



Newsletter / Special Issue

About Decentralised Wastewater Treatment Solutions & Proper Sanitation



BORDA Developed & disseminated by BORDA and over 20 BORDA BNS Network Partners in South and Southeast Asia & Southern Africa

For human dignity, health and urban environmental protection
Improved Sanitation for All!



BORDA got the Development Solutions Award by IWA

Bremen, Kuala Lumpur, December 7th 2011

BORDA was honored with a Development Solutions Award from the International Water Association (IWA) at the 2nd IWA Development Congress in Kuala Lumpur, Malaysia, which was held from 21-24 November, 2011. The Development Congress was organized to help address the lack of access to adequate water and sanitation services in urban areas in low and middle income countries. More than 700 international water and sanitation experts participated in this development congress. The IWA Development Solutions Award that BORDA received was conferred in recognition of its outstanding innovations ...

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UN: "Sustainable Sanitation: Five-Year Drive to 2015" - BORDA's approach acknowledged



One target of the Millennium Development Goals (MDG) is to halve the proportion of the population without sustainable access to basic sanitation by 2015. To achieve this goal the United Nations launched the "Sustainable Sanitation: Five Year Drive to 2015".

Still there are 2.6 billion people, half of the population in developing countries, without access to improved sanitation - far behind the MDG-target. This means, it becomes necessary to redouble efforts to improve sanitation by 2015. Open defecation and untreated discharge of wastewater into water bodies threaten health of local people. UNICEF estimates that 1.2 million children under five die because of improper hygiene and therefore mainly excreta-related diseases like diarrhoea. By launching the "Sustainable

Sanitation: Five-Year Drive to 2015" by UN Secretary General Mr. Ban Ki-Moon the UN along with the Water and Sanitation Programme (WSP) and UNICEF reinforce efforts to close the sanitation gap and provide improved health and environmental conditions. According to the UN improvements in sanitation can lead to an almost 40% reduction in illnesses caused by diarrhoea.

We see this Five-Year-Drive as acknowledgement for our for years. For more than 15 years BORDA and their Basic Sanitation Needs (BNS) network provide proven, reliable, low-maintenance and low-cost solutions for improved sanitation in low-income regions in Southern Africa and Asia. More than 1,000 implementation projects have been realised up to now. The IWA Award and the Five-Year-Drive approve us to be on the right track with our approach.

Member of:



German WASH Network



IWA Award for innovations of technology and com

Facts about the sanitation gap



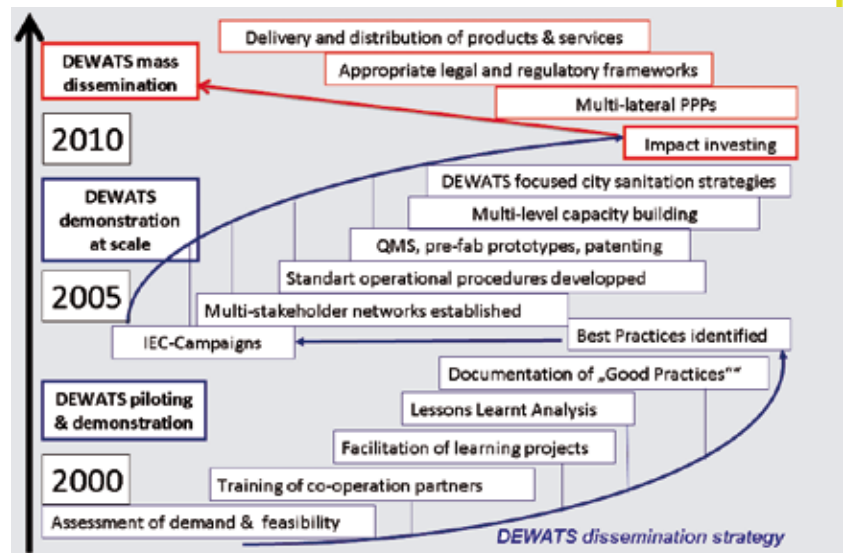
- Lack of sanitation is the world's biggest cause of infection
- 2.6 billion people lack access to improved sanitation, including 1.2 billion people who have no facilities at all
- 5.5 billion people do not have access to treatment plants for domestic wastewater.
- More than 80 % of domestic and industrial wastewater in developing countries are not treated and pollutes rivers, lakes, groundwater sources, and coastal areas
- Diseases transmitted through water contaminated by human waste include diarrhoea, cholera, dysentery, typhoid, and hepatitis
- Every day more than 3000 under-five children die from water related diseases.
- Nearly one in five children deaths - about 1.5 million each year - is due to diarrhoea. It kills more young children than AIDS, malaria and measles combined. Studies show that improved sanitation reduces diarrhoea death rates by a third.
- Children in poor environments often carry 1,000 parasitic worms in their bodies at any time
- Adequate sanitation encourages children to be at school, particularly girls. Access to latrines raises school attendance rates for children.
- At any given time, half of the world's hospital beds are occupied by patients suffering from diseases associated with lack of access to safe drinking water, inadequate sanitation and poor hygiene.

DEWATS dissemination strategy

The BORDA strategy comprises the stages that are necessary to disseminate Decentralised Wastewater Treatment Solutions (DEWATS) in identified regions or countries - from the first assessment to mass dissemination. The strategy also reflects BORDA's development programmes in Indonesia and India since 2000.

In the first stage an assessment of demand and feasibility is followed by training of co-operation partners and by the facilitation of learning projects. Lesson learnt analysis lead to identify best practices. On basis of best practices IEC-campaigns are conducted and a multi- stakeholder network is established. Developed standard operational procedures and QMS guarantee the quality of DEWATS products (e.g. patented pre-fab units) and services. A multi-level capacity building programme disseminates specific information and knowledge to relevant public or private stakeholder on local and national level. In the next step City Sanitation Plans that include a citywide sanitation analysis and specific options for sanitation infrastructure improvements are developed in co-operation with municipal authorities.

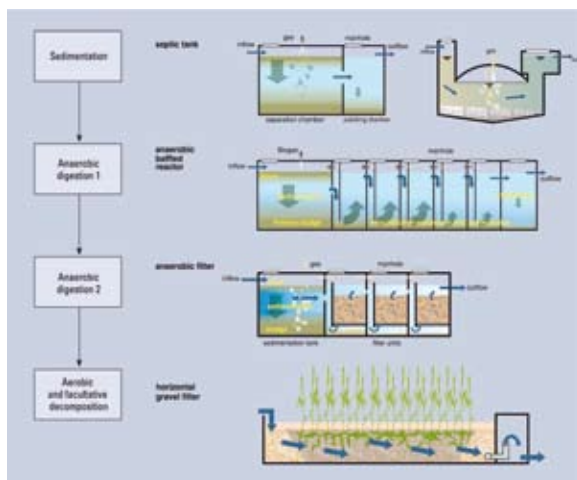
At the stage of mass dissemination public funded entities and charities do not have the chance to deliver the needed quantity. Therefore the private sector, including investment companies have to be engaged with an "impact investing framework". This framework is synchronized with other multilateral public private partnerships which are signed with delivery and distribution of DEWATS products and services. The whole approach must be embedded in an appropriate legal regulatory framework in order to distinguish and separate private policy and NGO investments.



This strategy is guided by the Mission of BORDA to improve the living conditions of disadvantaged communities and to keep the environment intact through the expansion of Basic Needs Services in the areas of decentralised sanitation, water and energy supply as well as wastewater and solid waste disposal." Due to the particular focus on decentralised sanitation, including wastewater treatment and solid waste management, BORDA emphasises its efforts with the slogan:

"Improved Sanitation for All"

community facilitation



About DEWATS:

DEWATS stands for „Decentralised Wastewater Treatment Solutions“.

DEWATS applications are based on the principle of low-maintenance since most important parts of the system work without technical energy inputs and cannot be switched off intentionally.

Advantages of DEWATS technology:

- Provides treatment for domestic and industrial wastewater
- Low initial investment costs as no imported materials or components are needed
- Efficient treatment for daily wastewater flows of up to 1000m³
- Modular design of all components
- Tolerant towards inflow fluctuations
- Reliable and long-lasting construction design
- Low maintenance costs

Hence, DEWATS technology is an effective, efficient and affordable wastewater treatment solution for small and medium sized enterprises (SME).

Results and effects

- For the last 10 years, more than 1,000 DEWATS projects in more than 200 cities have been implemented by the BORDA BNS network.
- Thus 250,000 persons have gained access to hygienic sanitation.
- Regulated decentralised wastewater management improves verifiable community hygiene and general quality of life of the residents.
- Residents and users participate actively in planning, implementation, and operation of projects .
- Total treatment of installed facilities is 50,000 m³ wastewater per day.
- Degrading open defecation has been reduced of 95% in areas of intervention; hygiene related diseases have been decreased of 60%.
- COD/BOD in wastewater was reduced by 85-90%.
- More than 1,500 experts and craftsmen have been employed by the partner network.
- Necessary investment costs for improved basic sanitation have been reduced to € 100 / person
- Internal quality management ensures efficient project implementation



Best Practice Example: DEWATS for Tofu Home Industries as Part of Community-based Sanitation Approaches in Urban Areas in Indonesia

“The water of this river was white every day and it smelled very bad,” remembers the woman living in Temanggung, Indonesia.

Indonesia consumes nearly 2.1 million ton soy-beans per year. The production takes place in densely populated low-income areas. Most of the industries are small-scale family businesses with 2-6 employees, mostly from a very poor background. The small or medium enterprise (SME) is the only income source for workers and the family who owns the business.

By processing the soy-beans, the environmental impact is huge. 1 kg soy-bean processing produces an average of 9.4 liter wastewater with an average COD (Chemical Oxygen Demand) of 8000 mg/l. The high environmental pollution makes the SME a part of the sanitation problem of the low income community. The communities' complaints and the attempts of the local government to shut down the SMEs is finally leading to the loss of the only income source of many people.

DEWATS CBS (Community-based Sanitation) for Tofu Home Industries: To stop the vicious cycle of environmental pollution and economic loss, BORDA and the BNS partner network in Indonesia started to support SMEs using the the DEWATS CBS approach.

Like in Temanggung, the projects are funded using multi-sourced funding schemes with contributions from the national and local government, the community and BORDA. A community-

based organization (CBO) is funded to supervise and maintain the project, a DEWATS operator is trained and the DEWATS plant with a biogas modul will be constructed. After almost four years the project started in Temanggung, seven SMEs are connected and the demand is still increasing. With DEWATS, biogas is produced for 30 households per day and more households want to be connected. With the cost efficient biogas, new business opportunities like catering and snack production bring new economic prospects to community members, especially women.



**Best Practice Example: The Changing Face of a Slum Community -
Community Based Sanitation and Slum Development Project in Tamil Nadu, India**



Increasing urbanisation has resulted in increased risk to public health and hygiene. Shrinking urban spaces make defecation difficult and unhygienic. Most slum dwellers usually live without proper toilet facilities. Women suffer the most, as privacy is hard to come by during daylight hours. East Devadhanam in Tamil Nadu, India is such a slum. It has a population of approximately 2,000 people. The lack of toilets led to open defecation, cultivating diseases caused due to parasitic and bacterial infections. The sanitation situation in East Devadhanam was deplorable calling for an appropriate sanitation solution in order to improve the health and hygiene conditions of the inhabitants.



DEWATS CBS (Community Based Sanitation): It was envisaged that the sewage from the public toilets could be treated through DEWATS for re-use. The biogas generated by the pre-treatment process in the biogas settler could be used for heating water and lighting, treated sludge could be used as fertiliser and treated wastewater for irrigation of a small agricultural plot adjoining the CBS complex. Treatment would also ensure better sanitary conditions in the neighborhood. Finally, the O&M cost would be relatively low in case of DEWATS and would benefit the community. The sanitation facilities have put an emphatic end to health hazards and the practice of open defecation and will go a long way in encouraging the use of the toilets and inculcating good health and hygiene practices. The

treated wastewater is put to appropriate use for irrigating the vegetable garden. Residents of East Devadhanam are now more enlightened than other marginalized communities. One of the major achievements of the project has been ensuring sustainability of the system as it is fully owned and managed by the community themselves.

Cont. from page 1: BORDA got the Development Solutions Award by IWA



The IWA Development Solutions Award that BORDA received was conferred in recognition of its outstanding innovations and contributions to technology and community facilitation that transform service delivery in low income urban settlements. The Award was presented to BORDA's Director, Mr. Andreas Ulrich, by the President of IWA, Dr. Glen Daigger. While addressing the congress during the award ceremony, Mr. Ulrich stated that he accepts the award on behalf of BORDA's Board, staff, BNS-Partner-Network and in the name of all individuals and organizations engaged in DEWATS development and dissemination.

Mr. Ulrich explained that the water and sanitation situation in low and middle income countries is in a state of crisis, therefore, academics and practitioners need to move fast with pragmatic approaches and technologies. The current fragmentation of the wastewater treatment sector and the focus on technological efficiency and perfectionism has become a threat to immediate, short term 'good enough' interventions that are needed to improve the sanitation situation in densely populated peri-urban/urban settlements now. He further explained that BORDA has developed and tested modular combinations of 'known and not-so-known' appropriate treatment technologies in order to provide affordable and low-maintenance wastewater treatment to clients that needed, but could not afford or operate, more sophisticated wastewater treatment. BORDA has demonstrated the impact and efficiency of this approach in over 1,000 projects implemented in 14 low and middle income countries in Asia and Africa.

The BORDA director acknowledged the special support of the Federal Ministry for Economic Cooperation and Development, Germany (BMZ), the Senator for Environment, Construction, Transport and European Affairs, Free Hanseatic City of Bremen, Germany, the Government of India, the Government of Indonesia and the Governments of other partner countries for their continuous policy support of BORDA's interventions. He also acknowledged and appreciated the hard work and dedication of BORDA's Board, staff, BNS-Partner-Network and all organizations engaged in DEWATS development and dissemination around the world.

With support from:



In cooperation with:

Local and national governments and BORDA BNS partner organisations in Asia, Africa and Latin America.



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