efficiency

PAUL® uses a membrane filter that retains over 99.99% of bacteria and virus. Pore size of the membrane is ca. 40 nm (0.04 µm) and lifespan exceeds 10 years. Per day, **more than 1,200 liter** water can be filtered – in practical use, the max. flow is **between 2,000 and 5,000** liter per day.

example India

In a project financed by the **German Environmental Foundation** (DBU) and the **NGO terre des hommes**, **PAUL®-Stations** were implemented in Tamil Nadu/India. For results see "benefit" and the report (in German):

contact

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web: www.waterbackpack.org

This is **PAUL®**, the centerpiece of the **PAUL®-Station** – originally developed for first aid in disasters and due to his long lifespan of 10+ years already in use as a permanent water supply in several hundred **PAUL®-Stations**

video (12 min):

facebook:

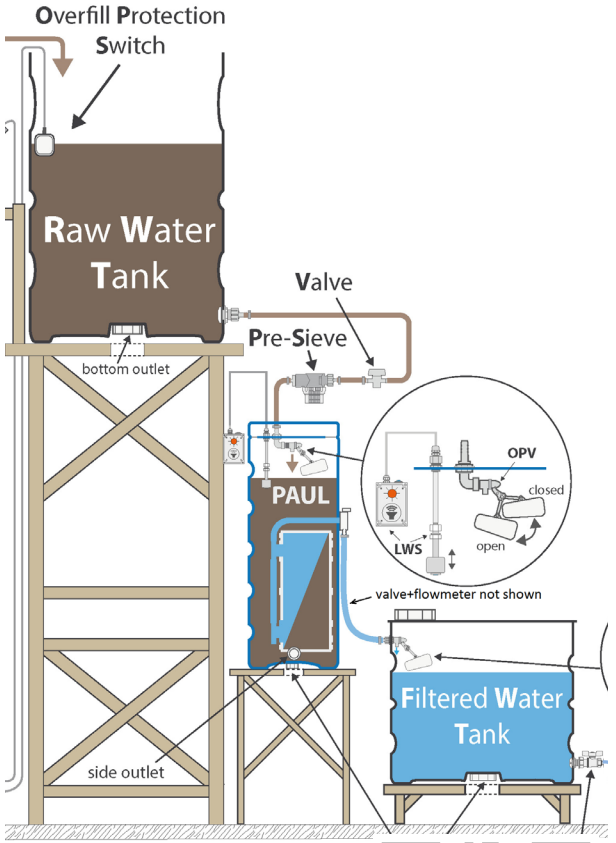
yes, you can help

Donate and help creating even more **PAUL®-Stations** in villages, schools, hospitals etc..

donate to: World University Service
reason: **Paul**
bank: Bank für Sozialwirtschaft
IBAN: DE95 3702 0500 0007 2321 00
BIC: BFSWDE33XXX

include postal address for donation certificate

Permanent water supply: PAUL®-Station



gefördert durch
DBU
Deutsche Bundesstiftung Umwelt
www.dbu.de

developed at
UNIKASSEL VERSITÄT

local benefit

- ☺ with total cost of as low as **3,500 €** you can set up **and** operate a **PAUL®-Station** for **10 years**
- ☺ 50% of that total sum is **local added value!**
- ☺ most simple is a payment model where families pay a fixed monthly fee, so called **water flatrate** (decided by the newly created water committee in India)
- ☺ with a fee of as low as **2 € per family and month** the total cost (invest and o&m for 10 years) can be paid back within **2.5 years**. Then, **during 7.5 years, the community earns the profit**!
- ☺ in the project in **India,** the **water price** for the locals **dropped down to less than 20%.** Same numbers were also obtained in **Myanmar.**
- ☺ in addition, the establishment of a **water committeee** has lots of **social benefits** for the people
- ☺ and it is **crucial** and most decisive that a **PAUL®-Station** does **not need import of spare parts, replacement cartridges etc.**, as this terminates all high tech applications in the rough reality!

This is how a PAUL®-Station looks

Design of pump & solar panel depends on

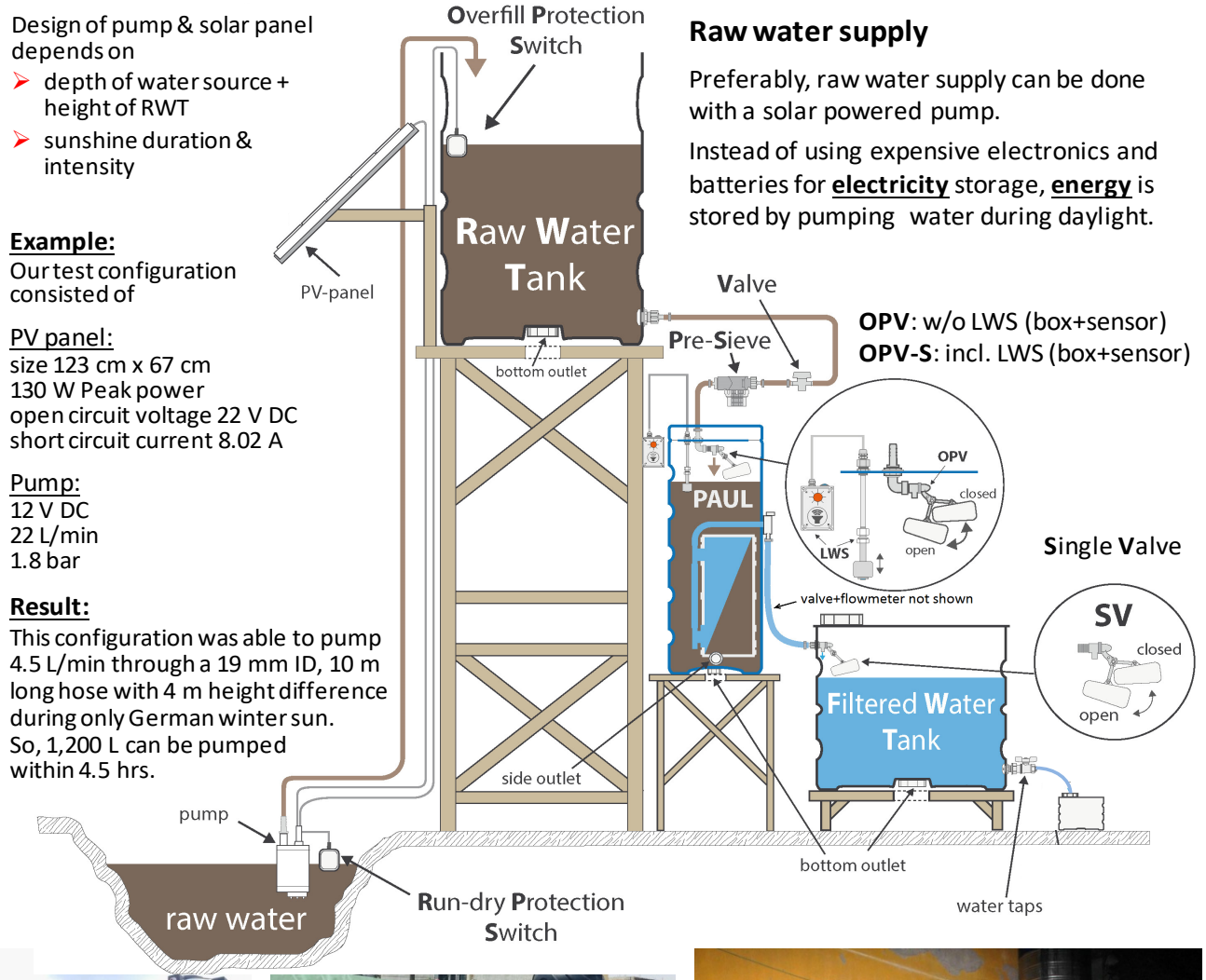
- depth of water source + height of RWT
- sunshine duration & intensity

Example:
Our test configuration consisted of

PV panel:
size 123 cm x 67 cm
130 W Peak power
open circuit voltage 22 V DC
short circuit current 8.02 A

Pump:
12 V DC
22 L/min
1.8 bar

Result:
This configuration was able to pump 4.5 L/min through a 19 mm ID, 10 m long hose with 4 m height difference during only German winter sun.
So, 1,200 L can be pumped within 4.5 hrs.



Raw water supply

Preferably, raw water supply can be done with a solar powered pump.

Instead of using expensive electronics and batteries for **electricity** storage, **energy** is stored by pumping water during daylight.

OPV: w/o LWS (box+sensor)
OPV-S: incl. LWS (box+sensor)