



Project Details

Water Purification, KYO Orphanage Anchagn, Cambodia



PROJECT NAME: KYO Water Purification Project

PROJECT SUMMARY:

The Kambuja Youth Organization (KYO) operates an orphanage in Anchagn, Cambodia, a village close by the Angkor world heritage sites. The orphanage has a well, but the water is not potable so expensive bottled water must be brought in for drinking. This project will procure and install a water purification system that will meet the needs of the orphanage as well as several local schools and many village families that currently rely on bottled drinking water or unsafe well water. The project will cost a total of \$5,126. KYO has committed to raising half of this, meaning **TGUP's target to fund this project is \$2,563.**

PROJECT PARTNERS:

- 1) The Global Uplift Project (TGUP) helps American students and individuals build classrooms and other infrastructure projects in the developing world from donations as small as one dollar (hence its name). Since its founding in 2007, TGUP has completed more than 130 such projects in 16 countries in Asia, Central America, and Africa. TGUP is an IRS registered 501c3 nonprofit.
- 2) Kambuja Youth Organization (KYO) is dedicated to the children of Cambodia. They provide a home and support for orphans and other needy children who would otherwise not be able to attend school. KYO is registered as a Non-Governmental Organization with the Ministry of Interior in Cambodia.

PROJECT MANAGEMENT:

One Dollar For Life

Senior Executive:

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PROJECT DATES: As soon as funding is provided.

TIMELINE: 1-2 weeks from funding.

ABOUT THE ORPHANAGE:

The KYO orphanage (aka “the center”) was founded in 2002 by a young couple who lost their families in the Khmer Rouge genocide of the late 1970s. They opened their home to some local orphans and have expanded to support a current population of 40 children. The children range in age from 4-18 and consist of roughly equal numbers of boys and girls. Most of the children are orphans; a few have one parent or both but are

from rural areas where they could not otherwise attend school. The children are housed, fed, and receive medical care via the center. They attend the local primary or secondary school and the center provides supplemental education in English and computer skills. The center provides additional training (e.g., driver training) and job assistance for young adults when they leave.



Operating funds come from donations and the income of one of the founders who is a tour guide. Improvements come from donations, mostly by foreign tourists. Projects have included a running water system, showers and toilets, hard-wall dormitories, kitchen improvements and, most recently, a computer classroom.

In 2017 a water project deepened the existing well to 50 meters. That improved the water quality but still did not make it potable, so for drinking expensive bottled water must be brought in frequently. The center spends about \$200 per month on bottled water (~3000 bottles), which is a significant fraction of the overall budget. It is this unending outside expenditure that the current project seeks to reclaim. The project will also provide enough clean water to share with local schools and families which also suffer from a lack of clean water.



ABOUT THE COMMUNITY:

Cambodia is one of the poorest countries in the world, ranked 152 of 189 by the World Bank in 2019 (nominal GDP = \$1,643 per capita or \$4.50 per person per day). Siem Reap is a rapidly developing areas of the country, largely due to the tourist industry around the Angkor heritage sites. Anchagn, a village of about 1,000 families, is around 10km from the city center, but it is one of the poorer villages in the region. Most of the adults work in subsistence farming or construction. Most village children attend school but about 25% are unable to as they are needed to work, typically in family enterprises or helping with family chores, childrearing, etc.



Like the orphanage, the village schools and most village houses do not have potable well water. Some are able to afford bottled water for drinking (at significant expense). Those which are too poor must drink untreated well water and often suffer diarrhea and other gastrointestinal illnesses as a result.

ABOUT THE PROJECT:

The project will procure and install a two-stage purification system for the KYO orphanage well water. The first stage is a bio-sand filtration unit which will remove solids and some pathogens and fill a new water tank at a rate up to 3000 liters/hour. That tank's output will be split, feeding both the existing pump and distribution system in the center for showers, toilets, and kitchen and a new ultraviolet light purification system.

The UV radiation system removes additional pathogens, bringing the quality up to WHO drinking standards. It can purify up to 250 liters/hour and its output will be used to fill another new water tank. That tank will fill 20 liter reusable plastic water bottles for distribution in the orphanage and to schools in the surrounding area.



The capacity of the system exceeds the center's drinking water needs, so additional large bottles will be procured, filled and offered to villagers at no cost. It's not yet known if all the village's needs can be met this way, but it will certainly meet the needs of the schools and some of the village households. Additional bottles can be procured later if they are needed.

The equipment will be supplied and installed by an experienced local firm. They include a 12-month warranty and can service the system as needed. No government approvals are required for the project.

ANTICIPATED BENEFITS:

The primary benefit will be the supply of safe, clean drinking water to the KYO orphanage in a much more economical and environmentally-friendly way than at

present. The current \$200/month expense for bottled water will be eliminated and those funds can be redirected to other needs such as facilities repair or expansion.

With total project cost of around \$5,100 the payback period will be approximately 2 years. The environment will also benefit through the switch to large, reusable containers in place of thousands of single-use plastic bottles. (The center does attempt to recycle the small bottles, but it is unclear how effective this is.)

Another significant benefit will be the supply of drinking water to the local schools and a number of village households. This will result in cost-savings for some (the schools and households that currently purchase bottled water) and health benefits for others (those households that cannot afford bottled water and must drink well water).

A final benefit will be cleaner water for bathing and washing at the KYO orphanage from the bio-sand filtration system. Although that system does not remove enough impurities to make the well water potable, it does remove many pathogens and doing so will remove a disease vector for the children and adults at the center.

BUDGET SUMMARY:

Bio-sand filtration system	\$1,950
UV radiation purification system	\$2,170
Other	\$ 540
Project management	\$ 466

Project Total	\$5,126
Less KYO 50% match	<u>-\$2,563</u>
Total TGUP	\$2,563

DETAILED BUDGET:

Description		Quantity	Unit Price (USD)	Total Cost (USD)
Bio-sand Filtration System	Sand tank	2	\$1,950	\$1,950
	Carbon tank	1		
	Filter pump	1		
	Air blower pump	1		
	Blow switch and fitting	1		
	Labor cost and accessories	1		
UV radiation system	250 L/H package RO with UV 40w	1	\$2,170	\$2,170
Storage tank	1000 liter	2	\$170	\$340
Plastic bottles	20 liter, reusable	40	\$5	\$200
Project management			\$466	\$466
			Grand Total	\$5,126