GOVERNMENT OF MALAWI

PARTICIPATORY
SANITATION AND HYGIENE
PROMOTION

IMPLEMENTATION MANUAL

Ministry of Irrigation and Water Development
Private Bag 390
Lilongwe 3
Malawi

July 2010

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Foreword

The Government of Malawi developed the Malawi Growth and Development Strategy to accelerate economic growth, create wealth and employment opportunities in order to reduce poverty on a sustainable basis for its citizens and all the people living in Malawi. Improving water and sanitation service delivery is one of the key measures and cross-cutting issues to be addressed by the Government of Malawi. The MGDS targets for the medium and long term are consistent with the Millennium Development Goals (MDGs).

Consistent with this overarching socio-economic development strategy, Government adopted the National Sanitation Policy (2008) to transform the hygiene and sanitation situation in the country. In line with the country's Vision 2020, the National Sanitation Policy provides both guidelines and strategies whereby, by the year 2020, all the people of Malawi will have access to improved sanitation facilities and that hygiene practices will be a norm. Recycling of solid and liquid waste will also be widely practised leading to a healthier life, better environment and new way for sustainable wealth creation.

The MDG target for sanitation is to halve the proportion of people without sustainable access to sanitation by 2015. The baseline, according to the Joint Monitoring Plan (JMP) of 2008, of access to improved sanitation is estimated at 57.4% and 51% in urban and rural areas respectively. According to the projections of the sanitation and hygiene sub sector, improved sanitation coverage is expected to be 68% by 2015 (MoIWD, 2007). There is need for major investments in both sanitation infrastructure and management systems in the sanitation and hygiene sub sector to meet the above international and national goals.

Therefore, the Ministry of Irrigation and Water Development is scaling up Sanitation and Hygiene Promotion services to maximize health, social and economic benefits. However, it is recognised that integrating water supply, improved sanitation and hygiene promotion is critical for the control of diarrheal diseases and other parasitic infections.

The Water and Sanitation Sector has developed a number of manuals and guidelines through a number of consultations at national, regional and district levels. This Participatory Sanitation and Hygiene Promotion Implementation Manual is produced to guide different stakeholders to implement hygiene and sanitation activities more effectively. It is expected that the promotion of sanitation and hygiene activities will be undertaken in the most harmonised and standardised manner.

It is, therefore, the wish of the government that all stakeholders in the sub-sector align their sanitation and hygiene promotion activities to the Implementation Manual.

Hon. Richie Bizwick Muheya M.P.
MINISTER OF IRRIGATION AND WATER DEVELOPMENT

List of acronyms and abbreviations

AIDS	-	Acquired Immunodeficiency Syndrome
CBM	-	Community Based Management
CIDA	-	Canadian International Development Agency
DFID	-	Department for International Development
DoEA	-	Department of Environmental Affairs
EIA	-	Environmental Impact Assessment
GoM	-	Government of Malawi
HIV	-	Human Immunodeficiency Virus
HSP	-	Hygiene and Sanitation Promotion
LA	-	Local Authority
MDG	-	Millennium Development Goal
MGDS	-	Malawi Growth & Development Strategy
MoFF & EA	-	Ministry of Forestry, Fisheries and Environmental Affairs
MoH	-	Ministry of Health
MoIWD	-	Ministry of Irrigation and Water Development
MoLGRD	-	Ministry of Local Government and Rural Development
MoNREA	-	Ministry of Natural Resources and Environmental Affairs
MoWCD	-	Ministry of Women and Child Development
MPRSP	-	Malawi Poverty Reduction Strategy Paper
NGO	-	Non Governmental Organization
NSP	-	National Sanitation Policy
NTU	-	Nephelometric Turbidity Units
NWDP II	-	National Water Development Project
NWDP	-	National Water Development Programme
PHWSIM	-	Participatory Hygiene, Water and Sanitation Promotion Implementation Manual
PHWSP	-	Participatory Hygiene, Water and Sanitation Promotion
PRSP	-	Poverty Reduction Strategy Paper
PSIP	-	Public Sector Investment Plan
R-WaSH	-	Rural Water, Sanitation and Hygiene
SWAp	-	Sector-Wide Approach
UNICEF	-	United Nations Children's Fund
VHWC	-	Village Health and Water Committee
WES	-	Water and Environmental Sanitation
WPC	-	Water Point Committee
WSS	-	Water and Sanitation Sector
WSSS	-	Water Sector Services Study

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Preface

Sanitation and hygiene is key to healthier life, better environment and new way for sustainable wealth creation. However, sanitation is rarely treated as a felt need, especially in the rural and low income areas. This significantly results in low coverage of improved sanitation facilities and poor hygiene practices.

Sanitation and Hygiene Promotion Programmes should be implemented to deliver both improved access to sanitation as well as hygiene promotion through adoption of a number of approaches including 'sanitation marketing'. Efforts should be made to provide communities with clear and action oriented messages on low-cost technology options that households can afford to provide and manage on their own. An effective hygiene promotion programme will rely on exchange of information between various stakeholders and the communities to empower them to identify their sanitation needs, plan for action, execute the action, monitor and evaluate their own efforts.

The Sanitation and Hygiene Promotion Sub-sector is coordinated by the Ministry of Irrigation and Water Development and implemented by district, town, municipal and city councils and water boards in collaboration with other stakeholders. It is important that all stakeholders follow the guidelines provided for in this Participatory Sanitation and Hygiene Promotion Implementation Manual in order to achieve the Ministry's intended goals and objectives.

This manual intends to provide guidelines for the implementation of sanitation activities in towns, market centres and rural areas by the Ministry, the District Councils, regional water boards and all other stakeholders in the water and sanitation sector.

The Ministry is indebted to all stakeholders for their contributions to this manual. The major task now is to effectively use this manual to enhance effective in the delivery of sanitation services and hygiene promotion.

Sandram C. Y. Maweru
SECRETARY FOR IRRIGATION AND WATER DEVELOPMENT

1.0 INTRODUCTION

The Government of Malawi developed the Malawi Growth and Development Strategy (MGDS) through which it intends to balance economic growth and social protection. Water and sanitation underpins both elements of economic growth and social protection. . Accordingly, government adopted the National Sanitation Policy (2008) of which the overall objective is to achieve universal access to improved sanitation, health and promote best hygiene practices.

The National Sanitation Policy (NSP) is strongly advancing the safe disposal of both solid and liquid wastes with good hygiene practices and the recycling of organic wastes. NSP generally provides guidelines and strategies as the basis of a Sector Wide Approach (SWAp) for participatory sanitation and hygiene promotion, by which committed development partners can make a significant contribution to the development of the country.

The MGDS targets for the medium and long term are consistent with the Millennium Development Goals (MDGs). For Sanitation, the MDGs target is to halve, by 2015, the proportion of people without sustainable access to basic sanitation. In Malawi access to basic sanitation is estimated at 85% above the MDG targets. The challenge however, is to achieve access to improved sanitation targeted at 68% by 2015. The present average coverage of improved sanitation is 46% (NSP2008). There is need for major investment in both sanitation infrastructure and management system to meet the above goals.

This Implementation Manual has been developed to provide guidelines to stakeholders with all the required arrangements and framework for the implementation of sanitation and hygiene promotion programmes.

The Manual shall be used alongside other water and sanitation sector policies, strategy documents, guidelines and manuals including the following:

- Malawi Growth & Development Strategy;
- National Sanitation Policy;
- National Water Policy;
- District Operational Manual;
- Implementation Guidelines for Rural Water Supply and Sanitation;
- Implementation Manual for Piped Water Supply Systems and Point Water Sources;
- Social Marketing Manuals
- Integrated Social Sanitation, Hygiene and Water Communication Plan/Strategy; and
- Various Technical Manuals for training and construction of water and sanitation systems/facilities

2.0 SANITATION

Safe excreta disposal creates the first barrier to excreta-related diseases. It helps to reduce transmission through direct and indirect routes. In most disaster situations it should be addressed with as much speed and effort as the provision of clean safe water supply. The provision of appropriate facilities for defecation is essential for people's dignity, safety, health and well-being. Hand-washing facilities should be provided close to any safe excreta disposal site such as a latrine or pour flush toilet. Availability of water for hand washing should be ensured at all times to ensure continued adoption of good hygiene practices.

To promote improved sanitation at household and community levels including at health facilities, market centres, business and other public places, it is important to see to it that:

- Each household/family unit shall have its own toilet/latrine facility with hand washing facility placed near the toilet/latrine facility
- Improved latrine facilities should be provided separately for boys, girls and teachers in schools
- A maximum of 20 people should use each public toilet
- Separate toilets for women and men in public places (markets, distribution centres, health facilities, etc.)
- Shared or public toilets are cleaned and maintained in such a way that they are used by all intended users.
- Toilets are no more than 50 metres away from dwelling units and a minimum of 30m downstream from a water point.
- Toilets are used in the most hygienic way and children's faeces are disposed of immediately and hygienically.

2.1 Definition of Sanitation

Sanitation is defined as the provision or availability of structures that facilitate hygiene. The structures include, for example, water taps, boreholes, toilets bath shelter, hand-wash facilities, washing basins, slabs, soak pits and solid waste management structures (i.e. refuse pits, incinerators, compost heaps, sharps pits etc). In other words, *Sanitation* means to have the facilities (‘Zipangizo za ukhondo’).

2.2 Areas of Focus of Sanitation

The common areas of focus of sanitation are as follows:

Area of Focus	Description
Water Point Sanitation	Sanitation at water points entails availability of apron, drainage channels, washing slab, soak-away pit, fence and livestock trough. Examples of safe water points include borehole, protected shallow well, tap, and protected spring
Household Sanitation	Sanitation at a household level includes the availability of improved pit latrine/ pour flash toilet, bathroom, hand washing facility, refuse pits and compost heaps.
Village Sanitation	Good village sanitation must have safe water points, common not household graveyards, toilets, refuse pits, compost heaps, drainage channels, and animal khola
School Sanitation	Good school sanitation must have safe water points, toilets, urinals, hand washing facilities, refuse pits, compost heaps, drainage channels.
Business and other Public Premises Sanitation	Good business and other public premises sanitation must have safe water points, improved toilets, urinals (optional), hand washing facilities, institutional sewerage systems, drainage channels, dust bins, skips and landfill sites.
Health Facility Sanitation	Good health facility must have safe water points, improved toilets, urinals, hand washing facilities, incinerators, pour flush toilets, sewage systems, drainage channels, refuse and sharps and placenta pits, and mortuary.

3.0 DESIGN OF SANITATION FACILITIES

Toilets must be sited, designed, constructed and maintained in such a way as to be comfortable, offering privacy, hygienic and safe to use.

In order to achieve this, it is important to observe that:

- Users (especially women) have been consulted and approve of the siting and design of the toilet.
- Toilets are designed, built and located to have the following features:
  - They are designed in such a way that they can be used by all sections of the population including children, the elderly, pregnant women, the physically and mentally challenged people;
  - They are sited in such a way as to minimise threats to users, especially women and girls, throughout the day and night;
  - They are sufficiently easy to keep clean to invite use and do not present a health hazard;
  - They provide a degree of privacy in line with the norms of the users;
  - They allow for the disposal of women's sanitary protection, or provide women with the necessary privacy for washing and drying sanitary protection cloths; and
  - They minimise fly and mosquito breeding.
- All toilets constructed that use water for flushing and/or a hygienic seal have an adequate and regular supply of water.
- Pit latrines and soak-ways (for most soils) are at least 50 metres away from any groundwater source.
- Drainage or spillage from defecation systems must not run towards any surface water source or shallow groundwater source.
- People wash their hands with soap at four critical times; after defecation, before eating, before food preparation and after changing baby's nappies.
- Vulnerable community members, for example, the aged, child headed households, the chronically ill etc are provided with tools and materials for constructing, maintaining and cleaning their own toilets if appropriate.

3.1 General considerations in the Design of Sanitation Facilities

3.1.1 Public Toilets

In public places and some initial disaster situations where it is necessary to construct toilets for general use, it is very important to establish systems for the proper regular cleaning and maintenance of these facilities. Disaggregated population data should be used to plan the ratio of women's cubicles to men's (of approximately 3:1). Where possible, urinals should be provided for men.

3.1.2 Communal Toilets

For a displaced population where there are no existing toilets, it is not always possible to provide one toilet per 20 people immediately. Any communal toilet must have a system in place, developed with the community, to ensure that it is maintained and kept clean. In some circumstances, space limitations make it impossible to meet this figure. In this case, while advocating strongly for extra space to be made available, it should be remembered that the primary aim is to provide and maintain an environment free from human faecal matter.

3.1.3 Shared Facilities

Where one toilet is shared by four or five families it is generally better kept cleaner and therefore regularly used when the families have been consulted about its siting and design and have the responsibility and the means to clean and maintain it. It is important to organize access to shared facilities by working with the intended users to decide who will have access to the toilet and how it will be cleaned and maintained. Efforts will be made to provide people living with HIV/AIDS with easy access to a toilet as they frequently suffer from chronic diarrheal infections and reduce mobility. Designs should also permit easy access to people with physical challenges as well as children.

3.1.4 Acceptable Facilities

Successful excreta disposal programmes are based on an understanding of people's varied needs as well as on the participation of the users. It may not be possible to make all toilets acceptable to all groups and special toilets may need to be constructed for children, elderly and physically challenged e.g. toilets with lower seats or hand rails. The type of toilet/latrine to be constructed will depend on the preferences, affordability and cultural habits of the intended users, the existing infrastructure, the ready availability of water (for flushing and water seals), ground conditions and the availability of local construction materials.

3.1.5 Safe Facilities

Inappropriate siting of toilets may make women and girls more vulnerable to attack especially during the night, and ways must be found to ensure that women feel safe, and are safely using the toilets provided. Where possible, communal toilets should be provided with adequate lighting. The structures should be constructed strong enough to avoid collapsing.

3.1.6 Distance of Defecation Systems from Water Sources

The distances of toilet/latrine facilities from water sources may be determined by prevailing soil conditions and geology. In flooded or high water table environments, it may be necessary to build elevated toilets or septic tanks to contain excreta and prevent it contaminating the environment.

3.1.7 Hand Washing

The importance of hand washing with soap at all critical times should be encouraged to prevent the spread of disease. There should be a constant source of water for this purpose.

3.8.8 Hygienic Toilets

If toilets are not kept clean they may become a source for disease transmission and people will prefer not to use them. They are more likely to be kept clean if users have a sense of ownership. This will be encouraged by promotional activities, having toilets close to where people sleep and involving users in decisions about their design and construction, rules on proper operation, maintenance, monitoring and use. Flies and mosquitoes are discouraged by keeping the toilet clean, having a water seal, Ventilated Improved Pit (VIP) latrine design or simply by the correct use of a lid on a squat hole of a Sanitation Platform, Dome Shaped Slab or use of Ecological Sanitation technologies.

3.1.9 Technical Issues

Since household/family unit latrines are going to be constructed by individual household owners, the latrine design should be simple while offering privacy, safety and convenience to the user. The fundamental criteria to be applied should be simplicity, minimum cost (affordability), long design life for adequate economic return, security and privacy, ease of cleaning and social acceptability. Some forms of sanitation facilities include sanitation platforms, ecological sanitation (ECOSAN) i.e. Arborloo, Skyloo and Fossa Alterna.

3.2 Specific Considerations for each Sanitation Facility

3.2.1 Water Point Sanitation

Water point sanitation is the provision of structures that promote sanitation at the water point. They are soak pits, irrigation, drainage, apron, washing slabs and fences.

The specific design considerations for some of these structures at a water point are as follows:

Soak-away Pit

A soak-away pit is provided to ensure that water is drained away from the water point. Soak-away pits are recommended for both piped and groundwater systems and in all types of soils except where natural drainage exists. For groundwater systems, soak-away pits are recommended in semi-permeable soil formation.

Siting: Down from water point. Recommended slop is 0.5 metres. Avoid siting near roads, houses and school blocks.

Distance: Should be a minimum of 10 metres from water point.

Dimensions: Main pits should be a minimum diameter of 1.5 meters and depth of 2 metres. Dimension for 2 French drains should be 3 metres long, 3 metres wide and 0.35 metres deep.

Construction: - Materials: large and small stones
- Equipment: Hoes, picks, shovels and string stick tape
- Measure (if available)

Figure 3.1: water point

Construction Procedure: - Mark circle using a string and a stick. Measure 0.75 metres. Attach string to stick. Draw a circle using line and stick at the end of the drain.

Mark drains as specified in figure 3.1.

Excavate pit and French drains (done by Community).

Fill pit with stones, starting with large ones at the bottom and smaller ones at the top.

Irrigation: As Wastewater Management Procedure

There are economical uses for wastewater, and if the community collectively decides, then irrigation could be an alternative wastewater management technique.

Siting: Down slope of water point at the end of the drain

Distance: Not less than 10 metres from water point.

Construction Procedure: Consult Agriculture Field Assistants.

Soil types – all types of soil

Recommended crops are fruit trees such as bananas, oranges, lemons, tree nurseries and vegetables

Recommended for both pipe and groundwater source facilities

Drainage, Apron and Washing Slab:

Drainage and Apron ensure surroundings are hygienic and prevent collection of water and waste seepage into boreholes. A washing slab encourages people to use safe water sources when washing clothes.

Construction

Materials: cement and bricks or stones

Equipment: builders trowel, strings, measuring tape, etc

Procedure: Details of design and construction procedures in section of civil works

Fence

A fence is required in areas with high population of animals. Fence keeps animals away from infesting water point areas. There are several types of fences that can be erected: Reed/Grass, all brick, brick pillars and poles.

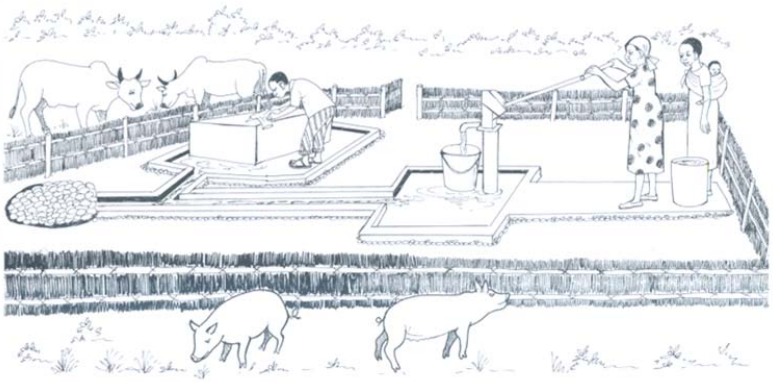

Figure 3.2: A fenced water point

In choosing an appropriate fence, both communities and implementers should consider cost – effectiveness, durability and availability of materials.

3.2.2 Household Sanitation

Household sanitation is the provision of structures, which promote sanitation and hygiene at the family unit level. The structures should include refuse pits, Hand Washing Facilities (HWFs), drying lines and bath shelters.

Pit Latrines

Siting
- Down slope from boreholes or wells.
- 50 Metres from water point.
- Minimum depth to ground water level 1.5 m.

Dimensions
- For round pit: 1metre diameter and 2.5 meters deep

Dimensions
For a rectangle pit: 1.2 meters long, 1metre wide and 2.5 meters deep.

NOTE: A round pit is stronger than a rectangle one. Walls of latrines should be built outside the circumference/perimeter of the pit dimensions to avoid pit collapse.

Construction
- Keep walls of the pit straight from top to bottom.
- Where soil is unstable, sandy or water logged, it is recommended to line pit using stones or bricks.

Lining the Pit
- Line the pit using stones or bricks.
- Use dry bonding at the bottom of the pit.
- Another alternative is to use mortar but honey-comb the walls up to a metre from the ground level, then do a solid wall.

Other Options for Pit Lining: The pit may also be lined with drums, reed weave/or bamboo weave.

Floor Finishing
- Floor Finishing can be made from mud (log decks with mud on the top) or, cement slabs or plats.
- Where cement slab or plats are used, a hole cover should be provided.

Pit-latrine Superstructure
- Walls for pit-latrine superstructure could be made from bricks, stone, timber, grass poles, bamboos, reeds or iron sheets.
- Pit latrine roofs could be made from thatch, iron sheets and tiles.

Hand Washing Facilities

Hand wash facilities (HWF) are containers with water outside latrine near or beside the latrine, which promotes the practice of washing hands after using the latrine.

Options for HWF

- Clay pot, plastic or steel container hangs on strings perforated on the side and with stopper.
- Gourd, plastic container with string tied to pole.
- Inverted bottle container.
- Clay pot plastic or steel container hanging on strings perforated on side and stopped. (Figure 3.2)

Figure 3.3: Hand washing facility

Solid Waste Management

Solid waste, when it decomposes attracts flies, rats, mosquitoes, cockroaches and other pests. When these pests come into contact with people they can transmit disease and germs. Common illnesses are eye infection, malaria and diarrhoea. There is need to ensure proper solid waste management.

Refuse Pits

Siting
- Behind dwelling house.
- It should be placed in the leeward side, where the wind is going away from the house to prevent smell.

Distance
- A minimum 5 metres from the house, a minimum of 30 metres from the water point.

Dimension
- Circular of rectangle shape, minimum of 2 metres squared, depth should be 1.5 metres.

Construction procedure
- When digging the pit, the excavated soil should be kept on the side of the pit.
- Therefore, when depositing refuse in the pit, the excavated soil may be used to thinly cover the refuse.
- Avoid depositing objects like glass and tins.
- Without these objects a well-maintained refuse pit could provide compost manure.

Composting Heaps

Composting heaps promote the use of compose/manure instead of chemical fertilizer.

Siting
- Could be either behind dwelling house, or behind the kitchen.
- The position should be on the leeward side of house and kitchen, the direction of wind is going, so the smell is away from the house.

Distance
- Should be a minimum of 5 metres away.

Dimensions
- Should be 2 metres by 1 metre.

Construction procedure
- Could be either from below ground or above ground, depth of 1 metre.
- The ground level heaps may or may not have walls.

Operations and Maintenance

- Alternative layers of rubbish and earth covering, and watering the heap three times a day.
- Heaps therefore should be built only as high as watering is possible.
- Pipes should be embedded into the heap to release the heat generated.

Bath Shelters

The provision of the bath shelter is to encourage the use of safe water sources when bathing instead of bathing in rivers or lakes.

Sitting

- Down slope from water point, kitchen and dwelling house.

Distance

- Minimum distance of 30 metres away from water point 5 metres away from dwelling house.

Dimensions

- Height of the superstructure should be high enough to give privacy to an adult.

Construction materials

- Grass, bamboo, reed for superstructure.
- Burnt bricks may be used in termite-infected areas.

Construction procedure

- Should be built with a soak pit.
- The superstructure should be built on the soak pit or lead waste water to a soak pit.

3.2.3 Village Sanitation

Village sanitation is provision of structure and carrying out activities to enhance hygiene at the village level. Such structures and activities are sanitary safe water points, toilets for every household, drain system, refuse disposal and graveyard.

Drainage systems are a problem in many villages in the rural areas. Where possible, villages and settlements should be sited where water drains naturally. If flooding and/or ponding occurs, the village should construct drains in flooded areas to natural drainage system such as gullies, streams reservoirs and lakes and plant trees (banana, blue gums, etc) where flooding occurs.

3.2.4 School Sanitation

School sanitation is important primarily for:

- Promoting school health, hygiene and sanitation
- Facilitating children as a means of disseminating health and hygiene messages to their household and communities
- Ensuring that children become responsible adults who practice proper hygiene and sanitation

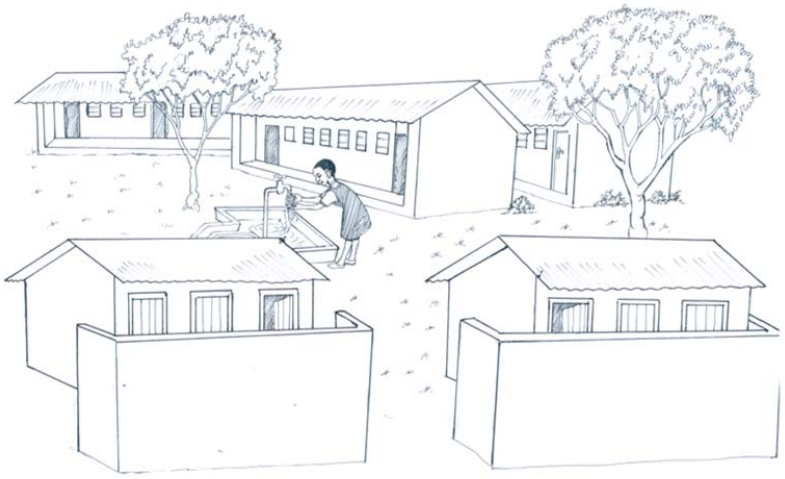

Figure 3.4: A fenced water point

The common sanitary facilities at a school and construction procedures have been described above. However, it is important to promote VIP latrines in schools or water closets in urban areas constructed using permanent materials with pit lining and concrete slabs in case of pit latrines. Hand Washing Facilities (HWFs) are sited in front of school blocks for supervision by teachers to prevent children drink water from the HWF.

4.0 SOLID WASTE MANAGEMENT

If organic solid waste is not disposed of, major risks are incurred of fly and rat breeding, and surface water pollution. Uncollected and accumulating solid waste and the debris left after a natural disaster, in drainage facilities and market places may also create a depressing and unpleasant environment, retarding efforts to improve other aspects of environmental health. Solid waste often blocks drainage channels and leads to environmental health problems associated with stagnant and polluted surface water.

The following key considerations must be made in solid waste management:

- People from the affected population are involved in the design and implementation of the solid waste management programme.
- Household waste is put in containers daily for regular collection, burnt or buried in a specified refuse pit.
- Recycling of organic waste shall be practiced as advanced in the National Sanitation Policy
- All households have access to a refuse container and/or are no more than 100 metres from a communal refuse pit.
- At least one 100-litre refuse container is available per 10 families, where domestic refuse is not buried on-site.
- Refuse is removed from the settlement before it becomes a nuisance or a health risk.

- Health care wastes are separated and disposed of separately and there is a correctly designed, constructed and operated pit, or incinerator with a deep ash pit, within the boundaries of each health facility.
- There are no contaminated or dangerous medical wastes (needles, glass, dressings, drugs, etc.) at any time in living areas or public spaces.
- There are clearly marked and appropriately fenced refuse pits, bins or specified areas at public places, such as markets and slaughtering areas, with a regular collection system in place.
- Final disposal of solid waste is carried out in such a place and in such a way as to avoid creating health and environmental problems for the local and affected populations.

4.1Waste Disposal Sites

4.1.1 On-site Disposal Sites

If waste is to be buried on-site in either household or communal pits, it should be covered at least weekly with a thin layer of soil to prevent it attracting vectors such as flies and rodents and becoming their breeding ground. If children's faeces/nappies are being disposed of they should be covered with earth directly afterwards. Disposal sites should be fenced off to prevent accidents and access by children and animals; care should be taken to prevent any leachate (liquid containing chemical substances that flows from the waste when it becomes wet) contaminating the ground water. Efforts shall be made to optimize the potential of producing organic fertilizers from all useable domestic organic waste.

4.1.2 Off-site Disposal Sites

Large-scale disposal of waste should be carried out off-site through either controlled tipping or sanitary landfill. This method is dependent upon sufficient space and access to mechanical equipment. Ideally, waste that is tipped should be covered with soil each day to prevent scavenging and vector breeding.

4.2 Refuse Type and Quantity

Refuse in settlements varies widely in composition and quantity, according to the amount and type of economic activity, the staple foods consumed and local practices of recycling and/or waste disposal. The extent to which solid waste has an impact on people's health will be assessed and appropriate action taken if necessary. Recycling of solid waste within the community will be encouraged, provided it presents no significant health risk. Distribution of commodities that produce a large amount of solid waste from packaging or processing on-site should be minimized if not avoided altogether.

4.2.1 Health-care Waste

Poor management of health-care waste exposes the community, health-care workers and waste handlers to infections, toxic effects and injuries. In a disaster situation the most hazardous types of waste are likely to be infectious sharps and non-sharps (wound dressings, blood-stained cloth and organic matter such as placentas, etc.). The different types of waste will be separated at source. Non-infectious waste (paper, plastic wrappings, food waste, etc.) will be disposed of as solid waste. Contaminated sharps, especially used needles and syringes, will be placed in a safety box directly after use. Safety boxes and other infectious waste can be disposed of on-site by burial, incineration or other safe methods.

4.2.2 Market Waste

Most market waste will be treated in the same way as domestic refuse. Slaughterhouse waste may need special treatment and special facilities to deal with the liquid wastes produced, and to ensure that slaughtering is carried out in hygienic conditions and in compliance with Local District Assembly by-laws. Slaughter waste can often be disposed of in a large pit with a hole cover next to the abattoir. Blood can be run from the abattoir into the pit through a slab-covered channel (reducing fly access to the pit). Water should be made available for cleaning purposes.

4.3 Communal Washing and Bathing Facilities

People may need a space where they can bathe in privacy and dignity. If this is not possible at the household level, central facilities may be needed. Washing clothes is an essential hygiene activity, particularly for children, and cooking and eating utensils also need cleaning. The numbers, location, design, safety, appropriateness and convenience of facilities should be decided in consultation with the users, particularly women, adolescent girls and any physically challenged people. The location of facilities in central, accessible and well-lit areas can contribute to ensuring the safety of users.

4.4 Safety Measures

All solid waste management staff that collect, transport or dispose of waste should be provided with protective clothing, at minimum gloves and ideally overalls, boots and protective masks. Water and soap should be available for hand and face washing. Staff who comes into contact with medical waste should be informed of the correct methods of storage, transport and disposal and the risks associated with improper management of the waste

5.0 DRAINAGE

Surface water in or near community settlements (villages) and institutions may come from household and water point wastewater, leaking toilets and sewers, rainwater or rising floods. The main health risks associated with surface water are contamination of

water supplies and the living environment, damage to toilets and dwellings, vector breeding and drowning. Rainwater and rising floodwaters can worsen the drainage situation in a settlement and further increase the risk of contamination. A proper drainage plan, addressing storm water drainage through site planning and wastewater disposal using small-scale on-site drainage, should be implemented to reduce potential health risks to the population. This section addresses small-scale drainage problems and activities. Large-scale drainage is generally determined by site selection and development.

It is important that people have an environment in which the health and other risks posed by water erosion and standing water, including storm water, floodwater, domestic wastewater and wastewater from medical facilities, are minimized.

The following key considerations for drainage systems must be made:

- Areas around dwellings and water points are kept free of standing wastewater, and storm water drains are kept clear
- Buildings including family units, paths and water and sanitation facilities are not flooded or eroded by water.
- Water point drainage is well planned, built and maintained. This includes drainage from washing and bathing areas as well as water collection points.
- Drainage waters do not pollute existing surface or groundwater sources or cause erosion.
- Sufficient numbers of appropriate tools are provided for small drainage works and maintenance where necessary.
- Water point committees are responsible for the maintenance of drainage works around a water point.

It is essential to involve the affected population in providing small-scale drainage works as they often have good knowledge of the natural flow of drainage water and of where channels should be. Also, if they understand the health and physical risks involved and have assisted in the construction of the drainage system, they are more likely to maintain it. Technical support and tools may then be needed.

5.1 Guiding Principles

The following guiding principles must be followed for the provision of small-scale drainage works

5.1.1 Site Selection and Planning

The most effective way to control drainage problems is in the choice of site and the layout of the settlement. All water points shall have adequate provision for drainage of waste water. These facilities shall be maintained by user communities.

5.1.2 Wastewater

Sullage or domestic wastewater is classified as sewage when mixed with human excreta. If the site settlement does not have an existing sewerage system, domestic wastewater should not be allowed to mix with human waste. Human waste is difficult and more expensive to treat than domestic wastewater. At water points and washing and bathing areas, the creation of small gardens or woodlots to utilize wastewater will be encouraged. Special attention should be given to the prevention of wastewater from washing and bathing areas contaminating water sources.

5.1.3 Drainage and Excreta Disposal

Special care is needed to protect toilets and sewers from flooding in order to avoid structural damage and leakage. This will be essential in schools and health facilities with piped water systems.

5.1.4 On-site disposal

Where possible, and if favourable soil conditions exist, drainage from water points and washing areas should be on-site rather than via open channels, which are difficult to maintain and often clog. Simple and cheap techniques such as soak pits will be used for on-site disposal of wastewater especially from point water sources and tap points of gravity fed piped water systems. Where off-site disposal is the only possibility, channels are preferable to pipes. Channels will be designed both to provide flow velocity for dry-weather sullage and to carry storm water. Where the slope is more than 5%, engineering techniques must be applied to prevent excessive erosion. Drainage of residuals from any water treatment processes should be carefully controlled so that people cannot use such water and it does not contaminate surface or groundwater sources. This might apply to market centres and large gravity piped systems where conventional treatment might be considered, considering the degree of environmental degradation.

6.0 HYGIENE

6.1 Definition of Hygiene

Hygiene is the consistent and proper use of sanitary facilities/ structures in order to prevent diseases.

6.1.2 Areas of Focus of Hygiene

The common areas of focus of hygiene are as follows:

- Using pit latrine/pour flush
  This practice builds an individual's behaviour of disposing human waste in a pit latrine/pour flush reducing the exposure of flies to the faecal matter, which controls the breeding of flies. As a result, transmission of diarrhoeal diseases is prevented. And also the bilharzias ova in stools are controlled in the pit latrine so it is easy to prevent bilharzias.
- Hand washing with soap at critical times.
  This practice removes dirt and germs from hands hence preventing diarrhoeal diseases - cholera, dysentery and typhoid fever. It reduces diarrhoea
- Bathing & washing.
  The practice removes dirty and germs from human body and clothes respectively hence, prevent skin diseases like scabies and conjunctivitis.
- Using safe water.
  This practice makes people to drink or use potable water all the time. As a result, diarrhoeal diseases are prevented. Drinking of safe water can lead to reduction of diarrhoea episodes.
- Using proper solid waste management systems
  This practice allows individuals and communities to dispose solid waste in a proper way through the usage of refuse pits, compost heap and graveyard. By doing so, flies are prevented from breeding and eventually diarrhoeal diseases are reduced. Aesthetically the environment is conducive to live in and with less obnoxious odours. Vermin breeding like rats is also controlled hence prevents such outbreaks as plague.
- Proper waste water disposal
  This practice makes the use of soak way pits or irrigation channels to drain the wastewater away from the surrounding. As a result, the formation of stagnant water at an area is prevented hence preventing the breeding of mosquitoes that transmit malaria. Apart from this, the practice makes the surrounding area to look dry, tidy and clean.
- Using bath shelters for bathing
  This practice prevents an individual from bathing in streams and rivers where bilharzias worms (cercaria free swimming, infecting stage) may be found. As a result, infection of bilharzias in an individual is prevented.
- Using washing slab at water point for washing

This practice prevents people from using streams and rivers for washing. As a result, people are prevented from standing in rivers and streams for a long time where bilharzias worms may infect them as a result bilharzias is prevented.

- Covering pit latrine squat hole
  This practice makes an individual who uses the pit latrine to cover the squat hole after using it. By doing so, flies are prevented from coming out of the pit, consequently, preventing the transmission of diarrhoeal diseases like cholera, dysentery and typhoid fever.

Proper wastewater disposal

Using washing slab at water point for washing: This practice prevents people from using streams and rivers for washing. As a result, people are prevented from standing in rivers and streams for a long time where bilharzias worms may infect them as a result bilharzias is prevented.

Covering of pit latrine squat hole: This practice makes an individual who uses the pit latrine to cover the squat hole after using it. By doing so, flies are prevented from coming out of the pit, consequently, preventing the transmission of diarrhoeal diseases like cholera, dysentery and typhoid fever.

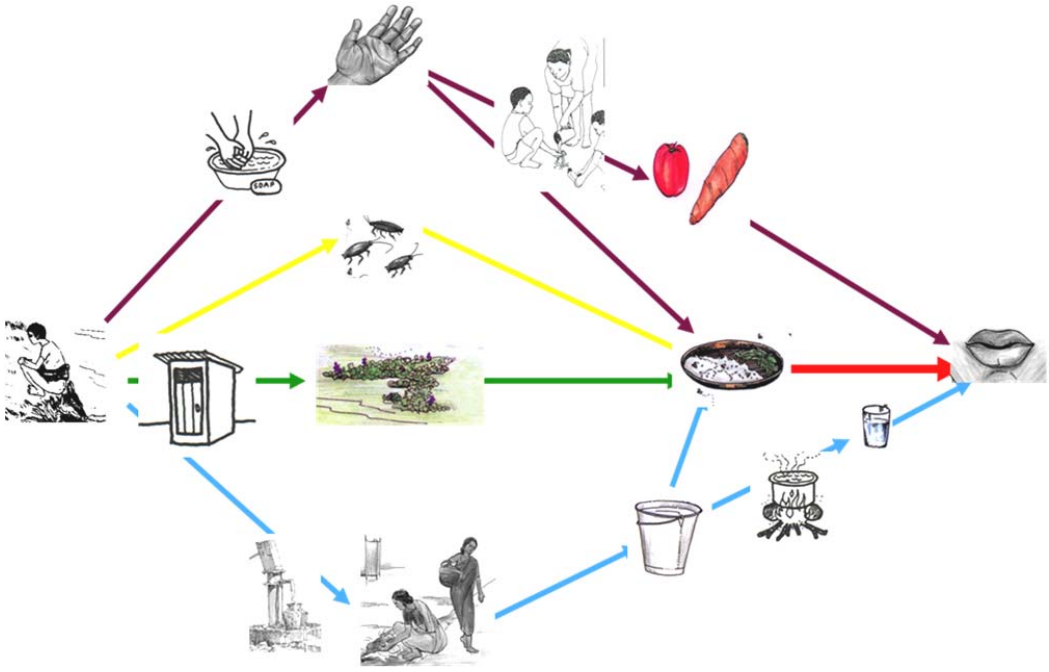

Figure 6.1: Transmission Routes

7.0 SANITATION AND HYGIENE PROMOTION

For any household or family unit or in public places such as schools, health facilities, markets, business and other public premises there is need to accelerate level of knowledge of the people to always use the sanitary facilities in a proper manner through hygiene promotion.

7.1 Design of Sanitation and Hygiene Promotion Programme

The following guiding principles should be followed when designing sanitation and hygiene promotion programmes to be effective and successful:

7.1.1 Assessing Needs

An assessment will be needed at district and community level to identify the key hygiene behaviours to be addressed and the likely success of promotional activity. The key risks are likely to centre on lack of excreta disposal, the poor use and maintenance of toilets, the lack of hand washing with soap or an alternative, the unhygienic collection and storage of water, and unhygienic food storage and preparation. The assessment will look at resources available to the population as well as local behaviours, knowledge and practices so that messages are relevant and practical. It will pay special attention to the needs of vulnerable groups.

7.1.2 Sharing Responsibility

The ultimate responsibility for hygiene practice will lie with all members of the affected community/population in the event of a disaster. All actors responding to the disaster should work to enable hygienic practice by ensuring that both knowledge and facilities are accessible, and should be able to demonstrate that this has been achieved. As a part of this process, vulnerable groups from the affected population will participate in identifying risky practices and conditions and take responsibility to measurably reduce these risks. This will be achieved through promotional activities, training and facilitation of behavioural change, based on activities that are culturally acceptable and do not overburden the beneficiaries.

It is important to ensure that no one target group is overburdened with the responsibility for hygiene promotional activities or management of facilities and that each group has equitable influence and benefits (such as training). Not all groups, women or men have the same needs and interests and it should be recognized that the participation of women should not lead to men, or other groups within the population, not taking responsibility. Training on gender mainstreaming will be undertaken to enhance equality in access to and control over water and sanitation facilities.

7.1.3 Reaching all Sections of the Population

Hygiene promotion programmes need to be carried out with all groups of the population by facilitators who can access, and have the skills to work with, different groups (for example, in some cultures it is not acceptable for women to speak to unknown men). Materials will be designed so that messages reach members of the population who are illiterate. Participatory methods that are socio-culturally appropriate offer useful opportunities for groups to plan and monitor their own hygiene improvements. As a rough guide, in a camp scenario there should be two hygiene promoters/community mobilisers per 1,000 members of the target population. The Integrated Social Sanitation, Hygiene and Water Communication Plan/Strategy will be a useful resource material for guiding interventions to various population groups. Hygiene promotion in schools, market centres and other public places must be adequately promoted.

7.1.4 Targeting Priority Risks and Behaviours

The objectives of hygiene promotion and communication strategies will be clearly defined and prioritized. The understanding gained through assessing hygiene risks, tasks and responsibilities of different groups will be used to plan and prioritize assistance, so that misconceptions (for example, how HIV/AIDS is transmitted) are addressed and information flow between humanitarian actors and the affected population is appropriate and well targeted.

7.1.5 Managing Facilities

Where possible, it is good practice to form water and/or sanitation committees, made up of representatives from the various user groups and at least half of whose members are women. The functions of these committees will be to manage the communal facilities such as water points, public toilets and washing areas, be involved in hygiene promotion activities and also act as a mechanism for ensuring representation and promoting sustainability. Each household/family unit will be encouraged to hygienically use and maintain a toilet/latrine facility. Proper arrangements shall be made in schools and other public places to keep latrine facilities clean and operational at all times.

7.1.6 Conducting Community-Based Hygiene Education

Community-Based Hygiene Education
Encourages community health action oriented planning programmes and activity implementation. In order to ensure that communities are involved in all hygiene education activities the following procedures have to be followed:

- Sensitize Village Leadership (Village Headman, Village Politicians and other influential leaders) on need for hygiene for the agreed-upon forthcoming Water sanitation project.

Figure 7.1: Hygiene Education

- Formation of the following committee Village Health and Water Committees (VHWC) which in turn sets up Water Point Committees. These committees should be instituted before water points are constructed.

- VHWCs are trained to design and implement hygiene education program.

- Baseline Data Collection
  - Baseline data is essential in hygiene education programme, because it provides the information on the existing situation and can be used for evaluation.

- Training on baseline data collection
  - The water supply and sanitation agency (WSSA) trains the VHWC to conduct a water supply; sanitation facilities and hygiene practices survey using participatory rural appraisal (PRA) techniques.

- Data Analysis
  Information has to be analysed by the VHWC together with the relevant community leaders. It is encouraged to collect the information below which should feed into the national sanitation and hygiene MIS.

  - Village population (men and women)
  - Total number of HH's in the village?
  - Number and Names (locations) of Safe Water Sources
  - Number of Households and people using each safe water source
  - Number of broken down water points
  - Number of unsafe water sources.
  - Number of households and people using each unsafe water sources
  - Number of households using safe water sources and have latrines
  - Number of households with latrines and HWF.
  - Number of households with bath shelters.
  - Number of households managing solid wastes appropriately.
  - Number of households whose water containers are kept indoors.
  - Number of households with water containers in-door and covered.
  - Number of people with malaria, diarrhoea, bilharzias, scabies and eye infections.
  - Hygiene conditions of each point (whether or not dirty, overgrown with grass, ponded, etc,).

  - Linking Baseline Data to Health
    - VHWC should be trained, using participatory approaches, to link the importance of water and sanitation with health such as given in the table below, for example:

Water and Sanitation Parameter	Health Importance
Use of Safe for drinking (kept in-doors, covered to avoid dogs, pigs)	Prevents bilharzia
Use of safe water for bathing	Prevents bilharzia
Use of bath shelters	Prevents bilharzias, scabies, eye infections
Use of latrines	Prevents diarrhoea, bilharzias
Use of HWF	Prevents diarrhoea
Proper use of soak pits (at water points, bath shelter)	Prevents malaria, bilharzias
Proper use of refuse pits compost heap	Prevents eye infection

- After linking the baseline data to health, the WSSA assists the VHWC to prioritise the problematic areas within their community. Priority ranking could be because of the prevalence or seriousness of the disease associated with the parameters. A suitable PRA technique to be used here is "ranking"

7.1.7 Participatory Approaches

After the VHWC has been trained in the importance of water and sanitation measures and have ranked what facilities, which need improvement then they should in turn train communities in the provision and use of these facilities. VHWC should use participatory techniques.

7.1.8 Hygiene Education Message

In order to promote community actions and behaviour change, specific hygiene messages have to be developed and disseminated. The following are some of the important messages in water supply and sanitation:

Area	Type of Message
Hand Washing	Hand washing prevents diarrhoea and cholera
Safe Water	Drinking of borehole/tap water prevents diseases such as diarrhoea and Cholera.
Latrines	- Usage of latrine prevents diseases such as diarrhoea and cholera - Usage of latrine minimizes fly breeding thereby preventing diseases such as diarrhoea and cholera - Usage of latrine prevents diseases such as bilharzias and eye infections.
Bath Shelters	- Bathing in bath shelter prevents diseases such as bilharzias and scabies.
Waste Water Disposal	- Disposing of wastewater in soak-away pits prevents malaria
Solid Waste Management	- Proper use of refuse or composting pit prevents diarrhoea and eye infection

8.0 IMPLEMENTATION ARRANGEMENT

8.1 Institutional Set Up

The Institutional set up proposed in the District Implementation Guidelines will be adopted in the use and operationalisation of the Participatory Hygiene, Water and Sanitation Promotion Programmes. A Rural – WaSH District Programme Cycle as conceptualized in the District Implementation Guidelines will be adopted. The District Coordinating Team under the guidance of the District Executive Committee for any District Assembly will provide implementation leadership under the policy framework of the National Sanitation Policy.

The key features to be considered under implementation arrangements will include development of Strategic and Action Plans as well as sourcing funding for hygiene and sanitation promotion activities according to the investment plan. Key implementation activities will include Orientation and Sensitization; Capacity Building and Training; Service Improvement (Promotion and Construction); and Monitoring and Support. These activities will be conducted at both District and Community levels.

8.2 CAPACITY BUILDING

Capacity building will be a major activity to be undertaken in implementing hygiene and sanitation promotion activities. This activity will be undertaken to build "institutional capacities" at community and district levels that will sustain a long-term program of improved water and sanitation services. Capacity building activities at the community level will target latrine artisans, hygiene promoters, sanitation clubs, school teachers and Local Service Providers who might be engaged to construct improved latrine facilities in schools. The District Implementation Guidelines will be adopted in implementing capacity building activities.

8.3 Institutional Roles and Responsibilities

The District Implementation Guidelines are quite clear on the roles and responsibilities of various players in the implementation of the WSS Programme. Implementation of hygiene and sanitation promotion activities will involve stakeholders at national, district and community levels. The tasks for stakeholders at national, district and community level in the implementation of WSSPs have been well articulated in the District Implementation Guidelines. These should be adopted and adapted to specific hygiene and sanitation promotion programmes.

8.4 Monitoring, Evaluation and Ongoing Support

Monitoring, evaluation and ongoing support principles and mechanisms advocated in the District Implementation Guidelines will be adopted and adapted to specific hygiene and sanitation programmes. The guidelines provide the framework for building the District

M&E System that will be a component of the District WSSPs Strategic Plan. The framework should be used in carrying out monitoring, evaluation and on-going support activities. The monitoring and evaluation concept proposed in the Integrated Communication Strategy will also be used to assess and track the adoption rate of good hygiene behaviour.

10.0 CROSS CUTTING ISSUES

10.1 Gender

Men and women often have different roles, levels of demand, and preferences in water and sanitation. In particular, women are usually the ones who manage water and hygiene in the households. Women and girls spend a large amount of time fetching water hence they have a strong incentive to contribute towards improved water services and to help maintain them when they are in place. Therefore, they should be involved in all phases of the project cycle i.e. making the initial demand for an improved service, planning, implementation and operations and maintenance. They should be encouraged to take part in key decision making position in the various water and sanitation committees as well as participating in training programmes.

10.2 HIV and AIDS

The issues of HIV and Aids have a direct impact on sustainable management of water and sanitation services. Affected families spend much time attending to the sick and fail to concentrate on water and sanitation matters.

On the other hand, use of improved sanitary facilities shall help to prolong lives of those infected, hence enable them actively participate in water and sanitation and other development activities.

Therefore, all water and sanitation initiatives and efforts should aim at integrating HIV and Aids issues by raising awareness of the risks and promoting behavioural change to prevent the spread of HIV.

10.3 Environment

Many catchment areas are being degraded in many parts of the country affecting quantity and quality of the water resource. Environmental consideration is therefore important when carrying out water and sanitation activities.

Environmental and social impact assessment should be carried out detailing the positive and negative effects of the proposed development on the environment. Appropriate mitigation measures should be recommended to minimise undesirable effects. This should be done in accordance with the guidelines of National Environmental Policy, National Environmental Action Plan, Resettlement Policy Framework and Environmental & Social Management Framework.

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Annex 1: Importance of hygienic practices

Hygiene Practice	Importance
Hand Washing preferably with soap	• Prevents transmission of diarrhoeal diseases e.g. cholera, typhoid, dysentery • Promotes personal hygiene • Promotes social interaction
Drinking Safe Water	• Prevents diarrhoeal diseases e.g. cholera, dysentery, typhoid • Prevents Polio
Covering of pit latrine squat hole	• Prevents breeding of disease vectors and vermins e.g. flies, cockroaches and rats - therefore prevents transmission of diarrhoea and other parasitic diseases • Reduces smell from coming out of the hole
Proper disposal of waste water	• Prevents breeding of mosquitoes that cause malaria • Provides cleanliness of the surrounding
Proper disposal of solid waste	• Prevents eye infection by reducing the breeding of flies; and rat infestations • Provides clean surrounding
Bathing/ washing	• Prevents skin infections e.g. scabies, leprosy • Promotes personal cleanliness • Prevents eye infections • Prevents infestations of lice
Washing at washing slabs	• Prevents infection from bilharzia • Promotes cleanliness surrounding the water point
Using pit latrines	• Prevents diarrhoeal diseases e.g. cholera, typhoid, dysentery • Provides privacy, social status and comfort to the users • Controls the breeding of flies • Prevents infection from bilharzia • Prevents Polio
Using bath shelters	• Prevents infection from bilharzias • Promotes personal hygiene • Offers privacy