



**INDEPENDENT STATE OF PAPUA NEW GUINEA**

**DEPARTMENT OF EDUCATION**

**POLICY**

**AND**

**STANDARDS**

**FOR WATER, SANITATION & HYGIENE (WaSH)  
IN SCHOOLS 2018-2023**





## MINISTER'S FOREWORD



Today as a nation, we in Papua New Guinea face one of the greatest challenges of providing an equitable access to safe, convenient and sustainable water supply and sanitation and improved hygiene practices for our citizens.

The National Government through its recently endorsed National Water, Sanitation and Hygiene (WaSH) Policy (2015-2030) aims to see a significant, sustainable and equitable increase in access to safe water and sanitation and improved hygiene practices throughout the country.

To contribute in achieving the above overall aims of the National Government, the Education Department has developed its Policy and Standards for all schools in the country to follow and comply with.

This Policy & Standards for Water, Sanitation and Hygiene (WaSH) in Schools represents the commitment of the Education Department to sustainably improve the students' overall health and wellbeing towards achieving a quality education within a child friendly school environment.

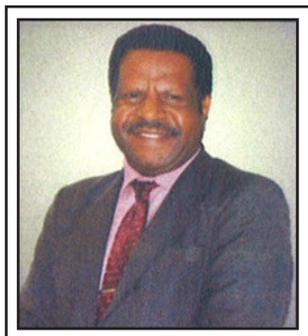
All schools operating in the National Education System including the permitted and private schools will implement this WaSH in Schools Policy and Standards.

This Policy and Standards is to be used by all WaSH stakeholders who are involved in planning, managing, financing, implementing and monitoring water supply, sanitation and hygiene (WaSH) in schools programs and activities in the country.

The successful implementation of this Policy and Standards for WaSH in Schools will have considerable impact in rising the health and lifestyles of our younger future.

.....  
**Honorable Nick Kuman, MP**  
Minister for Education

## SECRETARY'S MESSAGE



The Department of Education (DoE) has more than 2.1 million students in the national education system. These students have rights to quality water, sanitation and hygiene facilities at home and at school. They stay at school most of the year, therefore the quality of drinking water, sanitation and hygiene conditions in the schools have a direct impact on students' health and learning. The inadequate access to quality water, sanitation and hygiene conditions at the school disrupts students' pattern of continued learning at each grade.

Establishing hygienic and healthy school environment in every school is a powerful determinant of building healthy societies in our country. These are crucial elements that prevent spread of water related diseases. Hence, WaSH in schools enhances the wellbeing of our students, their families and paves the way for new generations of healthy students who in the future will contribute positively to the prosperity of their community and nation in terms of social and economic development.

Providing schools with sufficient water, sanitation and hygiene education and improvements remain a major challenge for the National, Provincial, District and School Authorities. WaSH in schools study carried out by DoE reveals that 55% of our schools lack access to clean and safe water, 94% of our schools do not meet national standards of toilets (1:25) and 98% of schools did not promote menstrual hygiene management. The Department estimates that 5 -10 million of schooling days are lost annually due to water, sanitation and hygiene related diseases such as diarrhoea and typhoid.

These constraints may continue to undermine children's rights to education, safe water and sanitation facilities at the school. There are clearly challenges associated with the provision of water, sanitation and hygiene in schools in the country, and there is a need for systematic standards for WaSH in schools.

Given these issues, this Policy and Standards on Water, Sanitation and Hygiene in Schools was developed through a consultative process to address issues inhibiting best WaSH practices. The Policy and Standards for WaSH in Schools provides specific guidelines to establish hygienic and healthy school environment that prevent diseases and to allow students to remain in school and improve student learning outcomes.

The successful implementation of this Policy and Standards on WaSH in Schools will contribute towards improving water, sanitation, and hygiene conditions in our schools, improve retention and improve learning environment as well as improve overall health and economy of country.

.....  
**Dr. Uke W. Komba, PhD**  
 Secretary for Education

## **ACKNOWLEDGEMENT**

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The Policy and Research Wing is acknowledged for its leadership of the process of policy development. The working group, chaired by Mr. Peter Kants (First Assistant Secretary-Policy & Research Wing), was fortunate to have the involvement of the following individuals; Mr. Joseph Moide (First Assistant Secretary – Inspection & Teacher Education Wing), Mr. Paul Ainui (Assistant Secretary – Inspection Division), Mr. John Kawage (Assistant Secretary Policy & Planning Division), Mr. James Agigo (Assistant Secretary Research & Evaluation Division), Brian Monie (Director-Policy Development & Review Unit), Raymond Pekiwape (Research Officer & National WaSH in Schools Coordinator), the four (4) Regional Directors for Inspections and the officers from the Provincial Education Divisions.

The working group thanks the Top Management Team for its advice and leadership towards the development of this Policy and Standards.

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The NGOs include; World Vision, Anglicare PNG, Child Fund, Water Aid, Oxfam, Care International, Live & Learn, Appropriate Technology and Touching the Untouchable.

The working group also thanks the many other Provincial and District officers, school boards, head teachers, teachers, students and school community members who contributed their comments through a range of workshops and meetings during the consultation period.

Special acknowledgement goes to UNICEF's WaSH Specialist, Kencho Namgyal for his technical advice and support in developing this Policy and Standards for WaSH in Schools.

The development of this Policy and Standards was fully supported by UNICEF under its WaSH in Schools Program.

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## ABBREVIATIONS

BOM	Board of Management
CSO	Civil Society Organizations
DDA	District Development Authority
DOE	Department of Education
EMIS	Education Management Information System
FBO	Faith Based Organization
LLG	Local Level Government
MHM	Menstrual Hygiene Management
MTDP	Medium Term Development Program
NEP	National Education Plan
NGO	Non-Government Organization
NQSSF	National Quality School Standards Framework
NWP	National Wash Policy
PNG	Papua New Guinea
P&C	Parents and Citizen Association
SDG	Sustainable Development Goals
SLIP	School Learning Improvement Plan
SWSN	Students with Special Need
SODIS	Solar Disinfection System
WaSHWater,	Sanitation and Hygiene
WinS	WaSH in Schools

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## **PART A: POLICY FOR WaSH IN SCHOOLS**

### **1. POLICY STATEMENT**

All schools and students must have access to basic water, sanitation and hygiene (WaSH) facilities and other related programs to promote good health.

### **2. DOCUMENT AUTHORITY**

This Policy is developed based on relevant powers contained in the Education Act (1983) and the Public Health Act (1973) and linked to the National WaSH Policy (2015-2030).

### **3. POLICY INTENT**

- All schools must have sufficient WaSH facilities in place.
- Safe, clean and sufficient water must be made readily available and accessible to students and teachers for, drinking, sanitation and hygiene purposes.
- All WaSH programs must be part of the School Learning Improvement Plan (SLIP).
- School development plans and guidelines must be drawn up and be consistent with the established guidelines and standards on Water Sanitation and Hygiene in schools.
- Access, equity and quality learning for all are promoted through WaSH in schools and other related programs.
- School authorities, stakeholders and partners must have all their Water, Sanitation and Hygiene (WaSH) activities, projects and programs coordinated from the National Department of Education.

### **4. POLICY INTENDED OUTCOMES**

This Policy anticipates that:

- All students and teachers have access to clean, safe drinking water.
- All students and teachers have access to clean functional toilets and hygiene facilities.
- All girls must have access to proper menstrual hygiene facilities.
- All students and teachers demonstrate appropriate behaviour change in their hygiene practices.

## **5. POLICY RULES**

- All WaSH in Schools programs are approved and coordinated by DoE.
- All schools must comply with the minimum standards for WaSH in schools.
- WaSH and other related programs and activities must be part of the School Learning Improvement Plans.
- All stakeholders and partners support the implementation of WaSH in Schools Policy.
- Building of WaSH facilities must be based on the established standards by DoE and partner agencies including NDoH, Water PNG and Works Department.
- Regular monitoring of WaSH in Schools activities will be carried out by school authorities, Education and Health inspectors.

## **6. RESPONSIBILITY FOR IMPLEMENTATION AND COMPLIANCE**

The Secretary for the Department of Education is responsible for the overall coordination, supervision and implementation of this Policy at the National and Sub-National Levels.

The Department of Education in consultation with the Provincial Divisions of Education and other key departments are responsible for the management and administration of this policy.

School authorities, heads of schools, parents and communities are responsible for the implementation of this policy.

The key partners and stakeholders are to support the implementation of this policy.

## **7. SCOPE**

All schools operating in the National Education System will implement the WaSH in Schools Policy.

This Policy also covers permitted schools including private schools operating outside of the National Education system. The aim is to meet the National WaSH Policy (2015-2030) targets and assess the extent of WaSH in Schools coverage in the country.

## **8. DEFINITIONS**

**Functional toilets:** Toilets are not physically broken and can be used.

**Sanitation:** Proper waste disposal

**Hygiene:** Situations conducive for maintaining health especially to do with cleanliness. For example, washing hands with soap after using the toilet, before touching and eating food and after handling waste.

**Minimum Operating Standards:** The requirement expected to be fulfilled.

**Permitted schools:** A school other than a member school of the National Education System. As defined in the Education Act (1983) these schools are not within the National Education System however must gain a permit to operate.

**Policy:** refers to the focus and direction for implementing WaSH in Schools.

**School:** means preschools, elementary, primary, community, high schools, secondary, vocational, FODE, inclusive education, teacher education, technical and business colleges approved permitted schools which provides education as described under the Education Act (1983).

## **9. RELATED DOCUMENTS**

- Vision 2050
- Medium Term Development Plans
- Sustainable Development Goals (SDG)
- National WaSH Policy (2015-2030)
- Education Act (1983)
- National Education Plan (2015-2019)
- National Health Plan(2010-2020)
- Public Health Act(1973)
- Education Sector Strategic Plan (2010-2030)
- Universal Basic Education Plan (UBE 2010-2019)
- School Registration Policy and Procedures (2016)

## **10. POLICY REVIEW**

This document must be reviewed after every 3 years from the date of implementation. A review date will set and review conducted and various sections of the Policy will be reviewed periodically to incorporate changes as and when the need arises.

## **11. DOCUMENT HISTORY**

When approved, this document supersedes any other Policy and Standards for WaSH in Schools.

<b>Effective Date</b>	<b>Authorized by</b>	<b>Version number</b>	<b>Comments</b>	<b>Review Date</b>
<b>1/01/18</b>	Dr. Uke Kombra (PhD) <b>Secretary for Education</b>	<b>Version #: 1</b>	<b>This policy has been endorsed by both the Minister &amp; Secretary for Education</b>	<b>January 2021</b>

## **PART B: MINIMUM STANDARDS FOR WaSH IN SCHOOLS**

### **SECTION 1: INTRODUCTION**

Hygienic and healthy school learning environment is a critical element to prevent diseases and facilitate children to access quality education with comfort, pride, dignity and convenience. To promote hygienic and healthy learning environment, it is important to install child friendly, gender sensitive, inclusive toilets and hand-washing facilities with soap or ash. Ensure safe drinking water is provided within the school with hygiene promotion programs to sustain behaviour change.

For a quality WaSH in schools programme, it should be supported by an enabling environment through policies, standards, institutional structure, coordination mechanism, adequate budgeting, finance, monitoring and supervision. The programme should trigger community mobilization to identify, analyze and address problems through School Learning Improvement Plan (SLIP) processes. Once demand is triggered, it should be supplemented with capacity development on building improved WaSH facilities. The school boards and management will use local hardware suppliers and locally available materials to enable them to improve their WaSH facilities. The programme should also have a sustained hygiene education programme to impart hygiene education and promote improved behaviour change amongst students. There is a Monitoring and Evaluation mechanism (school census) to keep the flow of information active for continual feedback for policy advocacy and review for continual improvements of the programme.

#### **1.1 Background**

PNG has ample policies like Vision 2050, Medium Term Development Plans (MTDP) 1 & 2, National Health Plan, National Education Plan 2015-2019 and more recently the National WASH Policy 2015-2030 with clear goals and targets on WaSH. However, there are limited standards, funding constraints; with no coherent institutional structure and coordination mechanism to deliver services on WaSH in schools, households and health care facilities. The statistics on WaSH in PNG are revealing the reality of how the policies are not translated into WaSH services delivery.

Preliminary analysis of 4700 schools through the PNG Annual Education Census Data on WaSH in Schools in 2016 revealed that only 51% of the schools in PNG have basic water and 28% have toilets which are gender separated and usable. From the census data, only 10% provided soap to promote hand washing.

The baseline assessment of WaSH conducted in 200 schools in all regions in 2015; reveal that 92% of the schools did not have Menstrual Hygiene Management facilities thus posing serious barrier to children especially girls in attending classes and accessing education regularly. Effort on delivering WaSH services by different organizations in PNG were fragmented with development partners, Non-Government Organisations (NGOs), Civil Society Organisation (CSO), Faith Based Organisation (FBO), provincial and local authorities delivering facilities and services to only a few institutions annually.

## 1.2 Purpose

The minimum standards on WaSH in schools have been developed through consultative process among the WaSH partners in PNG. A national workshop on WaSH in schools was held from October 31<sup>st</sup> to the 4<sup>th</sup> November 2016. Consultation was also undertaken with school children and their feedbacks were incorporated into this guideline. This guideline is in line with international best practices and standards whilst incorporating cultural aspects and availability of resources in PNG.

The standards are developed to create uniform minimum condition for WaSH in schools and a healthy environment for school children, teachers and other staff.

The standards deal specifically with water supply (water quality, quantity and access), sanitation (quality and access), hygiene promotion and menstrual hygiene management. They are designed for use in low-cost settings, where simple and affordable measures can significantly improve hygiene and health.

The word “school” is used in this document to include all schools comprising elementary, primary and secondary schools, boarding and day schools, rural and urban schools, and public and private schools.

These standards are designed to:

- Assess existing conditions and plan for incremental improvements in line with the National Quality School Standards Framework (NQSSF) and the global three star approaches to WaSH in schools.
- Support un-packing the ambitious goals and targets under National WaSH in schools related policies and guide implementers in ensuring schools receive and create uniform condition on WaSH in schools irrespective of geographic location, size and level of schools.

The standards are written for use by education managers and planners, school Board of Management engineers, architects, water and sanitation technicians, teaching staff, village education committees, local authorities and similar bodies.

The standards are requirements for WaSH in schools in all schools in Papua New Guinea regardless of funding source or implementing agencies.

The standards are subject to monitoring and approval by the Department of Education and the School Inspectors and Environmental Health officers.

## 1.3 Three Star Approach to WaSH Assessment

Three Star Approach to WaSH in Schools to achieve National Quality School Standards. 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. Therefore, it is necessary to both prioritize required improvements and work in a phased way so that the most urgent problems (or those that can be addressed rapidly) can be identified and targeted immediately,

and other changes can subsequently be made in a phased manner as per the indicators in Annex 1.

## SECTION 2: ROLES AND RESPONSIBILITIES

These standards can be effectively implemented if all WaSH in schools partners support the implementation by fulfilling their respective responsibilities.

### 2.1 Department of Education

- Establish a WaSH Unit and appoint a full time National WaSH in schools Coordinator
- Lead and Coordinate effort on WaSH in Schools
- Mobilize funding/resources on WaSH in schools
- Develop standards and ample guidance documents on WaSH in schools
- Incorporate WaSH in schools in curriculum and pre-service teacher training college
- Provide capacity building on WaSH in schools
- Monitor WaSH in schools and generate annual report on WaSH in schools disaggregated at district and by different level of schools
- Communicate and establish link with central agencies and other key partners and stakeholders.

### 2.2 Provincial Education Office/Provincial Government

- Appoint a WaSH in schools coordinator/manager/focal point at the province
- Ensure that all schools make incremental improvement on WaSH in schools using these standards
- Coordinate support to WaSH in schools and ensure that schools with most needs are provided with support if funding and support are available through DDA, province, national level government, development partners, NGOs, CSO, FBO, private sector foundation etc.
- Provide capacity development needs of schools on WaSH in schools
- Allocate budget for WaSH in schools including capital cost, operation and maintenance cost and cost of monitoring budget on WaSH in schools
- Support/Facilitate inspectors to monitor and enforce WaSH standards in schools
- Reward and certify schools that upgrade using this approved minimum standards as; emerging (one star), established (two star) and advanced evidence (three star) on WaSH in schools (**Refer to Annex 1**)

### 2.3 Provincial Health Authority

- Liaise with Provincial Education Division for WaSH in schools related activities
- Assist in providing logistics and technical support for WaSH in Schools purposes
- Ensure that appropriate technologies are applied in WaSH in schools
- Provide support in the assessment and investigation of disease outbreaks in schools
- Create and maintain base line data on WaSH in schools
- Provide biannual reports on WaSH in schools

- Provide advocacy and awareness on WaSH in schools
- Conduct routine and regular health inspections to schools.

## **2.4 District Education Office/District Development Authority**

- Appoint a WaSH in schools Coordinator/Manager /focal point at the District
- Ensure that school inspectors monitor WaSH in schools and incorporate WaSH in schools in the DDA five year plan
- Mobilize funding, allocate budget, finance and support service delivery including technical support on WaSH in schools
- Coordinate support to WaSH in schools and ensure that schools with most need are provided with support if funding and support are available through province, national level government, development partners, NGOs, CSO, FBO, private sector foundation etc.
- Ensure that school inspectors produce an annual report on WaSH in schools highlighting the progress and gap on WaSH in schools
- Submit the capacity development needs of schools on Hygiene Promotion and support capacity development on WaSH in schools
- DDA to ensure that a technical unit/ technical services are accessible to schools to facilitate improvement on WaSH in schools.

## **2.5 District Health Officers**

- Provide periodic technical support
- Work closely with School Inspectors to monitor WaSH in schools
- Conduct water quality monitoring
- Conduct routine health inspections of schools
- Conduct assessments of WaSH related and other diseases out breaks in schools
- Supervise WaSH facilities installation in the schools.

## **2.6 Ward and Local Level Government**

- Provide additional funding and infrastructure support
- Support advocacy on WaSH in schools
- Provide and mobilize community support for school WaSH projects
- Maintenance and sustainability of WaSH in schools.

## **2.7 School Board of Governors and Management**

Amongst other responsibilities, school Boards of Governors and Management are responsible to ensure schools are promoting health. Specific to WaSH in schools, the school Board of Management must:

- Benchmark the implementation of WaSH in their respective schools using the standards and indicators outlined in this document (**Refer to Annex 1**)
- Include incremental improvement plan for WaSH in schools in the school learning improvement plan (SLIP)
- Allocate funding for WaSH in schools and ensure effective implementation of WaSH in schools including budget for operation and maintenance and consumables such as soap and toilet cleaning materials and sanitary napkins.

## 2.8 Head Teachers/Principals

- Provide overall leadership for WaSH in their school
- Provide biannual WaSH in School situational reports to relevant authorities
- Ensure WaSH in schools committee, School WaSH Coordinator and School Health/WaSH club are formed to promote healthy/health promoting schools
- Ensure WaSH in schools is monitored and promoted in line with the indicators on National Quality School Standards Framework and three star approach to WaSH in schools (**Refer to Annex 1**)
- Provide WaSH in schools information in the school census and to the school inspectors and environmental health officers
- Coordinate WaSH awareness and advocacy in the school
- Develop WaSH in schools rules and guidelines
- Provide leadership to ensure WaSH in school is taught and implement.

## 2.9 Parents & Citizen

- Actively participate in school WaSH problem analysis and support the improvement on WaSH in schools
- Support the school Board of Management in the effective implementation of WaSH in schools
- Contribute labor, land, skills and local materials for upgrading/improving WaSH in schools, gardening, landscaping and in keeping the school, safe, clean and healthy
- Analyze school WaSH problem, identify problem and propose solution with transformed sense of ownership leading to development of a school learning improvement plan
- Take ownership and responsibilities of WaSH at family and community level.

## 2.10 Partners

- Development Partners, NGOs, CSOs, FBOs, Private Sector Foundation, Churches and all other partners must ensure that the minimum standards and indicators (**Refer to Annex 1**) are adhered to in the implementation of WaSH in schools
- All support must be routed through provincial/district administration. Direct support to the school by passing District and Provincial administration is discouraged to avoid fragmentation of effort and to ensure schools with critical need receive the support
- Submit annual WaSH in schools reports to the Districts, provinces and national level.

## SECTION 3: STANDARDS FOR WATER SUPPLY

### STANDARD 1: Water Quantity and Quality

**Sufficient** clean water is available at all times for drinking, food preparation, personal hygiene, cleaning and laundry is **safe** for the purpose intended.

#### 3.1 Improved Source, Quality and Quantity Indicators

##### 3.1.1 Improved water source

JMP (Joint Monitoring Programme) on SDG (Sustainable Development Goals) has proposed service monitoring on WinS (WaSH in Schools).

The *core* service ladders for all schools include three levels: no service, limited service, and basic service, where “basic” service threshold corresponds to the SDG indicator for Target 4.a. For schools that have basic service are encouraged to achieve advanced service.

The location of the school will determine the best type of water source available. An “**improved drinking water source**” is one that, by the nature of its construction, adequately protects the source from outside contamination, particularly fecal matter.

“**Improved water sources**” in a school setting include:

**i. Reticulated (piped) water system (city, town or community supply) and Gravity fed systems** (*Refer to Annex 3 technical diagrams*)

- Depends on the water source and customary land options
- Ensure that the source is safe from contamination and storage tanks are available in the schools.

**ii. Protected well/spring including boreholes/tube wells, protected dug wells and protected springs** (*Refer to Annex 4, technical diagrams*)

- Should be enclosed for pumping and 30m away and uphill from the latrines.
- Should be fenced for safety and security.

**iii. Rainwater catchment** (*Refer to Annex 5, technical diagrams*)

- All schools should install rain water tanks, either as their main water supply or as a backup supply (can cut down on water bills)

#### Drinking water

##### Advanced service

May include; water is available when needed, accessible to all, and free from contamination based on water quality testing (to be defined at national level)

##### Basic services

Drinking water from an improved source is available at the school

##### Limited service

There is an improved source (piped water/spring, rainwater, bottled water), but water not available at time of survey

##### No service

No water source or unimproved source (unprotected well/spring, tanker-truck surface water source)

Figure 1. JMP Service Ladder for Drinking Water

- Ideally, at least one water tank should be connected to the roof of every substantial building in the school
- All rain harvesting tank systems must be installed with the first flush system
- One rainwater tank should also be located near to each of the boys' and girls' toilets or connected to it for hand washing
- Any new building infrastructure should include complete set of rain water harvesting system
- Preferred type is the plastic (polyethylene), Ferro cement tanks
- PVC and poly pipes preferred for pipe work
- Closed PVC guttering should be used with the tank systems
- Concrete basement is required for all tanks to sit on
- Rainwater tanks should have back up storage capacity of 10 liters per child per day for at-least 30 days for a boarding school and 5 liters per child/user per day for at-least for 30 days. It is based on the assumption that water storage can be refilled within 30 days.

#### **iv. Bottled water** (*Refer to Annex 6*)

In the Joint Monitoring Program (JMP) classification bottled water is classified as an improved water source. However the school management or service provider must not consider bottled water or asking the children to bring drinking water bottle filled with water from home as having improved water source. Bottled water is considered as the last option among the various categories of improved water source when there are no sources available in the school.

**“Unimproved”** sources include:

- i.** unprotected well/spring,
- ii.** water cart/truck, and
- iii.** surface water (e.g. lake, river, creeks, stream, pond, canals, irrigation ditches)  
or
- iv.** any other source where water is not protected from the outside environment.

### **3.1.2 Water quantity**

- Minimum of 5 Liters of water per day per student should be available from the water source
- Minimum 20 Liters of water per day per student should be available for boarding schools
- 200 days (academic school days) x 5 Liters of water x number of students = Annual water requirement
- User of water include for students and staff.

Facility	Standard	Description
Day school	5 L/p/d	Minimum water required for meeting basic water needs
	+20 <sup>1</sup> L/p/d	Additional water quantity for schools with pour-flush toilets
Boarding school <sup>2</sup>	5 L/p/d	Minimum rainwater storage required at all schools and locations
	50 L/s /d	Minimum amount to be used for the primary piped water supply, where the preferred 100L/s is not available

### 3.1.3 Water quality

- Water quality testing should be carried out before constructing any new type of water source
- Drinking water should be 100% E-coli free
- The water supplied must be free of pathogens and protected from contamination inside the school itself
- Regular water testing is encouraged however bacteriological tests should be carried out during outbreaks
- Schools are encouraged to regularly clean water intake, storage tanks, practice the basic water quality testing technique etc.
- Rainwater catchment surface, guttering and storage tank must be correctly operated, maintained and cleaned
- Environmental Health officers should be involved in monitoring the physical and microbiological quality.

#### **Low cost water treatment options** (*Refer to Annex 7*)

- Boiling of water should be promoted
- Use of Aqua tablets should be promoted
- Chlorination of tanks is recommended for surface water
- Promotion of Solar Disinfection (SODIS)
- Promotion of Filtration
- Use of bleach.

## STANDARD 2: Water Facilities and Access

There must be sufficient water collection points and water use facilities available to allow convenience and access to water for drinking, food preparation, personal hygiene, cleaning and laundry.

### 3.2 Water Facilities and Access Indicators

#### 3.2.1 Tap ratio

Recommended tap ratio for schools in Papua New Guinea are shown below.

Tap Use	Tap Ratio	Remarks
DAY SCHOOLS:		
Drinking water	1:100 <50m from users	For urban schools only
	1:50 <50m from users	For rural schools only
Hand washing facility	1:50	Separated by gender and special needs. Minimum 1 hand washing facility inside/outside toilet and near dining area or market place in the school
BOARDING SCHOOLS:		
Laundry facilities (sink with scrubbing bench top)	1: 50 boarding students	For both urban & rural Schools
Shower Cubicle	1:20	Separate shower cubicle for boys and girls in both urban & rural schools

#### 3.2.2 Types of taps *(Refer to Annex 8, technical diagrams)*

- Taps should be offset and stand-alone from the tank
- Tap installation for drinking and hand washing should cater for different heights of students
- Promote tippy taps where there are limitations
- Install lockable taps.

#### 3.2.3 Location and accessibility

1. A reliable drinking water point should be accessible and available at all times for all students including students with special needs during school hours. Preferably placed at a central location and 50 meters away from students.
2. Drinking-water should be provided at clearly marked points, separately from water provided for hand washing and other purposes, even if it is from the same supply.
3. Drinking-water may be provided from a piped water system or via a covered container with a tap where there is no piped supply.
4. Hand washing facilities must be in the vicinity of the toilets and near dining area for all students including students with special needs.
  - Hand washing facilities should be available at school market for all students

including students with special needs.

- Hand washing facilities are convenient and hygienic for use. All hand washing places must have water and soap available at all times for all students including students with special needs with a suitable place for keeping soap.
- Where there are limitations, use flowing water from tippy taps, cans, bottle for hand washing with soap. Hand washing from stagnant water from a bowl or a dish must be discouraged as the water gets dirty.
- Students must not drink directly from the tap.

### **3.2.4 Water accessibility in the classroom**

- All students are encouraged to bring drinking water bottles to schools
- Make available clean and safe water in the classroom for student use
- Make available at-least one 20 liters storage container filled with water and connected with a tap head as a hand washing place with soap near each classroom in places where there are no tap stands.

### **3.2.5 Drainage of waste water**

- Waste water should be safely drained to prevent mosquito breeding
- All water coming out of taps must flow through a proper drainage system
- Concrete apron slab design should be used for waste water containment and drainage
- Soak away pit should be considered as a waste water management option

### **3.2.6 Water for Menstrual Hygiene facility**

- Sufficient water should be available at the menstrual hygiene facility or at the private and functioning changing room for girls.

## **STANDARD 3: Operations and Maintenance**

A Water Management Group should be set up under the School WaSH Committee and trained to take responsibility of all issues relating to water supply system and maintenance in the school.

### **3.3 Operation and Maintenance Indicators**

- School WaSH Committee should be sub-committee of SLIP set up in schools and should take responsibility of all aspects of WaSH in Schools
- WaSH Committee should include:
  - BOM chairman.
  - School WaSH Coordinator (Teacher)
  - Head teacher
  - A health worker – if health facility is nearby
  - Male and Female Student reps/ School Health Club Coordinator
  - Male and female P&C /Community representatives.
  - Local skilled artisan (plumber, carpenters)
- WaSH in schools committee must make available funding for upgrading, operating and maintaining water facilities in the schools
- WaSH in school committee must establish a vibrant School Health Club

- The committee must also appoint a School Water Caretaker whose tasks will be to carry out regular operation, repair and maintenance
- School Water caretaker must work closely with the school health club and to carry out regular cleaning of water source, intake, rainwater gutters, storage tanks etc. to improve the quality of water
- Awareness and training on all aspects of WaSH must be conducted for school authorities, staff, and all school children
- District, Provincial and National Department of Education and Health in partnership with development partners, NGOs and CSOs must provide regular training and supportive supervisory visits to the school WaSH Committee and technical training to the school water caretaker.

## SECTION 4: STANDARDS FOR SANITATION

### STANDARD 1: Access to and Use of Toilets

Sufficient, accessible, private, clean, secure and culturally appropriate and improved toilets with menstrual hygiene management facilities are provided for and used by all students, staff and people with special needs

#### 4.1 Sanitation Indicators

As in the case of drinking water, the *core* service ladders for all schools include three levels: no service, limited service, and basic service, where “basic” service threshold corresponds to the Sustainable Development Goal (SDG) indicator for Target 4.a. For schools that have basic service are encouraged to achieve advanced service as per the indicators defined in this document.

**Improved Sanitation Facility:** An “improved” sanitation facility is one that hygienically separates human excreta from human contact.

#### Descriptions of improved facilities

- Cleanable surface, easy clean and maintain
- Eliminate bad smells
- Prevent flies to access
- Accord privacy
- User friendly (inclusive of SWSN)

**“Improved” Sanitation facilities** in a school setting include: (*Refer to Annex 9, technical diagrams*)

- flush/pour-flush toilets,
- pit latrines with slab lid,
- and composting toilets or UDDT (Urine Diverting Dry Toilets)
- VIP Latrines

#### Advanced service

May include; facilities are safe, clean, accessible to all, of sufficient quantity and appropriate facilities for menstrual hygiene management are provided (to be defined at national level)

#### Basic services

Improved facilities which are sex-separated and usable at the school

#### Limited service

There are improved facilities (flush/pour flush, pit laterine with slab, composting toilet), but not sex-separated or not usable

#### No service

No toilets or laterines, or unimproved facilities (pit laterines without a slab or platform, hanging laterines, bucket laterines)

## Descriptions of unimproved facilities

- Lack of ventilation
- Dirty surface/slab
- Broken walls
- Not user friendly

“**Unimproved**” facilities include:

- pit latrines without cleanable surfaces
- hanging latrines, and bucket latrines
- Any other facility where human excreta is not separated from human contact.

**Gender Separated** means there are separate toilet facilities dedicated to female use and male use at the school.

**Usable** means Toilets/latrines are accessible to students (doors are unlocked or a key is available at all times), functional (the toilet is not broken, the toilet hole is not blocked, and water is available for flush/pour-flush toilets), and private (there are closable doors that lock from the inside and no large gaps in the structure)<sup>1</sup>.

For a school setting, the super structure of the toilet is equally important as the sub-structure.

## 4.2 Availability: Quantity

To ensure that the sanitation facilities are sufficient, the following student-to-toilet and staff-to-toilet ratios are established:

**Table 1: User-to-toilet ratios:**

Facility	User group	Minimum Indicator	Remarks
Day Schools	Students	1:25 girls	Provide an extra changing room facility for girls. 1 toilet + 1 urinal wall (50 cm) per 40 boys (inclusive of students with special needs)
		1:40 boys	
		1:40 urinal	
	Staff	1:20 separate male & female	
Boarding schools	Students	1:25 female	Provide 1:20 shower block for both boys and girls Also Provide a urinal for boys
		1:40 male	

## 4.3 Availability: Quality

Schools must install at-least a Ventilated Improved Pit (VIP) latrine with a cleanable slab. With VIP is a minimum option, incremental improvement must be made based on student population growth. The superstructure may be made of locally available materials, V crimp sheet, corrugated/flat iron, timber or any other affordable and durable. Wall must be firm and durable and must offer good privacy. Roof must also be durable and must not leak.

#### **4.4 Hand washing Facility** *(Refer to Annex 10, technical diagrams)*

To facilitate/encourage hand washing with soap and water after use of toilets, hand washing facility must either be provided inside the school toilet, just adjacent to each toilet, or the hand washing place must be strategically located between the classroom and the toilet. Both soap and water must be available at all times.

Where water and infrastructure are limited, schools are encouraged to install Tippy Taps, buckets/jerry cans fitted with tap heads. Waste water from the hand washing facility must be appropriately drained to a soak pit.

Depending on funding and availability of water for flushing other improved toilets such as twin pit pour flush toilets with leach pits which uses minimum water for flushing may be promoted. In twin-pit, pour-flush offset latrines, the toilet super structure can be a permanent structure, the wastewater can be directed to the one pit until it is full then redirected to the other pit, and the waste materials can be safely removed from a full pit and buried after it has been left to biodegrade for at least one year.

A decommissioned pit will take 6 months to fully sanitize and compost before the pit can be emptied and reused. Pit dimensions must be thus adequately designed. Soil permeability information and sharp waste load estimate are required for sharper design.

Pit must be located at-least 30 meters away from drinking water source.

The biggest challenge for Pit toilet is emptying of pit and the need to move the superstructure and more the pit when it is full. Design of both the superstructure and toilet slab must allow easy dismantling and movement to the new location.

Pit must be lined in high water table areas, in areas with sandy soil and in areas where the hard strata is at a depth deeper than the pit depth.

#### **4.5 Accessibility, Privacy and Security**

Toilets should be as close to the users as possible to ensure convenient and safe use. Toilets must be located next to or within 30m from classrooms - and preferably within the school premises. The path to the toilet should be gentle and not slippery, clear and safe (non-hazardous) and adequately lit. Children must be consulted to ensure that the toilets are accessible and are culturally appropriate accessible by students with special needs (SWSN).

Entrances must be provided with a privacy wall or the entrance should face away from public view to provide maximum privacy in entering and leaving the toilet building. Toilet building must be visible and not isolated or hidden.

Boys and girls must have gender-separated toilets. If the land space allows, toilets for girls and boys must be built in physically different location.

All toilet compartments must be secured by locks fitted on the inside of cubicles. Schools may in consultation with the Board and Parents and Citizenship Committee (P&C) decide to provide lock on the outside if required to secure/lock the toilet from

vandalism especially at night and during school holidays. A decision to secure outside locks is dependent on location and can be made in consultation with school and community. The schools are also encouraged to maintain healthy and good relation with the local community to guarantee the safety of the children.

Toilets for early child development (ECD) learning centers will need to be attached to their learning area or at-least adjacent to it as the young children need constant adult supervision when using the toilet.

#### **4.6 Inclusive design: young children, children with special needs and Menstrual Hygiene needs**

**For children with special needs** (*Refer to Annex 11, technical diagrams*)

Toilet building must be inclusive and must have one toilet cubicle suitable for people living with special needs. It should be accessible with ramp, guard/hand rail and must also be suitable for catering to use for menstrual hygiene needs.

Each toilet block one for boys and girls must at least have one toilet suitable for persons living with a disability.

#### **For young Children needs**

Toilet seats must be of suitable height considering age and size of children. Maximum toilet seat height for Early Child Development centres and elementary school must be 300 mm. Height of latch/hand must be low and without a lock. Hand washing facility must also be designed in accordance with the height of the children.

#### **Menstrual Hygiene Needs**

The toilet must cater for girls needs in managing menstrual hygiene needs and the following must be provided.

**Hardware** (*Refer to annex 12-technical diagrams*)

- A separate changing room for girls must be provided for with a hygiene rack, a bench to sit and rest and a hook to hang personal items.
- The changing room must be provisioned with sufficient water for washing and cleaning.
- Culturally appropriate waste disposal facility ranging from a simple dust bin with lids to oven/firebox must be integrated into the design. Waste management option must be decided in consultation with the girls and school staff.
- For children with special needs, the facilities must allow for increased space required for wheel chair users as well.

#### **Consumables**

- The changing room must be provisioned with or the school management must make available soap, sanitary napkin, re-usable sanitary cloth/locally available menstrual hygiene and cleaning materials for girls to use anytime they need.
- School management must also make arrangement to make soap or ash available at all times.

## Software

- The school must delegate a female teacher to provide careful guidance on Menstrual Hygiene Management to adolescent girls. Engage village female health volunteer in case of no female teachers. In case of no female village health volunteer engage wife of a teacher or a mother in the village.

### 4.7 Use, Operation and maintenance of toilet facilities

The school management must ensure that the toilets are cleaned daily with supervision and must ensure that the toilets are in clean condition. Daily cleaning roster with an assigned supervisor teacher must be administered daily. The assigned supervisor must monitor the cleanliness of the toilet every day. To avoid over burdening the teacher, tasks of supervision must be rotated among the teachers on a weekly basis.

Cleaning materials such as detergent, bucket, brushes, gloves and gum boots must be made available. Environment surrounding the toilet must be clean and attractive. The toilet wall must be painted bright with hygiene messages.

In the School Learning Improvement Plan, must also budget for operation and maintenance to repair broken/damaged components such as broken doors, leaking roof, broken/cracked wall, sinks, taps, drainage, showers, lights, windows, rubbish bins, or oven/firebox etc.

## SECTION 5: STANDARDS FOR HYGIENE PROMOTION

### STANDARD 1: HYGIENE PROMOTION

Hygiene Promotion is sustained through adequate water supply, proper use and maintenance of WaSH facilities for improved, positive hygiene behaviour by all educational institutions for healthy living and quality learning.

**Hygiene:** Situations conducive for maintaining health especially to do with cleanliness. For example, washing hands with soap after using the toilet, before touching and eating food and after handling waste.

**Promotion:** Empowering children/people to take ownership of their own health. For example: Demonstration on how to wash hands.

### 5.1 Community Mobilization

For a vibrant hygiene promotion, the school board of management (BOM) must work in partnership and harmony with the Parents and Citizens (P&C), influential and local leaders from the catchment community. Hygiene Promotion will be sustained through links and with support from the P&C and community,.

#### Expected Outcomes

- All schools must establish a School WaSH Committee

- School Inspectors and Health Promotion Officers/Environmental Health Officers with support and guidance from District Education officers must facilitate a community mobilization program targeting change in mind set of the school authorities, P&C, influential members from the community for improved hygiene behavior within the school and the community

## **5.2 Hygiene Education & Promotion**

The seven key hygiene behaviors that must be promoted in the schools are:

- Safe use of toilets
- Use of safe drinking water
- Hand washing with soap (Refer to Annex 13, hand washing steps)
- Menstrual Hygiene Management
- Personal hygiene such as brushing, bathing, washing, nail clipping, tidy hair
- Waste Management and environment hygiene
- Food Hygiene

Hygiene Education is directed through DoE's WaSH in Schools Policy

- Hygiene Education lessons in the school must be taught and assessed in both theory and practice
- Hygiene Education and promotion must be emphasized daily in the school environment
- Daily supervised group hand washing and daily supervised cleaning of toilets must be practiced by school to promote improved hygiene behavior
- Hygiene Education must be supported with funds and resources through the SLIP and other funding sources
- NDoE must coordinate support from WaSH in schools partners
- Provide frequent in-service training for teachers using the Participatory Hygiene and Sanitation Transformation (PHAST), School Led Total Sanitation (SLTS), or the Healthy Island approach for training
- Hygiene education must also be included in the Pre-service training college
- Sufficient hygiene promotion materials such as facilitation guide, posters, brochures, pamphlet, audio visual materials, games etc. must be made accessible to the schools which are approved by the National Departments of Health and Education
- School must observe important WaSH related Global Days such as World Water Day (March 22nd), Menstrual Hygiene Day (28th May), Global Hand Washing Day (October 15th) and World Toilet Day (November 19th) to raise awareness on different WaSH themes
- Schools are also encouraged to use different forums such as debate, quiz, games, sports, role play, concert, health clubs, and traditional festival in the community as a medium to promote hygiene in the schools

## **5.3 Menstrual Hygiene Management**

Schools must promote Menstrual Hygiene Management (MHM) to ensure that girls do not miss classes or are distracted during Menstruation. Girls must have access to a clean and private changing room which offers good privacy and are provisioned with soap, water and changing materials. Schools must ensure that girls receive careful guidance on menstrual hygiene management from a trained female teacher

- School Boards and School WaSH Committee must regularly monitor and discuss issues on MHM and make improvements on it
- Schools must budget to provide adequate consumables such as soap, sanitary napkins/clean cloth, rubbish bin or disposal facility available in the school
- Re-usable sanitary pads must be promoted where there is demand and where commercial pads are not available
- DoE must coordinate and mobilize partners to train teachers and staff on Menstrual Hygiene Management to supplement curricular education with special sessions as teachers and students to ensure that MHM are implemented more seriously
- Trained teachers must provide menstrual hygiene education to both boys and girls on adolescence
- A female teacher or a senior female student must be appointed as the MHM focal point that the girls are comfortable with; to provide careful guidance to the girls about specific questions and to provide them with MHM materials as and when needed
- A pocket guide must be made available for girls to read about menstrual health and hygiene on proper use, cleaning, handling, and disposal of used sanitary pads to prevent spread of germs when handling menstrual blood

Schools ensure continuous supply of toilet paper, soap and pads for emergency use. These materials are made available to students without unnecessary barriers and these can be provided from the school budget and other alternatives.

## **SECTION 6: MONITORING AND EVALUATION**

DoE will develop a WaSH in Schools monitoring and evaluation system at the national, provincial and school levels that will allow Departments multi-sectoral stakeholders and partners for WaSH in schools activities and programs to make informed and evidenced based WaSH planning, programming and implementation. This will ensure proper planning, budgeting, management, capacity building including identification of clear roles and responsibilities in implementing WaSH in Schools programme.

At the National level, appropriate WaSH in Schools indicators will be included in the National School Census to collect reliable and timely data needed for WaSH in School policy and standard implementation. Key indicators on Water, Sanitation and Hygiene standards will be collected and benchmarked with established WaSH standards. The data collected can assist the Department to use it to make inform decision in determining the outcomes of WaSH programs carried out in all school sectors throughout the country.

At the Provincial level, Standards Officers, will supervise and monitor WaSH through the National Quality School Standards Framework (NQSSF) using the three star approach.

### **Monitoring of Costing**

The general costing for building the WaSH facilities in the schools by all the concern stakeholders can be of;

- (i) No Costing at all
- (ii) Minimum Costing or
- (iii) High Costing

The above 3 categories of costing varies depending on the availability of the local resources in meeting the minimum standards.

## **SECTION 7: REVIEW OF THE STANDARDS FOR WaSH IN SCHOOLS**

Review of this Policy and Standards for WaSH in Schools is a requirement. Every 3 years from the date of implementation a review date will be set and review conducted. Various sections of this Policy & Standards for WaSH will be reviewed to incorporate changes as and when the need arises.

## REFERENCES

Government of Papua New Guinea (2016), *Vision 2050*, Waigani, National Capital District

Department of National Planning and Monitoring, *National WaSH Policy 2015-2030*, Waigani, National Capital District

Department of Education (2015), *National Education Plan – 2015-2019*, Waigani, National Capital District

Department of Education (2016), *WaSH in Schools Policy*, Waigani, National Capital District

## GLOSSARY

<b>Biodegrade</b>	Environmental Friendly decomposition of human waste and rubbish
<b>Consumable</b>	Soap, girls changing pad, detergent, buckets, mop, rake, etc..
<b>First flush system</b>	Toilet with flush system
<b>Gender separated</b>	WaSH Facilities for boys separated from girls
<b>Hardware</b>	Hand-washing facilities, toilets, girls changing rooms, etc.
<b>Software</b>	Hygiene promotion activities, e.g. Teaching of hand washing
<b>School</b>	The word “school” is used in this document to include all schools comprising elementary, primary, high school, vocational and secondary schools, boarding and day schools, rural and urban schools, and public and private schools
<b>Super structure</b>	Strong foundation upon which WaSH facilities are been built on
<b>Tippy taps</b>	Water in Container tied to a stick to be used for hand washing
<b>Three star approach</b>	UNICEF’s system used to assess and rate schools performance on WaSH practices in schools
<b>Usable</b>	Toilets/latrines are accessible to students functional and private

## PART C: ANNEXES

### ANNEX 1 BENCHMARKING OF SCHOOLS USING WASH IN SCHOOLS INDICATORS

Key Indicators on WASH in Schools with NQSSF and Three Star Approach				
	WATER	SANITATION	HYGIENE	
Incremental Improvement over years!	Advanced Evidence	<ul style="list-style-type: none"> <li>- School has an improved water source (Piped, gravity, fed, protected spring/well/borehole, rainwater)</li> <li>- Meet National Standards Tap Student Ratio, accessible, convenient, suitable height, etc...</li> </ul>	<ul style="list-style-type: none"> <li>- Meet National Standards</li> <li>- <b>1:25</b> for girls</li> <li>- <b>1:40</b> for boys</li> <li>- Toilets are (light, bright, ventilated) and in appropriate location, with enough toilets and suitable design with urinals, to prevent long waiting times - accessible to children with disabilities.</li> </ul>	<ul style="list-style-type: none"> <li>- Institutionalized Hygiene Education in schools</li> <li>- WASH hygiene promotion is integral part of school curriculum and Teaching Education.</li> </ul>
	Established Evidence	<ul style="list-style-type: none"> <li>- School promotes Low Cost Point of Use Water Treatment Option such as boiling, filtration, solar disinfection</li> <li>- Each classroom has at-least 20 litres water storage container filled with water.</li> </ul>	<ul style="list-style-type: none"> <li>- Improved Toilet (VIP/Pour Flush/Septic Toilet) functioning available</li> <li>- <b>1:40</b> for girls and <b>1:50</b> for boys with urinals</li> <li>- Changing room for girls provisioned with sanitary napkins/re-usable cloth, soap/ash and water.</li> </ul>	<ul style="list-style-type: none"> <li>- Daily supervised cleaning of Toilets and daily Supervised Group Handwashing with soap</li> <li>- Boys and Girls receive discreet Menstrual Hygiene Management Education</li> <li>- Regular WASH Hygiene Promotion activities are conducted; Evidence of IEC materials at strategic location</li> <li>- Deworming and Iron Folic Acid (IFA) Supplementation provided by Health Official.</li> </ul>
	Emerging Evidence	<ul style="list-style-type: none"> <li>- Children bring "water bottle from home"</li> </ul>	<ul style="list-style-type: none"> <li>- Min. of 2 VIP Toilet each; separate for boys and girls</li> <li>- 1 VIP toilet for teacher</li> </ul>	<ul style="list-style-type: none"> <li>- No open Defection</li> <li>- Presence of a handwashing facility with water and soap/ash outside toilet.</li> </ul>
	No Evidence (no star)	<ul style="list-style-type: none"> <li>- No Drinking water for children</li> </ul>	<ul style="list-style-type: none"> <li>- No toilets</li> </ul>	<ul style="list-style-type: none"> <li>- No Hygiene Promotion</li> </ul>

## ANNEX 2 SCHOOL INFRASTRUCTURE FORM EMIS (SCHOOL CENSUS FORM)

**31.** What is the number of toilet type(s) and condition are there?

Toilet Types	Permanent		Semi-Permanent		Bush Material	
	M	F	M	F	M	F
Septic Toilets (Flush/Pour)						
Shore Drop (Solwara)						
Pit Toilets:						
<i>Pit with cover</i>						
<i>Pit without cover</i>						
<i>Composting Toilet</i>						
<b>*None</b>						
<b>Total Toilets</b>						

*\*If the school has no toilets, please circle none and do not enter any data*

**32.** How many usable toilets does your school have? Only fill in if your school toilets meet the definition of usable.

*\* Usable means toilets main doors are unlocked, the toilet is not broken, the toilet hole is not block, and water is available for flush/pour toilets, and there are closable doors that lock from the inside and no large holes in the structure at the time of the questionnaire or survey*

Total Toilets	Male Toilets	Female Toilets	*Common (Shared) Toilets

*\*Common (Shared) Toilets refers to when a school does not have separate toilets for male and female students and just use the same toilet (s) for all students*

**33.** Where does the school get most of its drinking water from?

- Town Supply   
  Tank Water   
  Piped Water   
  Bringing water from home  
 Well/Spring   
  Lake, Creek, River, Stream   
  None

**34.** Is drinking water from the above main source currently available at the school?

- Yes   
  No

**35.** Does the school have hand washing facilities with soap and water available?

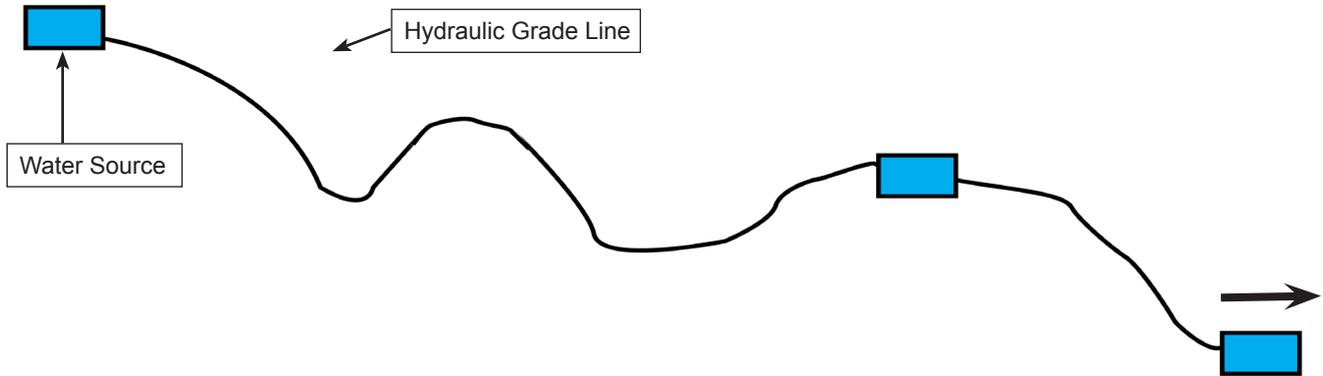
- Yes, with both soap and water   
  With water only   
  With soap only  
 No facilities with soap and water

**36.** What type of power supply does the school use?

- PNG Power   
  Solar   
  Generator   
  Others:  
 \_\_\_\_\_(specify)

### ANNEX 3: RETICULATED (PIPED) WATER SYSTEM AND GRAVITY FED SYSTEM

Spring, Sipage, Creek, river at a high elevated area.



### ANNEX 4: PROTECTED WELL INCLUDING BOREHOLES TUBE WELLS, PROTECTED DUG WELLS PROTECTED SPRING

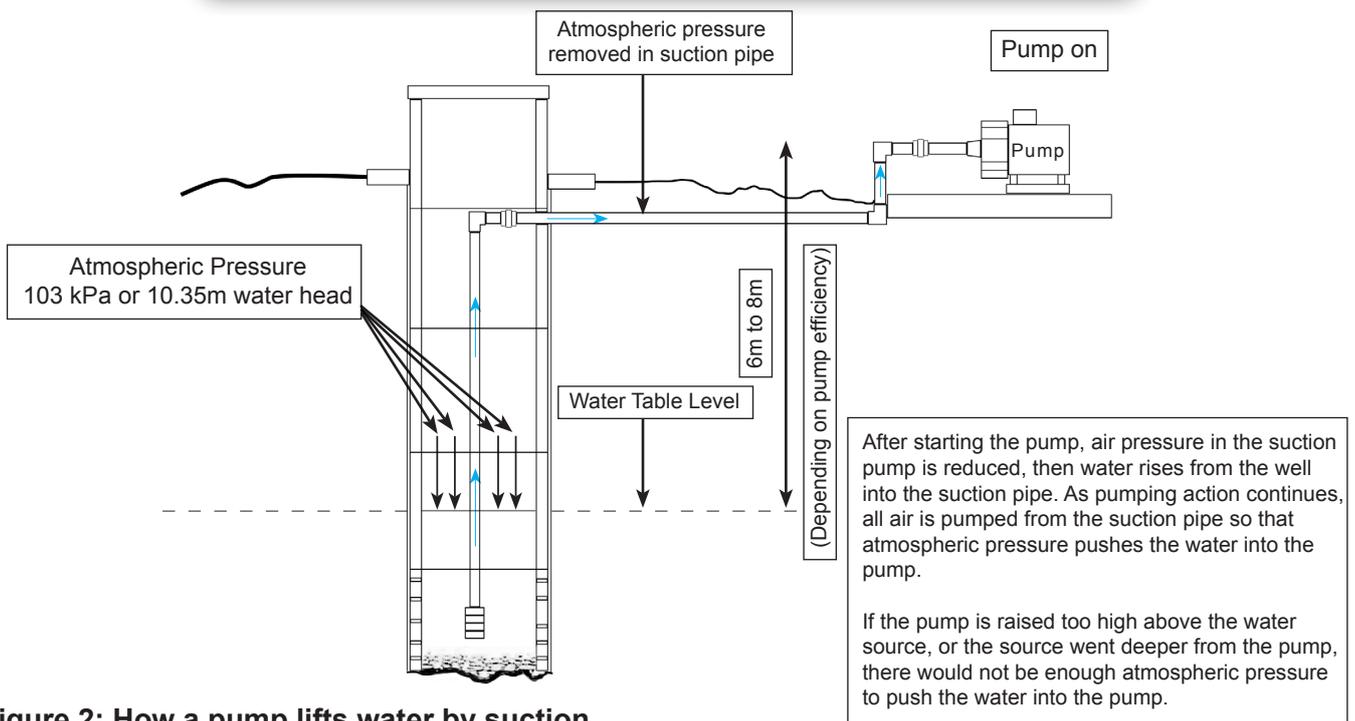
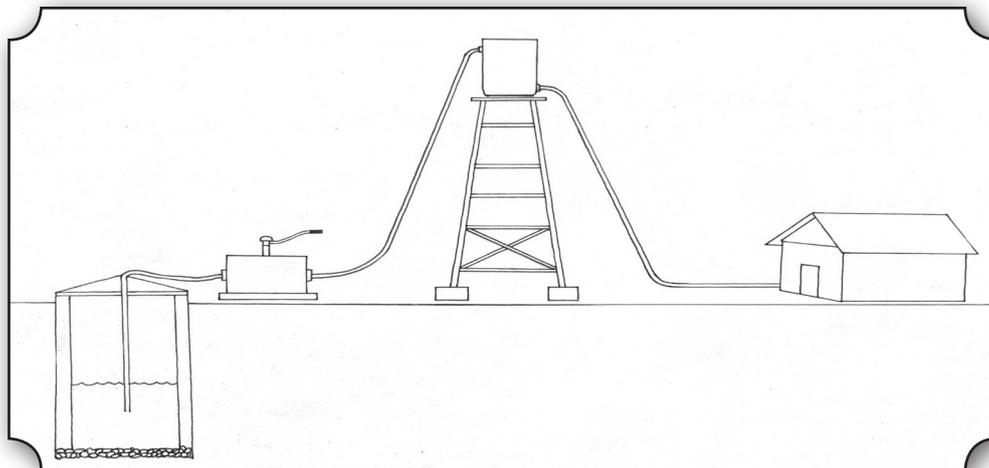


Figure 2: How a pump lifts water by suction

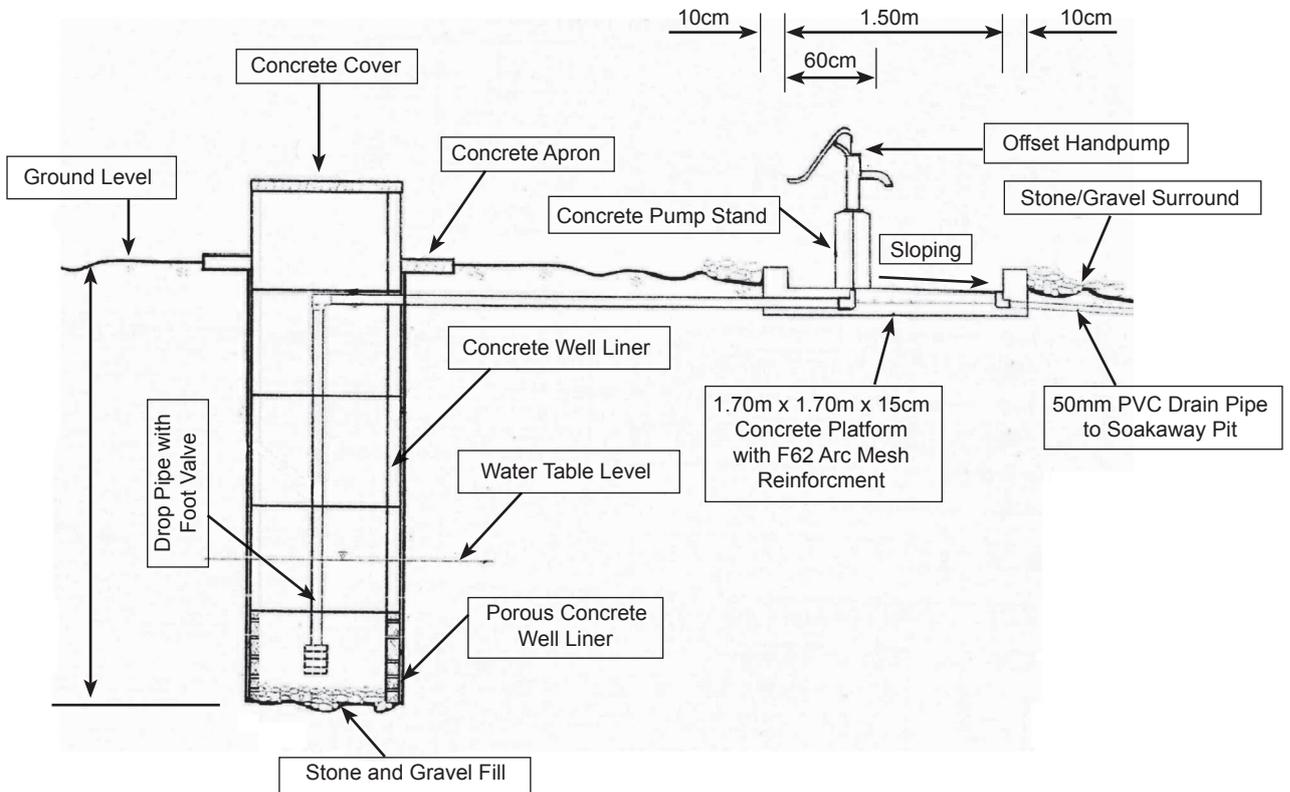
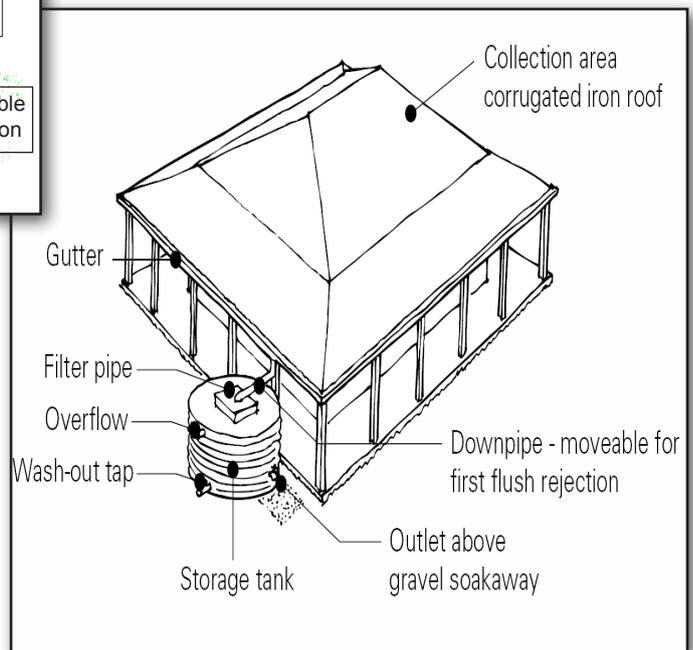
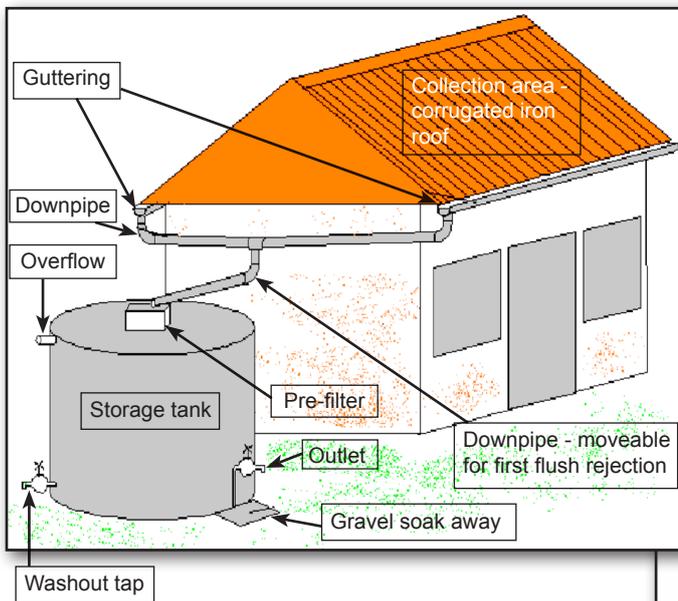


Figure 3: Shallow well development-using concrete well liners

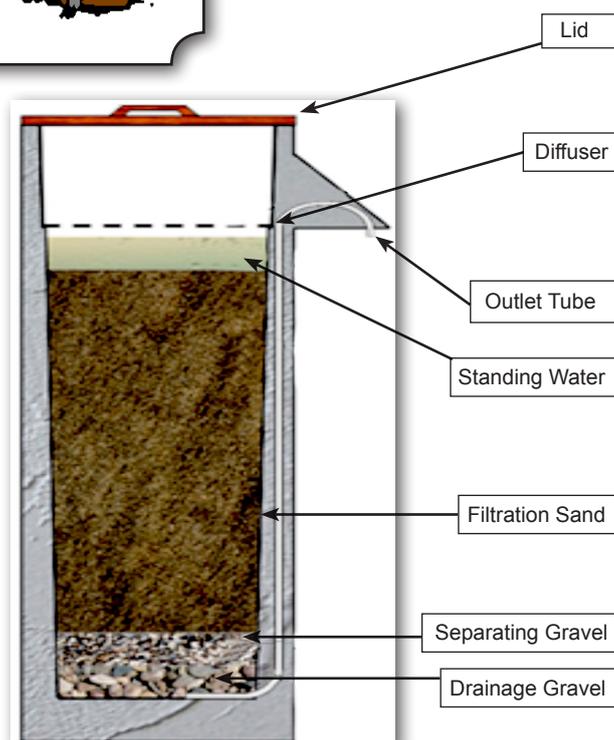
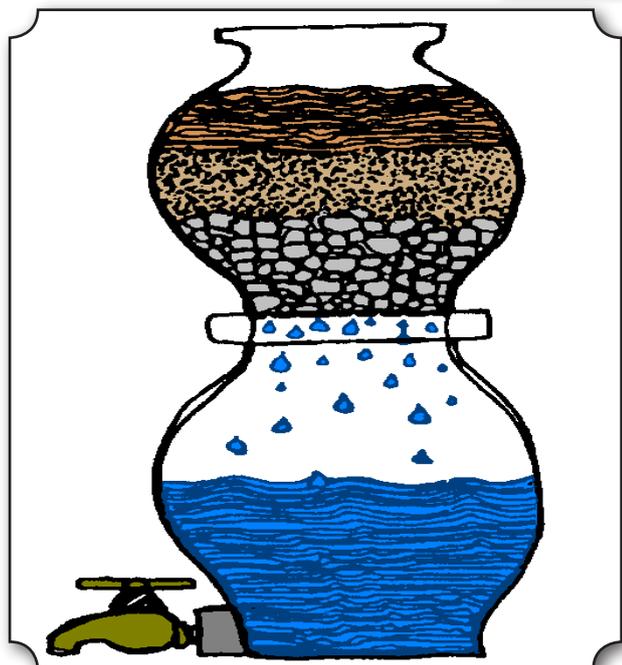
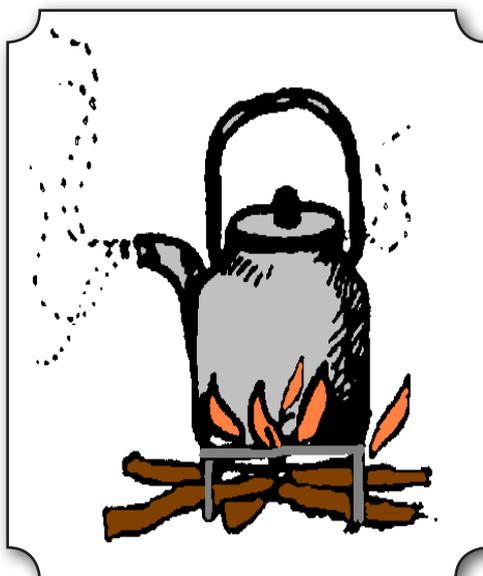
## ANNEX 5: RAINWATER CATCHMENT SYSTEMS



### ANNEX 6: BOTTLED WATER



### ANNEX 7: LOW COST WATER TREATMENT OPTIONS



**What is SODIS?**

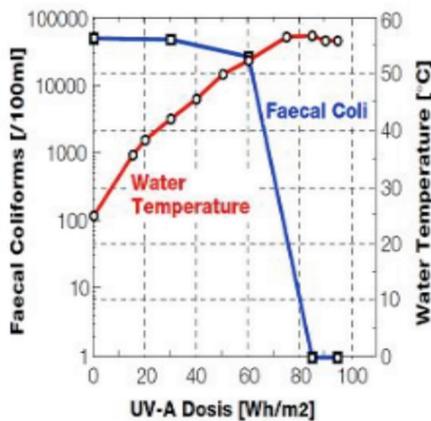
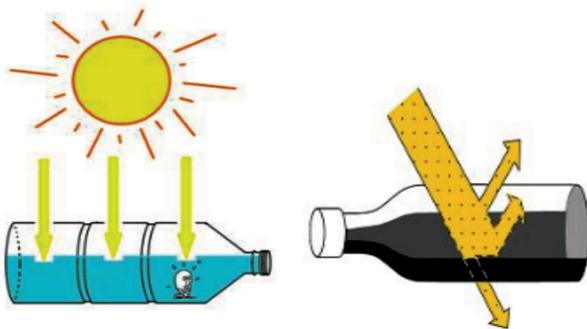
SODIS (Solar Water Disinfection) is a simple low cost solution for water treatment at household level to improve the microbiological quality of drinking water. It was developed in 1980 and tested in 1991 at the Swiss Federal Institute for Aquatic Science and Technology (EAWAG) by its Department of Water and Sanitation in Developing Countries (SANDEC). SODIS is recommended by the WHO (World Health Organization).

**How Does it Work?**

SODIS, Solar Water Disinfection is a simple method to improve the quality of drinking water by using sunlight to inactivate pathogens causing diarrhoea. Contaminated water (less turbidity) is filled into transparent plastic bottles and exposed to the full sunlight for 6 hours.

**Limitation**

- SODIS does not change the chemical water quality
- SODIS does not increase the water quantity or reduce water shortages
- SODIS requires relatively clear water (turbidity less than 30 NTU)
- SODIS is not useful to treat large volumes of water
- SODIS requires suitable climate and weather conditions. Regions well suited for SODIS are located between latitude 35°N and 35°S exposure time:
  - 6 hours under bright or up to 50% cloudy sky
  - 2 consecutive days under 100% cloudy sky
  - During days of continuous rainfall, SODIS does not perform satisfactorily. Water boiling or rainwater harvesting is recommended during these days.



Inactivation of Faecal coliforms with half-coloured pet bottle

**How to Apply SODIS**

1. WASH THE BOTTLE FIRST 
2. FILL THE BOTTLE WITH WATER AND CLOSE THE LID 
3. EXPOSE THE BOTTLE TO THE SUN FOR 6 HOURS 
4. WATER IS NOW READY FOR DRINKING 

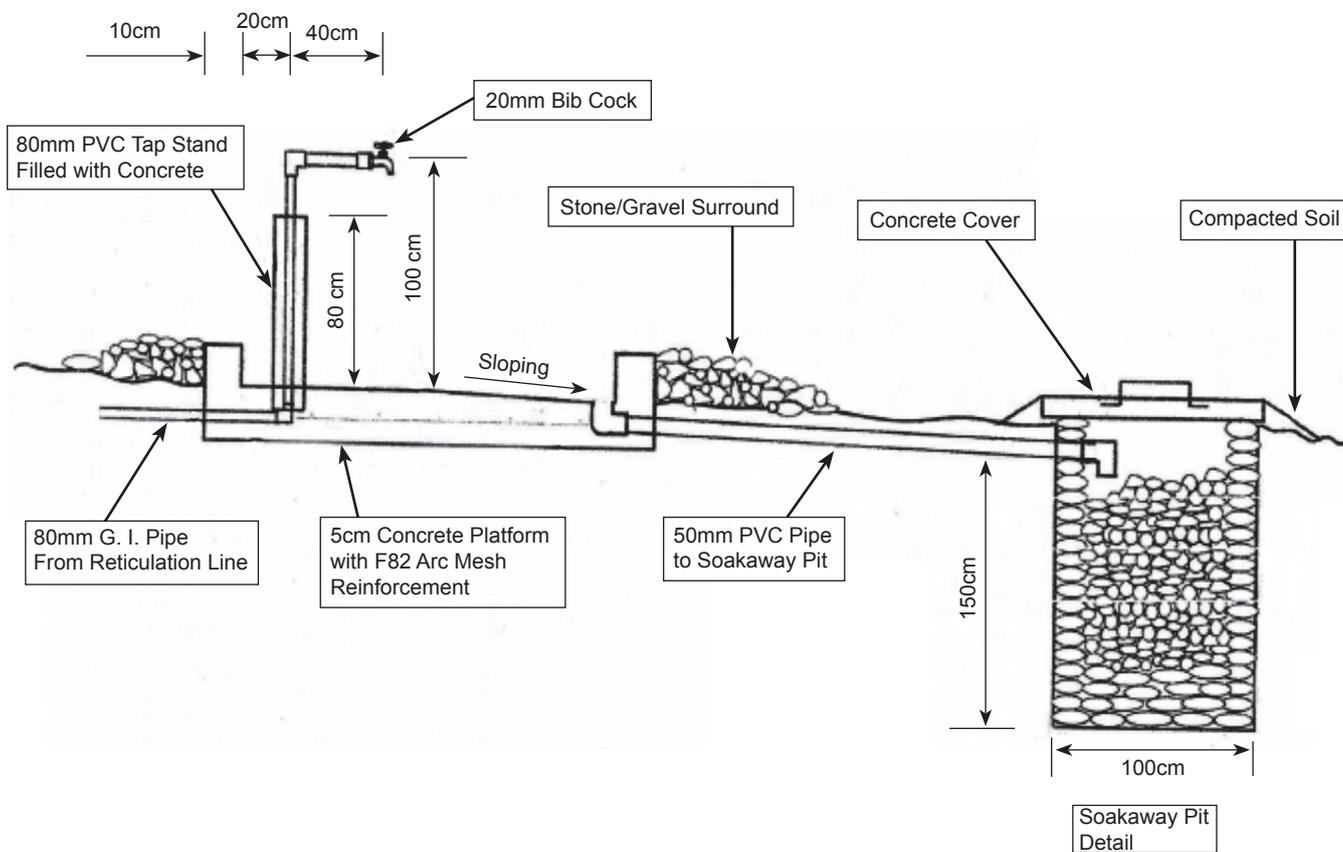
**Advantages**

- Proven reduction of viruses, bacteria and protozoa in water;
- Proven reduction of diarrheal disease incident in users;
- Acceptability to users because of the simplicity of use;
- No cost to the user after obtaining the plastic bottles;
- Minimal change in taste of the water; and
- Although SODIS does not have a chemical residual, recontamination is unlikely because water is served directly from the small, narrow-necked bottles with caps in which it is treated.

**Solar Disinfection (SODIS)**



**ANNEX 8: TYPES OF TAPS**



**Figure 4: Stand pipe installation (showing drainage to soak away pit)**

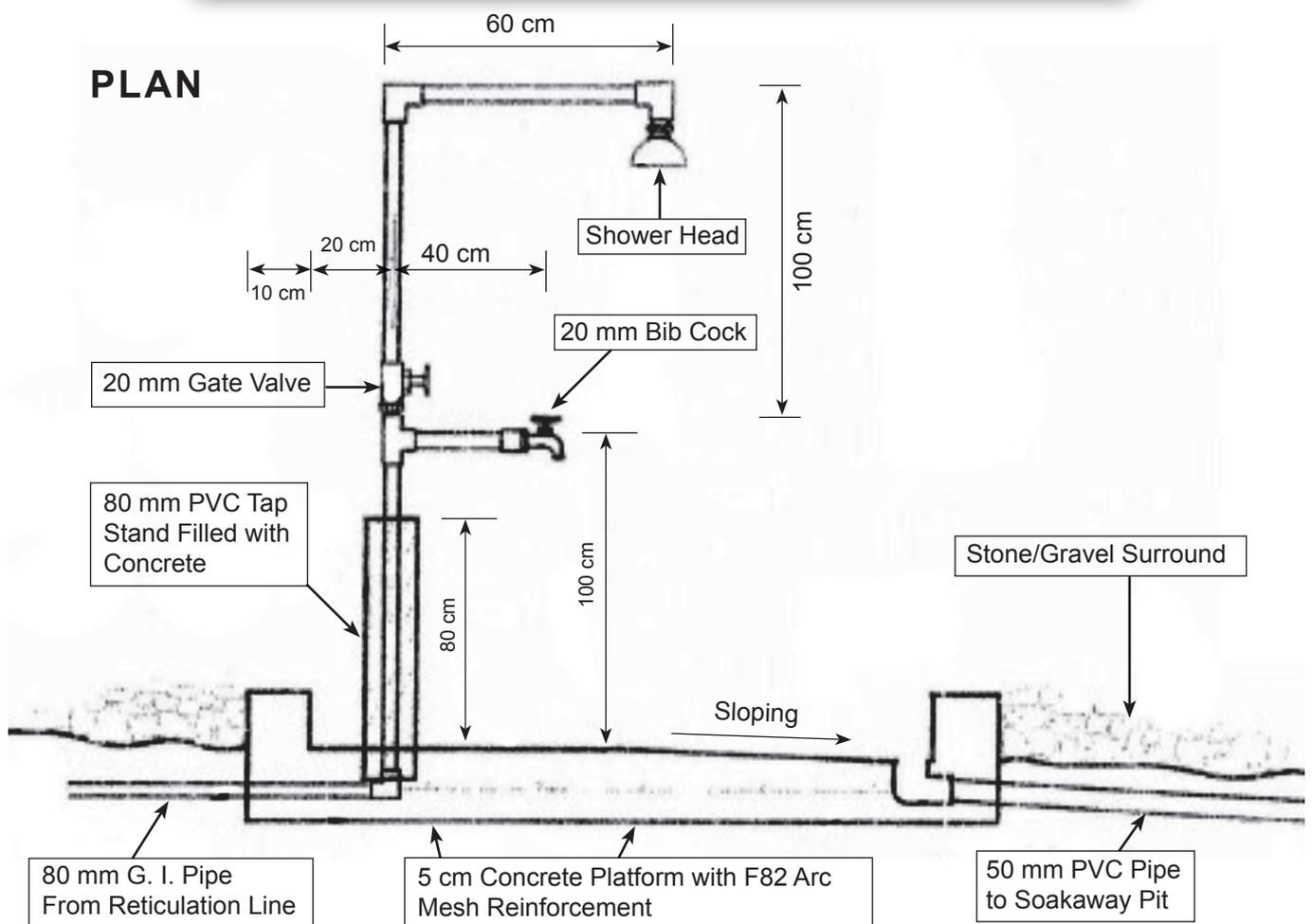
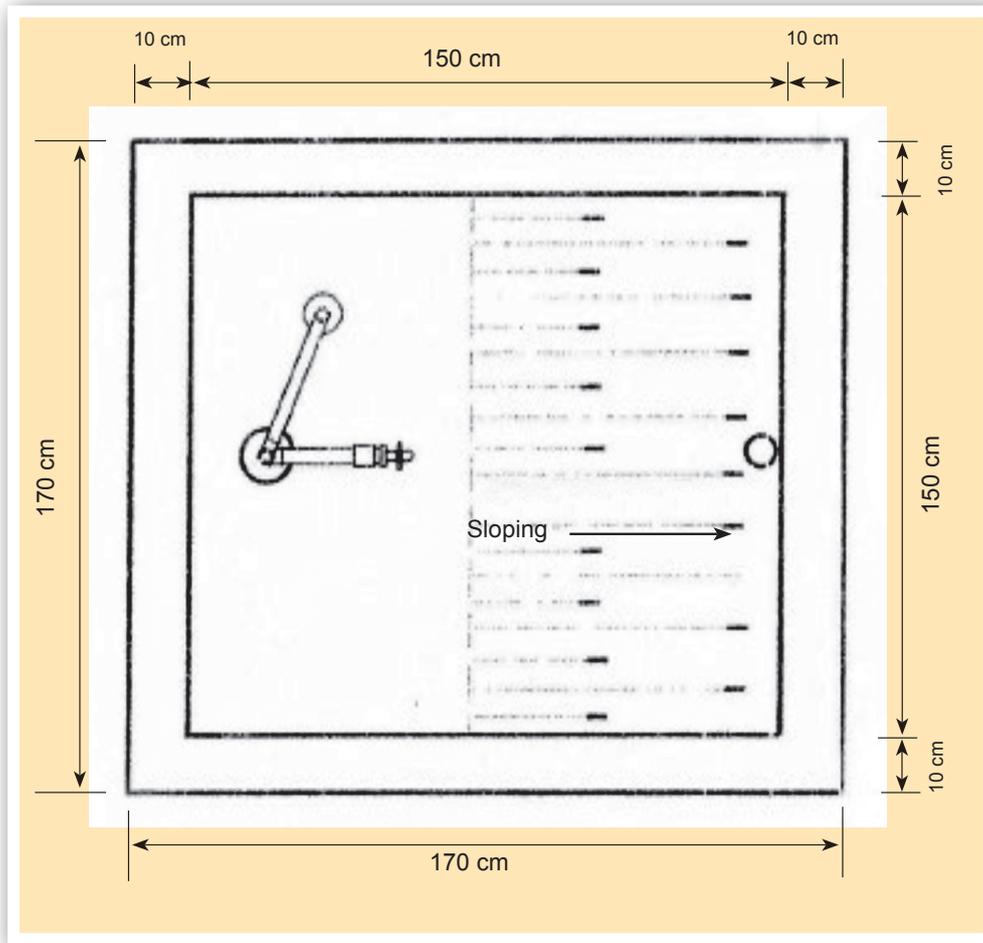
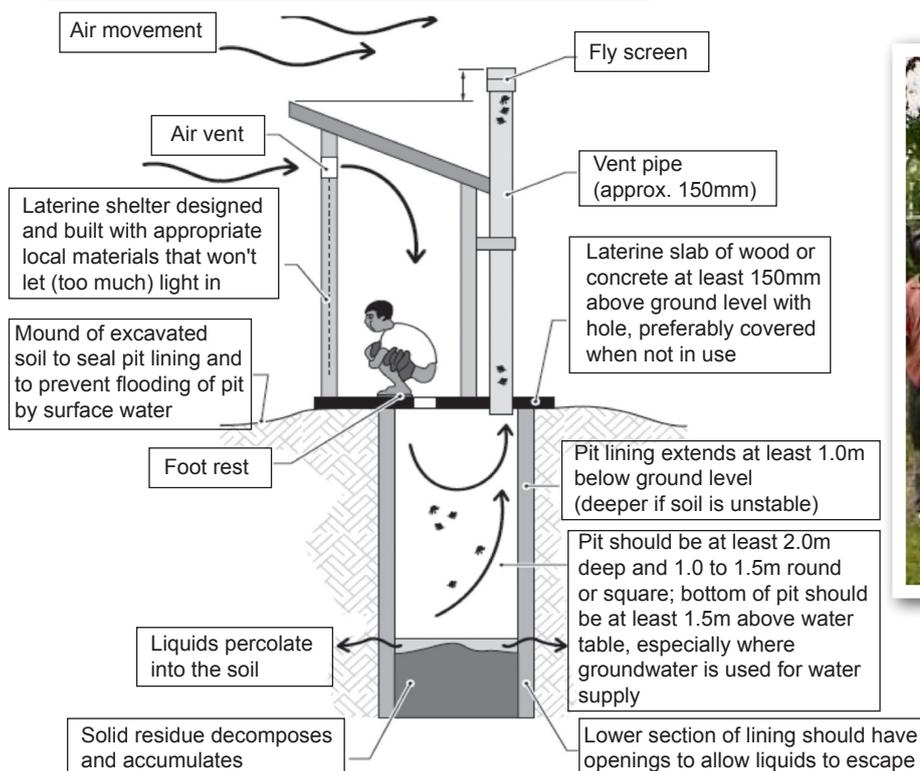
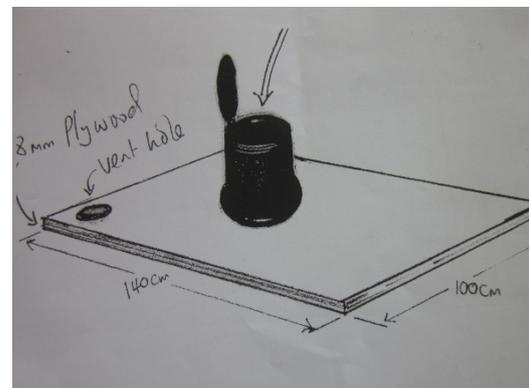
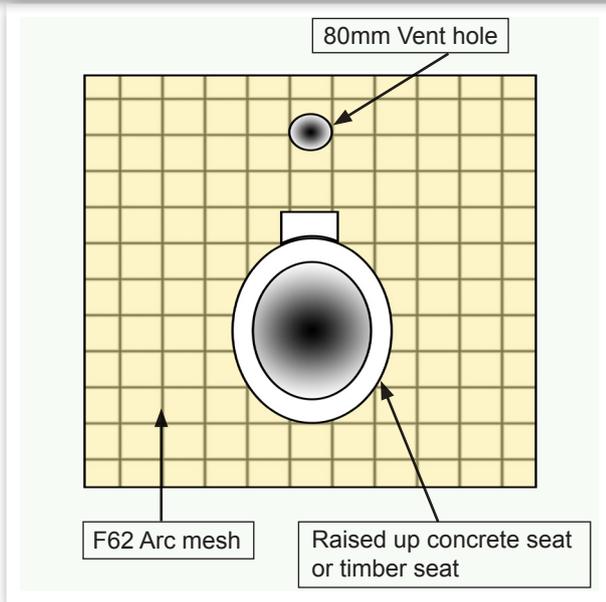
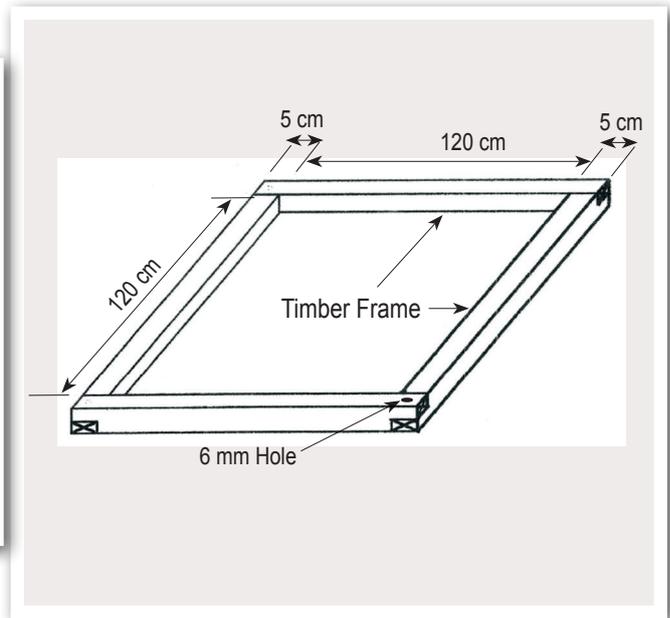
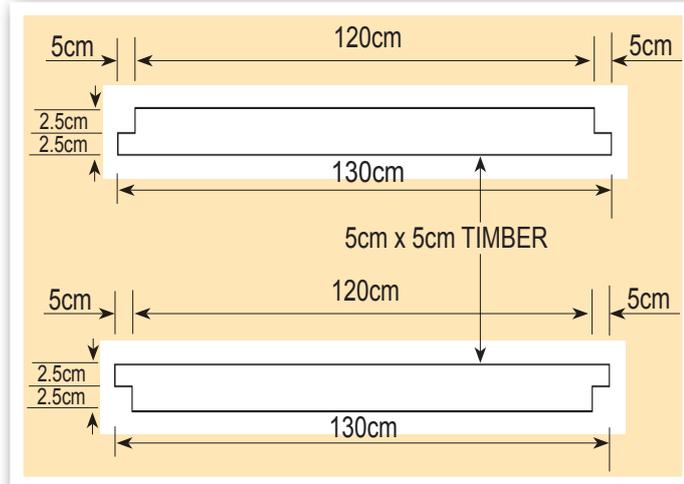


Figure 5: Stand pipe installation with shower

## ANNEX 9: IMPROVED SANITATION FACILITIES

### Ventilated Improved Pit (VIP)



## ANNEX 10: HAND WASHING FACILITIES

### Single Hand-Washing Unit – Tippy Tap



### Steps to construct Tippy Taps



**1**

Mark the location for the hole on the container around 12cm below the cap



**2**

Hold the nail with a pair of pliers and heat the nail with a lighter or fire



**3**

Use the hot nail to make a hole where the mark is on the jerry can



**4**

With the same hot nail, make a hole in the center of the lid



**5**

Put a rope through the hole in the cap and screw the cap back on to the container



**6**

The stick is now connected to the container with the rope



**7**

Make the hole through the soap. Put the short rope through the hole in the soap and tie a piece of wood to it



**8**

Adjust the length if the rope that end of the stick is about 15cm above the ground



**9**

Make holes in the ground with a distance of and put the poles. Place the stick on top and mount the container and soap



**10**

To prevent the tippy tap place to become a mud hole and a mosquito breeding place, it is essential to make a soak pit. Fill the hole up with coarse sand and gravel. Clean the soak pit as soon water does not seep away anymore.

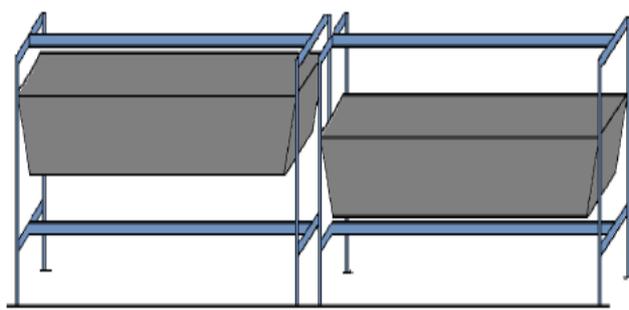
**Double Hand Washing Unit**



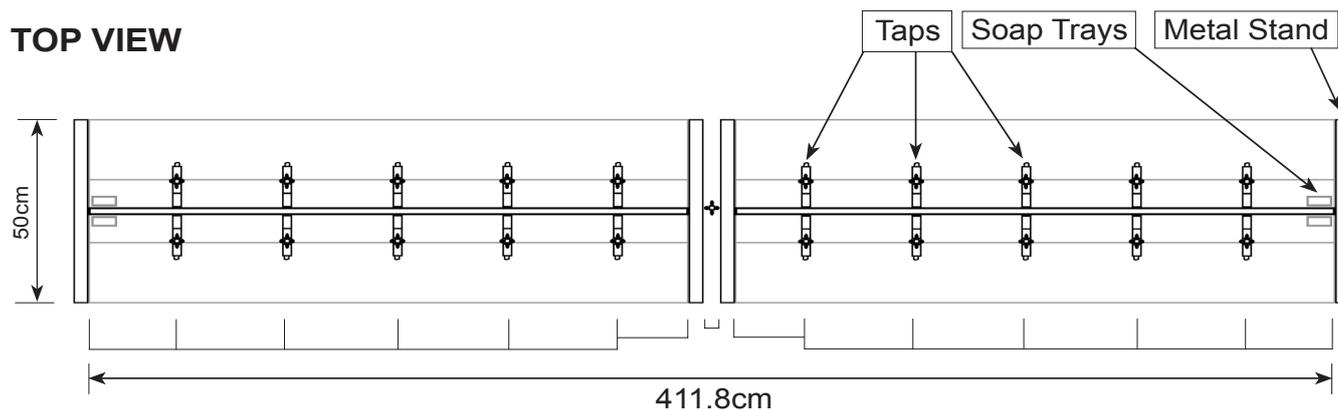
**Two single hand washing basin**



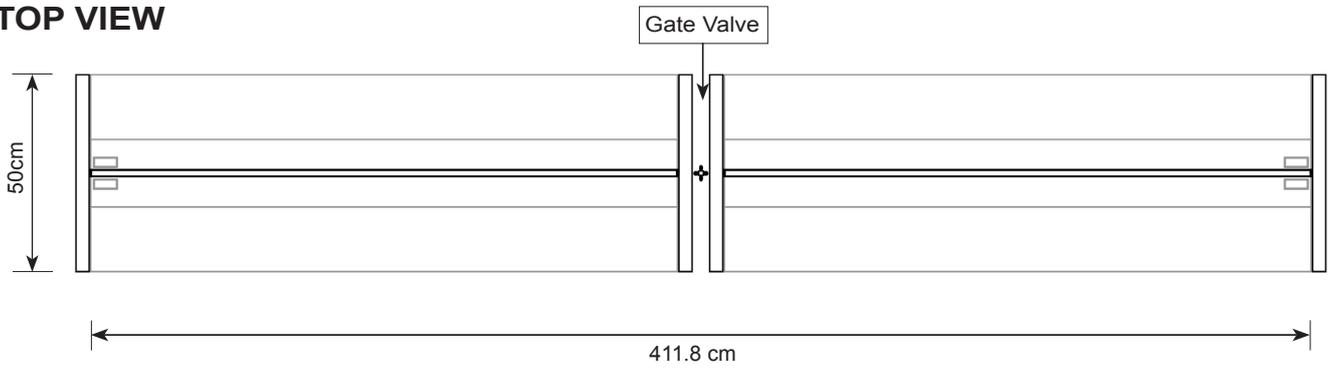
**Mass Hand washing Unit**



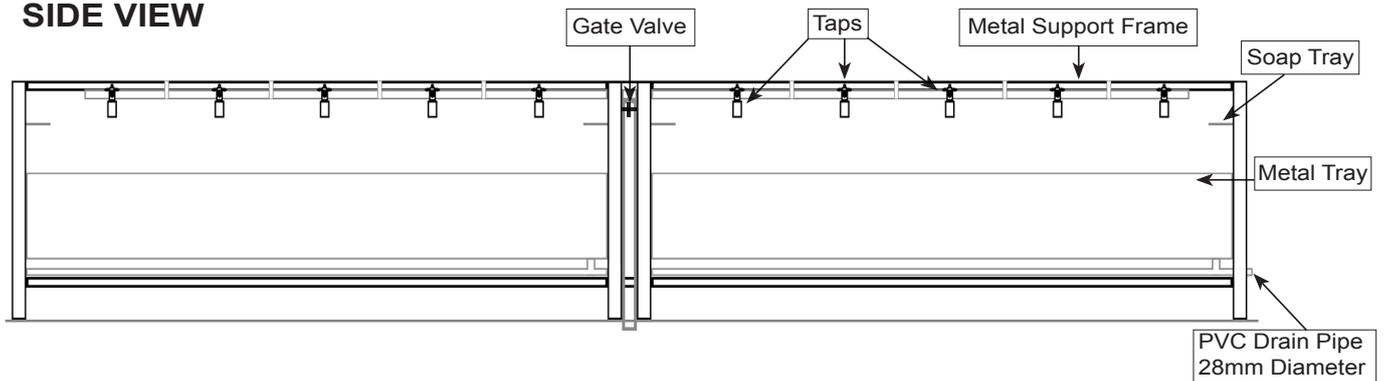
**TOP VIEW**



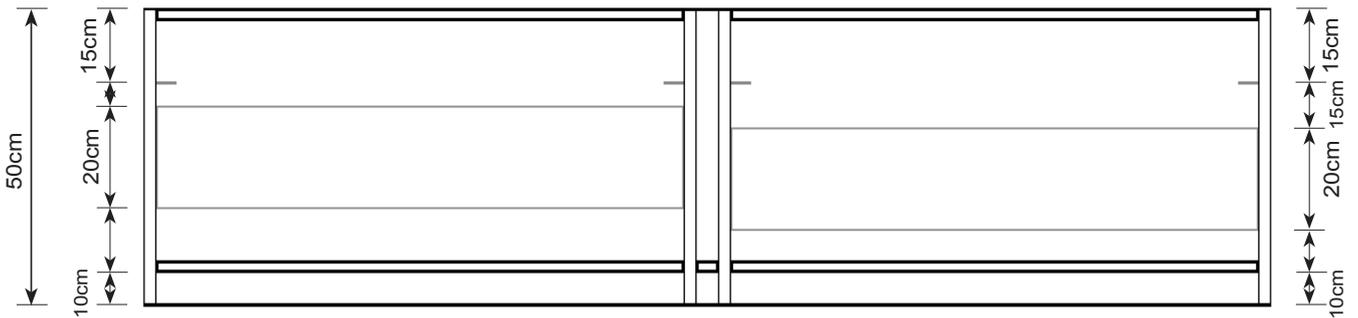
**TOP VIEW**



**SIDE VIEW**



**SIDE VIEW**



**ANNEX 11: INCLUSIVE DESIGN HARDWARE (SPECIAL NEEDS)**



**ANNEX 12: MENSTRUATION FACILITIES FOR GIRLS**



Girls' private changing room



A hole connect private room and incinerator (Fire Box)



Small incinerator (Fire Box), outside of girl's toilet

## ANNEX 13: PROPER HANDWASHING STEP/PATH

### Hand washing Fundamentals

1. Washing hands with water alone is not enough
2. Hand washing with soap can prevent diseases that kill millions of children every year

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### Three critical moments/times of hand washing are;

1. After using the toilet,
2. Before and after handling food/eating, and
3. After cleaning baby's bottoms

Hand washing with soap is the single most cost-effective health intervention

### Why Promote Hand washing With Soap?

Hands transport diseases from person to person either directly or indirectly across surfaces. Hands that have been in contact with faeces, nasal excretions and other bodily fluids, and not then washed thoroughly with soap, can carry viruses, bacteria and other parasites. They also carry pathogens from contaminated sources such as animal or bird faeces, contaminated foods, or from domestic or wild animals to new susceptible hosts. Hand washing is especially important where people congregate where harmful organisms are more easily transmitted. It can be prevented by hand washing. Many reviews report a significant reduction in the risk of diarrhoea as a result of hand washing.

### Why Use Soap?

Grease and dirt contain the largest concentrations of microbes. The chemical nature of soap, and the friction resulting from using it, breaks down the grease and dirt, and harmful organisms are washed away as the hands are rinsed with water.

Using soap also results in fresh and clean smelling hands, which makes the promotion of hand washing much easier.

### How to wash hands thoroughly

Hands should be washed with soap and under water for at least 20 seconds. Special attention needs to be paid to germs that may be trapped under nails and in crevices. The red arrows in the pictures below show the direction of movement of the hands. All traces of soap should be removed with water and the hands should be dried, or allowed to dry, after cleansing and before coming into contact with anything else.

