



SAFE WATER FOR
THAILAND'S
ISOLATED TRIBAL
VILLAGES

CHRISTOPHER ROBERT PROJECT

Jungle Water Program

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THE BEGINNING

The idea of The Christopher Robert Project was conceived when Lynn and Rip Verniero traveled to Thailand from USA in search of a renewed purpose after the loss of their only child, Christopher. In 2011 they trekked to a remote, hill tribe village in northern Thailand where they stayed with a hill tribe couple of the Lahu tribe and their four young children. They noticed the youngest child was unable to stand on his own and ambulated by his upper body as his feet drag behind.

Since their son Christopher had used a wheelchair, Lynn and Rip were sensitive to mobility issues and felt uncertain as to this child's future in a village so far removed. In a jungle village with no access to medical care and no way to pay, this little boy had two options; stay in a bamboo hut his whole life or crawl through mud and rocks to get to where he wants to go. Lynn and Rip met with the headman and tribal elders for permission to take the family out of the village for the first time ever to seek help. Everyone agreed and permission was obtained.

ORTHOPEDIC TREATMENT AND FOLLOW-UP

The orthopedic surgeon confirmed the boy's legs would never bear weight without immediate treatment. The treatment involved admitting the boy and using long-leg castings for a period of 3 months. After release from hospital the boy required leg braces, ongoing physical therapy and follow-up appointments for three years.

Lynn and Rip organized with the Karen hill tribe for assistance with communication and transportation throughout the three year follow-up. In November 2015, they visited the village and found the boy running around with his friends. The Christopher Robert Project was officially formed in 2012. Lynn and Rip had found renewed purpose. They then went on to the current project to provide clean drinking water to the remote villages.

WHO WE ARE

The Christopher Robert Project was founded in 2011 to provide necessary supports and services to Thailand underserved tribal villages. Envisioning a lifetime of upward social mobility for Thailand's underserved tribal villages, the CR Project's sole mission is to bring necessary supports and services directly into remote villages in Northern Thailand.

In 2015 the company achieved U.S. 501(c)3 tax-exempt status and remains compliant. Our work is carried out in Thailand's remote villages and assisted by conscious travelers, headmen and residents of villages, university interns and Thai nationals.

PAST PROJECTS

Since 2011 our organization has provided remote villages with needed supplies, English language education and urgent medical intervention to Thailand's most underserved demographic -the indigenous hill tribes of northern Thailand. Utilizing local knowledge and tribal language translators, our project implements and promotes initiatives based on each village's unique needs. After providing support to hill tribes for four years, founders were approached by headmen from three villages insisting their water was making them sick. This turned out to be a major concern for many villages nearby as well.

CURRENT WATER CRISIS IN THAILAND

It's been reported that Southeast Asia has some of the most contaminated drinking water in the world, tainted by deadly pathogens, viruses, arsenic and other heavy metals. The CR-BSF will not only filter dangerous biological pathogens but soon will even remove 76% to 91% of arsenic, reducing it to acceptable concentrations using charcoal filter inserts made cheaply by village women from locally sourced materials. The biggest problem that hill tribes face in Northern Thailand is the lack of safe water. Villages in remote areas of Northern Thailand lack access to public utilities, particularly water. Their water comes from ground wells, surface water and streams. This water is often visibly

contaminated with herbicides and insecticides and frequently tests positive for e-Coli bacteria, worms, and parasites which rapidly multiply. Malnourishment, poor hygiene and unsafe water lead to preventable diseases like malaria, dysentery, Cholera and diarrhea.

U.N. experts have recommended Thailand step up efforts to ensure all their citizens have access to safe water, noting a current stark contrast between populations who are able to enjoy this basic need and those who do not. The contrast between people who have access to safe water in modern zones in cities and those who suffer from the lack of access to these basic services and have been left behind including hill tribes was striking.

Remote Thai villages depend on surface and ground-water for their livelihood. At certain times of the year villages are completely flooded harboring deadly disease-carrying mosquitos, the flood waters subside leaving the water stagnant and paths carved for dangerous pesticide and chemical run-off onto the rice fields and eventually into the drinking water supply. Tribal headmen and village elders have emphasized that significant elevations of illness, diagnosed cancer and kidney disease and villagers are convinced it is due to an unsafe water source. Undiagnosed cases are difficult to quantify due to the remoteness of the village and the indigent population living there on less than \$1 a day.

WHY BIOSAND TECHNOLOGY?

With all of the household filtration systems out there, why do we exclusively work with the bio-sand filter? In our opinion the bio-sand filter is a great choice for Thailand's isolated villages.

1. The process is completely natural and the filter doesn't require electricity or drilling
2. It's so simple to use that even children within the home can easily understand its operation and maintenance.
3. They can be built cheaply with locally sourced materials.
4. BSFs can treat water from almost all available water sources – canals, piped systems, wells, rivers, etc. This means that people can use the water that's available to them and end up with safe drinkable water.
5. BSFs work with Thailand's many cultural, physical, financial and resource challenges.

A LOW TECH - HIGH IMPACT SOLUTION

The Christopher Robert Project knows that safe drinking water is the single most important resource in preventing disease amongst primitive and remote people and in particular, infants and young children. Today it's common to see many BSF designs in use, mostly constructed from concrete and transported in wooden forms that need replacement. Many of these organizations complain about concrete cracks when transporting over rough terrain rendering filters useless and wasting days of hard work.

The CR-BSF is a uniquely designed point-of-use bio-sand water filter; "jungle-tough" enough to withstand transport over rugged terrain into difficult to reach villages. The construction labor is less intensive than a concrete filter and more like assembling tinker toys -but the real magic is in effectiveness, longevity and the durability of the unit housing. At just under one meter tall and 10" in circumference our filter is totally self-contained. The CR-BSF is made of industrial strength PVC with a snug fitting diffuser plate and a self-contained 20 L catchment container featuring an on/off spout. This feature ensures the filtered water will stay safe without any chance of biological re-contamination when water is retrieved.

Our "jungle-tough" filter is laboratory-proven for high impact results. Like all bio-sand water filters, the CR-BSF needs no electricity and require minimal maintenance. Maintenance directions are printed on the filter's side in a graphic format. Easily understandable maintenance directions are convenient for village residents of all ages speaking any language. CR-BSF filters are manufactured at a Jungle Water workshop in Chiang Mai, Thailand and delivered to villages in need on a

weekly basis. University studies have concluded the simple formula in a life cycle cost framework is essentially that. ***“A pipe which has a long life at a low cost is the most affordable for long term usage.”*** The features that place the CR-BSF above other filters is the self-contained unit, it’s “jungle tough” durability, longevity and simple assembly.

AVOIDING THE PITFALLS

Current research tells us that the most challenging global issues regarding a successful BSF project implementation are lack of education and strict follow-up. Water and Sanitation Hygiene (WaSH) training and filter placement is overseen by an elected Women’s Water Council from each village. This council will oversee village WaSH training, household filter implementation and weekly follow up to successfully avoid these pitfalls.

VISION STATEMENT

Jungle Water envisions a lifetime of optimal health for Thailand’s remote villages through WaSH field training and timely access to government public health advisories. Experts know that access to safe water and Water and Sanitation Hygiene (WASH) education is essential for optimal health and can provides opportunities for economic growth, access to education, and equality for women, children and the infirmed. We believe our villages should attain their right to safe water and access to public health information regardless of where they stand within their country’s social hierarchy. By attaining the humanitarian right to safe water and education, village residents can avoid a path of poverty by taking the road to upward social mobility through wellness.

JUNGLE WATER MISSION/VALUES STATEMENT

The Jungle Water program exists because of a strong belief that access to safe water and pertinent public health advisories can create opportunities for growth and optimal health for residents in underserved Thai villages. Our organization believes that money shouldn't determine health and those who live in poverty should be aware of pertinent public health advisories distributed by their government. In our vision of a lifetime of safe water for Thailand’s remote villages, our sole mission is to provide village training in the principles of water and sanitation hygiene and install a low cost, high impact sustainable solution for an urgent need.

JUNGLE WATER GOALS STATEMENT

Jungle Water’s primary goal is to help eradicate preventable water-borne diseases in remote hill tribe villages by providing WaSH village training and point-of-use bio-sand filter implementation. It is our ultimate goal to place safe water filters in ten isolated villages to provide each family 60 L of safe water or more each day for life. The Christopher Robert Project’s, Jungle Water program intends to provide Water and Sanitation Hygiene (WASH) training to under-served villages prior to placing laboratory-proven CR-BSF units into the homes of each family. With our unique “jungle tough” bio-sand water filters, our villages can be assured of safe, drinkable water free of deadly pathogens. This ambitious endeavor will provide clean water for life to over 2,880 individuals in ten remote villages currently living without a safe water source. This ambitious initiative begins in January 2020 and is expected to run three years until completion.

CIRCLE OF RECIPROCITY

The Christopher Robert Project believes strongly in relationships of reciprocity because we understand not all of our villages can contribute monetarily for their filters. This is why we partner with villages that agree to compensate our field team in various ways throughout filter implementation. Villages will contribute to the field team experience by preparing meals, providing a comfortable area for sleeping arrangements, engaging team members in village activities such as weaving, participating in elephant care and conservation and sitting for media interviews. Our circle of reciprocity benefits everyone!

➤ Benefits to Underserved Villages

Thailand's underserved and isolated villages benefit from WaSH field training, household point-of-use bio-sand filters and strict follow-up. Villages attain their humanitarian right to safe water access directly in their homes.

➤ Benefits to Ethnic Women

Village women earn extra income by selling embroidery and weaving products out of their village craft center. Ethnic women also benefit by engaging in leadership roles within the program. The JW Women's Water Council oversees the entire filter implementation of their village from training to follow-up. Traditionally, headmen are the leaders in Thailand's tribal villages but it is well known throughout the world that women are the primary decision makers in the family. Village women, in a final demonstration of appreciation present program guests a village-woven farewell gift prior to departure.

➤ Benefits to Village Children

Village children benefit by learning the principles of WaSH through games and activity engagements with Community Health Promoters. They learn the basics of how the filter works and are receive filter maintenance training. The goal with children is to elevate their process of understanding how water affects health and how to prevent waterborne disease through lifestyle choices presented through engaging learning activities. Ultimately providing ongoing wellness and decreasing school absenteeism.

➤ Benefits to the Christopher Robert Project

The Christopher Robert Project benefits from continued relationships of reciprocity to continue doing as designed -to provide upward social mobility for Thailand isolated and under-served tribal villages.

VILLAGE TRIAL 2016

February 3, 2016: Water samples were collected in six villages and analyzed for deadly pathogens by Chiang Mai University, Science and Technology Service Center. Results indicated extremely high levels of e- Coli and severely elevated total plate counts suggesting the village's quality of water is too dangerous to ingest. It was determined that pollutants and pathogens from breached wells, outdated unsheltered catchment, livestock and hazardous chemical waste run-off have degraded the water supply to dangerous levels. The Science and Technology Center advised villages to boil the water for 10 full minutes before drinking. After careful thought, expert consultations and research and development, the Christopher Robert Project devised a sustainable solution to this most pressing need. Filters were placed in the homes of six village headmen after their families attended village Water and Sanitation Hygiene training. Word travels fast in a village and soon thereafter four more villages signed on for safe water!

March 22, 2016: Chiang Mai University water analysis confirmed all analyzed water from our previously placed filters were safe to drink. Village Headmen are now requesting filters for every resident home.

Results: Free from coliform and dangerous pathogens

COMMUNITY HEALTH PROMOTERS

Community Health Promoters visit villages with the field team weekly to provide village WaSH training to both adults and children under the direction of Jungle Water's Public Health Coordinator and Asst. to Public Health Coordinator. CHPs build trust within villages by speaking on current health-related and water-related issues and also cover pertinent health advisories the government feels the public should be aware of. CHPs are responsible for updating a detailed app

every filter placed using photography, geolocation and handheld technology to track the performance and placement of all filters.

Jungle Water has a trusted field team consisting of Thai nationals and village residents who visit the recipient's homes weekly for filter placement, training and follow-up. The field delivery team is responsible for manufacturing, field delivery, maintenance training and is available for consultation. Our dedicated field manager oversees and is responsible for all aspects of this team while in the field.

PROGRAM REVENUE

Since 2012 the Christopher Robert Project has been self-funded.

WOMEN'S WATER COUNCIL

An appointed group of village women make up each village's Women's Water Council. These capable women oversee all activities of village field work. They rely on the field team regarding questions pertinent to Thai public health advisories, water sampling, water-borne illness and the CR BSF functionality and simple maintenance. A circle of trust must remain open for a successful safe water implementation.

VILLAGE FIELD WORK

Public Health Team

- Community Public Health Promoters create engaging monthly WASH classes in the village
- Set-up field learning center for village classes
- Disseminate pertinent public health advisories
- Photograph the following month's new filter recipients
- Log serial numbers using the JW app and assist the field team when necessary.
- Upload information about each filter into the filter database. We follow each filter's usage and log results from water analysis.

Delivery and Set-up

- Delivery and supervise set-up of CR-BSFs
- Train residents as needed when flow rate slows, the diffuser needs to be rinsed (no soap).
- Demonstrate the maintenance of "swirl and dump" which will increase the filters flow rate.
- Field manager describe the parts of a filter, demonstrate how the filter works and address questions or concerns about the CR-BSF or the village's water supply.

Marketing

- Capture engaging images and video of WaSH training and filter delivery
- Capture personal stories through media
- Set up photo shoots with village residents or children
- Consider a unique filmmaking project that you can be proud to call your own with media credit
- Engage village residents and children in photography projects
- With the assistance of a translator interview residents about their life being careful to rely on your cultural orientation training

EXIT STRATEGY

Our organization believes that sustainability is an important aspect of true empowerment and we expect beneficiaries will become safe water families who share knowledge of public health advisories as they pertain to village water quality and maintenance of that quality.

An exit strategy is an important part of any project with an ending. We expect that villages not stay dependent on Jungle Water for the long term. A structured removal of our involvement at the appropriate time enables villages to not only benefit from our involvement, but also to eventually move forward independently and empowered. It is our hope that villages will start small businesses that produces charcoal replacements packets for filters after one year. Women Weavers in villages will donate an ethnic handmade gift to all volunteers to remind them that their dedicated assistance in villages will sustain long after they've left.

Once we are no longer actively involved in a village we will continue to monitor filter recipient's concerns and progress on an as-needed basis for consultation. The Christopher Robert Project will remain available for support and guidance if needed.