



Decentralized Wastewater
Treatment Solutions

HIA & HE | Health Impact Assessment & Hygiene Education



**Awareness building & impact
assessment to improve
sanitation situations &
hygiene behaviour**



BORDA

**HIA & HE |
DEWATS Service Package**

**Developed and disseminated by
BORDA & BORDA BNS Network**

Improvement of Sanitation has to be more than just the provision of technical hardware

DEWATS from beginning to end

Lowering infection rates and improving sanitation does not only result from effective technologies; there must be a comprehensive and flexible solution to every grievance in every region. Health Impact Assessment is the evaluation of potential health impacts resulting from a certain policy, programme or project. It informs policy- or decision-makers about their planning and helps to maximize the positive health impacts of the implementation. Proper locations are recognized and the impacts are meticulously detailed for stakeholders and community members. After facilities are built the work must not stop. It is necessary to continue with hygiene education conducted through a local team prepared to pass valuable education on to the community about safe hygiene behaviours associated with the new infrastructure. The final result is a complete and adaptable solution to every sanitation grievance.

Complementation is required

The provision of improved sanitation is known to reduce the risk of faecal-oral diseases, mainly diarrhoeal episodes. Relying on sanitation alone is insufficient, because

- o most disease transmissions are the consequence of poor hygiene behaviour
- o programmes, providing sanitation but no hygiene education, are likely to fail
- o hygiene education programmes as a stand-alone will be limited in success as well when appropriate sanitation facilities are missing

In conclusion, technical solutions and the improvement of awareness and hygiene behaviour have to come along with each other.

The MDG effort to half the population without access to improved sanitation by 2015 is prognosticated to be missed, because the processes of provision are too slow compared to the growing population especially in areas, where the situation is worst. However, the definition of "access" and "improved sanitation" are very technical and do not consider actual use and condition of the facilities. At this point, hygiene awareness and improved behaviour close the gap.

BORDA BNS Networks Mission

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

DEWATS Service Packages

One Basic Needs Service is DEWATS, an effective, efficient, affordable and proven wastewater treatment solution for (sub-) tropical regions and low-income countries. DEWATS stands for "Decentralized Wastewater Treatment Solutions", but it is much more than just a technical approach. DEWATS Service Packages include not simply the construction of hardware but a whole set of integrated measures which are combined according to demand. HIA & HE is one of these DEWATS Service Packages that aims to improve sanitation by broad evaluation and awareness building of hygiene.

To improve bad sanitation situations (right) only by technical applications is not enough – the users should also learn how to keep a better hygiene (below).



Broad evaluation and educational awareness building of hygiene complementing one another

Health Impact Assessment & Hygiene Education

A key factor for sustainable and effective sanitation improvement is the involvement of the beneficiaries. BORDA realizes that Hygiene Education (HE) is therefore a necessary component of sanitation, and not just an add-on. Assessment approaches like Health Impact Assessment (HIA) give clues about the gaps that need to be closed. It raises awareness among the users about the benefits of improved sanitation, but also the risks that exist when appropriate housekeeping and hygiene behaviour are neglected. HE is designed in a demand-responsive manner and therefore flexible in implementation. The aim of HIA & HE is to reach sustainability of sanitation improvement and the maximum benefit for health and well-being.



School Sanitation block in Zambia before intervention: the importance of good hygiene is already noticed.

HIA Key Features

The building process begins with an extensive review of suitable locations. By using a groundwork team of professionals, HIA contributes to proper planning based on the key principles of:

- Providing qualitative & quantitative evidence
- Using a multidisciplinary, participatory approach

- Focusing on equity & social justice
- Openness to public scrutiny
- Providing a social model of health and well-being

Assessments take place in the beginning of impacts to guarantee benefits of proper building locations, but they also continue to monitor the effects after completion. These important steps are performed:

- **Scoping:** determine whether HIA is appropriate and required
- **Screening:** set out the parameters of the HIA
- **Identification:** develop community profile and collect information to identify potential health impacts
- **Assessment:** assess and prioritize information on impacts and their significance



Users of new-built sanitation facilities write down their opinion during a Health Impact Assessment session in Indonesia.

- **Decision making & recommendation:** use HIA findings to adapt building process
- **Evaluation & follow up:** evaluate process and impact of HIA, monitor the actual health impacts

HIA is based on the **social model of health**, which recognizes that there are several determinants of health: "Health is the state of complete physical, mental, and social well-being and not merely the absence of diseases" (WHO, 1984)

HE Key Features

Based on collected base line data (HIA), and open discussions with the community during field visits the details of implementation of the HE sessions will be prepared. Key features of the programme are:

- **Training sessions** clustered by different topics of concern (e.g. hand washing with soap, safe use of water, good housekeeping)
- **Conduction** in a participatory manner in which participants are analyzing their situation themselves
- **Self-exploration and analysis** of the existing health threats and possible solutions instead of teaching
- **Professional support** by a facilitator



Community in Zambia discussing HIA & HE targets.

Interaction between HIA & HE

Both, HIA and HE are based on community participation in order to ensure adequate measures for improvement and user satisfaction.

- HIA regards the projects not only from objective perspectives, but also from the beneficiaries' view, giving importance to their perceptions and offering space for feedback.
 - HE takes up those inputs where possible and necessary.
- In addition, the participatory approach encourages ownership among the beneficiaries.

HIA & HE – a convincing concept to improve sanitation and hygiene behaviour in a sustainable manner

HIA Benefits

HIA can be easily applied when- and wherever sanitation improvement is required. Therefore, this DEWATS Service Package:

- o gives proof for the extent of project impacts.
- o allows beneficiaries to express their opinion about the situation and their satisfaction with the project.
- o shows where improvement is necessary, not only of technical nature, but especially of gaps that can be closed by educational and promotional work on hygiene.
- o permits to evaluate long-term results of sanitation upgrading projects.

HE Benefits

In order to ensure the sustainability of the sanitation facilities and improvement of health, HE provides the following benefits:

- o Reduction of faeco-oral diseases (especially diarrhoea)
- o Clean and adequately maintained sanitation facilities which are convenient to use
- o Cleaner environment (reduced open defecation/promotion of facility use; waste disposal)
- o Be informed about disease transmission ways and know how to block them
- o Making good hygiene behaviour a habit (e.g. hand washing with soap)

Facts and figures

Until today, HIA have been implemented in over 120 project locations in Indonesia with a total of more than 1000 respondents. Also in Zambia, HIA projects have begun. In 2008, HE started for the first time, namely in India.

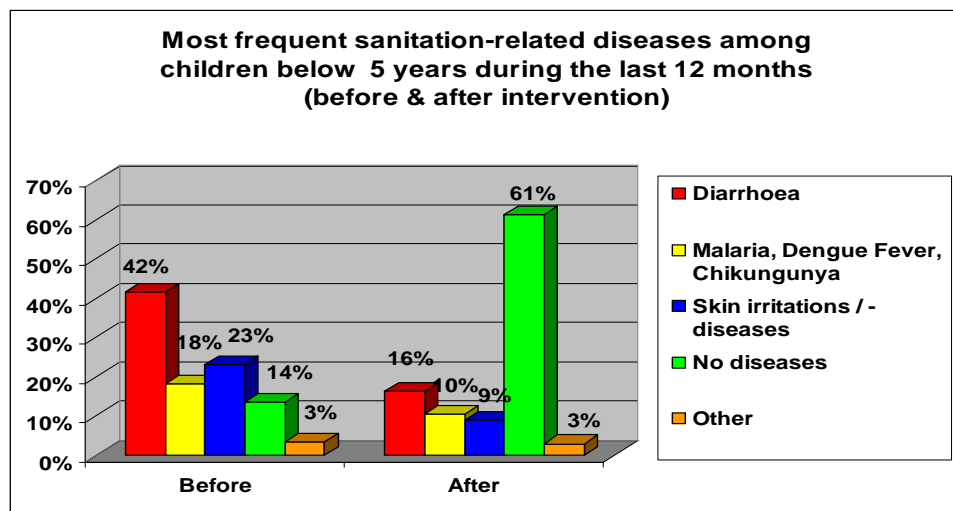
Convincing results

The success of HE & HIA becomes evident by regarding the following exemplary HIA long-term results:

- o Full privacy for women/girls while taking bath and using the toilet:
Before intervention: 35%
After intervention: 74%
- o Use of unimproved sanitation:
Before intervention: 77%
After intervention: 4%



Role play for HE module development: hand washing with soap.



DEWATS Service Packages

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

DEWATS – Decentralized Wastewater Treatment Solutions

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

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