

Threat to public health

About 2.6 billion people worldwide, especially in Africa and Asia, lack access to proper basic sanitation. This figure reveals how important it is to act innovatively as without adequate sanitation people not only have to face an unworthy and polluted environment, but are also at high risk of infection and suffer deficiencies in privacy and safety.

Lack of privacy and hygiene

Insufficient sanitation facilities threaten or ignore the privacy and security needs of school children. One very important example of this is the lack of facilities and care for girls during their menstrual periods. This includes lack of water for hand-washing, lack of maintenance and lack of hygiene education.

Fear and unhygienic conditions have a significant impact on education, particularly that of girl students, causing significant absenteeism and even school dropouts.

BORDA BNS Network's Mission

The mission of BORDA (Bremen Overseas Research and Development Association), and its Basic Needs Services (BNS) Partner Network, is to improve the livelihoods of disadvantaged groups within societies and to sustain the functioning of eco-systems through dissemination of demand-oriented BNS. BORDA and its network develop and disseminate innovative solutions to facilitate access to BNS.

DEWATS School Based Sanitation

During the process of DEWATS SBS implementation in schools, BORDA and its partners cooperate with willing local partners to reconcile the interests of all stakeholders (e.g. school maintenance body, municipality, target group) to construct sanitation facilities which meet the needs of children and young adults.

Four main technical sanitation solutions are applied:

- Double vault dry-toilets
- Indirect flush with recycling water
- Pour-flush
- Biogas-latrine

Education, evaluation and training programmes complete the DEWATS SBS Service Package to assure correct handling and reliable maintenance and, therefore, the sustainability of the whole SBS project.



**A promising concept to
improve hygiene and health
in schools**

SBS |
DEWATS Service Package

Developed and disseminated by
BORDA & BORDA BNS Network

The DEWATS SBS Service Package guarantees hygiene, dignity and basic sanitation in schools

Key SBS features

The following measures are taken during the implementation of DEWATS SBS:

- o Demand-based selection process to assess the willingness for appropriate participation, the ability to co-finance and the assurance of satisfactory house-keeping.
- o Planning, financing, implementation and management of the project with participation of all stakeholders.
- o Construction of an inviting and gender-sensitive sanitation centre which provides fresh clean water and meets basic hygienic standards.
- o Implementation of a decentralised, sub-terrestrial and locally adapted treatment system, including the option for biogas generation and safe wastewater re-use.
- o Health and Hygiene Education (HHE), Health Impact Assessment (HIA) and maintenance training for the preparation, implementation and management of proper SBS.

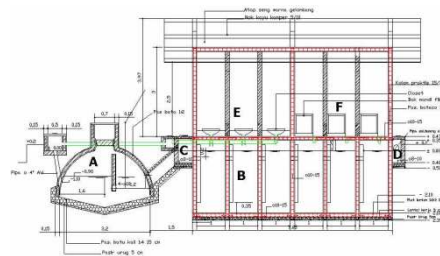
Resulting benefits

- o Clean toilets and fresh water provision improve hygienic conditions and significantly reduce health risk and infection.

- o Good hygiene behaviour, due to Health and Hygiene Education and the availability of hygienic sanitation facilities, is improved in a sustainable manner at school and is also transferred to home from children to parents. This initiates social dissemination of upgraded hygienic customs.
- o The privacy, security and dignity of schoolchildren are ensured by the new toilet facilities. Absenteeism and school dropout rates are lowered observably, especially among girls.

Additional benefits

- o The biogas that occurs from wastewater treatment can be used for cooking in the school kitchen.
- o The school garden can be irrigated by the treated water from the DEWATS plant.



The DEWATS modules for physical and biological wastewater treatment in schools are: bio digester, sedimentation chamber, anaerobic baffled reactor and discharge for re-use.

Operation & maintenance training

The benefits of DEWATS SBS can only be assured through permanent and attentive housekeeping. This is why the DEWATS SBS Service Package integrates the establishment of an operation and maintenance service and special training. It enables students, or housekeeping staff, to run the facility independently which is crucial for its sustainability. Major maintenance, when required (e.g. desludging every two years), is contracted to professional organisations. Compulsory monitoring is carried out during the start-up phase and is also optional if the system is thought not to be working properly.

A proven solution

Today, BORDA and its BNS Partner Network, have already achieved the sustainable operation of more than 900 DEWATS plants, including the successful realisation of over 30 SBS projects. This demonstrates that DEWATS School Based Sanitation is a proven and affordable solution to combat sanitation grievances at schools.

BNS Partner Network in SADC Region



University of Kwazulu Natal
(Pollution Research)
South Africa



Environmental Engineering
and Pollution Control
Organization Tanzania



Water and Sanitation
Association of Zambia,
Zambia



Technologies for
Economic Development
Lesotho

DEWATS Service Packages

- o School Based Sanitation
- o Community Based Sanitation
- o Emergency Sanitation
- o Sanitation for Hospitals & Hotels
- o Wastewater Treatment for Agro-Industry
- o Sanitation for Prisons
- o Sanitation for Real Estate
- o Sanitation Mapping
- o Municipal Sludge Treatment Plant
- o Health Impact Assessment & Hygiene Education
- o Capacity Development
- o Research & Development



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