Student-led water, sanitation, hygiene & Greening

Training Manual for Facilitators
Acknowledgement

RAIN Foundation and Development expert center (DEC) are pleased with the publication of this facilitator’s manual for school water, sanitation, hygiene and greening. The student-led concept was adopted from the widely known “Community Led Total Sanitation and Hygiene” approach. Hence, we would like to thank pioneers of CLTSH. We would also like to extend our gratitude to all individuals, schools and institutions who, contributed to this manual. Thank you for your input feedbacks and continuous revision throughout the development of the manual.

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Acronyms

- CLTSH: Community – Led Total Sanitation and Hygiene
- GHD: Global Hand-washing Day
- HWWS: Hand Washing With Soap
- M&E: Monitoring and Evaluation
- ODF: Open Defecation Free
- RWH: Rainwater harvesting
- SLSSHG: Student Led School Sanitation, Hygiene and Greening
- SLWaSHG: Student-led water, sanitation, hygiene and greening
- WaSH: Water, Sanitation and Hygiene
- PTSA: Parents, Teachers and Students Association
Table of Contents

Acknowledgement .................................................................................................................. 2

I. Chapter one: Introduction ................................................................................................... 7
   A. Background .................................................................................................................... 7
   B. What is student-led WaSHG? ....................................................................................... 8
   C. Why student-led WaSHG in schools? ................................................................. 8
   D. Objectives .................................................................................................................... 9
   E. Scope of the manual .................................................................................................... 9
   F. To whom this manual is intended ............................................................................. 9

II. Chapter two: About the manual ...................................................................................... 11
   A. Manual development .................................................................................................. 11
   B. Contents of the manual ............................................................................................... 12
   C. Building blocks of Student-Led WaSHG ............................................................. 12
   D. Guiding principles for facilitators .......................................................................... 12
   E. Pre-training preparations ......................................................................................... 13
       1. Selecting lead students ......................................................................................... 13
       2. Lead Students and Key teachers selection criteria ............................................ 13
       3. Setting up location and time .............................................................................. 13
       4. Check the following before starting .................................................................. 13

III. Chapter three: training methods .................................................................................. 14
   A. Creating Supportive and Conducive Environment .............................................. 14
   B. Self-assessment and reflection: ............................................................................... 14
   C. Small group discussions and presentations: ....................................................... 14
   D. Plenary discussion .................................................................................................... 14
   E. Out door activities ..................................................................................................... 14
   F. Energizers .................................................................................................................. 14

IV. Session One: Water ........................................................................................................ 16
   A. Objectives of health education about water ....................................................... 17
   B. What happens when water sources are unprotected? ........................................... 18
   C. Rainwater harvesting ............................................................................................... 20
   D. Roof-top rainwater harvesting ............................................................................. 20
       1. Components of roof water harvesting systems: .............................................. 21
       2. How much rainwater can be harvested in a school? ...................................... 22
       3. How to improve the quality of harvested rainwater? ....................................... 22

V. Sanitation & Hygiene for healthy school ....................................................................... 25
   A. Sanitation facilities and hygienic practices ......................................................... 25
       1. School latrines ....................................................................................................... 25
       2. Latrine use and management ............................................................................. 26
       3. Hand Washing ..................................................................................................... 27
   B. Ignition ....................................................................................................................... 29

VI. Chapter five: Greening .................................................................................................... 31
   A. Objectives of health education on greening .......................................................... 31
   B. School waste management .................................................................................... 34
   C. The Zero waste in classrooms principle ............................................................... 35

VII. Chapter six: Sustainability in school WaSHG .............................................................. 37
   A. Roles and responsibilities ....................................................................................... 37
       1. In the school .......................................................................................................... 37
2. Out side the school ................................................................................. 37

B. Seven Steps to sustainable WaSHG in schools ................................. 38
   1. Integrating Student-Led WaSHG in the school curricula .................. 38
   2. Establishing/ strengthening Student clubs ........................................ 38
   3. Monitoring ....................................................................................... 39
   4. Follow-up ......................................................................................... 39
   5. Financing ......................................................................................... 39
   6. Communicate ................................................................................... 39
   7. Celebrate the achievements ............................................................. 39

VIII. Annexes .......................................................................................... 41
   1. Assessment questions for rooftop top rainwater harvesting structures .... 41
   2. Checkpoint questions for drinking water ........................................... 41
   3. Water quality checklists .................................................................... 42
   4. School greening assessment .............................................................. 43
   5. Example of action plan ...................................................................... 45
   6. Follow up reporting format ............................................................... 46
Dear Facilitators,

RAIN Foundation and Development Expert Center (DEC) have been working together on school WaSH since 2013. Both organizations have been working on community and school WaSH for a number of years independently. RAIN Foundation has been working on WaSH for more than a decade with the aim to increase access to water for vulnerable section of the society in developing countries-women and children in particular by collecting and storing rainwater. Development Expert center have similar working experience in education, sanitation and hygiene. Together the two organizations were able to blend WaSH infrastructures with capacity building for an integrated and improved access to WaSH and behavior development. Through these interventions, we have witnessed schools being transformed in to healthier environments and taking the lead in their development.

Dear facilitators, we believe this manual will serve you with providing appropriate content and activities necessary to carry out effective training on water, sanitation, hygiene and greening in schools. The manual contains three main sessions on water, sanitation and hygiene and greening. It also includes brief explanation of the various topics discussed during activities and activity summaries that will help to summarize discussions. Use the annex for documents that are not attached in the main sessions.

Have a pleasant training!

Rain foundation and Development Expert Center
I. Chapter one: Introduction

A. Background

Proper and adequate facilities of water, sanitation, hygiene and greening (WaSHG) are essential for maintaining healthy school systems. In some schools particularly in rural areas WaSHG have not gained the required attention from the immediate responsible bodies such as school administrations, teachers, education bureau and parent teacher associations (PTAs). As a result, most schools are running with the absence of one or all of these facilities.

Developing countries including Ethiopia are working hard to achieve the Millennium development goals (MDGs) on education, water and sanitation. According to a recent MDG report there is significant improvement in universal access to school. Children enrolment in primary schools has reached 91% in 2015 and Sub-Saharan Africa has had the best record of all the regions1. Access to water and sanitation facilities and hygiene education is however lagging behind the target for 2015. A study conducted in 18 eastern and southern African countries including Ethiopia indicated a lower than 50% availability of WaSH facilities in schools2. High rate of school enrolment need to be complemented by enhanced healthy school environment to reduce absentees and drop out caused by the lack of it.

If water and sanitation facilities are absent or are badly maintained and used, schools become high-risk environment for children. If children urinate and defecate behind and around school buildings in whatever vacant space is available, it then becomes a source of infection, and sends strong negative signals to the children and teachers that this is an accepted norm. Bad smell from open defecation, waste-dumping sites, and lack of shed trees makes school compounds less attractive for playing and outdoors activities. Bad smell in classrooms hampers children’s concentration and their performance at school leading to lower interest in schooling, repeated absentees and drop out.

Access to adequate water and sanitation facilities and improved hygienic practices in schools provide pleasant environment for learning and teaching, enhance interest of students in education, and improve overall education quality. A study by WHO3 describes the health benefits of improved WaSH facilities in school children as the following:

- Improved water supply reduces diarrhea morbidity by 25%, if severe outcomes (such as cholera) are included.
- Improved sanitation reduces diarrhea morbidity by 32% on average.
- Hygiene interventions including hygiene education and promotion of hand washing leads to a reduction of diarrheal cases by 45%.
- Improvements in drinking-water quality through household water treatment, such as chlorination at point of use and adequate domestic storage, leads to a reduction of diarrhea episodes by 39%.

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3 http://www.who.int/water_sanitation_health/wsh0404summary/en/
B. What is student-led WaSHG?

Water, Sanitation, Hygiene and Greening (WaSHG) in schools refers to a combination of technical and human development components that are necessary to produce a healthy school environment and to develop or support appropriate hygiene behaviors. Student-led is an approach that promotes the empowerment of students to take the lead in creating and maintaining school WaSHG facilities and practices. It considers students as key players in the process of achieving behavioral changes, finding solution to WaSHG challenges and managing WaSHG facilities in their school. They serve as agents of changes starting from their classrooms up to their communities. Other important actors such as teachers, administration, security, PTAs, education and health bureaus will have a supporting and facilitating role in the process.

![Diagram of student-led approach](image)

C. Why student-led WaSHG in schools?

Maintaining functional WaSHG facilities, open defecation free status and going further for sustainable behavior change at individual student level needs continuous effort that a single intervention cannot provide. The student-led approach is formulated based on the rationally that students are better positioned to take the task of attaining sustainable WaSHG in their schools because they are the most vulnerable to the problem and they benefit the most from improved practices. As a result, they are most likely to respond faster and participate in long-term process that involves vigorous activities. Furthermore, children are far more receptive to new ideas and practices and most primary school students in particular are at an age when they can be influenced to cultivate new habits. If school children have more active role in their school WaSHG activities, have access to proper WaSHG facilities and develop adequate hygiene skills, there is high probability they will:
Be healthier,
Positively influence the hygiene practices among their family members and the wider community,
Learn about menstrual hygiene and physical and emotional changes during puberty, which will encourage girls to come to school during menstruation and reduce health problems related to poor sanitation for girls

D. Objectives

The main objective of the student–led WaSHG approach is to improve management and maintenance of WaSHG facilities and develop hygienic behavior in schools and beyond.

Specific objectives

- **Empower students;** students can play a very important part of transforming their schools if given the opportunity and trained. They are the closest to the problem therefore they can understand the health benefits of improved WaSHG and can participate voluntarily in creating and maintaining it.
- **Promote Child Rights** – Water and sanitation is a basic right of children. High prevalence of water and sanitation related diseases cause them to fall ill or even die. Maintaining high standard of good sanitation and hygiene practices lead to fewer diseases and better health.
- **Increase enrolment and retention of girls** – Lack of private sanitary facilities for girls can discourage parents from sending their daughters to schools and contribute to the absenteeism and drop-out of girls, especially of adolescents. Teenage girls in particular find it difficult to properly attend schools that have no or a few badly maintained facilities.
- **Improve environmental cleanliness** – Proper facilities will prevent pollution of the environment and limit health hazards for the community at large.

E. Scope of the manual

This manual is prepared to address water, sanitation, hygiene and greening problems in schools. It encompasses the overall behavioral change of students that include latrine utilization, solid waste management, personal hygiene, hand washing, food hygiene, safe water management and greening. It is primarily developed with the consent to educate school children to develop healthy practices in and outside their school compound. It has incorporated different activities and illustrations that will help students understand and practice protection of water sources, safe management of the environment, the management of solid and liquid waste, individual and school sanitation and greening that aims at creating healthy and pleasant school.

F. To whom this manual is intended

This manual addresses two main groups of users:

1. Those who are responsible for a particular school management, teachers and students of primary, lower secondary, and nursery schools. Those who are involved in any type of informal education, youth program or program for out-of-school children
2. Those who could make an impact at the national level, through their capacity to influence policies, curriculum development and teacher training, like government departments, international organizations and NGOs.
II. Chapter two: About the manual

A. Manual development

This manual was first developed as “Student-led school sanitation and hygiene (SLSSH)” by Development Excerpt Center (DEC). DEC has validated the SLSSH manual in collaboration with 18 primary schools and it has resulted in significant achievement of open defecation free schools. The student-led school water, sanitation, hygiene and greening manual is developed as a follow-up to the SLSSH. This version of the student-led manual includes water and greening that were not part of the previous manual but are essential for the overall achievement of healthy schools. It is developed through collaborative process between various stakeholders and experts. Stakeholder participation includes expert workshops with education and child psychology experts, discussion with school heads, students and teachers, discussion with education bureaus and NGOs. It has been validated with the participation of 8 primary schools.

![Diagram of integrated school WaSH](image)

Figure 2: integrated school WaSH

The student-led approach has two main components

1. Training of trainers (ToT); student representatives, lead teachers and representatives of PTAs will be trained first on WASHG concepts
2. The trained students and if necessary supporting teachers will then train the rest of the school and they will also be responsible for starting up clubs if there is no existing WASHG club in the school and promoting and implementing WASHG.
B. Contents of the manual

This manual contains the following;
1. General information on water, sanitation, hygiene and greening for facilitators and to help discussions on different issues
2. Information on facilitation
3. Activities for students
4. Activity summaries
5. Strategies for sustainable implementation
6. Annexes

C. Building blocks of Student-Led WaSHG

Empowering students to lead:
Students take up the leading role in each and every steps of improving water, sanitation, and hygiene and greening practices in their school.

Capacity building:
Continuous capacity development to build students’ management skill through providing technical and material support to facilitate their school hygiene and sanitation

Child friendliness:
The student-led is an approach implemented in Schools considering of child interest and ability by appropriate language, understanding their capacity, and child wellbeing.

Gender sensitivity and Inclusiveness:
All the activities in this manual ensure gender mainstreaming and inclusion of marginalized and disabled children.

Building up on existing infrastructures and practices:
The manual do not start from scratch but encourage assessing and building up on existing school structures such as mini media, clubs, etc. enhance existing WaSHG facilities, use school events and celebration days

D. Guiding principles for facilitators

1. Facilitator’s role is to facilitate not to dictate/teach;
2. Students develop hygiene and sanitation behaviour change tools and not rely on just “outsiders”;
3. Be culturally insensitive and do not use nice words about shitting in the bush, leaving the toilet dirty or leaving the tap running;
4. Students monitor and follow the progress towards the state of WaSHG in their school and behaviour change among themselves;
5. Students organize activities to increase access to water, hand-washing and toilet facilities in their school.
E. Pre-training preparations

1. Selecting lead students

The lead students should be a student that could play a role of an ambassador for WaSHG. Therefore they should be carefully selected in discussion with students, teachers and PTAs. Among other things, lead students should be:

- Interested in the promotion and establishment of WASHG
- Volunteer to carry the roles and responsibilities of a lead student
- Influential to other fellow students
- Exemplary in their academic and social performance

2. Lead Students and Key teachers selection criteria

**Lead students**

- Earlier experiences in good leadership of clubs
- Commitment and interest in co-curricular activities
- Role model in good conduct
- Good communication skills
- Good writing and reading skills
- Outstanding in school performance
- Active participant in school activities
- Equal number of girls and boys
- First Cycle from grade four 2 students and second cycle from grade five to eight 5 students

**Key teachers**

- One school principal or vice
- One teacher who has experience in sanitation and hygiene related club management, Motivation, acceptance in school, high performance,

3. Setting up location and time

Trainers/facilitators need to select appropriate location for the training in agreement with school teachers and administration. Each section of the training requires significant amount of time to fully cover the concept and the activities under it. Therefore, it is important to plan ahead with school administration and lead teachers on how to organize the training in terms of time. The training can be organized either continuously or in sessions parted in different time frame. It is up to each school to decide the time frame that best fits them.

4. Check the following before staring

- Facilitators
- Participants
- Rapporteurs
- Training materials (refer to annex for list of materials)
- Training manual
- Registration paper
- Visual documentation (camera, video)
- Clock
III. Chapter three: training methods

A. Creating Supportive and Conducive Environment
Before going to the content part of the training, it is important to create a viable atmosphere for optimal participation and communication during the training. Use the following approaches to open up the training.

1. Enable participants to introduce one another;
2. Make participants able to establish ground rules (e.g. time management, discipline,) for the training period;
3. Identify and discuss participants’ expectations;
4. Make participants understand the objectives of the training, and
5. Create comfortable atmosphere that all participants get the opportunity to ask question and share their ideas and experiences.

B. Self-assessment and reflection:
Before starting the main concept of the SLWaSHG, make sure to ask the participants to close their eyes, take time, think and organize in their thought about issues and concerns they are requested to give their reflection on

C. Small group discussions and presentations:
Identify issues that needed to be addressed in groups and form a group of five to six participants to discuss and come up with conclusions, decisions and/or recommendations on the issues.

D. Plenary discussion
Here facilitators raise open-ended questions on issues and concerns under discussion and participants get equal chance and opportunity to give their opinions in the plenary session or alternatively a selected individual presents the out come of the discussion to the participants.

E. Out door activities
Combination of out door activities with indoor activities will help to sustain trainee’s concentration and reduce boredom. Out door exercises give opportunity to move around, freely discuss with peer and observe the environment that can bring more inspiration and findings for on the concept under discussion. Therefore, keep good balance of indoor activities with outdoors.

F. Energizers
An energizer is a brief activity that is intended to increase energy in a group by engaging them in physical activity, laughter, or in ways that engage the members cognitively (problem-solving). Use small fun exercise to help energize the group in between long sessions.
On Picnic day
Tell participants that we are going on a picnic and in order to come on the picnic, they need to go through the green glass door. To get through the green glass door each participant must bring something to the picnic. What they can bring to the picnic depends on the first letter of their first name. Each person may only bring objects to the picnic that start with the letter of their first name. For example: the facilitator (whose name is Almas) would start by saying. "I am going through the green glass door and I'm bringing Asa, but I am not bringing the burtkan. What are you bringing Lemlem?" Lemlem might respond by saying I'm going to bring the Denech, but I am not going to bring juice. In which case the facilitator might say, I'm sorry Lemlem, you can't bring the Denech you need to bring something that starts with you first letter.

Sinking Boat
Facilitator request participants to stand in the middle of the training hall in a circular way and assume themselves traveling to India by a ship. While they were half way to India the captain of the ship announced that the ship has got problems and they are forced to evacuate the passengers from the ship using small boats, which have limited carrying capacity. The capacity of the small boats is told by the captain. Then the participants are requested to run in a circular way as if they are traveling by a ship. When the captain tells them the numbers, (first 5, second 3, and finally 2) of people to jump in to a boat, participants rush to hold each other accordingly. Finally, when participants are requested to be in pair, they take time to introduce each other (Name, what they are doing, what they like and dislike in their life). In such a way, each participant introduces his/her friend to the plenary session.

All my friends
Create a circle of chairs in the classroom. Have enough chair so that only one person does not have one. That person stands in the middle of the circle. They start the game by using a sentence starter, "All my friends..." then they will choose a trait that some people who are seated have. For example: "All my friends who have green on". All of the students will get up and race to another chair, leaving one person standing in the middle of the circle, only to repeat the phrase, with a new trait. The rule is that you MUST get up, and move to another chair if the trait applies to you. You cannot move to the chair next to you.

Which animal is it?
On a slip of paper, write the name of an animal that makes an obvious noise. Create five slips for each animal. Give each participant a slip of paper, but tell him or her to keep his or her animal a secret. The participants are to find the rest of their kind, but there is no talking. So how do they find the others? They have to make the noise of the animal. Once two of the same kinds have found each other, they stay together to find more. Continue until all of the like animals have created one big group. If a student approaches a dangerous animal e.g. lion, tiger, snake they can make him out of the game.
IV. Session One: Water

Water is one of the gifts of nature, and it is one of the most vital resource for the survival and proper functioning of all forms of life; humans, animals and plants. Unfortunately not all water helps man to survive. Water from contaminated sources cause numerous diseases and untimely deaths. The fact that human needs water and cannot live without it, forces him to use it whether clean or contaminated. As a result, people suffer from life threatening water born diseases.

Figure 3: Water in school
A. Objectives of health education about water

Teaching students about water including the source, utilization and management from an early age will help them to:

- Create an understanding of the importance and effective use of clean water,
- Illustrate the relationship and importance of water in the management of sanitation facilities,
- Inform school children how to use water lifting devices in a safe and proper way,
- Make school children understand the importance of maintenance and continuous care

**Activities**

**Activity 1: Sources of water**

Organize students in groups (Maximum 5 to 6 students in a group) and ask them to draw and label the different water sources in their school and in their neighborhood on a chart. Collect the charts and initiate discussion on sources of water.

Material needed: - chart, pencils, colors

Time: - 10-15 minutes

Different sources of water have been observed during our school WASH visits such as:
- Piped water with tap
- Borehole with pipe and tap
- Protected spring with pipe and tap
- Shallow well with hand pump
- Roof top rainwater harvesting with tap
- Outside school compound sources such as scoop wholes, hand dug wells, reservoirs with pipe

**Activity 2: Safe and unsafe water sources**

Ask students to distinguish the Water sources they draw in activity one as “safe or unsafe” or “clean or dirty”. Collect the drawings and initiate a discussion on how they classify the different water source as “clean and dirty or safe and unsafe”. At the end of this activity explain to the students about safe and unsafe water sources.

Materials: drawings from activity one

Time: 15 min

Safe sources:- are water sources that are protected and treated to meet safe water source standards
E.g: protected reservoirs, springs, shallow wells, boreholes and rainwater harvesting schemes

Unsafe sources: - are not protected and or treated
E.g: unprotected ponds, springs, wells, reservoirs, rivers, lakes, scoops

17
Activity 3: Protected and unprotected sources of water

Ask students to go back to their previous groups and classify the water sources they drew on activity one as “protected and unprotected” based on the explanation or definition you gave on safe and unsafe water sources. After classifying the water sources as protected and unprotected, let the students categorize the protected sources on one side and the unprotected sources on another on new chart. Post both charts on the walls of the classroom so that they can look at it during the break.

Time: 10 min
Material: drawings from activity 1 & 2, chart, Marker

B. What happens when water sources are unprotected?

Unprotected or unsafe water is one of the most important mediums of infectious diseases. Unprotected sources are easy gateways and transporting channel for pathogens. They can easily be contaminated through contacts with different sources of contaminations such as animals, humans, dust etc. As a result water needs to be protected and tested before approved for domestic use. This involves sanitary inspection, Physico-chemical and bacteriological tests and remedial actions such as disinfections. The need for water quality testing comes from the fact that it is difficult for anyone particularly school children to know whether the water is really clean and safe or not. Water that seems physically clean might not be safe when chemically and bacteriologically tested. Therefore, it is necessary that School children should be demonstrated and understands that water that looks clean can still carry pathogens and other disease carriers.

Activity 1: water quality testing

Prepare two glasses of water that look clean, 1 glass contains salt and water the other contains pure water. Ask students if they think the water is clean or not. Then ask two volunteers to come forward and test the water and write down their reaction.
Material: flip chart, marker, two glasses, salt, water

Time: 10 minutes
Activity 2: water treatment

Ask students how water is treated in their home or localities to purify the water to drinking level. Write down their answers on the flipchart or on a board. Starting from their answers explain the students about water treatment and different treatment mechanisms.

Activity 3: Keeping water clean

Organize students in groups of 5 or 6 and ask them to write down the mechanism they use in school and at home to keep their water clean.

Material: Chart, Marker
Time: 10min
C. Rainwater harvesting

Rainwater harvesting is known to be the mother of surface and groundwater sources. Rainwater harvesting can provide, safe, viable and low-cost solution that can be applied in both urban and rural school settings that do not have clean and sufficient water sources. Schools create an ideal condition for rainwater harvesting because they have large catchment area (roofs) and high demand for water. When, particularly harvested from clean catchments such as roofs it has the least chemical, bacteriological and physical quality problems, and thus only need rudimentary treatment.

![Image of rainwater in schools](image)

Figure 4: rainwater in schools

D. Roof-top rainwater harvesting

Roof-Water Harvesting System: Roof water harvesting is a system where rainwater is harvested from a roof of a house, classroom or other structure; in which case the roof serves as a catchment area. It is the most suitable form of harvesting in schools since schools have several buildings, which have sufficient roof sizes for harvesting rainwater either as a main source of water or to supplement other sources.
Figure 5: rooftop-rainwater harvesting in schools

1. Components of roof water harvesting systems:

**Catchment Areas:** Catchment areas are hard impermeable surfaces (roof in the case of roof top harvesting) on to which rain falls.

**Gutters and down pipes:** These are conveyance channels for the harvested water from the roof to the storage container. Gutters and down pipes should have filters to remove solid materials along with the water flowing through.

**Storage:** The storage tank is the most expensive component of the rainwater harvesting system. The availability of readymade plastic storage facilities make rooftop water harvesting less time taking, attractive and an important water supply option for schools in rural areas in particular. Unless cost restricts, as much as possible the storage needs to be large enough to capture all the harvested rainwater particularly in areas where other sources of water supply sys are technically or environmentally less feasible. The shape of the storage can be cylindrical, spherical, and rectangular or square, and they can be constructed from Ferro-cement (RC), masonry, readymade plastic containers (ROTO), etc.
2. How much rainwater can be harvested in a school?
The amount of runoff that can be collected from a given building roof in schools can be estimated using the rainfall of the locality and catchment area in this case the roof.

\[ Q = 0.8RA \]

where

- R is rainfall in millimeter,
- 0.8 is the runoff coefficient C that takes into account losses between the roof and the storage.
- A is the catchment area/roof area

Based on this calculation, a school with two building blocks of 15m by 5m dimension that receive average annual rainfall of 600mm can harvest

\[ Q = 0.8 \times 600\text{mm} \times 15 \times 5 \]
\[ = 36,000 \text{ liters of water} \]

A student will need on average 5 liters of water per day for drinking, hand washing, and cleaning. In water-scarce areas and in schools with shifts, this figure can go lower. However, students should have access to adequate amounts of water for drinking, hand washing, cleaning, and latrines. For example, a school that has 500 students would need an average of 2500 liters of water per day to meet the daily water demands of the students. A school with no supplementary water source then requires harvesting this amount of water from rain.

3. How to improve the quality of harvested rainwater?
The level of physical, biological, and chemical contents of water determine its safety for different purposes. The level of biological, chemical, and physical contents of the water shouldn’t exceed the recommended standards/limits for drinking water. In order to maintain the safety of harvested rainwater up to this standard, it is necessary to conduct overall cleaning and maintenance of the RWH system. Harvested rainwater can be kept safe by following simple instructions such as:
- Protecting the catchment area, maintaining clean roof with regular cleaning
- Protecting the gutter from dirt and other contaminants by cleaning
- Protecting the source adequately,
- During collection and delivery
- During the storage and the use of water at distribution taps in schools

Activity 1: Sanitary inspection of rainwater harvesting structures

Organize students in groups (maximum 8 students per group), hand them the sanitary inspection sheet (attached in the annex) and walk with them to the RWH structure in the school compound and ask them to fill their observation. Collect the inspection sheets and check if any of the group has answered yes for one or more of the questions. And inspect the RWH system together if there is any defect found on the system.

Material: inspection sheets, pen/pencil

Time: 15 minutes

Health and safety measures in the design and construction of rainwater harvesting systems

- Cover and thoroughly screen tanks to exclude mosquitoes, birds and animals, especially in areas where mosquito-borne disease is an issue.
- Design tanks to overflow to gardens, infiltration trenches or the storm water system.
- Desludge your tank periodically with a tap installed at its base.
- If rainwater and mains supply are both used then mains water must be isolated from the rainwater system by a valve mechanism or tap.
- Protect water in tanks from sunlight, which can stimulate algal growth. Plastic tanks may allow light to penetrate so they should be kept out of the sun or painted.

Activity summary
Activity 2: water management

Arrange students in groups of 6 or 8. Ask them to discuss on how to best manage their schools and write their ideas on a chart. Encourage them to come up with innovative ideas on managing their water. After the group discussion the group present its findings to the class.

Material: chart, marker
Time: 20 minutes

Proper management of RWH system is vital for its performance and sustainability. Therefore it’s necessary that the management of RWH systems is done by the users themselves, unlike design and construction that, in many cases are implemented by outsiders. The student led approach promotes students to manage the water schemes in their compound with the support of staff. Proper maintenance is among those aspects that in many cases is neglected or not paid due attention: resulting in reduction in efficiency, effectiveness and durability of RWH systems. Inspection, regular cleaning and minor repair of the whole RWH system: the catchment, the conveyance, the tank and the various tank components such as tap are vital for the system to run long after its installation.
V. Sanitation & Hygiene for healthy school

Sanitation combines the knowledge and practice of creating and sustaining clean and healthy school environment. It strives to create attitude and behavioral change of students towards their day-to-day practices that involve their health. Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases.

Objectives of health education about sanitation and hygiene;

- Help students to develop understanding on personal and environmental sanitation and hygiene;
- Lay the basis for attitude and practice change among students and the school community
- Spread awareness on sanitation and hygiene among families and communities around school

A. Sanitation facilities and hygienic practices

1. School latrines

Most schools we have visited in our project sites have some form of latrine but very few among them meet the minimum standards for student friendly toilets. There are defects in construction, number and quality. One of the major challenges is amount of toilet in schools; in majority of the schools there is...
high toilet to student ratio. The standard to student to toilet ration is 1:100 for girls and 1:150 for boys in Ethiopia and 1:50 for girls and 1:100 in most other African countries. In most rural school the ratio even goes up to 1:200. Moreover most toilets lack doors. Lack of doors in latrines significantly discourages schoolgirls and adolescent boys that need privacy while using toilets.

School latrines should be:
- Physically separate for boys and girls
- Appropriate ratio to number of students
- Gender sensitive orientation
- Disability sensitive
- Provide privacy and safety

2. Latrine use and management

The use and management of latrines is equally important as to its access. Students should be able to use toilets properly, avoid stooling outside the hole and clean toilets everyday. Toilets should also be maintained on regular basis when the doors get broken, the roofs get leaking or the ventilation gets plugged and they start smelling bad.

Figure 8: playing in unhealthy environment
3. Hand Washing

Hand washing facilities are usually absent in rural schools. According to the study of UNICEF hand washing facilities are less than 18% in eastern and southern African countries including Ethiopia. Even the schools that have some sort of toilets do not have hand-washing facilities. The lack of hand washing facilities hamper hygienic practices, even though students have the awareness of disease transmission through unclean hands lack of hand washing utilities will leave them without option.

Figure 9: Hand washing after toilet

Activity 1 the sheet cycle

Initiate discussion among participants by presenting the F-diagram (find in the annex). The discussion is mainly on the health risks of open defecation, vehicles transporting shit into households, ways of contaminating food and drinking water at the source and in the house. After the discussion create a group with maximum 5 to 6

students, provide them with pieces of paper with items on F diagram and arrows and ask them to create connection with cause and effect. The groups can present their drawings to plenary discussion.

Material: papers with names of items, e.g. sheet, flies, stomach ache, health, hand washing, etc. and arrows
Time: 20 minutes

Activity 2: self assessment

Ask students what they think about Open defecation. When do they openly Defecate (when there are people around, when no one sees them, mornings, afternoons, evenings)? What do they feel when they openly defecate in or outside the school compound? Afterwards ask the students to go in to their previous groups and discuss the concepts of shame, fear and disgust in their group and come up with single definition for each terms.

Material: marker, paper/ flip chart
Time: 20min

Activity 3: transact walking

Ask students to walk through their school compound and it’s surrounding to observe and record the sanitation situation (School latrines, school solid waste disposal area, bushes, school surroundings, school compounds, school water points, school sewerage areas, school garden, lunch feeding area, girls’ hygiene corners, etc.). While conducting transect walk, initiate discussion on the effect of open defecation (OD); role of flies, animals, wind, flood in transporting shit in to lunch feeding area, class rooms, play grounds, water points, surrounding households; school latrine usage etc.

Material: paper and pencils
Time: 30 minutes

Activity 4: sanitation mapping

After transect walk, let students and other school community members sit in a circle around good site for school sanitation mapping and select two or three students who can draw and let these student draw the sanitation status of the school.

Material: colorful powders, cards, ropes, leaves,
Time: 20 minutes
Activity 5: Sheet calculation

Ask the students how many times a day they are stooling (once, twice, three times, etc.) and quantity they defecate at a time (0.25kg, 0.5 kg, 1kg, etc.). This helps the group to calculate the amount of shit they are defecating per day. Lead teacher announce the total number of students in the school. This give important data to the group to calculate the total amount of shit defecated by all the students in the school every day.

Material: chart with table, pencils, calculator

Time: 15 minutes

Activity 6: Shit flow

Ask students where they shit, where the shit is carried to and finally enter. Create a link between the shit flow and water sources in the surrounding.

Activity 7: Hand washing

Bring a loaf of bread or a loaf of Injera kept in clean and covered container. Also, bring water and soap for hand washing and keep unseen. Select one student willing to eat the bread/injera and call him/her to come up and show. When he/she tries to eat without washing his/her hands, stop and ask the students for what is missing. When he/she tries to wash hands only with water, stop and ask the students for what is missing. When he/she follows inappropriate hand washing procedures, stop and ask the students to show appropriate hand washing.

Material: Injera or bread, container, jag of water, soap,

Time: 10 minutes

B. Ignition

The above triggering produces different responses. Not all of the students and staff might admit the sanitation and hygiene realities of the school and most importantly not everyone might agree on the intervention mechanisms. The response that can be generated from a triggering exercise can be categorized as below;
- **Matchbox in a Gas Station** – fully ignited and made all people ready to take action
- **Promising flame** - where a majority have agreed but a good number have still not decided
- **Scattered Sparks** - where the majority of the people have not decided on collective action, and there are many fence-sitters, and only a few have started thinking about going ahead
- **Damp Matchbox** - where all people are not interested to do anything to stop open defecation

![Diagram of Matchbox in a Gas Station](image)

**Figure 10:** Results of triggering

### Activity 1: Developing action plan for improved sanitation and hygiene

Ask participants to make a group of 5 to 6 members and discuss on the following topics:
- Set up a goal to achieve open defecation free status in 5 months time
- How to maintain school latrines clean every day,
- On how to develop hand washing practices after toilet and before meals
- How to establish or strengthen existing clubs such as water, sanitation, sport or environment that can take over the training and development of hygienic activities
- Identify change areas in the school

Bring the discussion in plenary and present all the group ideas and ask participants to agree on one objective for each sanitation and hygiene and write these objectives on separate sheet. Continue the discussion on action plan necessary to achieve the objectives. Post this goals in visible parts of the school e.g. outside of toilet walls.

**Material:** Action plan Matrix, marker

**Time:** 45 minutes
VI. Chapter five: Greening

School greening is a concept of introducing and developing environmental friendly behavior among school community. It encourages students to participate in greening activities that will result in healthy surrounding, fresh air and attractive playgrounds. Greening areas inside school have multiple purposes. They serve as demonstration site and learning ground for subjects like environmental science, geography, and biology. In schools where there is adequate water and space, greening activities can be taken further to create vegetable plots that support nutrition program in schools. In countries such as Ethiopia where environmental degradation and desertification are increasingly threatening people’s livelihood having proper knowledge of the environment at an early age is an important part of producing well informed citizens that take care of their environment in the long run.

Most schools particularly in rural areas have good potential for school greening. This is because
- They have fenced compound/ property usually secured with a guard there by obstructing destruction or theft of trees and seedlings.
- They have suitable environment for implementation of participatory greening programs through existing curricular and extra curricular activities.
- They are usually considered as a community asset therefore it is easier to raise support from parents and other community members.

A. Objectives of health education on greening

Student –led school greening has the following objectives
- Enhance the condition of the greening in a school compound and contribute to positive learning environment.
- Introduce students with nature conservation and build up healthy human-environment relationship from an early stage in life.
Activity 1: green data collection

Divide the students in to two groups ask both groups the following questions and the group that score more points will be the winner

1. Walk around the school and write the names of the plants in the school compound including flowers, vegetables, trees,
2. Write their function
3. Write the name of one plant they would like to have in the school and why

Ask them to present their results to the plenary. After their presentation take few minutes to discuss with them importance of living in healthy and green environment.

Material: Paper and pen/pencil
Time: 20 minutes

Activity 2: setting up a goal

Group participants (maximum 5 to six in one group) ask them to write down their vision/goal on greening their school. Collect the papers and post it on the wall. Bring the groups to plenary and ask them to choose on one or two goals they want to achieve in a year time. Write the chosen goal statement on clearly visible place in the school.

Material: paper, pencils
Time: 15 minutes
Activity 3: how green is my school?

Make a group of 5 to six students and ask them to assess the green status of their school using the ranking system.

Material: ranking sheet, pencils
Time 15 minutes

Before embarking to the actual greening activities it is important to conduct an assessment of the school existing status and culture of greening. This will provide information on school practice on greening. The practical activities can therefore be built up on the outcome of the assessment. The assessment employs a simple ranking method that allow students and staff to see the level of the status of their school in terms of greenness. The ranks can later be used as monitoring tool to check progress.

Activity 4: mapping

Group the students in to maximum of eight per group. Provide them with chart, pencil and color and ask them to map the following items on the chart:

- School boundary
- Land cover/land use
- Soil type
- Availability of water
- Climatic zone
- Plants that can easily grow in the area
- Availability of space for greening
- Where to plant which plants

Material: chart pencil colors
Time: 20 minutes

Environmental mapping/green mapping is an essential part of student-led school greening activity. It increases student participation and student teacher interaction. The output of the mapping exercise could be a simple sketch and it can be supported by environmental science or geography teachers.
Activity 5: Green school action plan

Use the previous group for this exercise. Ask the groups to discuss on the greening targets they want to reach in one year and to list all the activities/actions that are necessary to reach the target. Afterwards ask them also to list the resources (time, person, money) required to carry out the activities/the action. Bring the groups to plenary discussion and formulate a general action plan with agreement with all participants.

Material: chart, pencil
Time 15 to 20 minutes

An action plan will allow students, the green club, lead teachers to structure the activities towards their vision and draw concrete resource identification necessary to meet the goal. Use the results of the environmental survey and green mapping as an input to identify priorities of the key areas where you want to make change and create an action plan. It is important to set realistic and achievable targets to improve environmental performance at the school so that you can take pride in tangible accomplishments in the short term. And it is also important to set long-term, inspiring and challenging targets to move beyond the status quo and foster greater environmental improvements. The action plan could involve and promote, for example, school gardening, composting, innovative recycling.

B. School waste management

Waste management is an integral part of greening in a school. It will give students practical experience on type of waste, how to reduce waste production and waste reuse and recycling. These wastes can be toxic to the people and the environment if not managed properly. They can create breeding places for insects such as flies, mosquitoes etc; they provide food and harborage for rats. Indiscriminate disposal of solid and liquid waste pollute water sources and land, posing serious health problems and nuisance in the school. These insects and rats are health risk in that they are potential disease transmitters. Schools can generate enormous amounts of waste both organic and inorganic such as:

- Plastics
- Papers
- Pens
- Pencils
- Rubbers

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General-Info

Activity summary

Activity summary

Activity summary
C. The Zero waste in classrooms principle

Schools are ideal places to let students practice environmental friendly waste management. The zero waste principle advocate a scenario where all waste that is produced will be recycled or reused therefore there will not be any waste to be disposed. It encourages the reuse and recycling of waste that no waste is buried or burned. Start a Zero-Waste-in-the-Classroom Policy in the school. Set up collection bins (teachers, students, and parents can volunteer to be responsible for removal), audit how much rubbish is created in a week. Design innovative ways to deal with the classroom waste, disposal is not an option. Each classroom can develop its own way of reusing or recycling waste. Start up competition between classrooms and complement the classroom that has managed its waste the most in morning gatherings. e.g. of recycled and reused classroom wastes are arts, composts, etc.

Activity 1: waste data collection

Provide students with paper or plastic bag and ask them to collect all of their trashes in the bag for one day. At the end of school day, they have to categorize the trash and graph the data. The student can post their graph on the classroom wall. Discuss with them types of wastes produced in the school compound and which wastes rank the highest in the following session.

Material: trash bags, chart/paper
Time: 1 day for collection and recording and 30 minute for discussion
Activity 7 waste management

Ask participants on how to manage the wastes that are produced everyday? Write their ideas on a board or on a chart. Basing on their ideas, initiate a discussion on waste management such as;

- Reusing organic waste for compost
- Reusing paper waste for handcrafts
- Reusing plastic wastes for decoration and planting
VII. Chapter six: Sustainability in school WaSHG

Realizing WASHG in schools requires fundamental change. Depending on the initial status of the school, the change required can be small or big. The road to changing a WaSHG status of a school can be bumpy if there is resistance, unwillingness, carelessness etc. in the school. Therefore it is important to put the required persistence, time and effort to gradually build up the school. Lead students and clubs are key to start and stir this change. For that it is important to;

- Continuously empower and reward lead students and clubs
- Design strategies that can fit in to the particular socio-cultural and economical situation of each school
- Design action plans that are simple to understand and to practice for all type of students (male and female; disabled and disadvantaged)
- Make activities interesting for students to voluntarily participate

Schools host tremendous opportunities for improving their water, sanitation, hygiene and greening. They are fertile grounds to develop new ideas and practices. They are full of young minds that are enthusiastic to hearing and practicing new ideas, which makes it easier to get immediate support group that is interested enough to start up implementing WaSHG. These immediate interest groups can be used to further disseminate and promote WaSHG and draw more students to join the initiative.

A. Roles and responsibilities

Water, sanitation, hygiene and greening as individual components will still contribute to improved health and safety in schools but when combined they will make greater contribution towards achieving healthy and student friendly school environment. The implementation process will require a coordinated effort from different actors’ students, school staff, family, and education bureaus.

1. In the school

- **Lead students**: expected to take initiatives to lead, plan, organize, coordinate, facilitate, mobilize, monitor, document and report on WaSHG initiation and behavioral change promotion activities in their school.
- **Students**: expected to fully engage in the process of planning, implementation, monitoring and evaluation of WaSHG activities in their school.
- **Key teachers**: are expected to facilitate trainings, link with partners, and closely support overall WaSHG activities in their schools.
- **Teachers**: Participate, advise, support, and deliver required information in the process of implementation of WaSHG activities in their school.
- **School Management Committee**: expected to support and cooperate for the implementation of WaSHG activities.
- **Other School Community Members**: involve in the processes of implementation of WaSHG activities

2. Outside the school

**District Education Office**: This is the responsible body for the integration of WaSHG in the school curricular. Their voice can easily be heard by school administration and staff therefore their collaboration and support is crucial to the sustainability of school WaSHG activities. The bureau can support schools in the development/inclusion of bylaws into the existing rules & regulations/ guidelines/ bylaws of the
schools. It can also support sustainability of school water, sanitation, hygiene and greening activities by participating in monitoring, evaluation and feedback processes.

**District Health Office:** The health office provides technical support and direction to integrate sanitation and hygiene with the school’s other day-to-day activities. It can serve as technical backstop for lead students and teachers whenever they need support on school health education. The office can also take part in monitoring, evaluation and feedback processes together with the district education bureau.

**District Water Resource Office:** This is key partner for the sustainable utilization, functionality and management of water facilities in a school. They can support schools by providing messages on water safety, water use, and scheme management to students and teachers. In addition they can also take part in a sustainable financing of drinking water and hand-washing water facilities by integrating schools in to their water supply plan.

**District Women, Youth and Children Affairs Office:** Participation of the district women and children affair will largely contribute to all-inclusive WaSHG approach in schools. They can participate in the planning and development of schools WaSHG strategies to make sure that the plans and strategies are children friendly and gender sensitive. They can also assist its implementation by giving technical advice to the team and train clubs on gender issues.

**District Administration Office:** Administration bodies are particularly important for the dissemination and scaling up of WaSHG practices in schools. They can easily carry WaSHG messages from one school to the other, reward schools on their achievements and encourage them on reaching higher standards. They can also present WaSHG to Wereda and higher administrative bodies that are responsible for policy making on education and financing.

### B. Seven Steps to sustainable WaSHG in schools

1. **Integrating Student-Led WaSHG in the school curricula**

   One of the major move to achieve long-term sustainability of the water, sanitation, hygiene in a school is to embed it in the school curricula. Once it becomes part of the school curriculum it can be part of the various other school plans and activities.

2. **Establishing/ strengthening Student clubs**

   School Clubs are at the heart of student-led WaSHG efforts. They can offer a forum for brainstorming, discussions, organizing events and communication. Ideally, a school club should have representatives of students, teachers and parents. Most schools might have an existing environmental, gender, entertainment clubs. In that case the effort needed will be to strengthen the clubs and make it attractive to non-member students to participate. In case there is no club of any sort, it can be established with the help of the school administration and facilitator usually a teacher.

   The purpose of school clubs is to help identify issues, undertake research and analysis, make recommendations to relevant school decision-makers, coordinate WaSHG activities, and facilitate communications with the broader school community. The clubs can collaborate with other student clubs such as the sport or art clubs, PTAs, individual teachers, or specific school departments to implement activities or organize events.
3. Monitoring

The purpose of monitoring is to provide ideas for program effectiveness in between formal evaluations and review periods and to give an early warning of any problems so that these may be corrected before it causes any damage. In an attempt to respond to this purpose, the trained students, WaSHG clubs and key teachers shall design their own monitoring and follow up mechanisms and tools and monitor a day-to-day hygiene and sanitation progress in their school with the support of school management committees. Furthermore, led students should regularly monitor behavior change promotion actions, management of WaSHG facilities, classroom management and vector control. In addition, schools shall organize regular (quarterly or bi-annual) progress review meetings with the participation of School supervisors, directors, focal teachers, student representatives, and District Education and Health office experts. Monitoring results should specifically report on goals, targets, achievements, challenges, gaps or delays in the implementation process.

4. Follow-up

The results of monitoring and evaluation activities serve as an input for designing follow up activities that further strengthen positive results and solve challenges. Follow-up activities determine the lifetime of the WaSHG initiative. If a school designs proper follow-up scheme that keeps the motion after the initial training and campaign then it can ensure the long-term success of the initiatives.

5. Financing

Finance is one of the key factors for operation, maintenance and upgrade of WaSHG facilities. Funds allocated by government or donor agencies might not be sufficient to grant 100% access to water, sanitation facilities and hygiene education at schools. Therefore, self-initiated independent financing mechanisms are important. Schools should design innovative financing schemes to support the maintenance of existing schemes and construction of new facilities.

6. Communicate

Communication is key to spreading success and inspiring more actions. It keeps the school and the community informed of progress made. Communication can be done through classroom displays, school assemblies, newsletters, or other press coverage. Among the issues to be communicated are the progresses of sanitation and hygiene in the school challenges in achieving the desired outcome in sanitation and hygiene, action plans for achieving clean and healthy school environment.

In addition, students can also disseminate messages through posters, notice board; messaging during school flag ceremony; messaging during school events; conduct peer dialogues. Clubs can also organize dialogues among different school community groups periodically including drama, storytelling, poem, paintings and question and answers, etc.

7. Celebrate the achievements

Celebrating and communicating achievements are critical components of student-led programs. Celebrations and other related events can often unify the whole school and strengthen community relations. It can bring important experiences from the community and other institutions. Schools might consider partnering with external organizations in their community to benefit from their experience and expertise. In some schools, environmental consultants have offered to take part in the environmental review process. Many local government agencies and utilities offer free advice on energy, recycling, and hazardous waste management. Schools should also consider the wider community when preparing action plans - for example, schools could offer to be the local recycling point or to be a drop-off for organic
waste that can be composted. Some schools get involved with cleanup at nearby parks or share their experiences in other ways.

Annual Earth Day celebrations - organized around April 20 or water day held on 22 March - can offer an opportunity to celebrate. Celebration could be with sports, plays, music; games coupled with cleaning and assessment activities. Showcase actions taken by the school and bring together the school and wider community. Celebrations can also be used as a platform for fund raising.
VIII. Annexes

1. Assessment questions for rooftop rainwater harvesting structures

<table>
<thead>
<tr>
<th>Observation questions</th>
<th>Yes or No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is there any visible contamination on the roof catchment area?</td>
<td></td>
</tr>
<tr>
<td>1.1. If the answer is yes for question 1, what type of contamination does you observe?</td>
<td></td>
</tr>
<tr>
<td>2. Are the guttering channels that collect water dirty?</td>
<td></td>
</tr>
<tr>
<td>2.1 If the answer is yes for question 2, what type of contamination do you observe?</td>
<td></td>
</tr>
<tr>
<td>3. Is there any dirt in the filter box?</td>
<td></td>
</tr>
<tr>
<td>4. Is the tank properly covered/ protected?</td>
<td></td>
</tr>
<tr>
<td>4.1 If the answer is no for question 4, which part of the tank is not covered?</td>
<td></td>
</tr>
<tr>
<td>5. Is there any leakage in the RWH system?</td>
<td></td>
</tr>
<tr>
<td>6. Is there water logging in the water collection area?</td>
<td></td>
</tr>
</tbody>
</table>

1. Checkpoint questions for drinking water

<table>
<thead>
<tr>
<th>Design and construction</th>
<th>Operation and maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are there sufficient water points in the right places for all needs?</td>
<td>Is water accessible where needed at all times?</td>
</tr>
<tr>
<td></td>
<td>Is there always soap or a suitable alternative at hand washing points near the toilets?</td>
</tr>
<tr>
<td>2. Are there sufficient, clearly identified drinking-water points?</td>
<td>Are drinking-water points properly used and adequately maintained?</td>
</tr>
<tr>
<td>3. Does the water supply have the required capacity?</td>
<td>Is sufficient water available at all times for all needs?</td>
</tr>
<tr>
<td>3.1 Is there suitable alternative supply in case of need?</td>
<td>Is the water supply operated and maintained to prevent wastage?</td>
</tr>
</tbody>
</table>
2. Water quality checklists

<table>
<thead>
<tr>
<th>Design and construction</th>
<th>Water quality, operation and maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. If necessary, can the water be treated at the school?</td>
<td>If water is treated at the school, is the treatment process operated effectively? Are there sufficient supplies and adequately trained staff to carry out treatment? Is the quality of the treated water monitored regularly?</td>
</tr>
<tr>
<td>3. Does the water supply meet WHO guidelines or national standards for potable water?</td>
<td>If necessary, are there measures in place to avoid exposure of water source to external contaminants?</td>
</tr>
<tr>
<td>4. Does the water have acceptable physical properties for drinking (smell, taste, appearance)?</td>
<td>If the water is not acceptable to some or all of the schoolchildren and staff, do they use a safe alternative supply of drinking water? How can it be made acceptable?</td>
</tr>
<tr>
<td>5. Is the school water supply designed and built so that low-quality water cannot enter the drinking-water supply and cannot be drunk?</td>
<td>Are procedures for protecting drinking water in the school followed consistently?</td>
</tr>
</tbody>
</table>