



MÖRK WATER SOLUTIONS
BU of MÖRK BAU GmbH & Co. KG
Mollenbachstr. 33-35
71229 Leonberg / Germany
www.moerkwater.com

This brochure was printed on FSC-certified paper..

water brings life

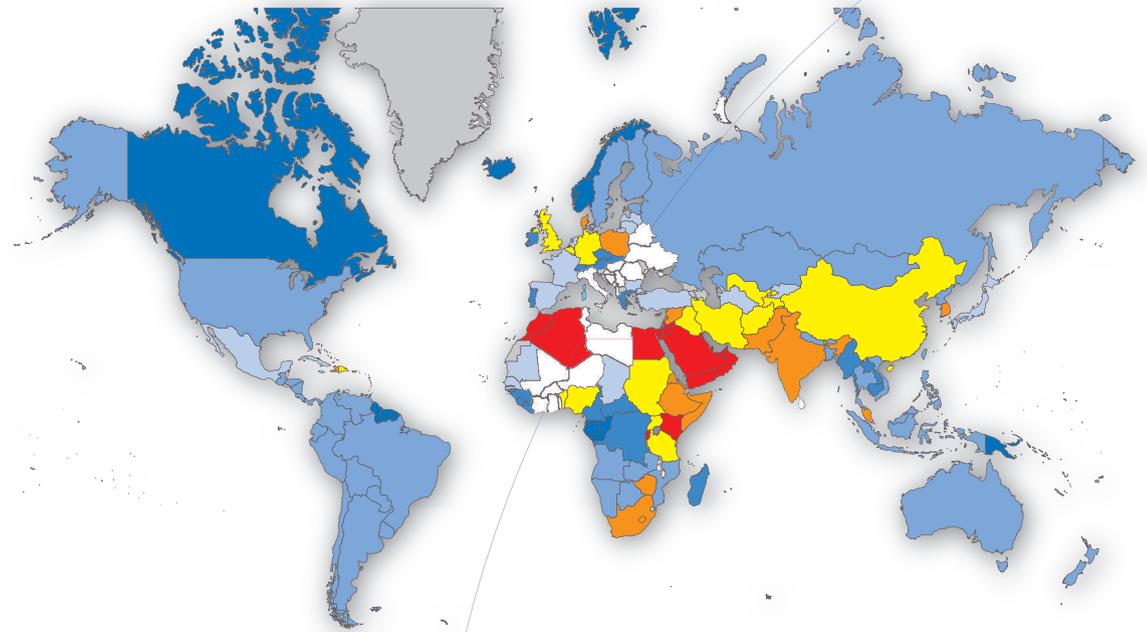


water brings life

mörk  **desalin** [®]
RO100SW



Do you want to change lives?
Clean water for all.



Source: FAO, Nations unies, World Resources Institut (WRI), Philippe Rekacewicz



Water – The key issue of the future

Water is the basis requirement for life. We need water to drink, to wash and to cook. Many diseases are the result of consuming contaminated water. Studies show that access to healthy water is a key factor in the promotion of societal progress in developing countries.

More than **1 billion people** currently have no access to hygienically safe water. Particularly in remote regions, the water supply is often hopelessly inadequate. The population has to resort to unsafe water sources, such as rivers or lakes. In many cases, even wells and springs fail to deliver hygienic drinking water, as the ground water itself is contaminated (e.g. with arsenic, for example in India and Bangladesh), wells are contaminated with salt (especially near the coast due to excessive use over many years) and surface waters are polluted as a result of uncontrolled agriculture and industry.

In areas south of the Sahara, **fewer than 65 %** of the population have access to clean drinking water, and the problem is set to become even more exacerbated due to population growth and the finite nature of water resources. Many diseases arise as a result of the poor supply of drinking water. Typhoid, diarrhoea and others cause immense suffering, particularly for children.

As UN experts explain, the availability of water in many places is well below the absolute minimum. Furthermore, the poor quality of the water threatens population development and even, in many cases, human survival.

For this reason, one of the UN Millennium Development Goals is to halve, by 2015, the proportion of the population without sustainable access to safe drinking water.

Solution concept

Our recently developed concept empowers people in rural areas, to produce their own drinking water through self-sufficient desalination units. The concept not only envisages a suitable product but for putting this into practice, it is based on three pillars: Product, Education and Support.

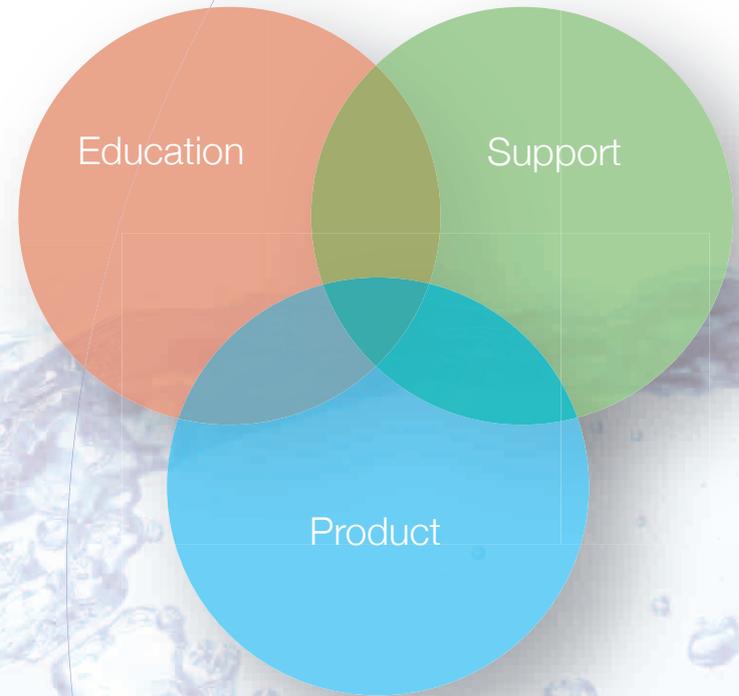
The **Product**, the energy self-sufficient seawater desalination plant, produces water where it is needed.

Education is the basis for empowering people. Contractor, service personal and operators can easily be taught how to use and maintain the unit

independently, through adapted training material. The objective is the transfer of know-how and the independence of the operators.

We want to **Support** independent local entrepreneurs who take responsibility for the plant, earn their living with it, and thus look after it accordingly. For this purpose, a sustainable business model has been developed to encourage the establishment of local entrepreneurs.

The local people will be involved, in the installation of our unit, from the very beginning.



Information of villagers



Platform for the desalin installation



Framework of desalin installation



Construction of the framework



Information of villagers

mörk desalin[®]

RO100SW

To solve this problem, we have developed the innovative **mörk desalin[®]** plant concept, featuring the following points:

- decentralized (there where the water is required)
- self-sufficient (independent of mains electricity)
- inexpensive (in terms of both procurement and running costs)
- local (local resources are involved)
- secure (increased anti-theft protection)

Our plants are self-sufficient in that they use 100% renewable energy, are culturally adapted to regional value creation, and are simple to operate and maintain.

The plant is installed near the coast. For the drawing of seawater, a well that is already salty is used, or a new well is dug by the coast with the aid of the population. As many local materials as possible are used, such as tanks, pipes, found-

ation and steel frame. The focus of the project is to integrate the plant into local society and culture from the outset. The plant can be assembled from modules according to the specific situation.



Technical data



- Drinking water capacity: 100 l/h
- Dimensions of tower:
450 cm x 290 cm x 180 cm
pedestals:
270 cm x 50 cm
- Energy efficient reverse osmosis plant: 4 kWh/m³ of drinking water produced
- Operation without the addition of chemicals
- Energy supply from photovoltaic modules and a small wind power turbine
- Drinking water supply for up to 600 people in coastal regions
- Reduced transportation costs through use of materials available and produced regionally

Pilot project

We are currently running a pilot project in Zanzibar, Tanzania, in cooperation with GIZ (Gesellschaft für internationale Zusammenarbeit GmbH). This project is being funded by the German Ministry for Economic Cooperation and Development (BMZ) and our partner Dow Chemical.

The aim of the project is to improve access to a self-sufficient, ecologically sustainable and inexpensive supply of drinking water for the population in neighbouring areas of Zanzibar. The following points are implemented in the project:

Dafür werden folgende Punkte in dem Projekt umgesetzt:

1. Development of a cooperative partnership with a local partner who will subsequently support the installation of further plants as a representative of

MÖRK WATER SOLUTIONS and act as a service centre for long-term commitment in the region.

2. A training partner will be established in Zanzibar to provide potential operators and other interested parties with training courses and on-going training measures for the transfer of know-how and technology in the field of water treatment and renewable energy and to inform the local population of the advantages of the drinking water thus obtained.

3. Two **mörk**desalin® plants are being installed for demonstration purposes. These will be used, in realistic conditions, to draw up and demonstrate a sustainable operator concept, adapted to local conditions, for self-sufficient, decentralized seawater desalination plants.



Well is dug by hand



Training



Test users

develoPPP.de



Funding

From the German Ministry
for Economic Cooperation and Development (BMZ)

Project partners

giz

Project partner

Gesellschaft für internationale Zusammenarbeit GmbH
Project support in the field of development policy; partner with local expertise and contacts in developing countries

Development partner

Supports the development process with international experience in water treatment projects and membrane expertise; world's leading membrane manufacturer

Development partner

Technical development of the system concept; expertise and references from pilot trials in Bangladesh and on-going projects in India (2010, 2011) in the field of water treatment

Project partner for pilot plant

Local project implementation; establishment of a service centre in Zanzibar with MÖRK WATER SOLUTIONS; installation of a training course at the local KIST institute (Karume Institute of Science & Technology, Zanzibar)

For implementation of the project, we have managed to acquire a number of partners. These bring with them the technical expertise required for development and support, and also the cultural competence required for the on-site implementation and integration of the project. These measures will ensure that the plant remains an integral part of village life in the longer term.



Company presentation

MÖRK WATER SOLUTIONS stands for innovative and sustainable solutions in the field of drinking water. Our focus is on developing countries. The major challenge for society in the future will be the drinking water supply. Our concepts provide people with safe access to drinking water.

Our vision is to supply more than **1 million people** with drinking water in the next 20 years with **mörk**desalin[®] systems! Contact us if you would like to get involved and support this project!

MÖRK WATER SOLUTIONS is a business unit of MÖRK BAU GmbH & Co. KG, a family-run company with a history going back over 100 years. The core competence of the company is professional project management.

Furthermore, Mörk has been active in the field of energy for some years. The MÖRK PHOTOVOLTAIK business unit develops, plans and implements solar projects on all scales.



mörkodesalin[®]
RO100SW

Johannes Puy
Business Unit Manager

Water Solutions Team



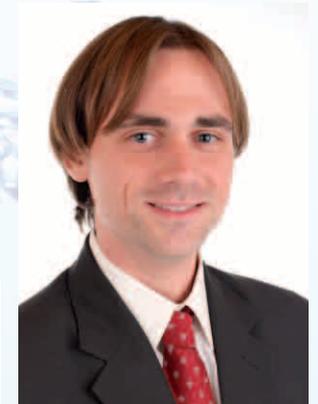
Martin Brezger
Managing Partner



Barbara Brezger
Sales Manager



Johannes Puy
Business Unit Manager



Stefan Schmidt
Technical Manager

