PROJECT CATALOG

W WATER FOR LIFE

A AND

S SANITATION

H HYGIENE

HELPING HAND
FOR RELIEF AND DEVELOPMENT

1-888-808-4357(HELP) www.hhrd.org

MISSION

The mission of Helping Hand for Relief and Development's (HHRD) Water for Life (WFL) program is to provide access to clean water for daily consumption and irrigation.

We construct and rehabilitate water supply pumps, wells and storage tanks for the benefit of children, families and communities.

Water And Sanitation Hygiene (WASH) ensures dignity and health by building bathrooms and hand washing stations.

VISION

HHRD's WFL envisions a world in which all communities have easy access to safe, protected and sustainable drinking water and dignified sanitation solutions.

We champion water as a basic human right and believe that everyone should be protected from water-borne diseases through hygiene education.

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Africa

Rainwater Harvesting

Kenya & Uganda

Average time to install and inaugurate:
2 months

Average number of beneficiaries:
2000 students (in school setting) or 1550 people (in a community hospital setting)

Life span of project:
6 years, if well maintained

Rainwater harvesting is the collection and storage of rain which would otherwise run off and become dirty and polluted. Rainwater is collected from a roof-like surface and redirected to a tank for future needs.
This is one of the best methods developed to support the conservation of water. Pure rainwater can be used for irrigation, washing, cleaning, bathing, cooking, and also for livestock requirements.

Mega Borehole Plant

Kenya

Average time to install and inaugurate:
6 months

Average number of beneficiaries:
30,000 people

Digging range:
100ft to 350ft

A borehole is a narrow shaft bored in the ground, either vertically or horizontally. Boreholes have been an alternative source of water in areas where there is no ready supply of fresh water. A borehole may be constructed for many different purposes, including the extraction of water. The life of the project is 10+ years; & with some periodic maintenance, the life of the project can be further enhanced.

Shallow Well

Kenya, Uganda, Somalia, Mali & Tanzania

Average time to install and inaugurate:
2 months

Average number of beneficiaries:
1,000 people

Life span of project:
5 years, if well maintained

Digging range:
20ft to 50ft

A shallow well is a hole which has been dug, bored, driven or drilled into the ground for the purpose of extracting water. The source of a shallow well is an aquifer--a body of porous rock or sediment saturated with groundwater resulting from precipitation which seeps through the soil. Shallow wells tap the shallowest aquifer in the vicinity. A well is considered to be shallow if it is less than 50 feet deep. This allows the use of a suction pump which is generally strong enough to extract water up to 22 feet (6.7 meters) in one pull.

Water Filtration Plant

Kenya

Average time to install and inaugurate:
6 months

Average number of beneficiaries:
15,000 people

Life span of project:
15 years, if well maintained

A water filtration plant is a facility that works to purify water by removing chemicals, hazardous and toxic materials from a water source.

Filtration is a process which removes particles suspended in water. Removal takes place through a number of mechanisms which include straining, flocculation, sedimentation and surface capture.

Submersible Pump

Kenya, Uganda, Somalia, Mali & Tanzania

Average time to install and inaugurate:
4 months

Average number of beneficiaries:
1,000 people

Life span of project:
5 years, if well maintained

Digging range:
80 feet or more in depth

A submersible pump is especially suited for deep wells. The pump utilizes a motor coupled directly to the bowl assembly and is designed to operate completely submerged in the fluid being pumped. Power is supplied to the motor by waterproof electrical cable. Submersible pumps are efficient, high in capacity, require very little maintenance, and are generally economical for wells that are more than 80 feet in depth.

Washroom Project

Kenya, Uganda, Somalia & Tanzania

Average time to install and inaugurate:
6 months

Average number of beneficiaries:
15,000 people

Life span of project:
10 years, if well maintained

Digging range:
3 meters long, 2 meters wide, 7.5 meters deep

HHRD Africa bathrooms consist of 5-unit pit latrines and one hand-washing area. It is used as a sanitation facility in public schools and enables children to get an education they would otherwise be deprived of if the school lacked this vital resource. The toilets are supplied with water for cleaning and flushing purposes. A septic tank is located at least 3 to 6 meters away from the building.


n+Aeration
Hand Pump
dah Municipality-07,
hapa-Nepal
hatti Family,
Friends from
A, USA.

Nepal

Bio Sand Filtration + Aeration with Community Hand Pump

Average time to install and inaugurate:
3-4 months

Average number of beneficiaries:
500 people (daily)

Life span of project:
5 years

Installing a simple traditional hand pump for the provision of raw water, HHRD Nepal takes the composition of the soil into consideration. We add a Bio Sand Filtration, an Open Aeration and Electrical Dozen Pump that turn this small project into a workable solution for our beneficiaries. It provides water for washing as well as for drinking.

Drinking Water Treatment Plant (RO/UT)

Average time to install and inaugurate:
3-6 months

Average number of beneficiaries:
1500 people (daily)

Life span of project:
10 years

This project is similar to the Bio Sand Filtration & Open Aeration, but infectious microorganisms are killed using ultraviolet rays. It can provide 1,000 liters/hour.

Features:

Kills infections microorganisms in the water using ultraviolent rays Filters water for taste and smell. Since it does not use chemicals, it is one of the safest water treatment systems.

Pakistan

"Afrediv" or Community Hand Pump "Abaayar"

Average time to install and inaugurate:
4-6 months

Average number of beneficiaries:
150 people
(7-15 households)

Life span of project:
3 - 5 years

Digging Range:
Afridev hand pump = 120 ft Local Hand Pump = 80ft

Capacity:
900 liters/hr

Community hand pumps are ideal for villages and households in which surface ground water sources are common. Only a basic pump is needed for poor families to meet their water requirements. This type of suction hand pump is economical and easy to install and maintain. Maintenance is done at the village level without the need for specialist parts. The pumps are made with cast iron.

Afrediv Hand Pump Projects will be installed at feasible locations after assessment. The number of households benefited will vary due to water flow and local requirements.

Solar Powered Water Project

Average time to install and inaugurate:
4-6 months

Average number of beneficiaries:
200 people

Life span of project:
3-5 years

Digging Range: 120 ft

Capacity:
1,500 liters/hr

After brainstorming with the team, relevant stakeholders, local NGOs, and other locally available resources, WFL decided to install solar-powered water uplifting solutions in a 500 liters water storage tank. The project was designed to replace the Afrediv hand pump in educational institutes where it is difficult to use and not easily accessible for disabled children.

In special cases, extra taps are installed. The number of households benefiting also varies. Solar Based Drinking Water Solution Projects will be installed in schools, madaris, and mosques.

Dug Well with Pulley

Average time to install and inaugurate:
4-6 months

Average number of beneficiaries:
200 people

Life span of project:
5-10 years

Digging Range:
80 ft

Capacity:
3000 liters/hr

Wells are a traditional source of water in rural areas of Pakistan. The ground is excavated deep to hit water. Digging is done through various techniques, including drilling, blasting, etc. Cemented rings are put in open wells for long life and sustainability. Water motors and hand pulleys are used for pulling the water up and down from the wells.

Number of households benefiting will vary due to water availability and local requirements. Water Well Projects will be installed at a reasonable pace.

Water Supply (Gravity Flow) Scheme

Average time to install and inaugurate:
4-6 months

Average number of beneficiaries:
250 people

Life span of project:
15 - 25 years

Digging Range:
No Boring

Capacity: 2,700 liters/hr

The distribution of water is always troublesome in hilly and remote areas.
To remedy the situation, a reservoir of water is created mechanically and stored where it can be easily disseminated to the required population. The scheme also involves the development of new water resources so that demand can be met seamlessly.

Number of households benefiting will vary due to water availability and local requirements. Gravity Flow Schemes will be installed in feasible locations after assessment.

Submersible Water Pump

Average time to install and inaugurate:
4-6 months

Average number of beneficiaries:
250 people

Life span of project:
3 - 5 years

Digging Range:
300 - 400 ft.

Capacity:
2,500 liters/hr

A submersible water pump operates beneath the earth, pushing water to the surface. Most submersible pumps are long cylinders that are about 3 to 5 inches in diameter and 2 to 4 feet long. Submersible water pumps have a hermetically sealed motor that is close-coupled to the body of the water pump. Having a hermetically sealed motor prevents the water from getting inside the pump's motor and causing a short circuit.
Other components of a submersible water pump are the cable, which is connected to the motor, and a pipe that transports the water to the surface. Water is then stored in a water storage tank constructed near the tube well. Submersible water pumps are best suited to remote areas or places where electricity has frequent outages.

Number of households benefiting will vary due to water availability and local requirements. Submersible pump projects with tanks will be installed in feasible locations after assessment.

Deep Tube Well

Average time to install and inaugurate:
4-6 months

Average number of beneficiaries:
1,500 people

Life span of project:
5 -10 years

Digging Range:
500 - 600 ft.

Capacity: 2,000 liters/hr

A tube well is a type of water well in which a long (6 to 10 inch) pipe is bored into an underground aquifer. The lower end is fitted with a strainer, and a pump lifts water for irrigation. The required depth of the well depends on the depth of the water table. A small reservoir of water is made at the outlet of the tube well to be used by the local population for things other than drinking.

Number of households benefiting will vary due to water availability and local requirements. Tube well projects will be installed in feasible locations after assessment.

Ram Pump Project

Average time to install and inaugurate:
8 - 12 months

Average number of beneficiaries:
1,500 - 2,000 people

Life span of project:
10 - 15 years

Digging range:
No boring

Capacity:

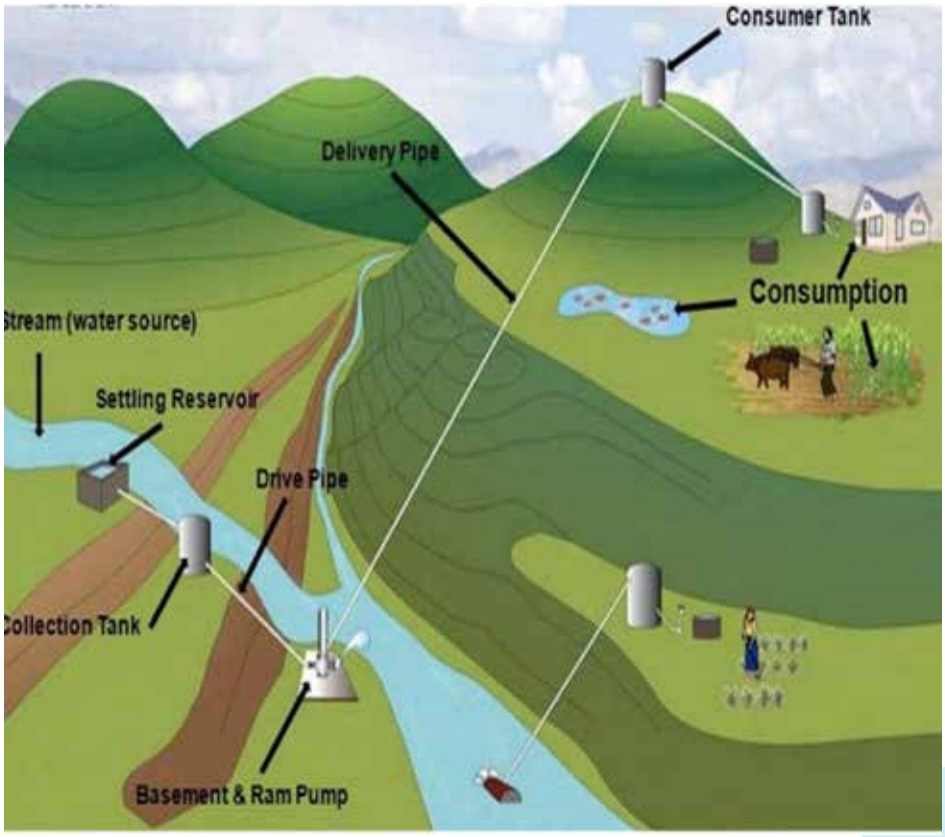
- Ram Pump complete with 4" input & 2" water delivery
- Ram Pump complete with 3" input & 1.5" water delivery
- Ram Pump complete with 2" input & 1" water delivery

A traditional water pump uses the potential energy of the water to generate electricity first. This electricity drives the pump and transfers the water to the required location.

In contrast, the hydraulic RAM pump uses the energy of flowing water to achieve a greater force without any added pressure. The "head" of a water pump is a measurement of how high the water could go with one pump if allowed to travel upward uninhibited. The higher the head, the greater the strength of the pump. RAM pumps harvest the energy of a large volume of water, turning what might be a low head yield to a higher head. The scientific principles involved in the working of hydraulic RAM pumps are listed below:

- Incompressibility of water
- Conservation of energy

Using the above-mentioned principles, the device works as a Positive Displacement Pump to gain a higher head as compared to its centrifugal counterparts while not consuming additional energy, i.e., fossil fuel and electricity.



Water Filtration Plants

Average time to install and inaugurate:
6 months

Average number of beneficiaries:
2,000 people

Life span of project:
5 - 10 years

Digging range:
300 - 400 ft.

Capacity:
2,000 liters/hour

Water purification is the process of removing undesirable chemicals, biological contaminants, suspended solids, and gases from contaminated water. The goal is to produce water fit for drinking. Water purification plants are a source of pure, safe, and healthy drinking water.

Water filtration plants make use of Ultrafiltration (UFT) and Reverse Osmosis (RO) processes. The reverse osmosis process is used in those areas where underground water condition is not good, i.e., water is saline. The ultrafiltration process is used in those areas where underground water is sweet but not completely pure to drink.

Number of beneficiaries can vary due to water availability and local requirements.

RO and 2 UFT Plants will be installed in feasible locations after assessment.

Washroom Project in Schools

Average time to install and inaugurate:
6 months

Average number of beneficiaries:
200 - 250 students

Life span of project:
5 - 8 years

Digging range:
150 - 200 ft.

Capacity:
40 -50 students per toilet

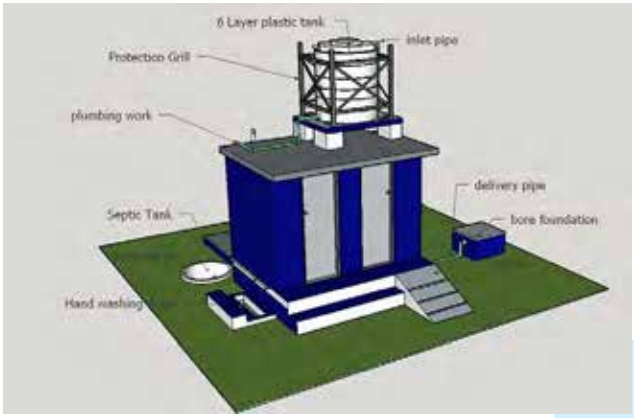
The project will focus on three major areas:

1) increasing the knowledge and improving the behavior of the students, teachers, and parents around Water, Sanitation, and Hygiene in schools,

2) improving the WASH-related infrastructure at schools through rehabilitating and constructing bathrooms, installing a water system, and

3) improving general knowledge of hygiene management in the most deprived areas.

The project will use a child-to-child approach for the promotion of good health practices. Schoolteachers and parents will also be engaged in the promotion of good hygiene behaviors and practices.
The development of a peer forum (like a club) proved highly successful in imparting hygiene messages at scale. Additional enabling factors such as training for schoolteachers, capacity building and awareness-raising, and support for the district-level government education department played significant roles in the program's success.



Afghanistan

Bore Well with Afrediv Hand Pump

Average time to install and inaugurate:
4 - 6 months

Average number of beneficiaries:
100 - 170 people

Life span of project:
3-5 years

Digging range:
30 - 55 meters

Afrediv hand pumps are ideal for villages and households in which surface ground water sources are common. Only a basic pump is needed for poor families to meet their water requirements. This type of suction hand pump is economical and easy to install and maintain. Maintenance is done at the village level without the need for specialist parts. The pumps are made with galvanized iron.

Indonesia

Bore Well with Water Tank

Average time to install and inaugurate:
3 months

Average number of beneficiaries:
10 households

Life span of project:
3 - 5 years

Digging range:
Minimum 100 meters from one water well to another.

Some areas need around 12 meters depth / 20 meters depth or more.

Depends on the geographical conditions of the areas.

To increase the health rate of Indonesians, HHRD's vetted partner, Human Initiative, builds water well projects. This mission is supported by several activities, one of which is the construction of a well 20 meters deep to increase community access to clean water resources.

The water well is built in residential areas that urgently need clean water. Most people in those areas work as farmers and laborers with middle to lower economic levels.

This program has been implemented across Indonesia: Bogor (West Java), Lombok, East Nusa Tenggara, and Central Sulawesi.

Cambodia

Water Tank

Average time to install and inaugurate:
3 months

Average number of beneficiaries:
50 people daily for households,
200-300 students for schools,
200 patients at health centers,
225 congregants at masjids

Life span of project:
5 years

How it works:

- **Inauguration:** start to build the water project (foundation)
- **Mid-Implementation:** Almost done with all installments.
- **Completion:** Handing over program to the community.

In many rural areas in Cambodia, schools, masjids, and health centers have only one small water well pump capable of providing for the entire community. Upgrades include a hand wash basin in addition to the motor for pumping water from the system.

Water Project Model:
We selected the water tank project model to make it easier for people to do wudu/ablution, get drinking water and more.

Capacity:
We have one tank that can hold 2,000 liters of water. This supplies four water systems with cement in good condition, so one water tank can be used for a minimum of 5 years.

Machine:
We use a motor to pump the water from a small well or river and store it in the water tank.

Civil work:
Basic Survey Participation of Local Govt. Feasibility Study Water Quality Testing Water Consumption Committee.

Lebanon & Jordan

Water Supply via Trucks and Water Tanks

Average time taken to finish the project:

- **Jordan:**
  3 Days per week
- **Lebanon:**
  Daily

Average number of beneficiaries:

- **Jordan:**
  600 people
- **Lebanon:**
  1500 people

This project provides needy families with clean water through water tanks four times a month. We aim to ease the sufferings of the refugee families, especially women and children.

Water Filtration System

Average time to install and inaugurate:
21 days

Average number of beneficiaries:
200 people

Life span of project:
1 -3 years

Capacity: 1,500 liters/hr

There is lack of clean drinking water in the MENA (Middle East North Africa) region, especially in Jordan and Lebanon, so HHRD provides water filters to Palestinian refugees in these two locations. This project has the capacity to ease lives and increase the health of the population.

Washrooms for Syrian Refugees

Average time to install and inaugurate:
11 months

Average number of beneficiaries:
600 people

Life span of project:
5 years

Digging range (if any):
Land preparation

Thousands of Syrian refugee families live in tents in Jordan, notably in Al Mafraqa and Madaba. They are lacking proper facilities for sanitation and have to go outside to relieve themselves.

This practice not only affects the environment, but it is also unhealthy for people living in the area. Moreover, in harsh weather it becomes difficult to go outside. Life-threatening animals like snakes, scorpions, and such are also another issue in this regard. If proper bathrooms can be provided for these deprived families living in tents, it can improve their way of living.

PROJECT DONATION LEVELS FOR 2022

Afghanistan	
Afrediv Pump	$3,335

Africa	
Kenya Shallow Well with Afrediv	$4,500
Somalia Shallow Well with Afrediv	$4,500
Uganda Shallow Well with Afrediv	$4,500
Tanzania Shallow Well with Afrediv	$4,500
Mali Shallow Well with Afrediv	$5,750
Kenya Rain Harvesting	$3,450
Uganda Rain Harvesting	$3,450
Kenya Mega Borehole	$115,000
Uganda Mega Borehole	$115,000
Kenya Mega Water Filtration Plant	$160,000
Kenya WASH (5 Units Restroom)	$6,670
Somalia WASH (5 Units Restroom)	$6,670
Uganda WASH (5 Units Restroom)	$6,670
Tanzania WASH (5 Units Restroom)	$6,670

ASEAN	
Cambodia Water Tank	$1,600
Indonesia Water Tank	$2,500

Bangladesh	
Water Project	$1,600

**Donation levels are subject to change.*

PROJECT DONATION LEVELS FOR 2022

MENA	
Jordan Water Tanks Placement at 3 Locations	$1,150
Palestinian Refugees Home Water Filtration for 3 Families	$1,000
Syrian Refugees in Jordan Water Supply by Truck Project for 2 Families	$1,000
Syrian Refugees in Lebanon Water Supply by Truck Project for 2 Families	$1,000
Syrian Refugees WASH in Jordan (One Unit Restroom)	$2,000

Nepal	
Bio-Sand Filtration Community Water Pump	$1,460
Drinking Water Treatment Plant	$6,000

Pakistan	
Afrediv Pump or 2 Abayaar Hand Pumps (in selected locations)	$1,000
Solar Based Drinking Water Solution (SBDWS)	$1,300
Dug Well	$2,650
Submersible with Brick Masonry Water Tank	$3,450
Gravity Flow Schemes	$3,450
Tube Well	$11,300
Ultra-Filter Unit (UFT)	$13,300
R O Plants	$20,000
Ram Pump	$20,000
WASH (2 Units Restroom)	$5,400

Rohingya Refugees in Bangladesh	
Mega Water Project	$11,000
WASH (2 Units Restroom)	$2,450

**Donation levels are subject to change.*