Best Water Source

Description of the project: manual and/or motor–operated water treatment system

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On March 22nd of every year, we commemorate the United Nations "Day of the Water". We are reminded that 1 billion people in the world don't have access to clean water, which exposes them to sickness caused by polluted water. Polluted water kills 1.5 million children every year.

Being aware of this situation and not ready to accept it motivated me to construct a unit for water treatment which can be operated also without electricity by people in developing countries or any rural area.
This demands only filtration technology can fulfill. Chemical treatment or UV irradiation only neutralizes the dangerous contaminations but cannot remove it.

Based on the technology of the company SanSystems in Austria, I started to develop a unit to purify water through pushing it manually through a filter-system. As only a filtration technology makes it possible to eliminate bacteria and viruses in the water as well as removing all the dirt and at the same time preserves the natural attributes of the water. This allows most surface water sources to be utilized for drinking water! This is an innovation with the potential to save the lives of thousands of people, especially children's lives.

Although there are some voluntary service projects and national efforts to build wells and pipe systems, these efforts are limited. Surface water (from rivers and lakes) can be found and accessed easier. Therefore it is important that the hand water pump be easily transported.

The core of the machine is a High Quality Filter developed by a leading German company.

Filters have to be cleaned, which usually involves an expenditure that limits their applicability. This machine is operated by valves in a way that allows one to switch between filtering and cleansing with a few lever movements without having to make adjustments to the machine. Thus the basic cleansing only takes a minute.

The running of the machine requires no other source of energy except human strength. However, one more highlight of this machine is that it **can also be operated by electrical pumps** or any external pump. This gives rise to use this equipment in many circumstances. Depending on the effort, the way of pumping and the quality of the water, about **500 to 1000 liters of clean water per hour can be produced**, enough to supply a whole village. The filter can be used for several years if looked after carefully.

The device itself:

It is mobile weighing about 25 kg. It is simple to operate and requires no other energy source except human power. If electricity is available (renewable energy, for example), the device can also be operated by electric pump. The control of the single processes is undertaken by means of valves. The instructions are mounted on the device.

Capacity: over 500 L/hr., dependent on the raw water and spent power. The water after filtration has no need to be boiled which saves money and energy. There is less need for firewood and preserves the trees and the environment.

The cleaning of the filter does not require dismantling of the machine. The system integrates 3 main cleaning types. With simple lever movements, the valves are driven through colour designation which gives an almost automatic cleaning process. The filter can be used for several years if maintained carefully.
The following guidelines have to be observed:

- avoid frost and heating over 40°C
- regular circulation of water is required (possibly daily), or the conditions for standby have to be maintained
- the filter must be cleaned at least three times a day (depending on the water quality)

Water pollution by nitrates, ammonia, salt, smell, chlorine, oil e.g. and other fluids cannot be stopped by the filter. To solve problems of that kind additional equipment must be used and can be included in the system.

Mr. Hauseder explaining the waterpump function

Examination of the water quality:

Chemical and bacteriological laboratory tests of the raw and filtered water should be carried out. A simple integrity test of the performance of the filter can be easily carried out by the user.

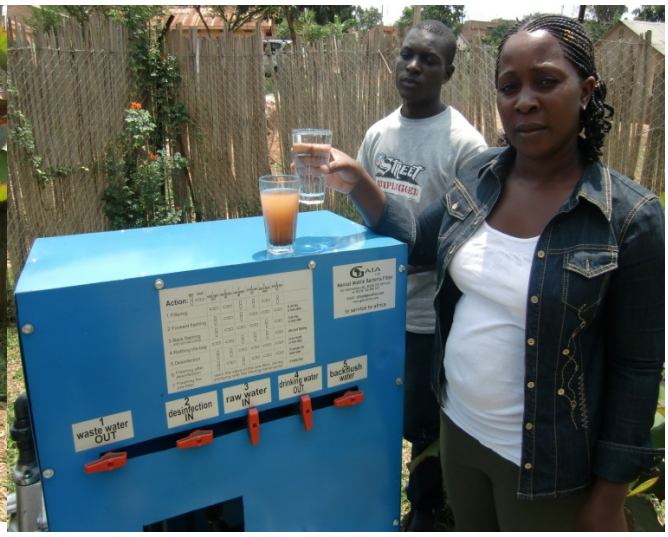
After the basic construction and assembling of the prototype which was done by the technical college in Wels/Austria, extended tests followed, adjustments and improvements were made.

Distribution:

It can be purchased in Austria, but we very much prefer that we can find partners in various countries who want to take the chance to become Licence partners. They will get the parts, instruction and support necessary for production and act independently. On this way the units are cheaper and new technology gets transferred to those countries as well.

On 27th February 2010, the first Afro-Prototype of the “Best Water Source” Water Processing Machine went on-line in Uganda.
Still this Year, units will be produced in Nigeria too.

With external electrical pump



Clean water from very dirty water

It is easy to carry