

# Water is the prerequisite for all life!

## Counteract the worldwide lack of water

### Water reuse

Clean water is so scarce that we should not use it for purposes where drinking water quality is not necessary. Everywhere in the world untreated waste water or highly polluted river water is used for irrigation purposes. What is flushed from the toilets of the rich irrigates the vegetables in the gardens of the poor.

The resulting produce then also lands on the tables of the rich. The danger that comes from pathogens and poisons from industry affects all population groups. If the hygienic pollution could be controlled and if industrial waste water inflow could be stopped, then municipal waste water would not only be an ideal source of water for irrigation, but also of fertilizer.

We want to get away from the centralized treatment plants, which today are seen by many experts as being major disseminators of multi-resistant pathogen microorganisms into the environment. Our approach is to develop decentralized systems, which allow for a high degree of cleansing, thus making it possible to safely reuse the waste water.



Pilot plant near Madras (Chennai), India. After Treatment in an ÖKOTEC plant the waste water of a boarding school is used for irrigation of paddy fields.

In decentralized sizes, too, planted soil filters provide a selective cleaning effect as needed, with high performance and high operating stability. In the „classical“ waste water treatment processes, such as trickling filters or activated sludge processes, one can expect a bacterial elimination of 1 – 2 log units. This is not clean enough to be used to irrigate agricultural

crops. We have therefore, through long-term trials, developed a 2-step soil filter that achieves a stable output quality, thereby making it possible to reuse the water for practically any agricultural purpose. Even the use of added technical disinfection measures, such as UV equipment, would here not bring any improvement.

When planning to reuse the water, maintenance of the plant gains special importance.

In addition to the customary maintenance work and performance assessment, it is especially important to conduct microbiological tests at regular intervals. According to the most recent recommendations of the German Environmental Agency, E. coli is to be used as a test parameter.

It can be foreseen that the decentralized reuse of waste water will become a part of municipal concepts. In this case, both the maintenance and the recurring performance assessment of decentralized plants can be greatly simplified, for example through a standardization of the plants and through centrally organized operations.