National Guideline for
School Water, Sanitation and Hygiene (SWASH) in Tanzania

First Draft for Piloting & Consultation

Oct 2010
National Guideline for School Water, Sanitation and Hygiene in Tanzania

Oct 2010

All pictures by: Rashid Mbago
Foreword

In an effort to respond to the challenges posed on the education sector, the Government has established the Primary and Secondary Development Programs with the focus on increasing the enrolment of pupils (through the abolition of school fees), improving teaching and learning processes, provision of teaching and learning facilities and strengthening teachers and coordinators capacity. Efforts to increase school enrolment have been successful but this has at the same time placed heavy burden on the existing school infrastructure, particularly the water, sanitation and hygiene facilities.

The current status of school sanitation and hygiene behaviour is not promising: only 38% of schools have adequate number of latrines; 20% of schools have water supply facilities within the school premises and less than 10% of all schools in the country have functioning hand-washing facilities with available water. Schools that lack basic water supply, sanitation and hygiene facilities result in high incidence of illness, adversely affect children's participation and performance, lowering enrolment rates, increasing absenteeism and drop-out rate. Special groups such as adolescent girls and children with disabilities are particularly negatively affected. More importantly, unsanitary conditions in schools send the wrong message about the importance of sanitation and hygiene and nurture a generation with poor hygienic practices and habits.

This School WASH Guideline is the joint effort of four key Ministries responsible for School WASH including Prime Minister's Office – Regional Administration and Local Government, Ministry of Education and Vocational Training, Ministry of Health and Social Welfare, and the Ministry of Water and Irrigation in close collaboration with other stakeholders including development partners, NGOs, Civil Society Organizations, local government authorities and institutions and the communities. It stipulates key strategic areas including institutional arrangements, financial mobilization and management, capacity building, policy formulation and cross-cutting issues that need to be collaboratively addressed by four key Ministries. It also complements other regional and national efforts on improvement of school sanitation and hygiene contributing to a positive learning environment, quality education and health for school children.

School hygiene; sanitation and water can make an enormous difference in the lives of school children, particularly girls. A clean, safe, secure and enabling environment in which pupils can learn and perform to their full potential is a vital part in any child's life and a basis for development. I urge all stakeholders to give higher priority and attention to School WASH improvement. I urge all stakeholders to use this guideline as a valuable tool to support this endeavour of making school environment more healthy and supportive for our future generation. Our children today is the world tomorrow, let us make sure every child in Tanzania is given this opportunity. Investing in improving School WASH is an investment for a healthy, happy and bright future.

........................................

(To be determined)
Acknowledgements

This guideline was jointly developed by four key Ministries responsible for School WASH:

- Ministry of Education and Vocational Training (MOEVT)
- Ministry of Health and Social Welfare (MOHSW)
- Ministry of Water and Irrigation (MOWI)
- Prime Minister's Office - Regional Administration and Local Government (PMO-RALG)

Various organisations and individuals have been consulted and involved during the process of developing and piloting this guideline. Key contributors to the guidelines include representatives from:

- Ardhi University
- CARE International
- Centre for Community Based Rehabilitation in Tanzania (CCBRT)
- Concern Worldwide
- Environmental Engineering and Pollution Control Organisation (EEPCO)
- Health Action Promotion Association (HAPA)
- Muhumbilli University
- Netherlands Development Organisation (SNV)
- Sustainable Environmental Management action (SEMA)
- Southern Highlands Participatory Organisation (SHIPO)
- Tanzania Environmental Sanitation Association (TWESA)
- Tanzania Institute for Education (TiE)
- United Nations Children Fund (UNICEF)
- WaterAid

A range of other organisations has also contributed to the guidelines, including a number of Local Government Authorities where the guidelines have been piloted in Tanzania.

Permission has also been granted to reproduce or adapt original designs by the Water and Engineering Development Centre of Loughborough University, UK, and ASAL Consultants, Kenya. Ardhi University provided facilitation support at various stages and students from Ardhi University also contributed. A number of independent consultants also gave their advice freely on specific technical issues.

The participatory process which has led to the development and piloting of the guidelines has been funded by Australian Aid through a global grant with UNICEF. The support process has been co-ordinated and managed by the Netherlands Development Organisation (SNV) in collaboration with WaterAid and UNICEF.
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<td>ARU</td>
<td>Ardhi University</td>
</tr>
<tr>
<td>CBO</td>
<td>Community-Based Organisation</td>
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<tr>
<td>CCBRT</td>
<td>Comprehensive Community Based Rehabilitation in Tanzania</td>
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<tr>
<td>CDG</td>
<td>Capital Development Grant</td>
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<tr>
<td>CGA</td>
<td>Central Government Authority</td>
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<tr>
<td>CGI</td>
<td>Corrugated Iron Sheets</td>
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<tr>
<td>DP</td>
<td>Domestic Point/Development Partner</td>
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<tr>
<td>DWST</td>
<td>District Water and Sanitation Team</td>
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<td>EEPCO</td>
<td>Environmental Engineering and Pollution Control Organization</td>
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<td>GoT</td>
<td>Government of Tanzania</td>
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<tr>
<td>HAPA</td>
<td>Health Action Promotion Association</td>
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<tr>
<td>HHSH-TWG</td>
<td>Household Sanitation &amp; Hygiene Technical Working Group</td>
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<tr>
<td>HWTS</td>
<td>Household Water Treatment &amp; Safe Storage</td>
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<tr>
<td>IEC</td>
<td>Information Education Communication</td>
</tr>
<tr>
<td>ITI</td>
<td>International Trachoma Initiative</td>
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<tr>
<td>LGA</td>
<td>Local Government Authority</td>
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<tr>
<td>LGCDG</td>
<td>Local Government Capital Development Grant</td>
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<tr>
<td>MDG</td>
<td>Millennium Development Goal</td>
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<tr>
<td>MKUKUTA</td>
<td>Mkakati wa Kukuza Uchumi na Kupunguza Umaskina Tanzania (National Strategy for Growth and Poverty Reduction)</td>
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<tr>
<td>MoEVT</td>
<td>Ministry of Education and Vocational Training</td>
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<td>MoFEA</td>
<td>Ministry of Finance and Economic Affairs</td>
</tr>
<tr>
<td>MoHSW</td>
<td>Ministry of Health and Social Welfare</td>
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<tr>
<td>MoU</td>
<td>Memorandum of Understanding</td>
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<tr>
<td>MoWI</td>
<td>Ministry of Water and Irrigation</td>
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<tr>
<td>MUHAS</td>
<td>Muhumbili University of Health and Allied Sciences</td>
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<tr>
<td>NGO</td>
<td>Non-Governmental Organisation</td>
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<tr>
<td>NSHSC</td>
<td>National Sanitation &amp; Hygiene Steering Committee</td>
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<tr>
<td>NSHTC</td>
<td>National Sanitation &amp; Hygiene Technical Committee</td>
</tr>
<tr>
<td>NWSDS</td>
<td>National Water Sector Development Strategy</td>
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<tr>
<td>O&amp;M</td>
<td>Operation and Maintenance</td>
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<tr>
<td>OPD</td>
<td>Out Patient Department</td>
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<tr>
<td>PEDP</td>
<td>Primary Education Development Program</td>
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<tr>
<td>PHAST</td>
<td>Participatory Hygiene and Sanitation Transformation</td>
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<tr>
<td>PMO-RALG</td>
<td>Prime Minister's Office – Regional Administration and Local</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>--------------</td>
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<tr>
<td>PoU</td>
<td>Point of Use (Water Treatment)</td>
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<tr>
<td>PSI</td>
<td>Population Services International</td>
</tr>
<tr>
<td>PVC</td>
<td>Polyvinyl Chloride</td>
</tr>
<tr>
<td>RS</td>
<td>Regional Secretariat</td>
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<tr>
<td>SanPlat</td>
<td>Sanitation Platform</td>
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<tr>
<td>SCI</td>
<td>Save the Children International</td>
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<tr>
<td>SEDP</td>
<td>Secondary Education Development Program</td>
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<tr>
<td>SEMA</td>
<td>Sustainable Environmental Management Action</td>
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<tr>
<td>SHIPO</td>
<td>Southern Highlands Participatory Organization</td>
</tr>
<tr>
<td>SHIVYAWATA</td>
<td>Shirikisho la Vyama vya Watu wenye Ulemavu Tanzania</td>
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<tr>
<td>SNV</td>
<td>The Netherlands Development Organization</td>
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<tr>
<td>SWASH</td>
<td>School Water, Sanitation &amp; Hygiene</td>
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<tr>
<td>SWASH-TWG</td>
<td>School Water, Sanitation &amp; Hygiene Technical Working Group</td>
</tr>
<tr>
<td>TAWASANET</td>
<td>Tanzania Water and Sanitation Network</td>
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<tr>
<td>TB</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>TC</td>
<td>Teachers College</td>
</tr>
<tr>
<td>TEC/DEN</td>
<td>Tanzania Early Childhood Development Network</td>
</tr>
<tr>
<td>TENMET</td>
<td>Tanzania Education Network</td>
</tr>
<tr>
<td>TIE</td>
<td>Tanzania Institute of Education</td>
</tr>
<tr>
<td>WASH</td>
<td>Water, Sanitation &amp; Hygiene</td>
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<tr>
<td>WSDP</td>
<td>Water Sector Development Programme</td>
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<tr>
<td>WSS</td>
<td>Water Supply and Sanitation</td>
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</table>
1 Introduction

1.1 Overview of the Guideline

This guideline and its toolkits were developed by four key Ministries responsible for School WASH (MOEVT; MOHSW; MOWI and PMO-RALG) with support from various development partners, international and national organisations that are interested and actively involved in School WASH in Tanzania. This guideline focuses specifically on water; sanitation and hygiene (WASH) in schools. It sets out the minimum requirements for WASH that are relevant to various types of schools in different contexts in Tanzania. It is designed for use in different school settings where simple; affordable and replicable options can be promoted to contribute significantly to improving water; sanitation and hygiene conditions in schools and pre schools. It is developed with the aim to:

- Assist local authorities (including schools management) and the local communities to assess the existing situation and to evaluate the extent to which those schools may fall short of national standards; and subsequently plan and implement any intervention or improvements required.
- Provide basic information (such as technical designs, cost estimation and simple operation and maintenance requirements) on a range of technical options that are suitable for various social economic conditions, for different ages, gender friendly and for children with disabilities.
- Set out specific standards to ensure that the improvement of existing and construction of new WASH facilities in schools meet the minimum requirements;
- Assist schools and communities with the development of comprehensive and realistic action plan so that acceptable conditions are maintained;
- Provide relevant toolkits that can be used by different target groups (school teachers/pupils; LGAs, International/local NGOs and contractors; Development Partners; decision-makers) for development and implementation of strategic action plan for SWASH improvement.
- Support the implementation of the relevant National Policies through setting and achieving specific targets.
- Assist LGAs to involve and support communities and schools in planning; budgeting; implementing and monitoring for School WASH improvement

The technical options for School WASH facilities and hygiene education approaches presented in this guideline are based on existing national and international best practices and models that have been successfully promoted in Tanzania. They aim to promote school WASH facilities that are suitable for the needs of all children including children with disabilities, pre-primary school children and adolescent girls and suitable to varying contexts and conditions.

Special Note: This draft guideline (and its toolkits) at this stage is not a blueprint; rather it is a living document that will be regularly updated and revised during the pre-testing and piloting process to reflect the actual situation on the ground. Local Government Authorities, Government Ministries, Development Partners, International and National NGOs and any other organisation using this guideline and its toolkits during the piloting phase are kindly requested to provide your feedback on from your experience using the feedback form provided with this guideline.

Some sections of this document are incomplete for the time being as it has not been able to reach an agreement or common ground between key stakeholders. The piloting process will provide the opportunity for the experiment of these ideas.
1.2 Current Status and Challenges for School WASH

Diarrhoea is the most important public health problem related to sanitation in Tanzania causing thousands of deaths among children. Disease statistics from MoHSW indicates that 60-80% of the diseases requiring hospital attendance are those related to poor sanitation. In most districts sanitation related diseases are ranked third among the top ten diseases causing morbidity. A repeated episode of diarrheal diseases makes children more vulnerable to other diseases and malnutrition; both malnutrition and inadequate sanitation are linked to poverty.

A recent SWASH mapping survey (2009) in all primary and secondary schools in 16 Districts of Tanzania indicated that the water, sanitation and hygiene situation in these districts is very poor. Only 11% of schools surveyed meet the national MoEVT draft “minimum” standard of 20 girls and 25 boys per drop hole. Twenty percent of schools have more than 100 pupils per drop hole and 6% of schools have no latrines at all. Ninety-six percent of schools do not have facilities that are suitable or accessible to children with disabilities. Only around 40% of latrines have doors (however, these do not always guarantee privacy) and very few have hygienic facilities such as soap (1%) or sufficient water for hand-washing (8%) and only 7% of the latrines were free from smell or soiling. With the regards to water supply, 62% of schools in these districts reported having access to piped or other protected water supply. However, some schools that reported having access to piped or other protected water supply may not have water on a regular basis and not all of these schools actually have the water supply sources within the school premises.

The overall picture from this SWASH mapping indicates that most schools are characterised by non-existent or insufficient water supply, sanitation and hand-washing facilities; or in some other cases, facilities do exist but many are broken; unclean or unsafe. There has been a substantial drop in school attendance of girl due to poor sanitation and hygiene facility to afford them privacy and avoid embarrassment, especially during menstruation. Latrine designs in most schools do not reflect the needs of girls, pre-primary school children and those with disabilities.

Efforts to improve the WASH situation in schools are being supported by a range of national and international actors on a small scale; a number of latrines have been built in response to the rapid increase in primary school enrolment rate after the abolition of school fees in 2002. However, each organisation is currently using their own approaches and designs for infrastructure, training and hygiene promotion and there is no standardized guidance on good practices or materials that can be used to undertake effective school WASH interventions. The MOEVT, MOHSW, MOWI each has some form of guidelines or designs which they promote for school WASH infrastructure, but these are currently not coherent across the Ministries. Guidelines and best practices on water, sanitation and hygiene in schools are widely available but there is need for coordinated guidance and standards for low-cost setting.

The major challenges facing most schools in Tanzania include:

- Severe lack of WASH facilities leading to overcrowd and rapid deterioration of facilities;
- No clear plan or commitment for the operation and maintenance of facilities;
- Low level of involvement of school teachers, pupils; parents and community in School WASH planning and implementation;
- Lack of monitoring and follow up measures to ensure that minimum requirements are in place and adhered to;

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1 MOHSW (2009): Sanitation and Hygiene Policy (Draft)
Hygiene education focuses mainly on theory and knowledge rather than encouraging hygiene practices and behaviour changes;

Unclear roles and responsibilities between key stakeholders.

This Guideline is developed in response to the existing problems and challenges: it introduced standardised technical options and hygiene education approaches that are suitable and can be promoted in all schools in Tanzania. Technical options are carefully designed to reflect the varying social, economic and cultural context in different regions of Tanzania. Various child-centred hygiene education approaches are adapted from international and national best practices that have been successfully promoted in Tanzania. Innovative designs and approaches included in this document that had not been introduced to Tanzania before have been pre-tested and piloted in different regions of Tanzania to examine the acceptability and suitability to different regions and cultures. There is a strong emphasis on the post construction activities to ensure regular and correct use and maintenance of facilities provided. Periodical monitoring and inspection is used as a tool to assess school performance and compliance and will be used as an incentive for prioritised funding allocation.

Given the fact that many schools are currently far from achieving acceptable levels of water, sanitation and hygiene, and may have no suitable facilities at all, because they lack resources, skills or adequate institutional support; achieving appropriate targets will often not be possible in the short term. This guideline is designed to reach the National targets in a phased way, this means the most urgent problems or those that can be addressed rapidly will be identified and targeted immediately, and other changes can subsequently be made as and when fund availability allowed.

1.3 The Scope of this Guideline

This guideline is developed based on the minimum conditions required for providing schooling with a healthy environment for schoolchildren, teachers and staff. This document deals specifically with water, sanitation and hygiene. The guideline is designed for use in low-cost settings where simple; affordable and replicable options can be promoted to contribute significantly to improving water; sanitation and hygiene conditions in schools.

Within the context of this document, the provision of water is addressed as the minimum requirements to enable hygienic behaviours (hand washing; personal cleansing and cleaning of sanitation facilities). The provision of having safe drinking water is a challenge but essential for children’s health and hence all schools should work to ensure its availability.

Sanitation in this document refers to safe disposal of excreta (human faeces and urine) through correct use of improved latrines (facilities that ensure hygienic separation of human excreta from human contact) and safe collection and disposal of solid waste and wastewater.

Hygiene in this document refers to the minimum hygienic requirements within the school premises and the promotion and education of sanitation and hygiene behaviour changes through the use of suitable IEC materials and hygiene education approaches for primary and secondary school children.

The word “school” is used in this document to include primary and secondary schools, boarding and day schools, rural and urban schools, and public and private schools. The common feature of all schools addressed by this guideline is that they are constrained by a severe lack of resources for infrastructure development.
The areas that are covered by this manual include:

- Minimum standard for School WASH
- Requirements for Sustainable School WASH
- Technical Options and O&M Requirements for School WASH Facilities
- Hygiene Education and Promotion
- Institutional Arrangements for School WASH
- Financial Arrangements for School WASH
- Parents and Community Participation in School WASH

1.4 Target Audience and the Use this Guideline

This guideline is divided into two parts: The General Guideline and a set of different toolkits and can be used by different users as follow:

<table>
<thead>
<tr>
<th>Table 1. Guidelines and toolkits</th>
</tr>
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<tbody>
<tr>
<td><strong>Document</strong></td>
</tr>
<tr>
<td>Users Sheets</td>
</tr>
<tr>
<td>The Guideline (this document)</td>
</tr>
</tbody>
</table>
| Tool Kit No.1: Assessment and monitoring tools | 1A: A simple matrix with assessment criteria developed to facilitate the assessment of WASH situation in schools. Each assessment criteria will be assigned with a score and this will help to assess the current situation in the schools and identify the level of intervention needed.  
1B: This toolkit is used by the LGAs and school inspector to follow-up on correct use of and compliance to the SWASH guideline & toolkits  
1C: This toolkit is used to monitor the SWASH situation internally by the school teachers and | Schools can use this to prepare their annual budget for SWASH improvement  
Central/local government for prioritised planning and budget allocation  
LGAS, Health/Education Officials; School Inspectors |
<table>
<thead>
<tr>
<th><strong>Tool Kit No.2:</strong> Technical Options for School WASH (in two parts)</th>
<th><strong>Tool Kit No.3:</strong> Sanitation &amp; Hygiene Education for Primary Schools; Handbook for Teachers</th>
<th><strong>Tool Kit No.4:</strong> Training Manual on the Use of the Guideline and its Toolkits</th>
<th><strong>Tool Kit No.5:</strong> Training Manual for Teachers on Hygiene Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical designs: Various technical designs for school water, sanitation and hygiene facilities will be selected from the existing ones that have already been promoted in Tanzania (by Ministries, international/national organisations)</td>
<td>Lessons Plan on Hygiene Education and Training Materials for Primary Schools</td>
<td>This toolkit is used to train and orientate key stakeholders on how to use the guideline and its toolkits correctly and effectively</td>
<td>This toolkit is used to train teachers on the use of the hygiene education guidelines (Toolkit No.3 above)</td>
</tr>
<tr>
<td>Bill of Quantity/ Cost Estimation for the selected SWASH facility options: This will form the basis for planning and budgeting purposes</td>
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<tr>
<td>O&amp;M guideline for the selected SWASH facility options: This aims to guide schools to make sure the constructed facilities will be correctly used, cleaned and maintained</td>
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<tr>
<td><strong>NGOs + Government agencies responsible for SWASH facilities construction</strong></td>
<td><strong>LGAs/schools to develop budget for SWASH facility</strong></td>
<td><strong>School teachers/parent representatives for construction supervision</strong></td>
<td><strong>Teachers or Teachers’ Training Institutes</strong></td>
</tr>
<tr>
<td><strong>Schools (teachers; management and pupils)</strong></td>
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</table>
2 Requirements for Successful and Sustainable School WASH

Sustainability of a project or an intervention means the continuation of its benefits and impact after the project itself has ended. The following are vital for sustainability of SWASH, it is important that these are taken into consideration when designing any intervention for SWASH

2.1 Comprehensive School WASH Programme

Without water and sanitation facilities, hygiene promotion and education in schools is difficult and has minimal impact. The provision of safe water and sanitation facilities is a first step towards a healthy learning environment. However, provision of infrastructure alone is not enough to guarantee the adoption of positive hygiene behaviour changes by school children. Similarly, teaching children facts about hygiene alone does not automatically lead to changes in their behaviour unless they have the opportunities to practice and adopt the positive behaviours that they acquired from the lessons.

The combination of facilities, good behavioural practices and education aims to a positive impact on the health and hygiene conditions of the school children. A comprehensive SWASH programme needs to plan for adequate infrastructure development as well as effective hygiene behaviour change education and correct use and maintenance of the provided infrastructure.

2.2 Appropriate and Affordable Technologies

Appropriate technologies: The provision of School WASH infrastructures will only be useful if they are suitable for and used by the pupils. Technologies introduced need to be socially and culturally acceptable to pupils of different ages or social background. For example, girl urinals might be suitable for primary school children but might not be accepted by adolescent girls who need more privacy; or VIP latrine might not be suitable for smaller school children because of its darkness. In some societies, where direct contact with human faeces is not acceptable, the introduction of latrines that require pit emptying might not be well received. In some cases children have not been brought up to use latrines at home, or there is no habit to use certain WASH facilities in the past for cultural reasons; both parents and children need to be involved in the planning and designing of SWASH programme to make sure that the concept of the new facilities is well understood and accepted.

Fig 1. Use of appropriate technologies
The availability of products and parts in the local market is the second determinant of continuity of use. When products are not easily available in the market and replacement parts are hard to find, sustainability of the intervention becomes even more challenging.

Affordability: Financial constraint is the major problem in most schools. Technical options presented in this guideline range from very simple/basic that meet minimum requirements to medium and more advanced options. In addition to social and cultural factors, schools need to take into consideration their budget availability to decide which options are most suitable and affordable.

2.3 The Home - School Linkage and Community Involvement

In order to achieve the maximum positive health impacts for children, the availability of safe water, sanitation facilities and good hygienic practices at home is equally important as it is at schools. Schools need to engage parents to ensure that WASH messages and behaviour changes are reinforced in homes. When parents are involved in school WASH activities, they are also reached directly with the same WASH messages that are taught to their children, making it more likely that behaviour will be reinforced at home, i.e. what is learned at schools can also be practiced at homes. Parents who are aware of the positive health impacts from safe water and good sanitation and hygiene are likely to give higher priority for sanitation improvement at home as well as at schools. The overall health impact of the school WASH will therefore be increased if sanitary conditions at home or in the community are also improved.

Fig 2. Home-school linkage
Village health workers, including hygiene promoters, can strengthen the link between school, home and community through meetings, health clubs and social events.

Possible activities for the outreach to families and the community are:

- putting up posters in the community or in households with hygiene messages that have been developed during hygiene lessons;
- setting up a school health club that takes up the tasks of organising activities in the community;
- inviting the parents or siblings for a role-play written and acted out by the pupils;
- involving the parents, not only those active in the Parent-Teacher Association, but also others, in the school sanitation and hygiene education activities such as the construction of new facilities or the operation and maintenance of existing facilities;
- giving the children homework or lessons that include survey work in their homes and the community, such as making a drawing of the way drinking water is stored in their homes, counting the number of latrines in the community, mapping the neighbourhood or making a community map with the different types of water and sanitation facilities;
- reinforcing the importance of using their knowledge and skill at home and in community.

The success of water, sanitation and hygiene promotion in schools depends heavily on the teachers' motivation and commitment to make it work. Teachers need to be regularly trained and supported with adequate teaching aids.

2.4 Clear Operation and Maintenance Arrangements

Inadequate planning for operation and maintenance (O&M) is a major obstacle to achieving sustainable WASH in Schools. Dirty facilities become unused facilities or can be a source of disease transmission. There are two aspects related to effective O&M of School WASH facilities: roles and responsibilities for O&M and funding sources. These two aspects need to be clearly set out; identified and agreed upon by the Schools before any intervention starts.

Many problems related to incorrect use and poor operation and maintenance occur because it is not clear who is responsible for the O&M. Each school needs a plan showing how to use facilities and who will clean them, when and how. For example: Will the school ask the parents or the students to pay a small fee to pay for upkeep of the facilities? If not, how will the O&M costs be covered? These issues need to be discussed and agreed with teachers, children and parents. Each school should have an O&M schedule with clear roles and task assigned to specific groups. For effective supervision, there needs to have a checklist for O&M which should be signed by the nominated Health Club members or teachers on duty responsible for school hygiene and sanitation.

Options for O&M of School WASH facilities may include:

- **Rota:** Groups of children take turn to clean the latrines. This arrangement works well provided that it is considered fair by all children (boys/girls; no discrimination).
- **Assigning latrines to a class or group of classes:** This arrangement is practical where schools have adequate latrines and can assign specific latrines/block of latrines to a class or a group of classes. These classes are using these latrines and responsible for cleaning them.
- **Hired cleaners/caretakers:** This is a simple and effective way to ensure proper maintenance and cleaning of SWASH facilities but in incurs a recurrent cost and therefore might not always be feasible.
For health and safety reasons, protective clothing (boots, gloves, masks, etc.) and suitable cleaning materials need to be provided. If children are responsible for cleaning of facilities, teachers or the School Health Club need to supervise and monitor the work.

Fig 3. Operation and maintenance – cleaning latrines
Table 2. Simple and Regular Cleaning and Maintenance Tasks

<table>
<thead>
<tr>
<th></th>
<th>Simple and regular cleaning and maintenance tasks may include:</th>
<th>Once a day</th>
<th>Once a week</th>
<th>Once a month</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water supply</strong></td>
<td>Cleaning drains / drainage area and removing visible garbage around water point</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checking for technical faults (for preventive maintenance)</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Drinking water</strong></td>
<td>Cleaning dippers and cups</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If the water does not come from an improved source, also ensuring that point of use water treatment is undertaken on a constant basis and the water treatment facilities are cleaned on a regular basis depending on the method used.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cleaning inside the water storage containers (for containers less than 5,000 Litres)</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Latrines and urinals</strong></td>
<td>Sweeping floor and washing floor / pan with soap and water</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cleaning walls</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Hand-washing facilities</strong></td>
<td>Removing visible garbage and draining/clearing puddles of water, cleaning drains/drainage areas, ensuring that soap and water are present</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Solid waste management and waste water disposal</strong></td>
<td>Collected from containers and disposed of or stored in appropriate containers in a single place.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Separation of solid waste</strong>: separation of different types of solid wastes at the source for appropriate disposal (eg paper and organic materials for composting, plastics and non biodegradable for reuse and recycling)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If burying or burning</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
**Funding for O&M:** For sustainable SWASH, funding requirements for O&M of School WASH facilities needs to be budgeted for and funding sources need to be identified and secured at the beginning of the school year.

Funding requirements for O&M depends on the specific needs of and affordability by each school, and may include: salary for cleaners/caretakers (if applicable); water/drinking water bills (if applicable); buying soap for hand washing, protective clothing and cleaning materials (liquid detergent; brush, toilet paper, etc.). Alternatively locally available, cheaper materials such as ash (for cleaning) or local brooms can be used. In addition, it is necessary to set aside a small amount for minor repairing or replacement as and when required.

**Best Practice on Mobilising and Managing Funds for School WASH**

Some schools set up a specific Fund for School Water and Sanitation with parents to raise money for the construction and to organise the operation and maintenance of the School WASH facilities. Parent representatives are jointly responsible for the use and management of this fund. All donation/contribution and expenditures are recorded. Every quarter, a financial statement on the use of the Water and Sanitation Fund is prepared and published on the school notice board.

Contributions can be in the form of materials, labour, cash or all three and the funding sources can be:

1. Monthly or annual contributions from parents
2. Community and/or Private donation
3. Contribution from the general school maintenance budget (Capitation Grant)
4. Contribution from the Village Government Development Grants
5. Contribution from income-generating activities
3 Minimum Standards for School WASH

The minimum standards set out in this section were developed on the basis of the combination and harmonisation of standards stipulated by the Government for School WASH (MOEVT and MOHSW). Given the fact that many schools are currently far from meeting the national targets, the minimum standards below were set to support the achievement of the national targets in a phased way, this means the most urgent problems or problems that can be addressed quickly will be identified and targeted first; further changes or improvement will be carried out when financing resources allows. The achievement of these minimum standards is the first step towards achieving the national targets and MKUKUTA target for School WASH.

3.1 Water Supply

- All schools should have access to a protected water source within their premises. Water sources (such as shallow wells) must be at least 50 meters away from the toilets or waste water sources/drainage depending on soil conditions of the area.
- Water should be always available (e.g. water point does not go dry in the dry season, is always under repair, not functional, tap broken or pipe blocked, etc.) and sufficient for hand-washing, cleaning and self-cleansing.
- Safe drinking water should be available throughout the school year; at least one litre of water per day for each pupil should be provided.
- If water is stored in school, containers should be clean and covered, and there should be a tap from the container or a way to safely remove the water without contaminating it.
- The water point design should be appropriate and accessible for small children and people with disabilities.
- There should be a working drain/soak pit from the water point

3.2 Latrines and Urinals

- Latrines designs should at least meet the minimum requirements included in this SWASH Guideline (toolkit number 2).
- Latrines should have a washable slab that is well secured over a pit that has been lined at least for the top 0.5m depth (further lining may be required for unstable soils, or where pits are to be emptied).
- Latrines should allow emptying and the possibility of reuse of sludge/structures especially for schools with inadequate space for rebuilding.
- Pupil/latrine ratio: This is currently not clear, an agreement to be reached by four key Ministries (please see annex 2 for further details)
- Each school should have separate latrine blocks for girls and boys. These blocks should be a minimum of 10m apart for the purposes of privacy and security and should have a privacy wall in front of the doors.
- Separate urinal/latrine for children from 4-6 years old
- There should be a separate block of latrines for teachers; with one drop-hole for male and one for female teachers.
- Latrines/urinals are in good condition and used by all.
- Latrines/urinals are child friendly and gender sensitive.
- There should be at least one drop hole available and suitable for pupils with disabilities, preferably one for boys and one for girls and these latrines should meet minimum requirements for accessibility.

- There should be a safe and clean unit where girls can bathe or clean themselves during menses; this should be compulsory for boarding schools and good practice for day schools.

- Cleanliness: latrines/urinals are free from visible excreta, stagnant urine and flies. There must be provision of water within or near the latrine for self-cleansing.

- Latrine doors should be lockable to ensure privacy for the users.

- Latrine doors and handles should be in easy reach for pupils of different age and suitable for children or adults with disabilities.

- Soap and water should be provided near the latrine for hand washing and should be within easy reach of the pupils.

- Latrines should be left open (not locked) when pupils need to use them.

- There should be cleaning materials available for latrines/urinals.

- There should be working soak pit or drainage for waste water.

3.3 **Hand-washing Facilities**

- All schools should have at least one functional hand-washing facility

- All hand washing points should have adequate clean water and soap or ash

- Hand washing facilities should be located in convenient and accessible location

3.4 **Solid Waste and Waste Water Disposal**

- All schools should have bins or other facilities for solid waste collection and disposal

- There should be facilities available in girls latrines or washroom for sanitary pad disposal

- Solid waste should be collected daily within the school premises and disposed safely

- Wastewater: There should be drainage or soak-pit near water/hand-washing point.

- Urine to be collected and disposed safely

3.5 **Maintenance of School WASH Facilities**

- School yard and surrounding areas should be clean (no excreta, no stagnant urine, and no visible solid waste).

- Clean classrooms and school compounds (waste is disposed appropriately and waste water is drained).

- All schools should use the monthly checklist for school WASH (Tool kit 1C)

- There is a maintenance fund e.g. for latrine cleaning, buying soap, cleaning materials and there should be arrangements for maintenance of SWASH facilities.

- The task of cleaning or maintaining sanitary facilities should be shared equally among girls and boys, and all socio-economic groups free from discrimination (if there is no caretaker).

- Boys and girls should both work equally to collect water.
3.6 **Hygienic Practices**

- All girls and boys practice hand-washing with soap or ash at critical times
- All girls and boys use the school latrines/urinals
- All students and teachers are aware of the health benefits of hand washing with soap/ash.
- Pupils can demonstrate proper hand washing and explain critical times and reasons

3.7 **Hygiene Education in Schools**

- Hygiene education is a part of school curriculum
- Hygiene education materials are available and suitable for children of different ages
- Teachers are trained regularly on methodologies and approaches in school hygiene education
- Schools have activities to provide and discuss with parents information on sanitation and hygiene.
- Teachers involve children in extra-curricular hygiene activities (e.g.: designing project or campaign on hygiene promotion in schools or at home)

3.8 **School Kitchen, Food Handling and Dining Areas**

- The school kitchen and dining hall should meet minimum hygienic standards (e.g. cleanable floor, adequate water supply, ventilation, free from vermin and rodents, separate storage of raw and cooked food, etc).
- Location of the kitchen should be away from sources of contamination like latrines, disposal sites, otherwise there should at least be an intervening ventilated space.
- If the school provides food, it should be prepared with safe water and by a cook who practices hand washing with soap before preparing and serving food. Kitchen staff that are having infectious diseases must not handle food.
- All food handlers should undergo medical examinations every six months and those who are found to be sick should be treated and recovery ensured before resuming their duties.
- Food should be handled and prepared with utmost cleanliness: school kitchens should be clean and meet minimum hygienic standards.
- Separate tasks / spaces (i.e. for preparation and clean up) in the kitchen and dining areas in order to prevent contamination of food.
- Kitchen utensils must be washed with warm water and detergent.
- Contact between raw foodstuffs and cooked food must be avoided.
- Food should be cooked thoroughly and stored at a safe temperature prior to serving.
- Safe water for washing fresh raw ingredients should be used.
- Particular care to only provide hot food is needed during cholera outbreaks as poor food hygiene is a major means of transmission.
- Wherever possible a dining area with seats and tables with washable surfaces should be provided for students to eat their lunches.
- Hand-washing facilities with soap should be provided near the dining area.
• In or near the dining area, have an area designated for disposal of food scraps and return of utensils.

• If students participate in kitchen duties (such as fetching water, assisting with preparations, serving, cleaning up), then they need hygiene training and monitoring.

• If students eat at desks in the classrooms, instil a routine of washing down desks before and after eating, in conjunction with hand-washing; also be sure to wash classroom floors.
4 Institutional Arrangements for School WASH

4.1 School WASH Institutional Set up at Ministry Level

School Water, Sanitation and Hygiene is a multi-sector area whose coordination is weakened by inadequate direction for implementation and lack of adequate guidelines specifying roles and responsibilities of each player. Furthermore, SWASH interventions have been implemented by many players from different ministries, partners and agencies without a clear coordination structure.

The recent Memorandum of Understanding signed by four key Ministries responsible for School WASH (MOHSW, MOEVT, PMO-RALG and MOWI) provides more clarity in roles, responsibilities and relationships between the four key Ministries responsible for School WASH. Figure 4.1 below summarise the content of the MOU and illustrates the relationship between the 4 key Ministries.

Fig 4. Revised S&H MoU coordination structure
### 4.2 Roles and Responsibilities of Key Stakeholders

**Table 3. Roles of responsibilities of key stakeholders**

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Roles and Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>National level</strong></td>
<td></td>
</tr>
</tbody>
</table>
| MOEVT | - Lead implementation of WASH in schools  
- Jointly Chair the Technical Working Group for School WASH with the MoHSW  
- Develop and review policy guidelines for School WASH in collaboration with the MoHSW  
- Participate in standards formulation for school water, hygiene and sanitation  
- Facilitate training of district and school staff in good SWASH practice  
- Develop/review materials for inclusion of WASH in the school curriculum  
- Review curriculum of teachers to include the SWASH package  
- Supervise and monitor implementation of national policies, standards and use of national guidelines by LGA Education Department  
- Supervise and monitor implementation of national policies, standards and use of national guidelines by LGA Health Department  |
| MOHSW | - Chair the National Sanitation and Hygiene Steering Committee  
- Chair the National Sanitation and Hygiene Technical Committee  
- Jointly Chair the Technical Working Group for School WASH with the MoEVT  
- Coordinate the formulation of policy, guidelines and strategies for hygiene and sanitation  
- Prepare Acts and Regulations relating to sanitation, hygiene and water quality  
- Set appropriate and realistic standards and enforce them (to protect public health) for sanitation and hygiene and regulating processes in collaboration with MoWI  
- Provision of technical assistance to LGAs  
- Coordinate and follow up of disbursement and use of the funds allocated for sanitation  
- Harmonise and promote participatory approaches for sanitation and hygiene services  
- Supervise and monitor implementation of national policies, standards and use of national guidelines by LGA Health Department  |
<table>
<thead>
<tr>
<th><strong>PMO-RALG</strong></th>
<th><strong>MOWI</strong></th>
<th><strong>Development Partners (Donors, INGOs/NGOs; FBOs; CBOs.)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring school WASH in collaboration with districts</td>
<td>Coordinate planning of sanitation and LGA hygiene projects and ensure clarity of responsibilities for operation and maintenance</td>
<td>Capacity building to support: “a gradual and sustained process of strengthening the capacities of individuals, organisations, and society” recognizing the type of capacity needs at each of these levels and the interrelationship between the levels</td>
</tr>
<tr>
<td>Develops guidelines on budgets.</td>
<td>Develops guidelines on budgets.</td>
<td>Supporting provision of hygiene and environmental sanitation services in schools</td>
</tr>
<tr>
<td>Coordinates information on the basis of which the distribution of LGAs funds are decided</td>
<td>Coordinates information on the basis of which the distribution of LGAs funds are decided</td>
<td>Researches</td>
</tr>
<tr>
<td>Together with MoEVT monitor and supervise construction of school sanitary facilities</td>
<td>Together with MoEVT monitor and supervise construction of school sanitary facilities</td>
<td>Financing</td>
</tr>
<tr>
<td>Coordinate institutional streamlining and capacity building for LGAs e.g strengthening of DWSTs</td>
<td>Coordinate institutional streamlining and capacity building for LGAs e.g strengthening of DWSTs</td>
<td>Monitoring and Evaluation</td>
</tr>
<tr>
<td>Supervision and monitoring the performance of LGAs and private sector</td>
<td>Supervision and monitoring the performance of LGAs and private sector</td>
<td></td>
</tr>
<tr>
<td>Ensure all indicators and reporting system are adhered to by LGAs</td>
<td>Ensure all indicators and reporting system are adhered to by LGAs</td>
<td></td>
</tr>
</tbody>
</table>

**Regional Level**

<table>
<thead>
<tr>
<th><strong>Regional Secretariat</strong></th>
<th><strong>Supervision and monitoring of LGAs on efficiency and effectiveness of use of resources related to WASH in schools</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Collating information for reporting to national level to various Ministries</td>
<td>Collating information for reporting to national level to various Ministries</td>
</tr>
<tr>
<td>Provision of technical assistance to LGAs for implementation of WASH in schools</td>
<td>Provision of technical assistance to LGAs for implementation of WASH in schools</td>
</tr>
<tr>
<td>Coordinate planning, budgeting and reports of LGAs</td>
<td>Coordinate planning, budgeting and reports of LGAs</td>
</tr>
</tbody>
</table>
### Local Council Level

<table>
<thead>
<tr>
<th>Local Government</th>
<th>District Water and Sanitation Team (DWST)</th>
</tr>
</thead>
<tbody>
<tr>
<td>★ Provide resources and guidance for setting; achieving and maintaining the targets set by schools</td>
<td></td>
</tr>
<tr>
<td>★ Advocate at national and district levels for equitable and adequate resources</td>
<td></td>
</tr>
<tr>
<td>★ Coordinate local environmental health service providers</td>
<td></td>
</tr>
<tr>
<td>★ Public works departments to ensure that sufficient technical support is provided</td>
<td></td>
</tr>
<tr>
<td>★ Monitoring and supervision of implementation of water, sanitation and hygiene guidelines in schools as part of the routine monitoring and inspection process</td>
<td></td>
</tr>
<tr>
<td>★ Provide training and advice to teachers, head teachers and other school staff and school committees</td>
<td></td>
</tr>
<tr>
<td>★ Ensure correct and cost effective design and construction of school WASH facilities</td>
<td></td>
</tr>
<tr>
<td>★ Ensure correct and cost effective maintenance of school WASH facilities and training of local school caretakers and maintenance staff</td>
<td></td>
</tr>
<tr>
<td>★ Organise regular on job training or tailor made courses for teachers responsible for hygiene education</td>
<td></td>
</tr>
<tr>
<td>★ Share reports on district budgets for sanitation among stakeholders to enhance transparency and accountability</td>
<td></td>
</tr>
<tr>
<td>★ Plan and coordinate school WASH competitions</td>
<td></td>
</tr>
<tr>
<td>★ Assessment of school WASH facilities using the developed tools (tool number 1), (once a year)</td>
<td></td>
</tr>
<tr>
<td>★ Ensure procurement procedures are adhered to</td>
<td></td>
</tr>
</tbody>
</table>

**The main roles of DWST:**

- DWST has to provide the day to day leadership and coordination for Water and Sanitation activities in the District.
- The team plans and manages the Council’s Water and Sanitation programme,
- Serves as the communication link with all stakeholders in the District, and supervises and supports Service Providers.

**Detailed tasks of DWST:**

- Inform and consult District Council Structures e.g. Full council, Education/Health/Water Committee, departments heads (DMT), District Tender Board.
- Coordinate and Liaise with Ministry of Water and Livestock Development (MoWLD), donors, NGOs and External Agencies.
- Collect and analyze data on water and sanitation service levels, water points and needs.
- Keep records and develop a data base/inventory on all W&S facilities.
- Prepare District Water and Sanitation Plan (DWSP) and annual plans.
- Promote awareness on Rural Water Supply and Sanitation Projects (RWSSP) and facilitate community demand.
- Appraise applications and proposals/Facility and Management Plan (FMPs) produced by the community.
- Consolidate community proposals and prepare consolidated budget.
- Plan, coordinate, and manage financing of sub – project implementation technical evaluation, preparation and tender documents and contracts, etc.
- Coordinate training of Services Providers, extension workers and communities.
- Supervise and monitor Service Providers and extension workers.
- Supervise and certify construction works and ensure quality standards.
- Administration e.g. contracts, progress reports, bid evaluation report.
- Trouble shooting – help solve conflicts and problems at different levels
- Organize monitoring and evaluation of Water and Sanitation projects.
- Provide continuous backup support to communities.

**Ward Level**

<table>
<thead>
<tr>
<th>Ward Development Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordinate planning and budgeting of school WASH</td>
</tr>
<tr>
<td>Coordinate all key organisations supporting SWASH in the ward</td>
</tr>
<tr>
<td>Follow up and monitor sanitation activities in schools</td>
</tr>
</tbody>
</table>

**Village Government Level**

<table>
<thead>
<tr>
<th>Village Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implement, monitor and support the development of improved school WASH facilities and practices and report to the village/mtaa assembly on progress</td>
</tr>
<tr>
<td>Ensure the Health &amp; Environment committee and or the Water Committee address SWASH as part of their core responsibilities</td>
</tr>
<tr>
<td>Facilitate resource mobilisation for school development including school WASH</td>
</tr>
<tr>
<td>Planning and budgeting on village funds for SWASH at community and school level</td>
</tr>
<tr>
<td>Prepare village/mtaa financial reports and present to communities and the LGA through village/mtaa meeting after every three months – on all progress and financial sources used for SWASH</td>
</tr>
</tbody>
</table>

**Water and Sanitation Committee at village level (WATSAN Committee)**

- Planning of water supply and hygiene & sanitation activities
- Coordination of community meeting/assembly
- Mobilization of community for participation in planned activities
- Monitoring on performance of Facilitation Service Provider(FSPs) and Technical Service Providers(TSPs)
- Contract management with local artisans or service company
- Set of regulation/rule in use of facilities
- Collection of capital contribution and tariff
<table>
<thead>
<tr>
<th>Sanitation Committees at village level</th>
<th>School Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Disclosure of information to community</td>
<td>● Make sure minimum standards and targets for School WASH are met</td>
</tr>
<tr>
<td>● Arrangement of cleaning and maintenance of the water point sites</td>
<td>● Create enabling environment to encourage teachers and pupils to meet the set standards</td>
</tr>
<tr>
<td>● Promotion of awareness and action on hygiene, sanitation and HIV/AIDS</td>
<td>● Make sure hygiene education is part of school teaching activities</td>
</tr>
<tr>
<td>● Coordination between Village Government, Village Health Committees, and other relevant organizations</td>
<td>● Develop and enforce school rules and regulations to promote good hygiene and a healthy school environment</td>
</tr>
<tr>
<td>● Communication between DWSTs, FSPs and TSPs.</td>
<td>● Encourage parents-teachers to actively get involved in WASH development</td>
</tr>
</tbody>
</table>

**School Committee**

- To prevent water and sanitation diseases, through community sensitization, and mobilization on sanitation and hygiene practices
- Coordination of community meetings in relation with hygiene and sanitation issues
- To supervise construction of latrines, and to ensure every household has latrine
- Promotion of awareness and action on hygiene, sanitation and HIV/AIDS
- Coordination between Village Government, Village Health Committees, and other relevant organizations
- Communication between DWSTs and Village leaders
- To monitor hygiene and sanitation issues at village level

**School Board**

- Plan, budget with any finances available for SWASH from any source
- Prepare and share school financial reports with the school and community on the use of expenditure on SWASH from the school capitation grant or other funding
- Act as a catalyst of change in the community on matters related to WASH

- Develop plans for school development including school WASH and mobilise resources
- Monitoring and ensure proper O&M of school SWASH facilities
- Mobilise and approve funds for SWASH
- Ensure procurement procedures are adhered to

**Teachers**
- Participate in specialised training for sanitation and hygiene education
- Guide pupils to adopt good hygiene behaviour changes through hygiene education programme
- Motivate pupils to participate in extra-curricular activities and serve as the catalyst for hygiene promotion at home and in the community
- Supervise and promote proper use and maintenance of WASH facilities and the health school environment
- To teach and assess exercise based on school and hygiene topics

**Pupils**
- Use school WASH facilities correctly and responsibly
- Follow good hygienic practices and behaviour changes
- Contribute ideas in designing and construction of WASH facilities
- Participate in school campaigns, competitions or projects on WASH
- Play an active role in cleaning and maintenance of WASH facilities (where appropriate)
- Participate in development of hygiene messages

**Parents/community**
- Educate/encourage children to practise good hygienic practices
- Contribute to the construction, rehabilitation and O&M of WASH facilities in cash or in kind as and when required
- Actively participate in School WASH facilities development (planning; selection of appropriate technical options, construction supervision, quality control, fund raising, etc.)
- Regular monitoring of SWASH facilities (at least twice a year)

**Private sector**
- Advise on technical designs and materials appropriate for the location
- Provide cost efficient and quality services
- Undertake quality construction of SWASH facilities
- Undertake maintenance of SWASH facilities if contracted to do so
5 Technical Options for Water and Sanitation

This section briefly describes technical options for water supply and sanitation that are suitable to varying context and conditions of different localities in Tanzania and their advantages and disadvantages. For detailed designed and cost estimation of each option, please refer to Tool Kit No. 2 on Technical Options for School WASH Facilities.

5.1 Safe Drinking Water & Water Treatment

It is important that water used for drinking in the school is safe water. Safe drinking water means that it is free from pathogens such as bacteria, viruses and cysts, which can cause illness.

One way to ensure that water is safe is to undertake Point of Use (PoU) water treatment and Safe Storage. PoU water treatment means that the water is treated at the point of use. There are different methods that can be used, including: boiling; filtering through a cloth with settling and decanting; chlorination; filtering through a ceramic bucket filter, siphon filter or candle filter; use of bio-sand or other sand filters; solar disinfection and other methods.

Fig 5. Ceramic filter to treat drinking water
Fig 6. Boiling of drinking water

Once the water has been treated, or if it comes direct from a protected source, it is important to store it in a safe storage container, which is cleaned regularly and kept covered. If an implement is used to remove the water from the container then it must be a single container that is not used for any other purpose. Refer to the Toolkit 2 for further information on the different PoU water treatment and safe storage options.

5.2 Water Supply Options

5.2.1 Protected springs

These are water source where water has percolated through the soil layers and re-appears from the ground as a spring which may flow away and collect to form streams, rivers or lakes downstream. Spring water is often free from pathogens when the water comes out from the ground and so if the spring is protected and if the dissolved minerals are within permitted parameters they often provide good quality drinking water.

Environmental degradation and other human and animal activities are the major cause for the decrease of quantity and quality of spring water. Storm water (runoff) from upstream should be diverted away from the spring or directed to ground water recharge ditches which may even increase the discharge of the spring. No cutting of trees or farming should be allowed above the spring as these can reduce the yield of the spring.
Proper management of the spring catchment environment can ensure a sustainable water source from a particular spring. Appropriate civil construction at the spring will provide adequate protection against contamination from both human and animal activities during acquisition of water from the spring. A spring may be protected by constructing a catchment box with a controlled outlet for safe communal water collection. The spaces around the catchment box should be packed with impermeable materials such as pebble or gravels for water aeration and seepage.

5.2.2 Shallow Wells

**Shallow wells**: a shallow or hand dug well is a simple method of making use of groundwater runoff. They can be constructed and maintained with local resources at very low costs. Shallow wells are suitable in areas with a high groundwater table and good water quality. The technology is relevant if there is enough water in the soft formation within 10-12 m from surface. Dug wells are inappropriate for areas prone to flooding. Simple treatment technologies have to be used if water quality does not meet the required standards. A ‘chain and bucket’, a hand-pump or rope pump or a motor pump can be used for the extraction of water from a shallow well. Pump type depends on depth to water table.
It is important to have a cover for the well to prevent foreign matter, small animals or insects falling into the well. This cover has to be designed so that it can be removed completely or partially when drawing water. Safety issues need to be taken into consideration in designing the wells (cover the wells; reasonable height) to prevent young children from accidentally falling into the wells. In schools where shallow wells are used, latrines and waste water sources or soak pit must be located at least 15 meters from shallow wells.

5.2.3 Deep Boreholes

**Deep boreholes with hand-pump or electric pumps:** Deep borehole is suitable in areas where surface water sources and shallow aquifers tend to dry up during the dry season. Moreover the quality and cost involved in the treatment of surface water sources makes it advantageous to explore for deep groundwater. In most cases, deep ground water provides safe water for drinking except in areas where excessive levels of minerals are present.

Borehole drilling is a detailed stage of groundwater exploration. Initial activities consist of a desk study on the hydro-geological conditions of the area under consideration, a field reconnaissance survey and possibly a geophysical survey before site selection is determined for drilling. The drilling methods employed depend on the hydro-geological conditions of the site. Boreholes can be constructed by machine or by hand operated equipment.

5.2.4 Rainwater Harvesting

**Rainwater harvesting:** Suitable in areas with medium to high annual rainfall and in schools with relatively large roofing areas. The system consists of the roof of the building from where rain water flows through gutters and downpipes into collection tanks. Normally water may be abstracted from the tank by one or multiple tap(s); in the case of large tanks a motorised pump, hand-pump or a bucket and rope system may be used. Rainwater is preferably collected from roofs made of metal sheets or tiles. A thatched roof will fail to collect water effectively, lead to colouring of the water and is likely to make the water unpleasant to taste. The gutters and downpipes are required to channel rainwater from the roof to the storage tank. Gutters can be made of local wood or bamboo and, downpipes can be galvanised iron or PVC pipes. Gutters should slope evenly towards the down-pipe otherwise water can spill out and pools of water can form breeding places for mosquitoes. Rainwater collection tanks can be made from locally made materials (earthenware jars) or plastic tanks (e.g.: Afritank/Simtank), circular ferro-cement tanks / jars or plastered brick or cement ring tanks (under or above ground)
First flush diverter: It is necessary to divert the first flow of water from the catchment surface away from the storage tanks as dust, dead leaves and bird droppings may fall on the roof during dry periods, and these can carry dangerous and infectious diseases or contamination (unwanted materials/elements). This can be taken care of in the design such that the pipes or gutters are detachable from the collection tank, and the first runoff water from the shower is allowed to run to waste. Runoff water can be made to go through a small filter, consisting of gravel, sand and charcoal or a plastic mesh, before entering the storage tank in order to remove unwanted materials/elements.

![Fig 12. Rainwater harvesting](image1)

![Fig 13. Charco dam](image2)

5.2.5 Small Dams or Charco Dams

These are reservoirs for storing water, constructed in or adjacent to watercourses or within catchment areas, to store stream flow or surface runoff. Small dams are constructed by excavation, embankment or a combination of both and are typically designed to store 3,000 to 5,000 cubic metres of water, for one to two years storage. In the past dams were used for livestock water supply, however due to increased depletion of water resources in the country, this source could be used for schools especially if the land and terrain allows for runoff catchments. Small dams are subject to water losses through evaporation and seepage. Choosing less-exposed sites will reduce evaporation by wind action. Seepage can be reduced by choosing a site that has clay soil base.

Sealing of small dams to control seepage can be done, but is expensive, typically clay, plastic membranes or soil cement are used to seal small dams. Watershed protection is essential to reduce silting and pollution of the small dam. Generally, water from a dam will require a treatment as for any other surface water source, therefore the provision of simple treatment methods such as sand filtration should be considered when a small dam water is provided for a school. Ideally, the watershed should be vegetated and livestock and human activity excluded by fencing. A buffer strip of at least 30 meters width planted with grass, should be used where surface runoff enters the small dam to reduce silt load and rubbish, and the buffer strip should also be within the fenced area. Decision makers and community need to make choices on the water supply sources based on critical analysis of the feasibility of the available options.

5.2.6 Piped Water

A piped public water supply system often includes a number of taps or domestic point (DP) or stand pipes. The taps can be a globe or a self-closing type. Tap stands include a service
connection to the supplying water conduit, and a supporting column. The taps can be a globe or a self-closing type. The column or wall may be of wood, brickwork, dry stone masonry, concrete. Some tap stands have a regulating valve in the connection to the mains that can be set and locked to limit maximum flow. A water meter may also be included. A solid stone or concrete slab or apron under the tap and a drainage system must lead spilled water away and prevent the formation of muddy pools. A fence may be needed to keep cattle away. Tap stands are suitable in areas where piped systems are already in place.

Fig 14. Piped scheme to a domestic point

A tap stand can become damaged: through tampering or insufficient maintenance, or suffer from poor drainage. Taps need to be turned off properly after use to prevent wastage. Tapstands at the tail end of a piped system often have insufficient water pressure.

5.3 Sanitation Options
5.3.1 Latrine

Basic/Simple Options

Improved Pit Latrine with Sanplat: Generally, the latrine has three parts these are pit, floor and superstructure. The improvement referred to in the name is through the provision of impervious floor slab namely SanPlat. SanPlat stands for sanitary platform and slab that ensure hygiene and child safety. The slab is made of concrete materials and can be pre-casted in a plastic mould that gives an attractive shape and smoothness of the slab. The SanPlat may be of different sizes. It can also be constructed using a wooden frame. The slab can either be reinforced or not (if it is a domed slab). In addition it has several advantages: washable surface and drop hole cover that has handle, foot rest, tight lid against smell and flies, small drop hole (28cm x 14cm) which provide safety to all users including children. Sanplat are often made to be re-used once the toilet is demolished or abandoned. The pit can be a circular or square shape, in case of collapsible soil; lining should be done using locally available materials. In this case burnt

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3 Technical options presented in this section are based on the Ministry of Health's definition of Improved latrines
bricks, cement blocks, rock stones, trapezoidal blocks, woven wood or plastic food sacks with soil, can be used.

**Potential problems:** Poor quality of the floor slab due to inappropriate materials, improper ratio and curing may lead to reduced strength. Rough surface of the slab can be caused by inadequate shaking of concrete and inadequate water ratio during casting. Rough surface of the slab makes cleaning more difficult and the slab can remain soiled.

**Areas of use:** Sanplat latrines are not suitable for areas with high ground water levels or areas prone to flooding, areas with bedrock near surface, areas with very loose soil (as this would require the pit to be lined which would make it expensive) or densely populated areas where each household has its own well which makes it difficult to maintain an adequate distance between latrines and wells.

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**Fig 15. Simple pit latrine for schools (no pipe)**

**Fig 16. Ventilated improved pit latrine**

**Pit Latrines with Ventilation (VIP latrines):** VIP latrines are designed to reduce two of the problems frequently encountered by traditional latrine systems: the smell and the insect production. A VIP latrine differs from a traditional latrine by the inclusion of a vent pipe covered with a fly screen. Wind blowing across the top of the vent pipe creates a flow of air that sucks out the foul smelling gases from the pit. As a result fresh air is drawn into the pit through the drop hole and the superstructure is kept free from smells. The vent pipe also has an important role to play in fly control. Flies are attracted to light and if the latrine is suitably dark inside they will fly up the vent pipe to the light. They cannot escape because of the fly screen, and so they are trapped at the top of the pipe until they dehydrate and die.

**Potential problems:** VIP, as other pit latrines, has a problem of causing underground water pollution and the cost of construction is relative high as compared with improved traditional pit.
latrine due to vent pipe, it needs to be kept dark as a result children may be afraid to use the latrine because of the dark or out of fear of falling into the pit, it requires regular cleaning and replacement of fly screen and the toilet does not control mosquitoes.

**Areas of use:** It is suitable in areas with a low water table, in rural and urban areas, provided the space is available for re-construction of new one, once the first one is full.

**Double Vault Latrines (two alternating pits):** The double vault latrine has two shallow pits, each with their own vent pipe but under only one superstructure. The cover slab has two-drop holes, one over each pit. Only one pit is used at a time. When this one is full, its drop hole is covered and the second pit is used. After a period of at least one-year, the contents of the first pit can be removed safely and used as a soil conditioner/fertiliser where culturally acceptable. The pit can be used again when the second pit has filled up. This alternating cycle can be repeated.

**Potential problems:** Bad quality of the floor slab due to inappropriate materials or improper curing of concrete may cause problems. Inferior quality fly screens get damaged easily by the effects of solar radiation and foul gases. Improperly sited latrines can get flooded or undermined. Children may be afraid to use the latrine because of the dark or because of fear of falling into the pit. If the superstructure allows too much light to come in, flies will be attracted by the light coming through the squat hole and may fly out into the superstructure; this may jeopardise the whole VIP concept. Odour problems may occur during the night and early morning hours in latrines relying more on solar radiation for the air flow in the vent pipe than on wind speed. Leakages between pits can occur because the dividing wall is not impermeable or the soil is too permeable.

In hard or rocky soils it may be impossible to dig a proper pit. Pits should preferably not reach groundwater level and latrines must be 15 to 30 metres away from ground and surface water sources. VIP latrines cannot prevent mosquitoes breeding in the pits. People may not be able to afford the higher costs for construction of a VIP latrine in comparison to a simple pit latrine.

**Areas of use:** These types of latrine are particularly suitable for areas of water scarcity. Building the twin pit latrine is more practical in areas where the latrines can not be rebuilt in another location when they fill up or where it is not planned to empty the filled latrine pits.
Medium Level Options

**Ecological Latrine or Double Vault Compost Latrine:** The double-vault compost latrine consists of two watertight chambers (vaults) to collect faeces. Urine is collected separately as the contents of the vault have to be kept relatively dry. Initially, a layer of absorbent organic material is put in the vault and after each use, the faeces is covered with ash (or sawdust, shredded leaves or vegetable matter) to deodorize the faeces, soak-up excessive moisture and improve Carbon/Nitrogen ratio, which ensures that sufficient nitrogen is retained to make a good fertiliser. When the first vault is three quarters full, it is completely filled with dry powered earth and sealed so the contents can decompose anaerobically. The second vault is used until it is three quarters full and the first vault is emptied by hand, and the contents are used as fertiliser. The vaults have to be large enough to keep faeces for at least a year in order to become pathogen free. The superstructure is built over both vaults with a squat hole over each vault that can be sealed off. The latrine can be built anywhere as there is no pollution coming from the watertight chambers to pollute the surroundings. Where there is rock or a high water table, the vaults can be placed above ground.

**Potential problems:** Proper operation needs full understanding of the concept. This is often lacking and as a result, for instance, contents are left too wet, making the vault difficult to empty and malodorous. Where people are willing to use the contents as fertiliser, they may not allow sufficient time for the contents to become pathogen free.

**Area of use:** Ecological latrines are constructed above ground; they are suitable for densely populated areas where the risk of ground water pollution from pits to drinking water sources is high or areas where the water table is high, such as flood plains or coastal areas, above ground chambers will ensure protection from rising water in pits and ground water pollution. This type of latrine is particularly suitable to areas of water scarcity or areas where people are willing to use human excreta as a fertiliser. This type of latrine is however not appropriate where water is used for anal cleansing.
Pour Flush Latrines: There are two types of pour flush latrine which are commonly known. The first type of latrine is similar to simple pit latrines, but instead of having a squatting hole in the cover slab, they is a squatting pan with a water seal. In the simplest type, excreta falls directly into the latrine pit when the pan is flushed with a small quantity of water. The other type of pour flush latrine is known as an off set pour flush latrine. This type can be connected at a later stage with either a septic tank, the effluent from which can be disposed of by means of subsurface-soil absorption, or a small-bore sewer system. The pour flush latrine is a specially designed water-sealed bowl, which requires 1.5 – 2 liters of water for flushing the excreta. This water seal latrine eliminates entry of odour and prevents rodents. This pour flush latrine consists of a single pit either just below the bowl (onset type) or may be offset from the bowl (offset type) using the pour flush type bowl (pan and trap). In order to minimize the amount of water to be used, at the same time ensuring latrine works properly, the connecting pipe is always laid at a slope of 1:30 and finishing surfaces

Potential problems: Water or flushable materials for anal cleansing is required. If non-flushable materials (newspaper, corn cob leaves, etc.) are used, there needs to have waste bins in all latrines for safe disposal of anal cleansing materials to avoid clogging of system

Areas of use: It is most suitable for areas where there is a sufficient and regular supply of water. The pits are usually less deep than for VIP latrines and therefore this model is also more suitable where digging is difficult

Fig 19. Pouring water into a pour flush latrine

Fig 20. Pour flush latrine to pit
**Advanced Level Options**

**Flush Toilet Connected to Septic Tank or Sewer:** Flush toilet is interchangeably used with water closet (WC). It is a permanent and hygienic way of human excreta disposal if properly used. It can be a reliable sanitary facility for schools and other public and private buildings. Water is a means of conveying faecal material and urine from a squatting pan to the septic tank in this option – squatting type is mostly preferred for public buildings and schools.

![Image of flush toilet connected to septic tank or sewer](image)

**Fig 21. Pour flush to septic tank**

**Potential problems:** Similar to pour flush, the latrine is limited to be constructed in areas where water or any other flushable materials are available. It is unsuitable where solid anal cleansing materials are used.

**Areas of use:** It is most suitable for areas where there is a sufficient and regular supply of water. Also in areas where there is future possibility of connecting to sewerage system.

**Biogas-latrines:** Biogas latrines are integrated units, consisting of ventilated improved pit latrines, with septic tanks attached. The septic tanks, which serve as bio-digesters, differ from normal septic tanks in that processing is carried out in an anaerobic environment. The treatment of waste is more thorough than in a normal septic tank, and there is an outlet for the biogas produced in the process. Bio-latrine units differ in size depending on several factors including the quantity of materials being put into the latrine or the number of users; the climate, since temperature differences may require variation in retention time of the feed stock; the nature of the user community, and social and economic conditions affecting diet. The process of excreta digestion is anaerobic, therefore, biogas and digested slurry are the main products. While biogas is used for energy purposes, slurry is applied on soils to improve fertility.

**Potential problems:** It is relatively expensive when compared to other on-site sanitation options. It is difficult to handle the sludge produced. There may be community resistance to use excreta sludge and biogas for soil fertilization and cooking respectively due to cultural reasons.
5.3.2 Urinals

Urinals for girls/women as well as for boys/men have been used with success in different countries. Urinals are cheaper and quicker to build and easy to use for young children to use. Urinals help to reduce congestion or minimise the time for queuing up during break-time. A precondition is water must be available.

![Boys urinal](image1) ![Girls urinal](image2)

**Fig 22. Boys urinal**  **Fig 23. Girls urinal**

**Important design issues:**

- Girls Urinals: The angle of slope of about 45 degrees prevents possible splash back as it ensures splashing away from user.
- The wall and floor should be partially smooth plastered to protect against splashes
- The floor and walls must be made from washable and non-slippery materials
- If the urinal is not roofed but left open to direct sunrays, this will ensure quick drying during the dry season, and easy wash away during the rainy season.
- For more privacy it is important to separate urinals for older and younger girls since the older ones are not comfortable to squat with the younger ones.

5.3.3 Accessibility for Adults and Children with Disabilities

In each school, at least one block with two latrines should be provided for Women/Girl and Men/Boy with disabilities. Special arrangement for cleaning and maintenance of this block should be made. A range of technical designs and options (from low cost to medium and higher cost) is provided in this package. In general, designs of latrines for adults and children with disabilities should take into consideration the following issues:

- Safety and convenience
- Easy of use by users without undue effort
- Diversity and difference to meet the needs of a range of users with different disabilities.
- Legibility and predictability for users to

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4 Detailed designs for each option is included in Toolkit No. 2 : Technical Options
A range of options that is suitable, practical and affordable for different conditions.

If accessible designs are taken into account during the conception phase additional costs represent only around 1% of the total cost of a building. This clearly outweighs the costs for adapting facilities. Access for persons with disabilities means, however, more than ramps and wide doors. It is also about:

- How people approach buildings, get in, move and find their way around, and leave
- How people use services and facilities, obtain goods and information
- How people communicate with each other

In each school, at least one block with two latrines needs to be provided for girl / women and boy / men with disabilities. Special arrangements for cleaning and maintenance of this block should be made. A range of technical designs and options (from low cost to medium and high cost) is provided in this package. In general, designs of latrines for adults and children with disabilities should take into consideration the following issues:

- Safety and convenience
- Ease of use by users without undue effort
- Diversity and difference to meet the needs of a range of users with different disabilities
- A range of options that is suitable, practical and affordable for different conditions

The following specific requirements need to be incorporated in the design:

- **Proximity**: The maximum distance to the facilities should be between 100m – 150m; and should be less if there are a larger group of users with a mobility impairment.

- **Approach path**: The ideal width of a path is between 120 - 180 cm. Where the path is not on level ground a ramp with handrails (at 70 and 90 cm height) or curbs on both sides are needed. To ensure that persons with disabilities can reach their destination safely and without assistance, the slope of the ramp must not exceed 5% (1:20). Where space permits, both steps and a ramp should be provided. If only one option is possible, this should be a ramp. If the slope is more than 10m long, a level platform ("landing") is needed where users can rest. This is to be repeated every 10 m depending on the length of the ramp.
Surface of path: A firm, even, non-slip surface benefits everyone, not only blind persons, wheelchair and crutch users. It reduces accidents and is particularly helpful for people with poor balance or coordination and children. Concrete is durable but expensive. Locally available materials such as bricks/stones can also be used to provide a firm surface and prevent it from becoming muddy and slippery during the rainy season.

Doors: A level platform ("landing") is needed immediately outside any door so that users can open the door without their wheelchair rolling backwards or can stand on crutches without loosing their balance. The platform must have a minimal length of 120cm. A handrail next to the door is useful for a person who is unsteady on their feet while opening the door. This can be attached to the outside wall or fixed to the ground. The door should have a grab bar to allow easy opening. The minimum door width is 90 cm.

Floors: Floor should be even and smooth for easy cleaning but not so smooth that the floor will be slippery when it is wet. The floor should not be too rough as it will hurt people who crawl.

Sign: A brightly coloured visual sign on the door or the international disability symbol can be used to differentiate disability facilities to others and to restrict use. The size of the sign should be big enough to allow people with poor vision to identify whether is for males or females. The sign should be located at eye level (150 cm).

The size of the toilet: The size of the toilet room should be large enough to allow for a 150 cm turning cycle and have a space of at least 80cm besides the toilet to allow parallel positioning for easy transfer from wheelchair to the toilet seat. Hand rails have to be placed at 70 and 90 cm heights and can be attached to the floor or walls. If water is available it should be placed within reach from the toilet at 50 cm height.

Drop hole/squatting slab/seat: People with physical disabilities may have problems squatting and hence a seat can make a latrine more accessible. The seat with a hole carved in the seat, can simply be placed over the squat hole. Also concrete blocks can be used to construct a permanent structure.
Issues for blind and visually impaired people in schools: Blind and visually impaired people need to find their way using their remaining vision or judgement; signalling the edge of a step or entrance is helpful. This can be done by using bright colour paint or a change of floor texture as a blind person can feel the difference with their feet or with a cane; another way is the use of permanent structures as "landmark" (e.g. buildings, trees), or have a tactile guiding system, for instance with sticks placed in the ground. A safety rail is recommended on paths where a wrong step could result in a fall such as next to a pond or on a steep river bank. Persons using the tactile guiding system need to be oriented with assistance before they can move around independently.

5.3.4 Designing Latrines for Pit Emptying

Good practice in relation to pit emptying is:

- All latrines should be designed to allow for the pits to be emptied – with an opening that allows emptying by suction tanker, sludge gulper, or emptying by hand. Also enough space to get a suction tanker near enough to the pit to be able to get the suction pipe in to the pit sludge.
- If there is not enough space for a suction tanker then a portable sludge gulper can be used.
- There is a need to know where the pit contents can be disposed of – this information can be obtained from the local government authority or municipal council.
- Care must be taken to ensure safe handling of the sludge and those involved must wear protective clothes and practice good hygiene.
- Community awareness and mobilisation should be undertaken for regular pit emptying.
- Pits that are to be emptied will need to be fully lined to ensure pit stability.
5.3.5 Solid Waste

Poor solid waste management in schools could cause many problems including clogging of pipes and drainage systems and the creation of breeding sites for flies or insects which contribute to disease spread. Schools generate waste in the form of paper, cardboard and plastic materials as well as organic waste, all of which has to be collected for disposal. Container should be provided in each classroom, latrine, and other place in the schoolyard. When there is no organised system for waste collection in the local community, the following actions could be taken:

- Make sure that every classroom has a dustbin (plastic, earthenware or cardboard). Children should put all solid waste in this.
- Once a day, the solid waste from the class should be deposited in the school’s waste pit.
- Once a day, the solid waste from the school compound should be deposited in the school designated school waste disposal pit.
- Once in a few days or once a week, the waste should be disposed either by burning or covering by a layer of soil or sand.

Hard anal cleansing materials (paper, stick, corn cob) need to be disposed separately. These used anal cleansing materials are a source of disease and must either be put in the pit or be disposed of in a way that prevents them from becoming a health risk. It is very important that the materials do not become a health risk by contaminating the school environment.
The disposal/treatment methods of solid waste depend on the type and amount of waste generated per day from schools. Suggestion for disposal could include:

- Paper waste can be buried or burned in an incinerator made from an oil drum.
- Organic materials can be composted, for instance in big cement rings or log boxes/containers, and used as fertilizers for trees and plants in the school compound.
- Plastic waste can be collected and buried or in recycled
- Disposal through the existing municipal solid waste management system

### 5.3.6 Disposal of Used Sanitary Materials

Used sanitary materials should be disposed of in a separate container located inside each latrine, and subsequently taken to be burned. Each school should provide either a drum incinerator or fenced off pit for burning of used sanitary materials, both of which will burn the pads to ash. Girls should be educated not to dispose used sanitary materials into the latrine pits as this might quickly fill up the pits (in case of pit latrines) or block the system (in case of pour flush latrines). Given the need for privacy around disposal of used sanitary materials, the location of the incinerator or pit should be relatively close to the girls’ latrine block so the dustbins with used materials can be carried for burning in a private manner. The incinerator and/or burning pit should be sufficiently fenced off so that small children do not burn themselves.
5.3.7 Waste Water

In order to avoid the health of school children being affected by waste water that is stagnant or overflowing from waste water tanks or septic tanks, there is need to manage them properly. Agents such as bacteria and parasites cause infectious diarrhoea such as dysentery, cholera and typhoid. These agents get into humans via the mouth/hand to mouth. Parasitic infections such as intestinal worms or hookworms also get into humans through the mouth or skin and are passed out in excreta. It is important to make sure that the school does not create an unhealthy environment through pollution resulting from waste water, especially that from bathroom, latrines and urinals.

5.4 Hand-washing Facility Options

Fig 33. Waste pit for disposal of sanitary materials
Fig 34. Drum incinerator for disposal of sanitary materials

Fig 35. Tank with rainwater harvesting providing hand-washing by latrine
Fig 36. Tippy taps and liquid soap in bottle
There are different hand washing facilities options; the simplest of which is tippy taps also known in Kiswahili as Kibuyu Chirizi usually installed outside the toilets although these have a small volume and need filling regularly during the day. Another form may be a drum of water fixed with a tap and a soap dish. In all the facilities the container has to be filled with water by responsible users once the water is finished. All hand washing facilities should have drainage or a soakpit to prevent the area becoming muddy. Wastewater from hand washing facility can be led through a drain to a garden area.

A modern hand washing basin can also be used if the school can afford it and if tap water is available. A hand washing basin can be installed inside the toilet or at a convenient location within the school yard.
6 Periodic Operation and Maintenance of SWASH facilities

This section outlines simple tasks that need to be checked and carried out routinely by the schools, for more detailed guidance on operation and maintenance of each specific option, please refer to Tool Kit No.: 2: Technical Option and O&M Guideline for School WASH Facilities.

6.1 Simple O&M for Water Supply Facilities

- **Protected spring**: Clean the areas uphill from the spring. Remove dead vegetation and repair the security fence. Repair damage and cracks in the apron and the drainage channel. Make sure the soak away is operational.

- **Shallow wells with hand pump**: Regularly check and repair fence, repair damage and cracks in the apron and the drainage channel. Make sure the soak away is clear and operational. Remove debris from the bottom of the well and deepen the well as necessary. Check seals and valves inside the pump and bearings in the upper casing, for rope pumps and put oil as a lubricant in bushes. It is advised always to refer to the operation manual from manufacturer. In case of the risk of vandalism, pumps should be fixed with special locks for security.

- **Rainwater harvesting**: Clean the catchment roof and guttering. Replace broken or corroded gutter. At the start of each rainy season, empty the storage tank; remove silt and debris. Repair damage and cracks to the apron and drainage channel. Remove silt from storage tank.

- **Boreholes**: Replace worn and damaged parts of the system and carry out disinfection after flushing or when contamination is detected. Carry out pumping test once the yield has gone down, if the water level is found to be lowered, increase the riser main, or in case of centrifugal pump lower further the pump. If a de-fluoridation treatment plant is used ensure regular replacement of worn out parts including bone char. The O&M in this aspect should be done in consultation with respective water department.

- **Tap stands**: Replace worn and damaged taps. Repair damage and cracks in the apron and the drainage channel. Make sure the soak away is operational. Tap should be turned off after use to prevent wastage.

- **Small dam**: Ensure regular removal of silt, debris and vegetation from the dam and embankment, replace soil and re-compact the embankment, repair fence, and remove silt and vegetation from feed channel.

Fig 37. Operation and maintenance of facilities
### 6.2 Simple O&M for Latrines; Urinals and Hand-washing Facilities

#### Table 4. Operation and maintenance for school WASH

<table>
<thead>
<tr>
<th>Problem</th>
<th>Repairs needed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Latrines</strong></td>
<td></td>
</tr>
<tr>
<td>Door broken or does not give privacy; hinges loose</td>
<td>Repair panels of door; put new hinges; grease them</td>
</tr>
<tr>
<td>Door cannot be locked from inside or outside</td>
<td>In side: Make simple lock mechanisms using a metal staple/eye and catch/hook. Outside: Attach 2 staples/eyes (one door and wall) and buy padlock.</td>
</tr>
<tr>
<td>Cement plaster comes off the walls</td>
<td>Remove loose parts, clean and re-plaster with good cement mortar.</td>
</tr>
<tr>
<td>Roof is leaking</td>
<td>Repair/remove damaged ceiling boards. Clean and re-plaster the roof with strong cement mortar (3 cm) or repair or replace damaged iron sheets on existing roof</td>
</tr>
<tr>
<td>Pit latrine: Cover slabs are broken or missing or has holes</td>
<td>Put new cement mortar or replace the entire slab</td>
</tr>
<tr>
<td>Pour flush or WC: pan is broken</td>
<td>Replace the pan</td>
</tr>
<tr>
<td>VIP latrine: Ventilation pipe is broken</td>
<td>Install new PVC vent pipe</td>
</tr>
<tr>
<td>For direct pit latrines: Pits are full</td>
<td>Fill in the old pit and dig a new one. Or if appropriate pits by using bucket or scoop, and apply sludge to arm if sludge is safe.</td>
</tr>
<tr>
<td>For double-pit pour-flush latrines: Pits are full</td>
<td>Switch to other pit. Leave full pit for more than a year and the sludge will decompose anaerobically and then the sludge can be safely dug out.</td>
</tr>
<tr>
<td><strong>Urinals</strong></td>
<td></td>
</tr>
<tr>
<td>Smelling</td>
<td>Clean at least twice a day with water and detergent powder using a soft brush with a long handle. The detergent powder can be sprinkled in the evening to be washed in the next day.</td>
</tr>
<tr>
<td>Clogging of pipe</td>
<td>When the urinal does not drain properly anymore, then it is most likely that the drain is clogged. Remove the sieve over the drainpipe and insert a flexible, thin stick to push the blockage through. This can also be done from the soak-away end. All solid waste around the urinal areas must be collected properly and disposed of in the school.</td>
</tr>
<tr>
<td>Hand-washing Facilities</td>
<td>Waste</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-------</td>
</tr>
</tbody>
</table>
| **Broken and worn out basins and drainage system** | Repair and replace the basins and all worn out or damaged parts of the drainage system  
Ensure proper and regular cleaning |
| **Damaged or worn out taps /corks and pipe fittings** | Repair the damaged parts/fittings/ replace the tap washer or the tap  
Clean the tank and check the tap |
| **Hand washing tap not discharging water properly** | Repair and replace drain pipes |
| **Broken or damaged drains** | Replace the worn out parts  
If vandalised replace the facility |
| **Tippy taps : Worn out containers and rope** | Note: In order to avoid damages caused by improper use – training on how to use the facilities and regular monitoring and inspection is recommend |
7 Sanitation and Hygiene Education Approaches for Schools

7.1 General Approaches

The success of a school hygiene programme\(^5\) is not determined only by the number of toilets constructed, the number of hand pumps installed or water connections built, nor is the success of a programme determined simply by what children know but rather by what they practice. Knowledge that is not applied to hygiene behaviours practice, leads to failure.

Sanitation and hygiene education methodologies and approaches should be interactive, participatory, child friendly and disability sensitive. Examples of such approaches include Child to Child, PHAST, and Life skills-based hygiene education. These methods give children the opportunity to explore and acquire hygiene-promoting knowledge, attitudes and values and to practise skills that help them to avoid risky, unhealthy situations and to adopt healthier life styles. The methods also give children the chance to experience, discover, create and construct their own knowledge. Children are also given the opportunity to personalize the information and develop positive attitudes and values, as well as to practise new skills. Below are examples of how the child’s age and characteristics influence the choice of learning and teaching methods.

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**Physical:** Children in the age range of 4 to 7 find it difficult to sit for a long time and will need a variety of activities involving frequent changes of body position. The child needs opportunities to run, jump, balance, etc. Children in the age range of 8 to 11 can perform movements involving better body control. Therefore in hygiene class children can be asked to play pantomime games, for example, to depict different hygiene behaviours.

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\(^5\) Please refer to Toolkit No. 3 for detailed lesson plans for hygiene education in schools
**Cognitive:** Children in the range of 4 to 7 years have short attention spans and can only concentrate on single elements at a time. They also need a lot of opportunities to speak with others and listen to good language. In hygiene class the teacher can tell a story, for example, on the effects of eating raw food. The story has to be simple, short and fun, and the teacher should allow children to comment and interpret at some point. Children in the age range of 8 to 11 years develop the capacity to see other points of view. This development helps the child analyse, understand and see logical relationships. For example, in hygiene class, the children can be asked to organise and have a discussion that critically analyses a hygiene-related problem in the community and develops a number of solutions.

**Social-emotional:** In hygiene class small children can, for example, sing songs about how to clean themselves in the morning, during which they can act out the different behaviours. After this they can be complimented on their performance. Children in the age range 8 to 11 get embarrassed by physical displays of feelings and are sensitive to gender differences.

### 7.2 Methodologies

Teaching and learning methods are determined by the learning objectives and the desired behavioural outcomes. It is suggested that teacher training emphasises (or starts with) the easiest methods that teachers can use even under difficult circumstances. These might include:

- **Stories:** telling stories with a gap
- **Demonstrations:** child or teacher demonstrates how to wash hands correctly, how to explain about personal hygiene or telling a younger child about how to use a toilet.
- **Posters:** teacher shows a poster that illustrates many hygiene problems and asks children to identify these.
- **Rosters:** rosters of responsibilities of children for water, hygiene and sanitation related activities (cleaning, monitoring hand washing among young pupils, cleaning toilets at the end of the day, etc.).
- **Role Models:** Clean, smart student, and applied best sanitation and hygiene practices should be recognized and awarded

*Fig 39. Practical exercises*  
*Fig 40. Child washing her face to prevent trachoma*
7.3 Considering the Needs of Children with Disabilities

For effective approaches in sanitation and hygiene education, the special needs and alternative mode of communication for children with disabilities must be considered. This includes:

- Modifying schedules, acquiring or modifying equipment, providing qualified readers/guides, personal assistants or interpreters based on need
- Providing information in alternative and accessible formats:
  - Large print, Braille and audio messages for visually impaired and blind children
  - Easy-to-understand written or graphic formats for children with an intellectual impairment
  - Sign language interpretation for deaf or hearing impaired children
- Portraying persons with disabilities in the various materials and showing tools and equipment used by children with disabilities e.g. toilet and hand-washing modes

Fig 41. School latrine with children with disabilities utilising the facilities

- Making the infrastructures more accessible
- Considering the use of assistive devices such as wheelchairs, crutches, callipers and white canes when designing the WASH facilities
- Providing special training to education professionals delivering the training about disability awareness, use of alternative modes and formats of communication, and educational techniques and materials to support students with disabilities.
7.4 Menstrual Hygiene Management for Adolescent Girls

For girls to practice successful menstrual hygiene management (MHM) in school, they need to feel supported by families, teachers and peers, and to have school environments that are conducive to MHM. Essential components of supporting girls for MHM include:

- Teacher sensitization, awareness and understanding of girls’ monthly discomfort and/or need to use latrines more frequently than usual. Teachers should be discreet in their support as girls may only mention they feel unwell, without specifying that menstruation is the issue (due to local taboos or girl's shyness). This includes girls’ possible hesitation to stand and respond to questions during class time.

- The provision of the book “Vipindi vya Maisha” (Growth and Changes”) that provides detailed guidance and support for girls about managing their menstruation in school.

- Female matrons, teachers or school administration should privately assure that all school girls have adequate monthly sanitary materials, and are not missing school or class due to insufficient supplies of sanitary pads or cloths. Girls may also need underpants and/or undershorts for comfort about preventing menstrual leaks during school hours.

- Making the school built environment appropriate for MHM, including adequate latrines with dustbins inside and locks on the door, nearby burning facilities, water for handwashing inside of latrines, and a private space for washing of menstrual stains and/or washing, drying and ironing used menstrual cloths (in a boarding school setting).

- Teaching and sensitizing boys about girls’ need for privacy, respect and support during their monthly menstruation, to minimize teasing and mocking that may occur.

- As appropriate, the referral of girls to a school nurse or matron for emergency sanitary material, for pain relievers, and a space for resting when menstrual-related discomfort is significant.

Fig 42. Girls hygiene unit with water and a disposal bin
8 School WASH Assessment and Monitoring

8.1 School WASH Situation Assessment

A simple matrix with assessment criteria\(^6\) was developed to facilitate the assessment of the school current WASH situation. This assessment should be carried out once a year and will help schools to assess the current WASH situation and to identify the level of intervention needed. Schools can use this exercise to prepare their annual plan and budget for WASH development. Outputs from the assessment will help the central and local government in prioritised planning and budget allocation.

The tool uses simple assessment criteria that are based on the minimum standard jointly agreed by four key Ministries. Criteria are divided into four categories and are assigned with a grading as follow:

**Table 5. School WASH assessment grading**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>The existing situation and facilities are acceptable. No improvement is necessary</td>
</tr>
<tr>
<td>B</td>
<td>The existing situation and facilities are reasonable but would benefit from improvement. Action is not necessary a priority</td>
</tr>
<tr>
<td>C</td>
<td>The existing situation and facilities are poor. Improvement is required</td>
</tr>
<tr>
<td>D</td>
<td>The existing situation and facilities are very poor or there are no facilities. Provision of infrastructure is the highest priority.</td>
</tr>
</tbody>
</table>

8.2 School WASH Monitoring

The relevance of Monitoring to School WASH: Monitoring is the continuous assessment of the intervention and its environment with regard to the planned objectives, results, activities and means. Monitoring enables a stakeholder to review progress and to propose action to be taken in order to achieve the set objectives. Monitoring identifies actual or potential successes or failures as early as possible and facilitates timely adjustments to the operations.

Regular monitoring is essential for sustainable School WASH. Monitoring is beyond collecting information to 'see how things are going'. It is meant to improve programmes and activities over the long term. Monitoring involves checking, understanding the results of checking and then acting to improve a situation

School WASH Monitoring Indicators and Frequency: A monitoring tool kit was developed as a part of this guideline\(^7\). The monitoring indicators are based on the minimum school WASH standard as agreed by the four key ministries (See section 3 of this guideline). School WASH external monitoring needs to be carried out by district officials at least twice a year. The school committee needs to coordinate teachers, parents and pupils to conduct the school internal monitoring at least once a month. Please refer to toolkit 1A and 1B for detailed Monitoring Indicators.

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\(^6\) For detailed criteria and scoring matrix for different aspects of School WASH, please refer to Toolkit No.1A: School WASH Situation Assessment

\(^7\) See Tool kit 1B and 1C for External and Internal Monitoring
**Responsible Actors:** The overall responsibility for external monitoring lies with the District Water and Sanitation Team (DWST) and the School Inspectors. Other external actors who have a role to play include: Ward Education Coordinators.

The internal school monitoring could be the responsibility of: School Committees, parents, teachers, pupils and other responsible actors (such as NGOs and CBOs).

**Methodologies:** Valid and cheap methods should be used for monitoring and inspection. Examples of these include: observing facilities, asking children about who uses toilets/urinals and if there are problems, using checklist; examining an accounts book that records O&M expenses; talking with teachers about the use of teaching aids and materials, the suitability of the current hygiene education curriculum, and the need for retraining etc.

**The Use of Monitoring Results:**

- Develop an action list or follow-up plan in response to the situation if the monitoring information shows that there is a problem (What needs to be done? Who is responsible? What are the resources needed? When should it be completed). Normally, action should be taken to improve the situation at the lowest level possible; if not the situation should be referred to higher levels (refer to Table x: Roles and Responsibilities of Stakeholders).

- Results from the monitoring and inspection can also form the basis for the annual planning and budgeting for SWASH improvement (e.g.: Rehabilitation of old/damaged facilities, construction of new facilities; purchasing more IEC materials and teaching aid for hygiene education; enrolling teachers for refresher training).

- LGAs can use the results as the performance-based criteria for funding allocation or to reward good performing schools, teachers, health clubs or individual pupils as an incentive to encourage continuous efforts for SWASH improvement.
9  Financing the School WASH Sub-sector

9.1  Funding Sources
Currently, School Water, Sanitation and Hygiene is jointly financed by the Government of Tanzania annual budgets, development partners’ General Budget Support or Basket Funds and other joint funding mechanisms including earmarked projects and specific programs. The Government contribution is made to basket funds through the MoHSW, MoEVT, MoWI and the PMO-RALG, where as the development partners fund for School WASH is channelled either directly to Ministry of Finance or through funding baskets in respective Ministries where they are anchored. Other financing sources include funding from: International/local NGOs; faith-based organisations; the private sector and private donation; community contributions in cash and in kind (e.g. labour and materials) and District /Village Council own sources revenue.

9.2  Fund Flow and Management
Annually, the Government commits to provide Tsh 10,000 per pupil and Tsh 20,000 per pupil with disability as the capitation grant. This grant is channelled to each school quarterly from the Central Government (the Treasury) through the respective LGAs. Fund for School WASH facilities maintenance is part of the “maintenance and minor repairs” item below.

Table 6. Capitation grants allocations and priority expenditures

<table>
<thead>
<tr>
<th>No.</th>
<th>TYPE OF FUNDING</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Textbooks Purchase</td>
<td>40</td>
</tr>
<tr>
<td>2.</td>
<td>Infrastructure Maintenance &amp; Minor Repairs</td>
<td>20</td>
</tr>
<tr>
<td>3.</td>
<td>Materials/Equipment</td>
<td>20</td>
</tr>
<tr>
<td>4.</td>
<td>School Administration</td>
<td>10</td>
</tr>
<tr>
<td>5.</td>
<td>Examinations’ Costs</td>
<td>10</td>
</tr>
</tbody>
</table>

The existing financial structure for SWASH is facing several major problems as follows:

- Currently the allocation and flow of funds for SWASH is unclear and there is no financial tracking on expenditure on SWASH;
- Only the Water SWAp had a distinct budget line for sanitation and hygiene and school WASH although this is currently under discussion; it is not clear what allocations are being made under the health or education basket funds;
- Lack of priority on school WASH in the MTEF and budget guidelines and by the LGAs;
- No specific funds allocated for school WASH although Councils sometimes utilise funds received from Local Government Capital Development Grants (LGCDG) and Capacity Development Grant (CDG) for SWASH activities;
- There is no clear channel for disbursing SWASH funds by non basket funding development partners and community to allow monitoring of the impact; and
- Inadequate financial management skills in village government and schools.

8 Source: Primary Education Development Program II, 2007
This guideline proposes that:

- The Government should have a special programme for SWASH through which donors can fund SWASH nationally;
- There must be a specific fund allocated for school WASH;
- Flow of the school WASH funds should follow the current Government financial management procedures, which consider the principle of devolution;
- School WASH should be given priority and allocated more funds at all levels; to be reflected in the MTEF and budget guidelines issued by PMORALG to LGAs annually;
- Village Government and Teachers should be provided with guideline for utilising disbursed SWASH funds;
- Councils should plan for and identify funding sources to be allocated specifically for school WASH;
- Existing programmes which have some components of school SWASH, including those of national and international organisations who operate and directly fund at the local level should complement the main programme in a coordinated way to enable effective monitoring of outcomes and impact at all levels;
- Budget monitoring tools can be used to monitor SWASH funds at each level of government. For example public expenditure tracking survey should be used to compare budgetary allocations to actual spending. This involves ‘following the money’ to where it is spent, comparing budgetary allocations with records of transfers and receipts at each level of government.

### 9.3 Criteria for School Selection and Fund Allocation

The financial requirement to fill in the infrastructure gap throughout Tanzania, to meet basic minimum standard, is enormous (estimated at USD 2 to 4 million per district); this is calculated under the assumption that all existing (acceptable) facilities remain functioning and the financial need is only to cover the provision of new facilities. The general tendency to focus mainly (if not only) on construction of new facilities and to give little attention to rehabilitation or repair of non-functioning facilities in schools, poses a significant threat to the sustainability of investment.

Investment made in new infrastructure, without taking account of how previous investments are maintained, is a wasteful use of scarce resources.

In order to overcome this shortcoming, an incentive-based mechanism for prioritised village/school selection for fund allocation should be introduced to ensure that villages/schools will only receive funding for new investment if they have a good record of maintaining the existing facilities. More specifically, the village government/schools and community’s readiness and commitment to receive new funding will be assessed against the minimum requirements set out in this guideline using the external monitoring toolkit (Toolkit 1B). The following describes each of these issues in more detail.

**Readiness and commitment of the community**: Priority for fund allocation will be given to communities that are prepared and committed to improve WASH situation in their localities. The communities, the Village Government, and parent teacher association (PTA) should be able to show their commitments through: level of co-funding to SWASH fund and a clear plan or agreement of community involvement in School WASH development as indicated in the monitoring indicators.

**Readiness and commitments of schools**: School readiness and commitment are equally as important as that of the community and village government when screening for SWASH funding.
Schools should be qualified for prioritised funding if they can: i) set up a separate fund for SWASH jointly funded and managed by community/parents representatives; ii) show consistent high performance and commitments to SWASH improvement (based on the regular monitoring and inspection).

Fig 43. Community meeting discussing priorities

**Existing school WASH situation:** When schools have satisfied both conditions above, priority will be given to the schools where the needs are greater and schools located in poorer or more remote areas or areas that have never received external funding before.

### 9.4 Mobilising School and Community Commitments

Commitment from school and community to improve WASH situation in school is one of the key requirements for successful School WASH. Commitments can be in the form of social commitment (participating and supporting the various SWASH activities; formation of committees or social groups) or financial commitment (physical contribution in cash or in kind). In order to secure and sustain commitments, transparent and accountable mechanisms for reporting and financial management need to be established and put into practice effectively.

**Social Mobilisation:** Social mobilisation is the process of bringing together different actors in the community to raise people’s awareness and understanding of a specific development program in an aim to win community support for the program, strengthen community participation for future sustainability and self-reliance\(^9\).

Social mobilisation can be undertaken in the form of: village meetings, public information meetings; or through various school activities, campaign or person to person meetings.

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\(^9\) UNICEF/IRC 2009: Strengthening Water, Sanitation and Hygiene in School
Community mobilisation process should lead to the formation of a trusted committee who is committed to represent the community; to serve as the link between the school; external organisations and the parents; to mobilise and secure community's financial and social commitments; to make decisions on behalf of the community; to monitor the implementation of and provide feedback on the School WASH program.

**Community contributions to school WASH facilities**

Community involvement in school WASH can be established in different ways, for example:

- Be established from the existing School Management Committee
- Be developed from an existing community-based organisation such as: the Village Water and Sanitation Committee, Village Education Committee, Women's Group, etc.
- Establish a new committee with most respected and trusted persons who can represent the whole community (to be elected or selected by the community)

The roles of the committee for School WASH (sub-groups of existing committees, or existing committees with specific agenda items included on school WASH) can be:

- Inform the local community about the School WASH program and win their support.
- Work closely with the schools and external organisations (if applicable) to select the relevant technologies and designs for School WASH facilities
- Mobilise contribution from community and parents (in cash or kind; donation; technical expertise) both for infrastructure development and O&M of the facilities
- Monitor and supervise the construction of School WASH facilities to make sure the selected technologies; technical designs and standard are effectively enforced; and to ensure value for money from the fund available.
• Provide regular financial reporting and feedback to the school and community on the program implementation.

• Once the construction is completed, the Committee should be working closely with the schools to make sure the facilities are correctly used and maintained and that funding for School WASH facilities O&M is available and used for the intended purposes.

• Help to provide the link between school and community about various School WASH related activities and to strengthen sanitation and hygiene awareness and behaviour changes activities at the school and community.

• Participate in the monitoring and inspection of School WASH related activities.

Financial Mobilisation: Financial contribution from the community is an important indicator to gauge the community’s commitment toward School WASH improvement. The community's willingness to contribute financially (in cash or kind) for construction of School WASH facilities indicates that they consider School WASH as one of their priorities and will be more willing to support the proper use and maintenance of the constructed facilities later.

The level of community contribution for infrastructure development and SWASH promotion should depend on the local social economic situation. Examples of the contribution can be:

• **Cash:** can be collected for construction and or O&M of the constructed infrastructures or for buying soap on a regular basis

• **Labour:** mason, construction supervision, digging trench or wells, arranging a rota to bring water to the school for hand-washing on a regular basis etc.

• **Kind:** Technical knowledge or expertise, construction materials (cement, sand, brick, etc) locally made or available materials (log of wood, clay tile or thatch for roofing); soap or other cleansing materials, fund raising activities, financing various school WASH related activities for awareness raising or behaviour changes. etc

![Fig 45. Discussing school budgets and expenditure](image)
Financial Accountability and Transparency

In order to win the community’s support and trust, all community contribution (cash, kind, labour or donation) and other financing sources must be well recorded and accounted for.

Financial reporting for infrastructure development must be communicated with the local community either through village meetings or public notice board. Representatives from the elected committee should be available and willing to answer questions or concerns raised by the community on the use of funding.

If there is funding for School WASH facilities O&M, a simple “income and expenditure” report should be prepared and informed to parents through the school notice board or any other effective means of communication in the local community.
## Appendix 1: Glossary of Terms

<table>
<thead>
<tr>
<th>Terminology</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borehole</td>
<td>A borehole is a well that consists of a thin hole drilled into the ground and sometimes it is lined with a pipe. The thin hole reaches the water under the ground and a pump can be used to pump the water to the surface of the ground for use. A borehole can be shallow from 20m or very deep such as over 100m deep particularly in dry land areas.</td>
</tr>
<tr>
<td>Composting toilet</td>
<td>A dry toilet into which carbon-rich materials are added to the excreta and special conditions maintained to produce inoffensive compost. A composting latrine may or may not have a urine separation device.</td>
</tr>
<tr>
<td>Environmental Health</td>
<td>Refers to all those factors in man’s physical environment that exercise, or may exercise, harmful, damaging or detrimental effects on his/her physical development, health or survival.</td>
</tr>
<tr>
<td>Environmental health</td>
<td>management Refers to all those activities contributing to preventing and controlling those factors in the physical environment that can adversely affect human health including contaminated water, air and food as well as chemical exposure. This includes: disease control and prevention; water supply, sanitation and hygiene promotion; food safety; solid waste management; liquid waste management; pollution control (air, water etc); hazardous wastes management; occupational health; land use planning for human settlements; port health services; environmental related disasters, emergency preparedness and response; and inspection.</td>
</tr>
<tr>
<td>Environmental hygiene</td>
<td>Keeping the environment clean in order to prevent disease.</td>
</tr>
<tr>
<td>Flush or pour-flush toilet</td>
<td>These toilets / latrines flush the feaces using water to piped sewer system, septic tank, pit latrine or cess pit. The water passes through a water seal which presents smell entering the toilet / latrine.</td>
</tr>
<tr>
<td>Food hygiene</td>
<td>Keeping food clean throughout the preparation chain in order to prevent disease.</td>
</tr>
<tr>
<td>Hygiene</td>
<td>The method of using cleanliness as a method of preventing disease.</td>
</tr>
<tr>
<td>Hygiene education</td>
<td>The provision of education and / or information to encourage people to maintain good hygiene and prevent hygiene related diseases.</td>
</tr>
<tr>
<td>Hygiene promotion</td>
<td>The planned, systematic attempt to enable people to take action to prevent or mitigate water, sanitation and hygiene related diseases.</td>
</tr>
<tr>
<td>Improved sanitation</td>
<td>Facilities that ensure hygienic separation of human excreta from human contact, and can include: Flush or pour- flush toilet / latrine to piped sewer system, septic tank, pit latrine, cess pits; ventilated improved pit latrine (VIP) latrine; Pit latrine with slab; Composting toilet.</td>
</tr>
<tr>
<td>On-site sanitation</td>
<td>The collection and treatment of waste is done where it is deposited. Examples are the use of pit latrines and septic tanks.</td>
</tr>
<tr>
<td>Open defecation</td>
<td>Includes defecation in the bush or field or ditch; excreta deposited on the ground and covered with a layer of earth; excreta wrapped and thrown into garbage; defecation into surface water.</td>
</tr>
<tr>
<td>Personal hygiene</td>
<td>Keeping the body clean to prevent disease.</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Piped scheme</td>
<td>A water scheme where water is transmitted from one location to another via a pipe network. Water is dispensed from the piped scheme through a tap which can be inside a building our outside and shared by the community as a domestic point.</td>
</tr>
<tr>
<td>Pit latrine with slab</td>
<td>Is a dry pit latrine which uses a hole in the ground to collect the excreta and a squatting slab or platform that is firmly supported on all sides, easy to clean and raised above the surrounding ground level to prevent surface water from entering the pit. The platform has a squatting hole, or is fitted with a seat.</td>
</tr>
<tr>
<td>Point of Use water treatment and safe storage</td>
<td>The method used to treat water to make it safe for drinking and the method of storage to keep it safe from contamination before drinking. Various methods can be used such as boiling, chlorination, filtration, solar disinfection.</td>
</tr>
<tr>
<td>Protected water sources</td>
<td>Water sources that are protected from pollution (such as lining and covering a well, providing a drainage platform, or constructing a box around a spring)</td>
</tr>
</tbody>
</table>
| Sanitation / environmental sanitation | Is the hygienic means of preventing human contact from hazards of wastes to promote health. Hazards can be physical, microbiological, biological or chemical agents of disease. Subsets of this category are:  
  - safe collection, storage, treatment and disposal/re-use/recycling of human excreta (faeces and urine);  
  - management / re-use / recycling of solid wastes (trash or rubbish);  
  - drainage and disposal / re-use / recycling of household wastewater (often referred to as sullage or wastewater);  
  - drainage of storm-water;  
  - treatment and disposal / re-use / recycling of sewage effluents;  
  - collection and management of industrial waste products;  
  - air and noise pollution;  
  - management of hazardous wastes including hospital wastes, and chemical / radioactive and other dangerous substances. |
| Shallow well | A shallow well is a hand-dug well which is usually dug by hand into the water table and is lined with concrete rings.  
A protected shallow well - has a lining, a cover, a drainage curtain and some form of lifting mechanism such as a pump or a bucket and windlass all of which prevent contamination of the water in the well.  
An unprotected shallow well - will not be fully protected from contamination. Sometimes it is simply a hole in the ground and sometimes it may have a lining but not a cover, drainage curtain or a pump. |
| Solid waste management | The management of solid waste such as paper, plastics, tin cans, glass, grass, food wastes, sanitary towels and other solid wastes. Where possible solid waste should be separated at source and disposed of in different ways, for example, organic matter such as grasses and food wastes and paper can be composted, glass and tin cans can be recycled. |
A spring occurs where the groundwater reaches the ground level and comes out from the surface.

A protected spring - is one where the spring is protected above the spring through the prevention of farming and other activities and around the eye of the spring (where the water comes out from the ground) and the collection area.

An unprotected spring - is left open and is not protected from contamination above or below the spring.

| Spring                  | A spring occurs where the groundwater reaches the ground level and comes out from the surface. A protected spring - is one where the spring is protected above the spring through the prevention of farming and other activities and around the eye of the spring (where the water comes out from the ground) and the collection area. An unprotected spring - is left open and is not protected from contamination above or below the spring. |
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Appendix 2: Legal References on School WASH Facility Requirements

The current standards for pupils per latrine drop hole are currently unclear, with several different references being utilised. The ratios being used also need revisiting to ensure that they are achievable in all schools. The National Technical Working Group for School WASH will discuss this as an agenda over the coming months. For now the various standards that are being or have been referred to are noted below.

Table 7. School WASH facility requirements

<table>
<thead>
<tr>
<th>Official Documents</th>
<th>Pupil/drop hole ratio</th>
<th>No. of drop-hole and urinals per 2000 pupils(^ {10} )</th>
<th>Other WASH Related Requirements</th>
</tr>
</thead>
</table>
| Public Health Act, 2009 | No ratios noted – would need a regulation to be prepared | | 162 – ‘A person shall not operate or manage a school within the Authority area unless that school or training institution complies with public health requirements as provided under section 163’ 163 – ‘The authority shall permit a person to operate or manage a school or any other similar institution when it is satisfied that:  
  b) There are provisions for:  
    ii) Safe and adequate water supply  
  (iii) Adequate water closets or other sanitary accommodation facilities for staff, pupils and students  
  vi) Adequate arrangements for collection, storage and disposal of solid and liquid waste  
  (x) Provisions for people living with disability |

\(^ {10} \) Assuming 50% boy and 50% girl
<table>
<thead>
<tr>
<th>Water and Sanitation Act 2009</th>
<th>Minimum Education Standards for Primary Education in Tanzania, July 2008 (final draft)</th>
<th></th>
</tr>
</thead>
</table>
| Toilets (ventilated pit latrines) are sufficient, clean, covered and separated according to sex at least 1 pit for 25 boys and 1 pit for 20 girls. | Girls latrine = 50  
Boys latrine = 40  
Boys urinals = 20 | Existence of special room for girls.  
Establishment of sanitation pads collection system  
Existence of an incinerator  
Availability of safe and clean drinking water at school.  
School buildings equipped with gutters to collect rain water and drain it to tanks endowed with water taps  
Existence of storm water channels to drain water from school compound  
Existence of school electrical light  
Disinfection of school at least once per term |
| At least 2 pits for female staff members and 1 pit for male staff with urinal. | | |
| Urinals for boys (at least 1 for 50 boys) | | |
| At least one toilet unit per school in teaching area and residential area for physically challenged pupils | | |
Public Health (Sewerage and Drainage) Act 2000.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| 1. Sanitary accommodation shall be provided in the ratio of 1 to 10 up to the first 100 pupils/students/children, thereafter 1 drop hole for 25 pupils/students/children or fraction thereof. | **Girls:**
|   |   |
| 2. Where urinal accommodation is provided for males the number of drop holes may be reduced to half. | • The first 100 girls = 10 drop holes.
| 3. This guideline directs the provision of urinal accommodation for girl pupils/students and children. Hence, the number of drop holes may also be reduced to half. | • The remaining 900 = 36 drop holes.
| 4. Sanitary accommodation shall be provided in dormitories for boarding schools in the same ratios. Hand washing facilities shall be provided to each range of drop holes. | • A total is 46 drop holes.

**Boys:**
- The first 100 boys = 10 drop holes.
- The remaining 900 = 36 drop holes.
- Hence, total number of drop holes = 46.
- With the provision of urinals only 23 drop holes will be required for boys.

### A phased approach - for discussion:

When reflecting and clarifying on the require latrine and urinal ration, it would be worth considering a phased approach, both in terms of the numbers of pupils per facility and the standard or cost of the technology. For example, the phases could be as follows:

- Latrines for girls – 1 to 60 to 2010; 1 to 40 for 2015; 1 to 20 for the longer term
- Latrines and urinals (equal numbers of each) for boys – 1 to 150 to 2010; 1 to 100 for 2015; 1 to 50 for the longer term
- To aim for permanent concrete latrines which can be emptied in the longer term, but to have interim structures such as partially lined pits with mud block superstructures, but cleanable concrete slabs as an interim measure
- More attention also needs to be made to the emptying mechanisms for latrines or replacement
Appendix 3: Reference Documents

For a listing of the Government of Tanzania key hygiene education texts and other hygiene promotion IEC materials refer to Toolkit 3: Hygiene Education Materials for Primary Schools

Abraham, C (no date) ‘Curriculum Ideas for Exploring Hand-Washing’

Caritas, Ethiopia (2010) ‘Children's Hygiene and Sanitation Training (CHAST)’

Concern Worldwide (no date) ‘Mwongozo wa mafunzo ya mbinu ya mtoto kwa mtoto’ (Child to Child approaches)


Ministry of Education and Vocational Training (date?) Science Pupil's Book 1, 2, 3, 4, 5, 6, for Tanzania

MOHSW (no date) ‘Mwongozo wa Mwezeshaji, PHAST: Minyoo na Kichocho’ (PHAST for schools)


WASH Cluster Hygiene Promotion Project (2009) ‘WASH Hygiene Promotion in Emergencies Training’


### Appendix 4: Water Supply Options for Different Conditions

#### Table 8. Water supply options advantages and disadvantages

<table>
<thead>
<tr>
<th>Water Supply Options</th>
<th>Types</th>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rainwater Harvesting</td>
<td>Roof catchment</td>
<td>Technically feasible at schools, household level, and health facilities.</td>
<td>Roof catchment option is supplementary rather than a permanent source of water.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provides an option for storage of water.</td>
<td>Dependant on rainfall; materials and size of roofing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Initial cost could be high depending on the size of the system and materials used.</td>
</tr>
<tr>
<td>Shallow wells</td>
<td></td>
<td>Relatively low development cost</td>
<td>Provides only a basic service.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Can be upgraded by installation of replaceable water extraction technologies.</td>
<td>Can be easily polluted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low maintenance cost</td>
<td>Often not perennial</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Water right depends on quantity and quality</td>
</tr>
<tr>
<td>Stand pipe (piped schemes)</td>
<td>Piped scheme</td>
<td>Suitable where there are public piped water supply system</td>
<td>More detailed planning is involved</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The ownership of the stand pipe can be with the school</td>
<td>The system is managed and owned by different entity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance can be done by the school community</td>
<td>0&amp;M costs can be high depending on the type of mechanization</td>
</tr>
<tr>
<td>Spring</td>
<td>Protected system</td>
<td>Low O&amp;M costs</td>
<td>Spring catchments needs conservation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minimal interruptions in water supply, except if a seasonal spring</td>
<td>Ownership and access could be difficult depending on location and if the water source is relied upon by the community</td>
</tr>
<tr>
<td>Boreholes</td>
<td></td>
<td>Produces safe water depending on the depth</td>
<td>Has relatively high operation and maintenance costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>User friendly to children especially if hand pump is used</td>
<td>Possibility to encounter saline water</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Requires expensive technical process</td>
</tr>
<tr>
<td>Small dams (charcoal dams)</td>
<td>Open source</td>
<td>Simple technology</td>
<td>It requires large space</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Easy abstraction of water</td>
<td>Poor water quality that requires treatment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The water is often available for a shorter period due to evaporation, seepages/percolations</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>It may not be safe for pupils if they fetch water directly</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Can be a sources of water related diseases</td>
</tr>
</tbody>
</table>
# Appendix 5: Latrines Options for Different Conditions

## Table 9. Latrine options for different conditions

<table>
<thead>
<tr>
<th>Latrine type</th>
<th>Suitable for high ground water table</th>
<th>Suitable for flood prone area</th>
<th>Suitable for loose soils</th>
<th>Suitable for soil of low permeability</th>
<th>Water required for construction</th>
<th>Ease of maintenance</th>
<th>Capital investment</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>SanPlat latrine</td>
<td>Yes, if raised</td>
<td>Yes if fully lined</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Easy</td>
<td>Easy</td>
<td>Low, Sludge unsafe</td>
</tr>
<tr>
<td>Single VIP latrine</td>
<td>Yes, if raised</td>
<td>Yes if fully lined</td>
<td>Not for clay soils</td>
<td>No</td>
<td>Easy</td>
<td>Easy</td>
<td></td>
<td>Sludge unsafe</td>
</tr>
<tr>
<td>Double VIP latrine</td>
<td>Yes, if raised</td>
<td>Yes if fully lined</td>
<td>Not for clay soils</td>
<td>No</td>
<td>Easy</td>
<td>Easy</td>
<td></td>
<td>Sludge safe if kept for adequate time</td>
</tr>
<tr>
<td>Single VIP latrine with pour flush</td>
<td>Yes, if raised and with soak away</td>
<td>Yes if fully lined</td>
<td>Yes with soak away</td>
<td>Yes</td>
<td>Easy</td>
<td>Easy</td>
<td></td>
<td>Sludge unsafe</td>
</tr>
<tr>
<td>Double pit latrine with pour flush</td>
<td>Yes, if raised and with soak away</td>
<td>Yes if fully lined</td>
<td>Yes with soak away</td>
<td>Yes</td>
<td>Easy</td>
<td>Easy</td>
<td></td>
<td>Sludge safe if kept for adequate time</td>
</tr>
<tr>
<td>Ecologic latrine</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Easy</td>
<td>Difficult</td>
<td></td>
<td>Sludge safe if kept for adequate time</td>
</tr>
<tr>
<td>Urinals</td>
<td>Yes</td>
<td>Yes, if raised</td>
<td>Yes</td>
<td>Yes</td>
<td>Easy</td>
<td>Easy</td>
<td>Very low</td>
<td>Urine to be collected</td>
</tr>
</tbody>
</table>


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