

## Glossary of Water and Sanitation terms

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### **Aquifer**

An underground layer of water-bearing permeable rock or unconsolidated materials (gravel, sand, silt, or clay) from which groundwater can be usefully extracted using a water well. (UNICEF)

### **Community Mobilization**

A capacity-building process through which community individuals, groups, or organizations become aware of a shared concern or common need, and decides together to take action in order to create shared benefits. Community mobilization generally uses a participatory decision-making process. (UNAIDS)

### **Conservation**

Water conservation includes good environmental practices in wetland or spring management but it also included good practices in collecting, storing and transporting water to ensure maximized efficiency. Behaviours such as turning off taps when finished collecting water and using water efficiently are essential to water conservation. (WWF, UN)

### **Diarrhoeal Disease**

Diarrhoea is the passage of loose or liquid stools more frequently than is normal for the individual. It is primarily a symptom of gastrointestinal infections which cause around 2.2 million deaths each year worldwide. Severe diarrhoea may be life threatening due to fluid loss in watery diarrhoea, particularly in infants and young children, the malnourished and people with impaired immunity. Key measures to reduce the number of cases of diarrhoea include: access to safe drinking water, improved sanitation, good personal and food hygiene, and health education about how infections spread. (WHO)

### **Faecal-Oral Route**

Method of disease transmission where pathogens carried in faecal matter are ingested orally. This can occur in different ways including contaminated water, soil, flies, and fingers. Improved hygiene works to block this route and reduce disease transmission. (WaterAid)

### **Groundwater**

Groundwater is the water contained beneath the surface in rocks and soil, and is the water that accumulates underground in aquifers. It is usually safe to drink because permeable layers of earth act as fine filters removing bacteria and other impurities as water seeps through. In many parts of the world groundwater sources are the single most important supply for the production of drinking-water. (WHO, WaterAid)

### **Guinea worm**

Guinea worm disease is a debilitating and painful infection caused by a large nematode (roundworm). The disease is transmitted by drinking water that contains a small crustacean infected by a parasitic worm. Thus, the principal means of prevention is through ensuring access to safe sources and by motivating people to use the safe sources exclusively. (WHO, UNICEF)

### **Hand-washing Stations**

A source of clean water available for hand-washing. Hand washing helps to drastically reduce the transfer of bacteria and viruses that cause diseases and infections. Hand-washing is vital after defecating or handling children's feces, before preparing food and before eating. (WaterAid, UNICEF)

### **Hygiene**

The collection of behaviours relating to safe management of excreta, such as washing hands and disposing safely of household wastewater. Together with sanitation, hygienic behaviour is critical for control of diarrheal diseases and parasitic infections that cost lives and contribute to malnutrition. (WHO, The World Bank: Water and Sanitation Programme)

### **Hygiene Education**

Hygiene education focuses on issues such as personal hygiene - the simple act of washing hands with soap and water can reduce diarrhoeal diseases by a third. Different methods for communicating hygiene education may include: participatory learning, popular/cultural media, demonstrations, and testimonials. Successful hygiene education considers budget, community needs, and resources; it builds on local concepts and practices; it uses a variety of methods; it emphasizes dialogue, discussion, participation, and feedback; and it centres on realistic goals and short-term benefits. (WHO, WaterAid)

## Latrines

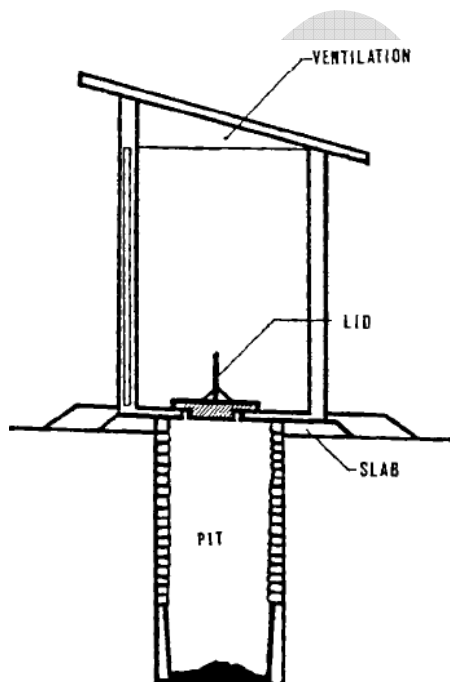
Hygienic lavatories are vital to improving health and reducing disease transmission. There are many types of latrines; here are two of the simplest and easiest to build:

### 1. Simple pit latrine

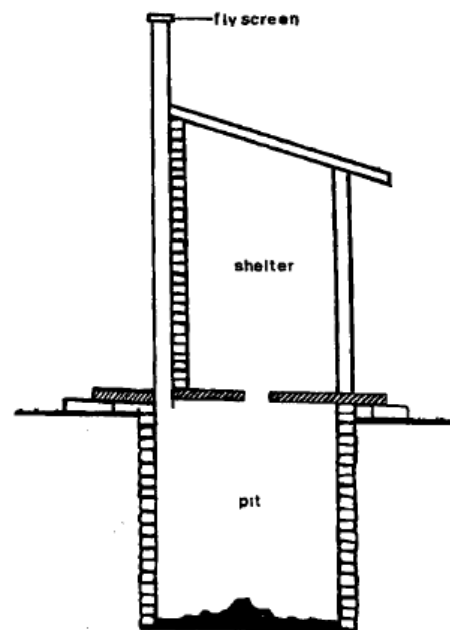
This type of latrine is the cheapest and most basic form of improved sanitation. It consists of a pit dug in the ground, a hygienic slab covering the pit, and a hole through which excreta can fall. The latrine is covered with a shelter and fitted with a door. The hole in the slab should be kept covered with a lid to reduce presence of flies and odour. The latrine should be constructed well away from water sources and buildings. (WHO)

### 2. VIP latrine

Ventilated improved pit latrines are improved pit latrines that help to reduce odours and prevent flies from breeding and escaping. Excreta are collected in a pit which is fitted with a venting pipe covered by a fly-proof screen. Uncovered squat holes or open seats in a VIP latrine ensure that air flows into the latrine and out through the vent pipe, reducing odours. Flies are prevented from escaping the latrine as they are attracted to the light from the vent pipe, but cannot escape through the pipe due to the screening. While slightly more expensive to build and maintain than a simple pit latrine, VIP latrines remain relatively inexpensive, and are more hygienic and pleasant to use. (WHO)



Simple pit latrine



Ventilated improved pit (VIP) latrine

## **PHAST**

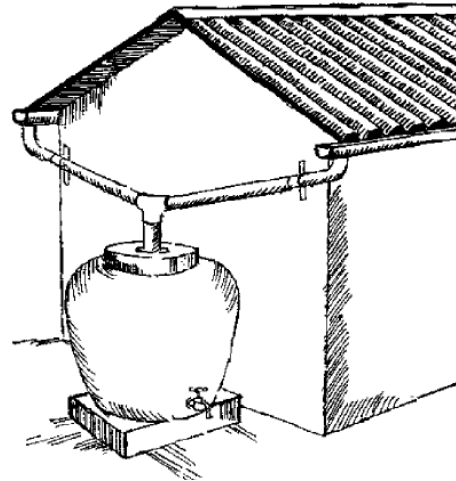
Participatory Hygiene and Sanitation Transformation is an approach designed to promote good hygiene behaviours, sanitation improvements and community water management. Community groups discover for themselves the faecal-oral contamination routes of disease, then analyze their own hygiene behaviours and plan how to block the contamination routes. The underlying basis for this approach is that no lasting change in people's behaviour will occur without understanding and believing. (WHO, UNDP)

## **Protected Spring**

A surface water supply that is protected from contamination by: ensuring that the spring is not in fact a surface stream that has re-emerged; fencing the surrounding area to prevent animals entering; building a concrete retaining wall and outlet pipe to keep the water collection area clean; building a drainage area to prevent pools of stagnant water collecting; and refraining from building latrines in the near vicinity. (WaterAid)

## **Rainwater Harvesting**

In areas where rain falls regularly, rainwater can be collected before it evaporates or becomes contaminated. Rainwater is some of the cleanest naturally occurring water available and can be collected from pre-cleaned roofs of homes and schools by using gutters to direct the rainwater into a storage tank. (WHO)



**Roof catchment for rainwater (UNICEF)**

## **Rivers, Lakes and Streams**

Safe water can be extracted from rivers and lakes though it almost always has to be treated to avoid contamination. Dams are often used in lakes to create reservoirs from which water can be extracted.

In rivers, direct extraction is possible; however, this water will generally require more treatment than water extracted from wells dug into the riverbanks. The permeable sand and gravel found along river banks helps to filter the river water before extraction. (WHO)

## **Safe Water Chain**

The transmission of water-borne disease is minimized when the links of the “safe-water-chain” are preserved. (WaterAid, Ryan's Well Foundation)



### **Sanitation**

Sanitation is the management and disposal of solid wastes and waste water in and around communities and households. The most dangerous waste product – and thus the focus of sanitation programmes – is human faeces. (UNICEF)

### **Spring**

A spring is the point at which groundwater appears at the earth's surface. Springs are created when the level of the water table intersects with the level of the land surface or when groundwater is released between two impermeable layers of earth. Springs are generally a high quality water source and may only require protection and not treatment. Springs are also favoured water sources as they are inexpensive to maintain and do not require a pump to bring the water to the surface. (WHO)

### **Surface Water**

Surface water supplies include small upland rivers, streams or springs. In some areas springs can be tapped, protected and used directly at their source. (WaterAid)

### **Sustainability**

Ensuring that water supply and delivery can meet the needs of current populations while also meeting the needs of future generations. Without such an approach, ineffective management of water resources may put at risk human health and welfare, food security, industrial development and the ecosystems on which they depend. (UNICEF)

### **Village Ownership**

The Village will own, manage and maintain the water collection and delivery system. Through village ownership, water and sanitation projects are more likely to be sustainable. (WaterAid)

### **Village/School Water Committees**

These committees are selected by the community and/or elders to manage and maintain the water systems at a school or in a village. They make decisions regarding all aspects of the project such as: the location of water supply points, wells, and boreholes; the method of construction; whether the initial contribution should consist of cash or labour; and the daily maintenance and cleanliness of the system. (WaterAid, UN)

### **VLOM (village level operation and maintenance)**

Village Level Operation and Maintenance (VLOM) is a strategy to help in solving the widespread financial and logistical problems experienced with centralized maintenance. A VLOM hand pump is simply a pump that can be maintained by the community itself, using predominately local resources. This will depend on the type of pump used, as well as the collective skills and resources of the community. (UNICEF)

## **Water Related Disease Transmission:**

### 1. Water-Borne

These are diseases that are caused by the ingestion of water contaminated by human or animal faeces or urine containing pathogens. They can be reduced through improved water quality. Examples include: *Diarrhoea, Typhoid, Cholera*. (WHO, UNICEF)

### 2. Water-Washed

These are diseases that are caused by inadequate use of water for domestic and personal hygiene. They can be reduced through increased water availability and improved hygiene. Examples include: *Roundworm, Typhus*. (WHO, UNICEF)

### 3. Water-Based

These infections are caused by parasitic pathogens found in aquatic host organisms. They can be reduced through decreased water contact, and improving water quality. Examples include: *Guinea Worm, Bilharzia*. (WHO, UNICEF)

### 4. Water-related Insect Vector

These water-related diseases are caused by insect vectors which either breed in water or bite near water. They can be reduced by improving surface water management, decreased contact with standing water and insect breeding sites, and improved water storage facilities. Examples include: *Malaria, Sleeping Sickness*. (WHO, UNICEF)

## **Water Sources**

There are three main sources of drinking water: groundwater, surface water, and rainwater. Depending on local geography, topography, climate, and needs, each of these may require different technologies and different levels of treatment in order to ensure the water is clean and accessible. (WHO)

## **Water Treatment**

The purpose of water treatment is to remove substances which may be dangerous to human health, such as pathogens (disease causing microbes) or other sources of contamination such as excess minerals or toxic substances. (WHO)

## **Water Use**

The number of litres of water used per person, including water for drinking, cooking, cleaning, sanitation, and other uses. The average person's water use in the USA is 595 L/day, whereas in Ethiopia it is only 5 L/day. (DFID)

## **Well Types**

### 1. Dug Well

These are one of the oldest and most common forms of obtaining groundwater worldwide, though they are restricted to locations where the earth can be removed by hand. In their most basic form, dug wells are unlined holes in the ground which reach the water table. Such wells should be upgraded wherever possible, usually by lining with concrete in order to prevent pollution and increase stability and also by adding a hygienic cover. These wells can either be shallow (around 5m in depth) or deep (upwards of 20m in depth). (WaterAid, WHO)

### 2. Tubewell

These wells are small diameter holes drilled into the groundwater supply. Usually fitted with a hand pump or powered pump, tubewells are lined with pipe from the surface to the water table. These wells can generally be built more cheaply and quickly than dug wells, they can also reach greater depths and can usually pump water more quickly. Compared to dug wells, tubewells are also safer to construct and use. (WaterAid, WHO)

### 3. Borehole

Boreholes are deep tubewells (100m or more in depth) that are most appropriate where large quantities of water are required, for instance for medium sized towns. Boreholes are useful when the water table is deep and where the aquifer is rocky. (WHO)

## **Water Pumps**

Pumps are devices that bring water to the surface of a well while allowing the well to remain sealed and covered, usually with a concrete slab. This is the preferable alternative to the traditional uncovered bucket and rope system in which water could easily be contaminated by things falling into the well. (WaterAid)

### 1. Rope Pump

This is a simple pump using a continuous rope fitted at intervals with discs or washers and pulled upwards through a pipe. The rope is pulled in a loop around a wheel, often a bicycle wheel, to bring water up from the well and out through the discharge outlet. (WaterAid)

### 2. Hand Pump

Hand pumps operate using a piston or a plunger to pull water up the well. They should be cost-effective, reliable, and easy to maintain. (WaterAid)

### 3. Diesel or Electric Pump

These pumps are used in cases where there is high demand for water and/or the water table is very deep underground. These pumps are expensive due to the costs of fuel as well as the specialized labour needed to install and maintain the pumps. (WaterAid)