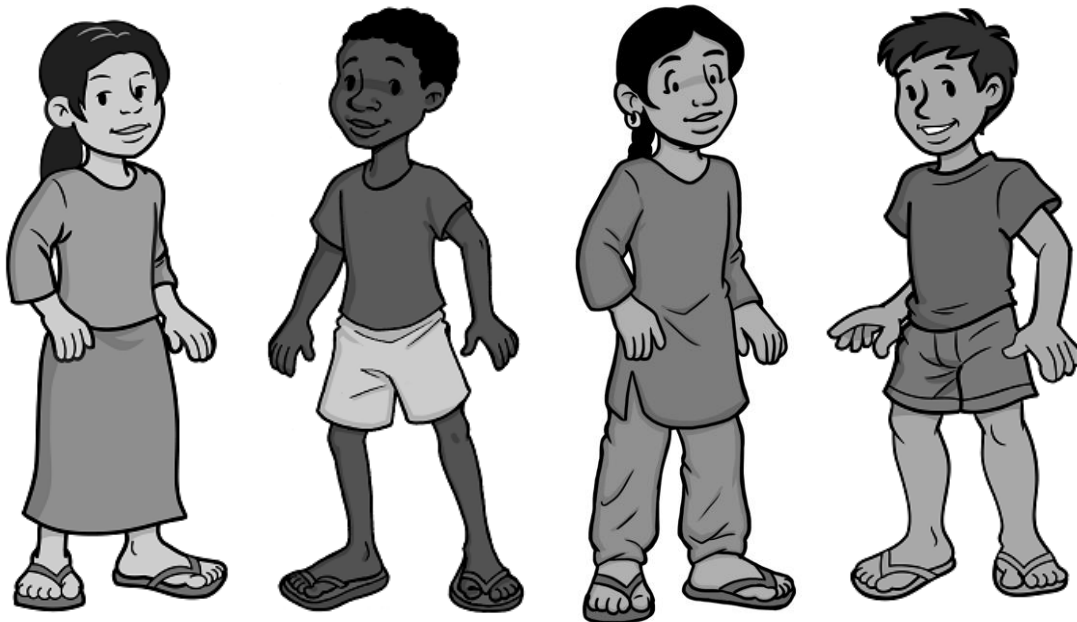


Technical Brief: Sanitation in Schools

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Technical Brief: Sanitation in Schools

1 Introduction

Children spend a large part of their day at school. However, about half of all schools in the least developed and other low-income countries still lack access to sanitation facilities. Safe and child-friendly latrines in schools improve health, boost education achievement, promote gender equity and have a positive impact on communities (UNICEF, 2012).

This Technical Brief introduces the importance of sanitation in schools and its impact on health and learning. It discusses how to design appropriate latrines for children, including children with disabilities, and provides criteria for locating school latrines. As well, designing handwashing facilities and menstrual hygiene management are also introduced. This Technical Brief also highlights other factors to consider when planning and implementing a school sanitation project, such as water supply, hygiene promotion, and involving key stakeholders.

For more information on latrine projects, CAWST's Technical Briefs and Fact Sheets provide details on:

- How to select, site and construct latrines
- Latrine emptying
- Sludge treatment, use and disposal
- Approaches for sustainable latrine project implementation

This document provides a technical overview and is not a design manual. An experienced professional should be consulted for the design of specific latrine technologies and structures.

Please see the Guide to CAWST Sanitation Resources for a complete glossary, list of abbreviations, unit conversions, and an overview of available resources.

CAWST focuses on the planning, design and implementation of on-site sanitation projects for low-income communities not connected to a sewer. For such communities, household or decentralized sanitation offers a hygienic and affordable solution.

CAWST's free, open content resources and schedule of international training workshops can be found at: www.cawst.org/resources and www.cawst.org/training.



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2 Importance of Sanitation in Schools

Learning, sanitation and health are interlinked. Schools are where children spend most of their time. In poor sanitary conditions, children are exposed to diseases and risk infection.

Health can be compromised when pathogens – microorganisms such as bacteria, viruses, protozoa and helminths (worms) that cause disease – are transmitted due to poor water, sanitation and hygiene (WASH) practices. Diarrhea and worm infections are the two main diseases that affect schoolchildren and can be drastically reduced through improved sanitation in schools (UNICEF, 2012).

Diarrhea is a significant reason why children are absent from school. Diarrhea causes the loss of nutrients and fluids. If the diarrhea is long lasting, and the child does not get a nutritious and balanced diet, the child will become malnourished.



Intestinal worm infections (such as hookworm and roundworm) affect roughly one in four people around the world. Soil-transmitted worm infections are passed on by eggs present in human and animal feces, which in turn contaminate soil in areas where sanitation is poor. Children have the highest risk of infection – eggs are ingested by children who play in soil and then put their hands in their mouths without washing them. As well, hookworm eggs hatch in the soil, releasing larvae that can penetrate the skin. Children become infected with hookworm primarily by walking barefoot on the contaminated soil (WHO, 2013).

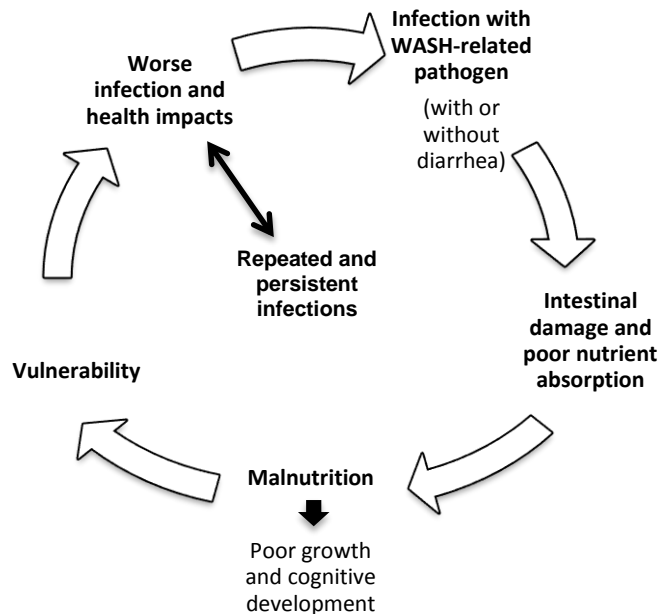


An infected person can pass on worm eggs through their feces

Certain repeated and persistent intestinal infections (with or without diarrhea) cause intestinal damage. This results in poor nutrient absorption and malnutrition. Once infected and undernourished, the body is more vulnerable to further infections, continuing the cycle. A more severe infection causes more severe health impacts, in both the short and long-term. Overall, the long-term impact on children is poor growth (stunting) and cognitive development. Stunting means a child has low length or height for their age. This is a measure of chronic malnutrition. Cognitive development is the process of developing intelligence and problem-solving ability. This cycle is illustrated in the following figure.

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Figure: Relationship of Intestinal Infections and Malnutrition and the Resulting Long-Term Effect on Child Development



(Guerrant et al., 2008)

The cycle can be broken if interventions are implemented, such as adequate sanitation and proper hygiene, safe water, proper nutrition and treatment of the diseases.

3 Latrines for Children

Latrines need to be adapted to make them accessible and comfortable for children. The design must have appropriate dimensions and adjustments for children since they are smaller and have less physical strength than adults. Latrines can also be scary places for children. They are often dark and large and the child usually has to enter the latrine alone. It is therefore not a surprise to find children's excreta on the ground outside latrines. Child-friendly latrines are easy and pleasant for children to use.

The following is a list of suggestions to make latrines more child-friendly:

- Lowered height of door handles and locks
- Lighter weight doors or labyrinth entry so doors are not required
- Lowered height of urinals
- Lowered height of seats (if seats are being used)

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- Smaller diameter of seat or squatting hole
- Handles or hand bars to hold onto while learning to squat
- Availability of water or other anal cleaning material
- Enough space for an adult to help a child if necessary
- Good ventilation to reduce smells
- Well lit so the inside is not too dark
- Open and clear access while ensuring enough privacy, especially for girls



UNICEF provides the following guidelines for child-friendly latrines at schools based on age:

Guidelines for Designing School Latrines Based on Age

School Type and Student Age	Latrine Design Guidelines
Early primary school (5-7 years old)	<ul style="list-style-type: none"> • Keep latrines clean, use light colours, have sufficient natural light and ventilation • Use hygiene promotion materials to decorate the walls • Provide space for a teacher or older student to stand next to the child to teach proper latrine use or handwashing • No need for privacy inside the toilet block; children like to observe others and imitate their behaviours
Middle and late primary school (8-11 years old) and secondary school (12-18 years old)	<ul style="list-style-type: none"> • Provide facilities that reflect everything children learn about good hygiene practices (e.g., having soap and water available for handwashing) • Offer privacy for boys and girls, including inside same sex facilities • Provide menstrual hygiene management facilities for girls (menstruation usually begins between the ages of 9 and 14)

(Adapted from UNICEF, 2012)



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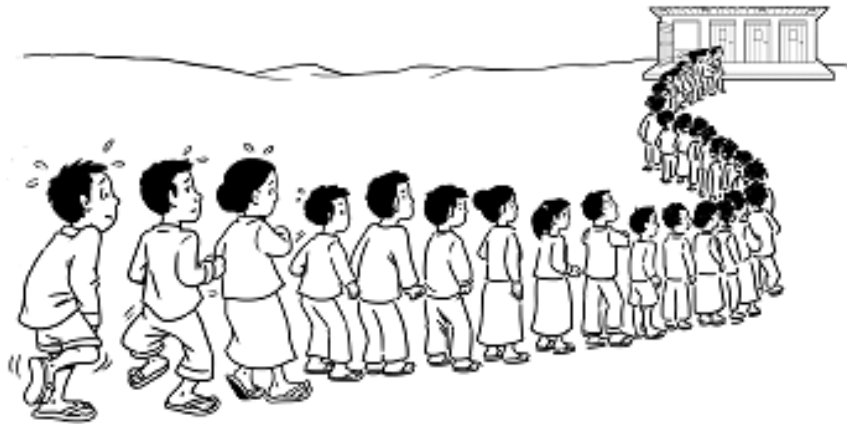
In larger schools, separate latrine facilities should be built for younger children and older children; for girls and boys (particularly adolescents); and for female and male teachers. In small schools, where different age groups use the same facilities, modifications can be made for smaller children, such as placing a foot stool in front of the toilet, or using a removable seat cover with a smaller hole (UNICEF, 2012).

The World Health Organization (WHO) also provides guidelines and indicators for latrines in schools. It states that sufficient, accessible, private, secure, clean and culturally-appropriate latrines should be provided for school children and staff. According to the WHO, latrines should follow these recommendations:



Small removable seat and foot stool

1. There are sufficient latrines with a minimal waiting time – 1 per 25 girls, at least 1 toilet for female staff, 1 toilet plus 1 urinal (or 50 centimetres of urinal wall) per 50 boys, and at least one toilet male staff. Other factors that determine the number of latrines may include the times when children are allowed to go to the latrine, the number of classes, and future growth of the school.



Having to wait in a long line may discourage people from using latrines

2. Latrines are easily accessible – children should not have to walk more than 30 metres to reach a latrine.
3. Latrines provide privacy and security.
4. Latrines are child-friendly and appropriate to local cultural, social and environmental conditions.
5. Latrines are hygienic to use and easy to clean.
6. Latrines have convenient handwashing facilities close by.
7. There is a cleaning and maintenance routine in operation that ensures clean and functioning latrines are available at all times.

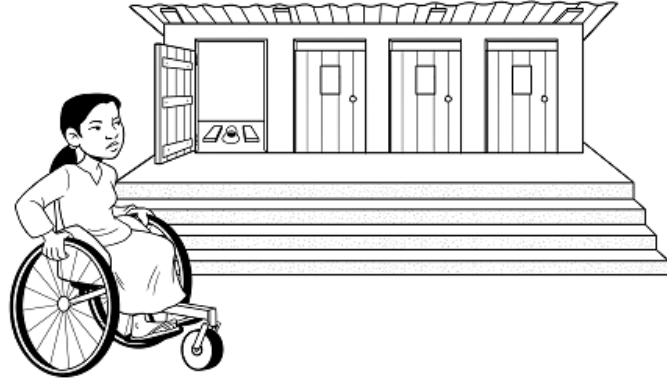
(Adapted from Adams et al., 2009)

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4 Latrines for Children with Disabilities

The special needs of children with disabilities must also be taken into account in latrine designs. More than a billion people in the world today experience disability, with one in five people living in developing countries having a disability (WHO, 2011). Estimates of the number of children with disabilities vary widely, depending on how disability is defined and measured (UNICEF, 2012).

Children with disabilities are often excluded from basic facilities, resulting in isolation, poor health and poverty. The lack of accessible latrines can deter children with disabilities from attending school. With some simple modifications, latrines can be made user-friendly for children with disabilities. The following features can be taken into consideration when designing an accessible latrine:



- Locate the latrine as near as possible to the children
- Provide easy access to the latrine with a wide path (at least 120 cm wide) that is well drained, compacted and non-slip
- Construct ramps with a gentle slope using less than a 1:15 (6.6%) gradient
- Construct an entrance area large enough to allow a person in a wheelchair to move, entrance doors should be a minimum 80 cm wide to provide clear space
- Use outward opening doors to leave more usable space inside the latrine
- Ensure that the door can be opened and closed by the user when they are inside the latrine
- Provide additional space inside to move a wheelchair or for a caregiver to help somebody
- Use a raised seat for people who have a difficult time squatting
- Provide support rails for people to hold on to when moving to and from the seat
- Provide guiding systems (e.g., paint the entrance and footrests) and good lighting for the visually impaired
- Ensure that lids, taps and knobs are light and easy to use with one hand or feet for children with missing or paralyzed limbs

(Adapted from Jones and Reed, 2005 and UNICEF, 2012)

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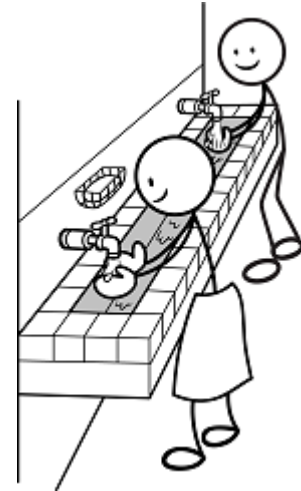
5 Handwashing Facilities for Children

Children also need somewhere to wash their hands after using the latrine. All latrine designs should include convenient handwashing facilities (also called handwashing stations). This helps handwashing to become a routine activity for schoolchildren and teachers.

A handwashing facility should have water and soap in one place. They can be made up of the following components:

- Tap and/or wash basin (to store and regulate the flow of water)
- Soap, clean soil or ash (to clean hands)
- Soap nets, soap on a rope or soap dishes (to manage and store soap)

Handwashing facilities must also be easy for children to use. The tap and/or wash basin should be low enough for children to reach. If it is not, there should be steps or a foot stool available for smaller children to stand on. The tap and soap should also be easy for children to use on their own.



Low trough-style sink

See CAWST's Technical Brief: Handwashing for additional information.

6 Menstrual Hygiene Management

Menstrual hygiene is an important aspect of latrine design that is often neglected. Girls begin to menstruate usually between the ages of 9 and 14. Without appropriate facilities for menstrual hygiene management, female students and teachers may be unable to remain comfortably in class. Girls in developing countries often report that they miss school because of menstrual hygiene management (UNICEF, 2008). Absence from school several days a month, adding up to 10–20% of all school days, can be detrimental to a girl's learning and academic performance. Eventually this absenteeism can lead her to drop out completely (UNICEF, 2012).

To manage menstruation hygienically and with dignity, it is essential that female students and teaching staff have access to latrines, water supply and places to wash in schools. They need:

- Somewhere safe and private to change their sanitary products
- Clean water and soap for washing their hands, bodies, and reusable cloths
- Facilities for safely disposing of used sanitary products or a clean place to dry them if reusable



See CAWST's Technical Brief: Menstrual Hygiene Management for additional information on menstrual hygiene-friendly schools and latrine designs.

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7 Siting Latrines in Schools

The following criteria should be considered when choosing a location for school latrines:

- Children need to feel secure when using a latrine. They should not be at risk of harassment by people or attacks by animals such as snakes, scorpions or spiders. Access routes must be open and clear and the facilities located within hearing and seeing distance from the school, in the event that immediate help is needed.
- Latrines should guarantee privacy, particularly for people over the age of eight. In some cultures, it is important not to be seen entering or leaving the toilet. Access routes may be better situated away from the busy part of the school, while at the same time open and clear for security reasons.
- It must be possible to reach the latrines during all weather conditions, including after heavy rains or flooding. Sufficient lighting is needed if the latrines will be used after dark (for example, in boarding schools or for community events).
- Latrines should contribute to health and hygiene improvements if properly used. For younger children, adult supervision of behaviour and skills is essential. Some locations will ease supervision. Locating a handwashing facility near the classroom of younger children, for instance, allows for better monitoring than placing it near the latrine.
- The location of the latrines should be secure to reduce the risk of vandalism. An individual or group of supervisors can be assigned the task of locking the latrines when they are not in use (e.g., at night, during school holidays) and monitoring the latrines for damage.
- Latrines are often located close to other sources of smells and flies, such as garbage dumps, cattle or animal pens. These locations discourage people, especially children, from using them. Latrines should be located somewhere else in a clean environment.
- Latrines need to be located based on the soil and groundwater conditions to avoid contaminating drinking water sources and the local environment. General recommendations include: 1) the base of the latrine pit should be 2 metres above the highest annual groundwater level and 2) there should be a 30 metre separation distance between a latrine and drinking water source.



(Adapted from UNICEF, 2012)

See CAWST's Technical Brief: Siting Latrines for more information.

8 Implementing Sanitation in Schools

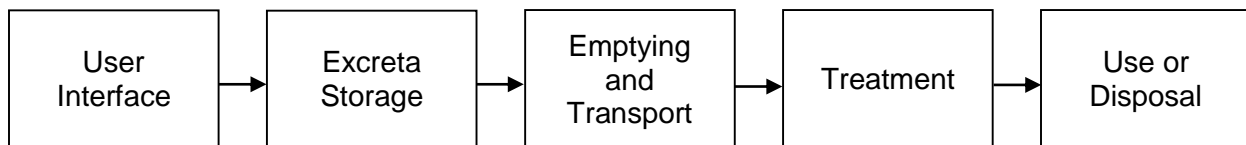
Providing sanitation in schools means more than just building latrines. Teachers must also have curriculum, materials and motivation to teach the children about sanitation and hygiene. Schools also need the resources to operate and maintain the sanitation and hygiene facilities over the long-term. The following components need to be addressed during project planning and implementation for school sanitation projects to be successful and sustainable.

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8.1 The Sanitation System

A sanitation system addresses all aspects of human excreta management, from a person using a latrine until the latrine sludge is safely used or disposed of. The entire sanitation system must also be considered in schools. For example,

- What happens after the school latrines are built?
- Who cleans the latrines?
- Who maintains and repairs damaged latrines?
- What happens when the latrines fill up?
- Where does the excreta from latrines go?



A well-designed latrine also needs an operation and maintenance plan so that it does not quickly deteriorate and become unusable. A good operation and maintenance plan will identify who is responsible for cleaning and maintaining the latrines and what costs are involved. The plan should be developed and agreed upon before the latrines are built (UNICEF, 2012).

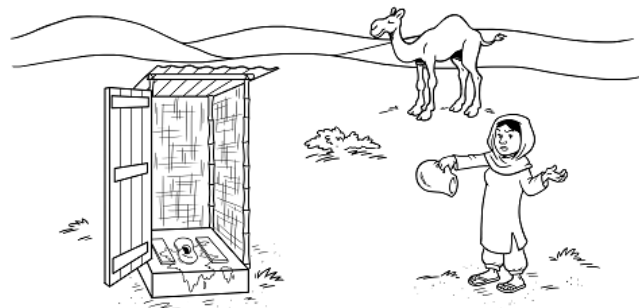
For more information on sanitation systems, see CAWST's Technical Brief: Introduction to Sanitation.

8.2 Water Supply

Schools also need sufficient water to operate and clean the latrines and for personal hygiene. Lack of access to a convenient and reliable water supply can often be a barrier to improved sanitation and hygiene, especially in rural schools.

The following water quantities are recommended for day schools (the quantities should be doubled for boarding schools):

- Flushing toilets: 10–20 litres per person per day for conventional flushing toilets/1.5–3 litres per person per day for pour flush toilets
- Anal washing/cleansing (only where required): 1–2 litres per person per day



(Adapted from Adams et al., 2009)

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8.3 Hygiene Promotion

Good education about hygiene is also as important as good sanitation facilities. The correct use and maintenance of latrines can be ensured through sustained hygiene promotion. The WHO provides the following features for good hygiene promotion in schools:

- Hygiene education is included in the school curriculum
- Positive hygiene behaviours, including correct use and maintenance of sanitation facilities, are systematically promoted among staff and schoolchildren
- Facilities and resources enable staff and schoolchildren to practice behaviours that control disease transmission in an easy and timely way

(Adapted from Adams et al., 2009)

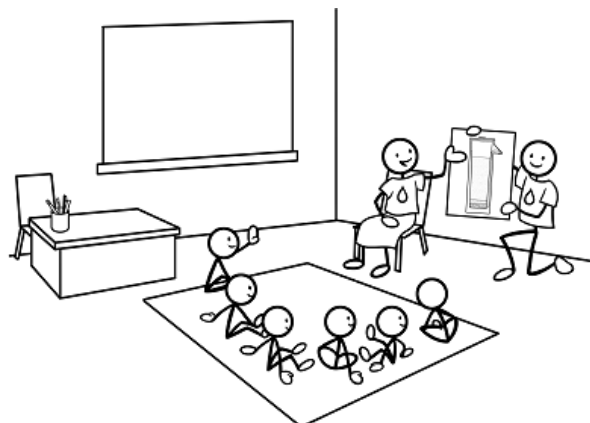
Effective hygiene promotion for children is more than teaching facts about health risks and bad hygiene practices. The life skills approach focuses on changing children's hygiene behaviour with a view to improving their overall quality of life. This approach moves away from traditional, teacher-centred education to using child-centred and participatory methods to build life skills and empower schoolchildren to make good choices (Potsma et al., 2004).

Sanitation clubs provide an extracurricular way for students to learn about hygiene. Children who participate in sanitation clubs can be trained as peer educators and monitors of school latrines. They can also be advocates for improved practices at home and in the community. For example, they can monitor the state of latrines in the community and encourage good hygiene practices at home.

8.4 Involving Teachers and School Managers

The involvement and commitment of teachers and managers is crucial to ensuring sustainable sanitation in schools. In particular, teachers play an essential role in encouraging children to adopt improved hygienic behaviour at school and home. They may also organize the care and maintenance of the facilities and report needed maintenance or repairs.

Some teachers may not have the time or motivation to take on additional responsibilities related to sanitation. Both teachers and school managers should be included as key partners during project planning and implementation to help give a sense of ownership and responsibility for the sanitation facilities.



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Most schools have some type of health or hygiene education as part of their regular curriculum and teachers have been trained in those programs. A sanitation project should build on what teachers already know and do. As well, it is essential to provide the necessary teaching materials and methods to make it easier and more effective for teachers to support the students.

An important focus of teacher training should be attitude change towards sanitation in schools. This can be done by integrating the activities into the existing curriculum and explaining that sanitation and hygiene is not another subject to teach, but a life skill used by children at school, at home and in the community to improve their overall health and hygienic living conditions (UNICEF, 2012).

8.5 Linking with the Community

Parents and community members can also have important roles in keeping the school latrines clean, safe and healthy, and encouraging children to adopt improved hygienic behaviour. Possible roles for local committees, parents and communities include the following:

- Partners during planning and implementation to give a sense of ownership
- Financial controllers and fund holders, especially if parents are required to contribute to fund the maintenance, cleaning staff, and supplies of soap and cleaning materials
- Overseers of latrine operation and maintenance
- Community-based monitors to check the sanitation facilities and report needed maintenance or repairs
- Coordinators for community members to use the sanitation facilities during emergencies
- Target groups for educational activities to ensure what is learned in school is applied at home

(Adapted from UNICEF, 2012)

8.6 Financing

Financial planning and management is also important for the long-term and sustainable use of school latrines. In addition to recovering the initial costs of building latrines, implementers need to also plan how the long-term operation of the latrines will be funded. These ongoing costs include the need to purchase consumable products (e.g., anal cleansing materials, soap), operation, maintenance, and latrine emptying. As well, the costs to run a hygiene promotion program need to be considered.

In many cases, schools, parents, the community or local enterprises will cover those costs. However, many school sanitation programs have had difficulties making the transition from the pilot phase to scaling up because of capacity problems and the lack of financial planning and management (UNICEF, 2012).

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9 Additional Resources

CAWST Sanitation Resources. Available at: www.cawst.org/resources

- CAWST's education and training resources are available on a variety of sanitation topics including latrine design, siting and construction; latrine parts and technologies; latrine emptying and transporting sludge; sludge treatment, use and disposal; and latrine project implementation.

IRC and UNICEF. Life Skills-Based Hygiene Education. Postma, L., Getkate, R. and C. van Wijk (2004). IRC, Delft, the Netherlands. Available at: www.unicef.org/eapro/Life_skills_based_hygiene_education.pdf

- This document provides guidance on concepts, developments and experiences with life skills-based hygiene education in school programs.

UNICEF. WASH in Schools. Available at: www.unicef.org/wash/schools/

- This website provides up-to-date information on events, resources and news about water, sanitation and hygiene education in schools and features video interviews with WASH in Schools experts from UNICEF and its partners.

WASH in Schools. Available at: www.washinschools.info/

- This website was jointly developed by the IRC and UNICEF. It serves as a discussion forum and information exchange for people working in WASH in schools.

Water Sanitation Programme (WSP). Toolkit on Hygiene, Sanitation and Water in Schools. Available at: www.wsp.org/schoolsanitation

- This toolkit includes practices and approaches that are likely to yield positive results to improve sanitation and hygiene in schools.

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