

# Upgrading of a Wastewater Pond Facility in Namibia

## Water reuse in agriculture

### Situation

The wastewater in Outapi is channelled into sewage ponds for treatment, where it then largely evaporates unused due to the long residence time and outside temperature (semi-arid climate). Overloading of the local pond system (steady population growth, large water masses in the rainy season) and general water scarcity in Namibia call for a solution to reuse the wastewater. Within the framework of the EPoNa research project, measures to treat wastewater for irrigation in agriculture are being tested. For this purpose, a wastewater line is optimised and compared with conventional treatment.

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## Solution

The Passavant® CarbonExtract® process with the Noggerath® Drum Screen RSH-MG 1600x1000 drum screen was used for mechanical pre-treatment of the influent. The wastewater flows through the drum screen from the inside to the outside, whereby dirt particles adhere to the inner surface of the screen basket. The water filtered through the 250 µm screen mesh is then biologically treated in a wastewater pond, filtered by means of a gravel filter and used on-site for irrigation for feed production. The retained primary sludge is used in two ways in the demonstration project. One part is used for soil improvement in agriculture, the other part is used to produce sewage gas in a nearby sludge digestion plant, which in turn is converted into electricity in a CHP unit.

Wastewater screening proves to be a suitable substitute for conventional sedimentation in the local situation. In principle, it is a sensible alternative for use in similar tasks for wastewater treatment in semi-arid/ arid areas.

## Advantages

- Reliable removal of particles, suspended and fibrous matter
- Compact pre-treatment
- Greenhouse gas emissions from wastewater treatment are reduced
- Enabling material recycling (e.g. fertiliser, biogas production)

## Technical Data

1 Noggerath® Drum Screen  
Type RSH-MG 1,600 x 1,000  
Drum diameter: 1,600 mm  
Drum length: 1,000 mm  
Throughput capacity: approx. 70 m<sup>3</sup>/h



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