

efficiency

The WaterBackpack is based upon a membrane filter module with a surface area of $\approx 10 \text{ m}^2$. Nominal pore width is 40 Nanometer (0.04 micron). Bacteria, who are much bigger, are retained by this membrane filter.

DESEE already conducted many test series with different contaminated surface waters. The results show that – without any maintenance or cleaning – a flow of 1,200 liter per day can be achieved over months. This means 800 bottles of 1.5 liter water every day, sufficient for **200 people** to survive.

The alternatives are: fly in 1.2 tons of bottled water every day – or just fly in one 20 kg PAUL once!

The **WaterBackpack** is a new, important and urgently needed tool to enable mankind to provide first aid with respect to water for those living in remote areas, especially children, in cases of disasters. He must absolutely be incorporated in the toolbox of first aid organizations.

Please also speak up for this intention!

human lives must be saved!

contact

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With a donation you support manufacturing WaterBackpacks for use in cases of emergencies and disasters.

Donate to : World University Service

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www.waterbackpack.org



Water supply in cases of disaster **The WaterBackpack**



gefördert durch



Deutsche Bundesstiftung Umwelt

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U N I K A S S E L
V E R S I T Ä T

motivation

Drinking water is mankind's most important food. However, still more than 800 Million people do not have access to safe drinking water. With emergencies and disasters, supply of drinking water, medical aid and supply of emergency accommodation are the most pressing problems. Wells and rivers are contaminated by pathogenic bacteria. Many people then suffer from diarrhea, cholera and other diseases, and many victims, especially children, die.

the problem

The so far available mobile waterworks used by first aid organizations are complex and highly engineered and need skilled operation personnel, energy and consumables. A minimum of infrastructure is needed to bring them in place. They are well suited for larger cities.

For those living in villages in remote areas, however, **cut off** from these waterworks due to destroyed infrastructure, there was no help **so far** concerning decentralized water supply. Thus, **additional help** was needed..

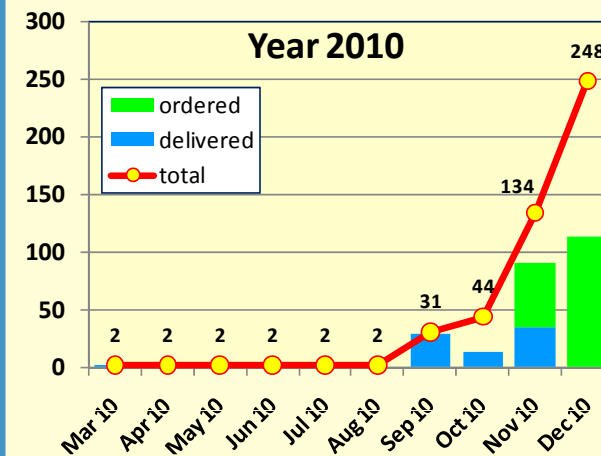
the solution

The Department of Sanitary and Environmental Engineering (DESEE) of the University of Kassel, with financial support offered by the „Deutsche Bundesstiftung Umwelt“ (DBU), developed the „**WaterBackpack**“, nicknamed „**PAUL**“, for decentralized water treatment in cases of disaster. We utilize a membrane filter to remove pathogenic bacteria.

The **WaterBackpack** stands out due to the following characteristics:

- ✓ no energy needed
- ✓ no chemicals or other consumables needed
- ✓ no skilled operation personnel needed
- ✓ self help possible even for illiterates: operation manual consists of only 4 pictograms
- ✓ portable by one person
- ✓ simple construction, no moving parts, thus extremely robust
- ✓ no maintenance nor cleaning needed

WaterBackpacks today found their way to Chile, Pakistan, Vietnam, India, Haiti, Taiwan, Kenia and Bolivia already.



Donators include

- ✓ Lions, Rotary, Soroptimist
- ✓ Foundation "Humanity Care"
- ✓ Childrens Help "Global Care"
- ✓ Hessian Minister of Economy
- ✓ Hessian Minister of Justice
- ✓ Tzu Chi Foundation, Taiwan
- ✓ General Consul SR Vietnam (Germany)
- ✓ and many private donators

