TGUP Project Details

Clean Water for Maasai
Monduli District , Tanzania

PROJECT SUMMARY:

This project will install two 5,000-liter water tanks, one solar powered pump, and three water faucets to provide clean, potable water for 100 Maasai families. The total cost of the project is $5,373 of which TGUP will grant $3,600.

In many of the villages in Monduli District, Tanzania, Maasai women live and take care of their children in conditions that are bad for health, lack basic services, and require many hours of heavy menial labor fetching firewood and water. They do not have clean water, plumbing, or electricity. People are often sickened from water borne bacteria.

PROJECT PARTNERS:

The Global Uplift Project (TGUP) helps donors build small-scale infrastructure projects in developing countries from donations as small as one dollar. Since its founding in 2007, TGUP has completed more than 250 such projects in 21 countries in Asia, Central America, and Africa. TGUP is a US registered 501c3 nonprofit.

International Collaborative for Science, Education, and the Environment, (ICSEE) was established in 1992 by Dr. Robert Lange. He was conducting an education project in Zanzibar after a year as visiting physics professor at the University of Dar es Salaam. He wanted to help women organized in the Zanzibar Women's Corporation install wells and start businesses and he needed a nonprofit to do so.

A Tanzanian nonprofit corporation was also established. The **International Collaborative for Science, Education, and the Environment, Tanzania** functions as an independent partner of the ICSEE, and adds an important dimension, being able to accept and utilize funds that can be directed only to African Organizations.

PROJECT MANAGEMENT:

ICSEE

Senior Executive:
Robert V. Lange
President
rbtvl@aol.com
508-735-9176

Supervising Executive:
Kisioki Moitiko
Project Manager
lengoije@gmail.com
+255 684 14 56 80

The Global Uplift Project

Senior Executive:
Robert Freeman
Executive Director
robertf@tgup.org
650-575-3434

Supervising Executive:
Cathy Dwulet
Director, Global Field Operations
cathyd@tgup.org
650-269-5598

PROJECT DATES: As soon as funding is available. ICSEE has outstanding and well-organized women and men ready to begin the work in the villages as soon as funding is provided. The leadership of ICSEE Tanzania is experienced in meeting with and explaining the program to village leaders and village women and can initiate the process at any time.

TIMELINE:

Week 1: Meeting with village leaders and residents.
Week 2: Purchase equipment and receive villagers' contribution toward costs.
Week 3-4: Install the water sanitation system with the ICSEE staff and village volunteers.

PROJECT DETAILS:

Water safety is key to a good quality of life. The prevention of waterborne diseases lies in getting the pathogens out of the locally sourced water. Rural women, such as the Maasai, bring this water home to their families. Maasai water sources are very dirty and there are few wells. The women collect water from shallow ponds and depressions that the people themselves or the government have dug for catching rain. These ponds are polluted with solid matter and bacteria even where the people have been careful to keep livestock away.

All testing sites, including small lakes, ponds, and the clear-looking water piped to the villages, are heavily polluted with bacteria, including *E. coli,* demonstrating a clear need.

The high incidence of diarrhea in local children points to the presence of serious pathogens. ICSEE water system prioritizes removing the primary killers in the water, including bacteria and other living organisms.

This project will install two 5,000-liter water tanks near a pond. The water will be pumped into the first tank every afternoon (powered by a solar panel) and treated with alum (aluminum sulfate). The alum promotes coagulation of particles in the water which then sink to the bottom of the tank. In the morning after the solid matter has settled, the manager lets the clear, but still bacteria-laden, water flow to a second tank by gravity. There, the water is treated with chlorine to remove illness causing bacteria. From there it is gravity fed to faucets which is where the women collect their portion. The result is 5,000 liters per day of clean, safe water – enough to supply 100 families. Each family will transport their portion of the water back home with donkeys as seen below.

THE COMMUNITY:

Monduli district has a population of about 180,000 Maasai living in 65 villages. The district has an area of about 5,000 square kilometers, with an average area of 75 square kilometers per village. Most villages have family settlements called bomas. There is no over-crowding of homes and people, but there can be issues about how much grazing land there is available and who is using it. Maasai are rural people with an economy based on livestock. They do not ranch but use grazing on shared common grassland as their primary access to value. The men control the livestock, and their wealth varies a great deal, with some having very few animals or even none, and others having hundreds of cows and goats.

The Maasai tribe is one of the best known in Africa, in part because they live near the major East African wildlife sites which are among the most popular tourist spots in the

world. There are between two and three million Maasai with two thirds living in southern Kenya. They are colorful, and generally respected, but their lives, especially the lives of women and their children, should not be idealized. It is a rain-based economy with livestock, and therefore conditions are very dependent on the weather. It is a strongly patriarchal society, and while women and girls are beginning to demand and grasp more freedom and power, they are still not in a commanding position. Home improvement, based on the solar electricity, safe stoves, and clean water is a great step forward. The active role the women play in stoves and solar installation, and the fact that it benefits them mostly, is part of the slow but sure establishment of more freedom and power for them.

There is not a strong tradition for sharing what wealth there is with the women, and the women struggle with very low levels of disposable income and need more to spend for their children and themselves.

Each of the women has her own house in the family settlements, (bomas), where they live with their children, near the houses of the other wives and relatives of their husbands. Their houses are very basic with a dirt floor, stick and mud walls, circular with a diameter of only a few meters, no windows, a stretched cow hide to sleep on, and without the ICSEE stove, they cook with a smoky, dangerous, inefficient, and open three-stone fire in the center of their living space. The homes typically do not have any electricity or water.

PRIMARY BENEFICIARIES:

Directly benefitting because of the installation of this sanitation system will be the 100 families getting the clean and safe water every day. Each family has 3-5 children so the expected total Maasai benefited is close to 500.

The troubling news is that 35 children out of every 1000 die before the age of five from the bad water. Not included in this devastating number is the other children who suffer from water borne disease but don't die – they are weak, don't go to school, and suffer in even much greater numbers.

BUDGET SUMMARY:

$1,029	Tanks and transportation of tanks
322	Solar panel and pump
643	Chemicals for first 100 days
901	Labor
3,121	Materials
- 643	Community contribution (cash contribution of approx. $6/family)
$ 5,373	Total
- 3,600	TGUP grant
$ 1,773	ICSEE portion

International Collaborative

For Science, Education, and the Environment

TGUP: WATER SYSTEM BUDGET BREAKDOWN

1$ USD = 2,332 TSH

	unit	qty	Price (TSH)	Total COST (TSH)	Total Cost (USD)
5,000 liter tank	each	2	950,000	1,900,000	815
tank transport		1	500,000	500,000	214
2 inch tank connector	each	6	30,000	180,000	77
1.5 inch tank connector	each	1	25,000	25,000	11
2 inch valve	each	5	85,000	425,000	182
1.5 inch valve	each	1	75,000	75,000	32
2 inch pipe	meter	50	6,000	300,000	129
1.5 inch pipe	meter	50	4,000	20,000	9
faucet	each	3	35,000	105,000	45
faucet stand pipe	each	3	45,000	135,000	58
hose standpipe connector	each	3	7,000	21,000	9
cement	bag	20	20,000	400,000	172
100 amp hr.battery	each	2	350,000	350,000	150
30 amp controller	each	1	105,000	1,105,000	474
cable connectors	each	2	20,000	40,000	17
wire 4 mm	meter	300	1,500	450,000	193
200 liter dawa tanks	each	2	75,000	150,000	64
1 inch hose	meter	100	4,000	400,000	172
SUB TOTAL				**6,581,000**	**$2,822**
200 watt solar panel	each	1	450,000	450,000	193
pump	each	1	300,000	300,000	129
general labor	person days	30	60,000	1,800,000	772
plumber labor	days	3	100,000	300,000	129
transport	trips	10	150000	1,500,000	643
tank stand and other steel	each	2	800,000	1,600,000	686
dawa			1	1,500,000	643
SUB TOTAL				**7,450,000**	**$3,195**
Community contribution	per family	100	15,000	1,500,000	-$643
TOTAL BUDGET				**12,531,000**	**$5,373**