. Since the topography does not permit a system driven only by gravity flow, we installed a slow sand  filtration system and a 30,000 liter cistern tank with a solar-powered pump to elevate the water to a central 20,000 liter reservoir tank to distribute clean water throughout the entire village. For one family whose house was too high to receive water from the community reservoir, we installed a rainwater harvesting system.

Everyone in the village participated in all aspect of construction and everyone now has clean, safe drinking water and each home has a sturdy household sink with an underground greywater drains.

A well-ventilated school bathroom was built, including four toilet stalls, two showers and a washing station with separate sides for boys and girls. The bathroom has an eco-friendly biodigester waste management system.

Rainforest Flow health educators are collaberating with local Shawi health professionals to develop an integrated culturally appropriate hygiene education program, including conducting monthly home wellness visits.Village mothers and school children participate in ongoing health and hygiene classes that reinforce good daily hygiene practices, improved nutrition and caring and maintaining their home sinks and school bathrooms.

We will continue to monitor health advances in Louis Terry at the family and community level and provide ongoing technical training to Louis Terry’s elected water committee to teach villagers to repair and maintain the water and sanitation systems for generations to come.

We hope this experience in northern Peru will allow Rainforest Flow to expand its proven WASH model to new regions and inspire more indigenous people to transform the health of their communities.