

FRIENDLY PLATFORM

CLEAN
WATER

ADEQUATE
SHELTER

SAFE
COOKING

IMPROVED
SANITATION

WATER
SECURITY

SUSTAINABLE
FOOD

CONSISTENT
HYGIENE



You empower Friendly Water for the World to be the advocate for those who are marginalized and disadvantaged. But the people who we support are usually denied more than one advantage, denied more than one right, and denied more than one opportunity. They are denied and excluded from building the foundation for their own future. Such people are missing many or all of the basic building blocks for technologically developed households and community.

Friendly makes available the ingredients that help build a platform for better health, prosperity and self-reliance. Ingredients that are low cost, low tech, and local. Local solutions to local problems. These solutions are activated using an approach to community engagement that emphasizes the dignity, strengths and assets of all the people involved. This is how we are building a platform for the future.

What is a platform? *It's something we can build, stand on and share - together.*

These are some of the ingredients and technologies that help secure our platform.

BIOSAND WATER FILTER

A slow-sand filter like a BioSand Water Filter cleanses almost any ground or standing sourced water. This kind of filter has existed in some form for more than 1800 years. Water poured into the filter and slowed through a diffuser plate is scrubbed by a small layer of specially selected sand and gravel. Impurities adhere to the sand and die from eating each other, a lack of food and air and other mechanisms.

- ✓ Up to 99% of pathogens are removed from water
- ✓ Filters can produce 72-84 liters of clean water a day in 6-7 batches
- ✓ Can last up to 30 years with limited maintenance



CLEAN WATER

INTERLOCKING SOIL STABILIZED BRICK (ISSB) MAKING MACHINE

Compressed bricks are made with soil, a stabilizer like cement, and pressure. A simple test measures the local soil and an appropriate amount of stabilizer is added to a mold. That mold is then compressed using a press like an ISSB making machine and local labor. Interlocking bricks fit together like toy blocks to form a strong structure. The resulting brick is left outside to cure.

- ✓ Four people can create 300 bricks per day
- ✓ No kiln firing reduces deforestation and climate impact
- ✓ Portable. Bricks can be made at the construction site, reducing transportation



ADEQUATE SHELTER

ROCKET STOVE

The stove, made of just an elbow, body and chimney, uses a narrow combustion chamber and air inlet to burn easy to collect, small-diameter wood fuel. The fuel burns at the front of the chamber, where the air is circulating, at an intense heat that almost eliminates smoke and pollutants. The chimney and pot skirt help efficiently focus the heat in a vertical column onto the base of the cooking pot.

- ✓ Compared to a traditional open three-stone fire, it uses up to 47% less fuel
- ✓ It also produces 75% fewer emissions than an open fire
- ✓ Reduces the risks of respiratory illness, child burns and thatch roof fires



SAFE COOKING

MICROFLUSH TOILETS

A vermicomposting, off-grid, odor-free and fly-free toilet. A mesh across the base of the toilet creates a filter-digester for solids and liquids to separate. The liquid is processed naturally in a sink hole or can be diverted to a container. The solids are composted by earthworms. The flushing and processing is accelerated using greywater from a handle-less hand-washing container in the toilet.

- ✓ Provides a safe toilet to the 4.6 billion who don't have one
- ✓ Outputs pathogen-safe compost for agricultural use
- ✓ Flushes on as little as .15 liters of water (versus 3.75-7.5 liters in western toilets)



FERROCEMENT RAINWATER CATCHMENT TANKS

Ferrocement tanks capture precipitation from gutters strategically connected to rooflines. The site is first excavated and bricks are laid to form a foundation. A mesh mold is connected to the foundation and the walls are plastered with mortar. Water access is provided through a tap at the base of the tank. The tanks we build currently range in size from 5,000 to 20,000 liters and can last for 30 years.

- ✓ Helps the 1.8 billion people who will face water scarcity by 2025
- ✓ Reduces the 16 million hours women spend in Africa looking for water
- ✓ Provides water during the year and dry-season for small-scale agriculture



PERMACULTURE

We apply indigenous permaculture principles to small-plot crop cultivation in the form of household gardens designed to sustainably produce food year round. Gardens are positioned and dug using swales and berms to maximize the capture and storage of rainwater. Soil is amended with organic material to enhance fertility and water retention. Seeds are then planted to maximize crop diversity.

- ✓ Yields can increase up to 10x, providing much needed food security
- ✓ Crop surpluses can help reduce poverty and community hunger
- ✓ Agridiversity enhances nutrition



SOAP MAKING / HAND-WASHING

The soap recipes we use vary by country, but all contain either a sulphonic acid or an oil or fat and lye solution. Other surfactants/detergents are added based on what is available in the local market. Core ingredients are stirred and mixed. Then each recipe is enhanced with additives like fragrance and color. This process can be used to create liquid or bar soap.

- ✓ Promotes hand hygiene, a new custom for some communities
- ✓ Hand-washing is the primary way to inhibit the spread of Ebola Virus Disease
- ✓ A \$3.35 investment in hand-washing creates the same health benefits as over \$1000 in immunizations



No two communities are identical. Each component of the platform is customized based on: the assets and strengths of the host community; the local physical, social and political environment; available resources; and mutual desired outcomes.