



Decentralized Wastewater
Treatment Solutions

DEWATS Service Package | Cambodia

SBS - School Based Sanitation



**A Comprehensive Approach to
Improve Health, Hygiene &
Sanitation in Schools**

School children are threatened by a high risk of infection and a lack of privacy and security

Situation

Globally there are more than 780 million people without access to safe drinking water and 2.5 billion people that lack basic sanitation, such as toilets or latrines. About 3.5 million people die from a water related disease each year. This includes 1.5 million children – 4,100 every day – dying from diarrheal disease, largely preventable through proper sanitation and improved hygiene. 80 per cent of diseases in developing countries are caused by unsafe water and poor sanitation, including inadequate sanitation facilities (UN, 2012).

In Cambodia around 30% of the people do not have access to a clean water supply and almost 65% do not have access to proper toilet facilities (CDHS, 2010). Without sufficient sanitation people face not only an polluted environment but also a high risk of infection and a deficiency of privacy and safety. Each year poor sanitation in Cambodia causes 10,000 people to die; 10 million cases of diarrhea; and \$448 million in losses to the Cambodian economy (WSP, 2008)

The poor quality water, sanitation and hygiene situation is also a serious issue in many schools. In Cambodia there are over 10,000 schools with over 3 million students enrolled. In 44% of these schools there is no water supply and 31% of the schools have no toilets (MoEYS, 2010). However, even if many schools do have toilets and water supply, they are often in very poor condition or not functioning. Further, most wastewater from schools is discharged untreated into the surrounding environment, which additionally threatens the health of all people in the school area.

The insufficient WASH (Water, Sanitation & Hygiene) facilities threaten or ignore privacy and security needs of school children and lead to a high risk of infections. This can affect children's health and their ability to attend school, which can have a negative impact on their academic performance.



SBS Project Approach

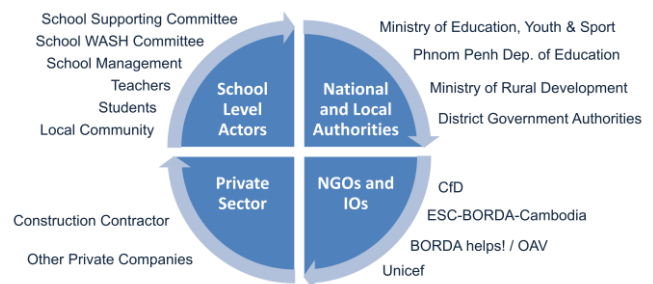
In order to address these serious problems, since 2009, ESC-BORDA Cambodia in cooperation with CfD have developed the School Based Sanitation (SBS) project approach to improve the Health, Hygiene & Sanitation situation in Cambodian schools.

Following the Ministry of Education's School Health Guidelines, the integrated SBS approach (social and technical aspects) focuses on:

1. Building School WASH Institutions
2. Promoting Health & Hygiene Education
3. Improving WASH facilities including on-site wastewater treatment (DEWATS) and good O&M (Operation & Maintenance)

Until 2012, the SBS project approach has been implemented in seven Cambodian primary schools around Phnom Penh, with plans to expand to more schools in other provinces in the future.

For smooth SBS implementation and long term sustainability of outcomes, ESC-BORDA-Cambodia and CfD cooperate with four main groups of stakeholders:



The SBS Project improves the Health, Hygiene and Sanitation situation at schools

Project Components

All SBS project schools are selected through a competitive and demand-based selection process to ensure that the schools have the willingness and ability to continue key SBS activities in the long run.

Once schools are selected, social and technical Needs Assessment surveys, including Health Impact Assessments (HIA), are conducted to gain more detailed information about the current WASH situation at the schools, in order to help effectively plan appropriate SBS WASH interventions and activities.

Social Aspects

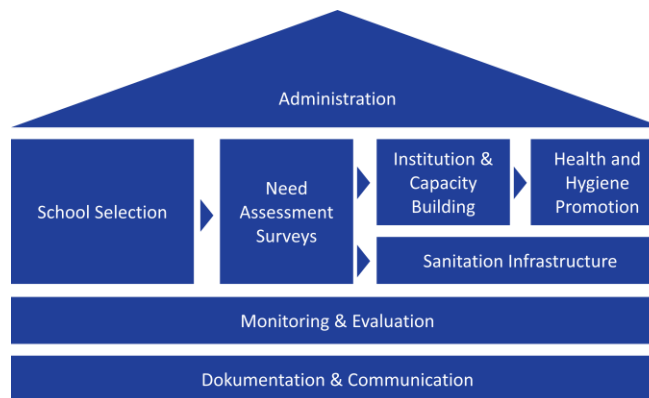
The schools are supported in establishing School WASH Committees (SWC) responsible for all school level WASH issues. The SWCs then take part in a series of trainings, such as WASH; meeting organization; O&M; O&M scheduling and budget planning; and popular education. This capacity building enables the SWC to coordinate O&M and Health & Hygiene promotional activities themselves, and therefore helps to ensure the sustainability of these important activities.



Technical Aspects

After conducting technical Feasibility Studies, engineers from ESC-BORDA Cambodia plan and design new WASH facilities in cooperation with school level stakeholders, so that they meet the needs of the school children and teachers at the school.

Options for the SBS WASH facilities include renovated/new toilets and urinals; hand washing sinks; improved water supply or rainwater collection; bins; clay water filters; and on-site underground decentralized wastewater treatment system (DEWATS).



Benefits

The construction of well-built and inviting WASH facilities with clean toilets and water significantly improves hygienic conditions, which leads to a reduction of health risks and infection. The new toilet facilities with gender separation ensure the privacy, security and dignity of school children.

The biological treatment of wastewater by DEWATS ensures that wastewater discharged from schools meets environmental standards and improves the living conditions in the areas surrounding schools.

Good hygiene behavior, due to Health & Hygiene education and the availability of functioning WASH facilities, is improved in a sustainable manner at school. This improved behavior can also be transferred to home – from children to parents.

Costs

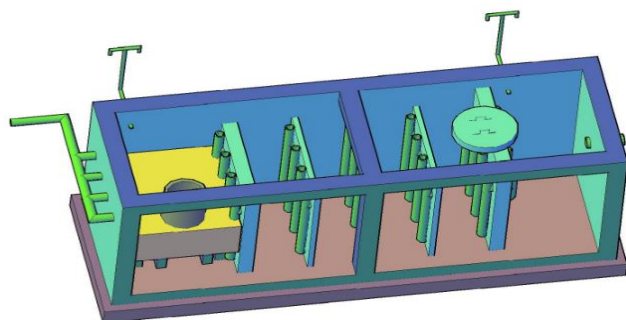
The costs of a SBS project includes both hardware (physical infrastructure) and software (operational and staff costs). For an average sized school with 500 to 1000 students, about 60% would be spent on hardware and 40% on software. The average cost per student for a SBS project depends on the total number of students served by a project and ranges from just \$30 to \$50 US.

SBS DEWATS – A Proven Solution

About ESC-BORDA Cambodia

For over 30 years BORDA's mission has been to improve the livelihoods of disadvantaged groups within societies, and to sustain the functioning of eco-systems through the dissemination of demand oriented Basic Needs Services (BNS), such as DEWATS.

DEWATS is an effective, efficient, affordable and proven wastewater treatment solution for (sub) tropical regions and low-income countries. Today, BORDA and its BNS Partner Network, have already achieved the sustainable operation of more than 1,500 DEWATS plants in Africa and Asia.



ESC-BORDA Cambodia was established in 2008 to provide comprehensive DEWATS services in Cambodia:

- DEWATS Promotion
- DEWATS Planning
- DEWATS Design
- DEWATS Construction
- DEWATS Training & Monitoring

ESC-BORDA Cambodia works on-demand and in close cooperation with government, NGO and private sector stakeholders, to help ensure the sustainability of projects.



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