1001FONTAINES

Purification of the water

The treatment method illustrated in the schematic below is the result of five years of experience. It has proven to work effectively in the villages and there is a constant focus by the "1001 fontaines pour demain" team and its supporting experts on finding ways of continuing to improve performance.

A process that respects the environment

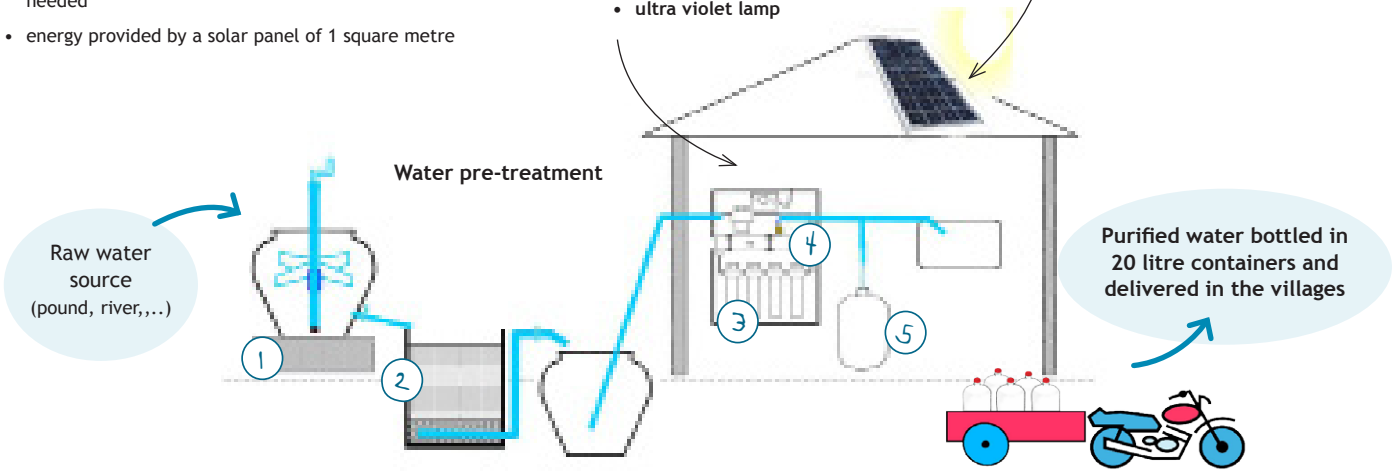
- limited use of chemicals (small amounts of chlorine to disinfect the containers)
- reusable plastic containers
- only a small percentage of the available sources of water needed
- energy provided by a solar panel of 1 square metre

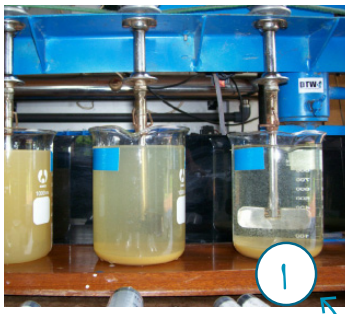
Ultra violet based treatment unit

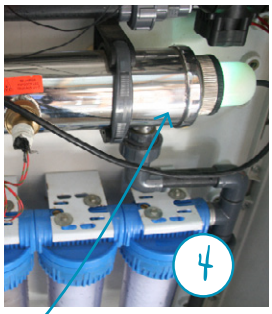
- small electric pump (600 to 800 litres per hour)
- electronic control unit
- a series of polyethylene filters
- ultra violet lamp

Powered by solar energy

- panels supplying 85 to 100 Watts (charging a 12 volt battery)







COAGULATION and FLOCULATION SETTLEMENT

Typically, the raw water is turbid due to the presence of small particles. To eliminate these, a process of coagulation and flocculation is used. The addition of aluminium sulphate accompanied by slow stirring causes aggregation of the particles into larger masses. Due to their weight, these particle masses fall naturally to the bottom of the vessel.

FILTRATION and MICROFILTRATION

Next the water is passed through a sand filter, which removes the majority of the remaining suspended particles. Then the water is passed through a series of micro-filters (diameters ranging from 60 to 1 micron). At the end of this step, the water is clear but is not yet potable.

ULTRA VIOLET PURIFICATION

In the next step the water is exposed to ultra violet radiation. The particular range of the ultra- violet spectrum that is used is UV-C (wave-length less than 280 nm), which kills germs. The main advantages of ultra violet filtration are as follows:

- the electromagnetism technique preserves the taste and chemical characteristics of the water
- low maintenance costs (the average life of the lamps is 8000 hours, which is equivalent to 12 years of production at the rate of 1200 litres per day).

BOTTLING and QUALITY CONTROL

Before filling and sealing, the containers are washed and disinfected with a chlorine solution.

The quality of the water is controlled based on microbiological criteria, such as the coliform bacterial index.