

WATER, SANITATION AND HYGIENE



KEY MESSAGES

- ▶ Water Sanitation and Hygiene (WASH) services meet basic needs; to provide them in sufficient quantity and quality is urgent for people to survive and stay in good health. Therefore, they are among the most vital and very first services provided in a camp.
- ▶ Sufficient water needs to be safe for drinking, cooking and personal hygiene. Good sanitation facilities must be culturally appropriate and safe for use. Hygiene should be promoted through clear and easily understandable messages. Water quantity, sanitation and hygiene should be treated as equally important factors for the prevention of illnesses and epidemics.
- ▶ To make WASH interventions effective and successful, participation of the camp population, particularly of women and girls, is essential. Whenever possible, camp residents need to be consulted and involved in all aspects of WASH interventions such as planning and implementation, coordination and monitoring, maintenance and follow-up.
- ▶ Specialised humanitarian organisations, WASH service providers, are usually in charge of planning, coordination, implementation and maintenance of WASH interventions. WASH interventions need however to be monitored by the Camp Management Agency. Both agencies need to work hand-in-hand and clearly communicate their roles and responsibilities to the displaced community.
- ▶ Standards and indicators for humanitarian operations and sectors, including WASH, guide humanitarian organisations in how best to ensure displaced persons' right to live in safety and dignity and help measure the impact and effectiveness of humanitarian interventions.

INTRODUCTION

Water, Sanitation and Hygiene (WASH) services meet basic needs: to provide them in sufficient quantity and quality is urgent for people to survive and stay in good health. Therefore, they are among the most vital and very first services provided in a camp. A continuous lack of water, insufficient latrines or uncontrolled open defecation, poorly set up waste disposal or drainage systems are all risks that may lead to illnesses and epidemics such as diarrhoea and cholera. To reduce these risks and manage a camp's WASH sector in line with international standards is the responsibility – in most camps and camp-like situations – of a specialised humanitarian organisation, a WASH service provider.

WASH services cannot be reduced to technical aspects only for they should be implemented with a sound understanding and approach to protection, particularly of women and girls. In most camp situations, women and girls are responsible for cooking, cleaning, washing and fetching water for their households. In this role, they are often exposed to a higher risk of abuse and sexual violence. WASH providers and the Camp Management Agency need to take into account safety aspects, and make sure that latrines and other WASH infrastructure are placed where they can be protected and allow safe access for women and girls by day and at night. Although sometimes difficult to promote, participation of women and girls in the planning, implementation and maintenance of WASH services is important. Ideally, they should be involved to the maximum extent.

! “...The main purposes of emergency water supply and sanitation programmes are to provide a minimum quantity of clean drinking water, and to reduce the transmission of faecal-oral diseases and disease-bearing vectors. A further important objective is to help establish the conditions that allow people to live and perform daily tasks, such as going to the toilet, and washing with dignity, comfort and security...”
(Humanitarian Charter and Minimum Standards in Disaster Response, The Sphere Project, 2000, P. 19)

As a rule, it is better to deliver an adequate amount of water of average quality than only a small amount of pure drinking water. Due to their life-saving nature however, WASH services need to be planned and carried out with the utmost care

and responsibility towards the camp population. To ensure quality, accountability and effectiveness of WASH services, sound and frequent monitoring must be carried out. The primary responsibility lies with the WASH provider as part of its professional obligation and secondly, with the Camp Management Agency in its role as overall coordinator of humanitarian service provision. Effective coordination between WASH providers and the Camp Management Agency is vital for they need to work hand-in-hand and clearly communicate their mutual roles and responsibilities to camp residents and the local administration/government authorities.

The WASH sector in a camp cannot be seen in isolation, for it is closely related to health, shelter, environment, and other sectors. Inter-sectoral links should be considered throughout a camp's life cycle from planning, to set-up and maintenance to closure. For example if water is contaminated, it will make people ill and the caseload at health centres may be unmanageable. Failure to organise waste disposal and ensure proper drainage will not only affect the camp population itself, but may also have a negative impact on the environment and the host community.

Ideally, WASH services provided in camps should comply with internationally or locally agreed upon standards and indicators. WASH providers will likely use standards and indicators set up and recommended by either The Sphere Project or UNHCR (see box below). Internationally, the best known standard to apply may be 15–20 litres of water per person per day – for drinking, cooking and personal hygiene. Camp Management Agencies and WASH providers need to make use of these standards and indicators. They guide and support humanitarian organisations in how to best ensure displaced people's right to life in safety and dignity and can help measure the quality and effectiveness of humanitarian interventions.

 A Camp Management Agency should have available in its office at least one copy of both The Sphere Project's Humanitarian Charter and Minimum Standards in Disaster Response, also known as the "Sphere Standards Handbook", and the UNHCR's Handbook for Emergencies. Both handbooks are standard works for humanitarian organisations operating in camps. They consist of guidelines, rules, standards and indicators that every member of a Camp Management Agency's staff needs to be aware of.

KEY ISSUES

ROLES AND RESPONSIBILITIES

Generally, a WASH service provider leads and coordinates the WASH sector in a camp, and is therefore responsible for the planning, implementation and maintenance of WASH services and infrastructure. If there are several WASH service providers operating in one single camp, one of them should be nominated as WASH Sector Lead for that camp, and further be first contact for the Camp Management Agency and the local sanitation authorities.

! The 2004 tsunami in Indonesia and the 2005 earthquake in Pakistan affected many cities and towns. Generally, in urban settings the local sanitation authorities will likely play a greater role in the organisation and coordination of emergency relief assistance than they usually do in rural camps. They have the best technical knowledge of local water supply and waste disposal systems that may have cracked or collapsed after a natural disaster.

The Camp Management Agency's core responsibility of overall coordination and monitoring of humanitarian services provided in one single camp applies to WASH, as it does to all sectors. WASH providers should regularly share their work plans and collected data, and report on services provided and gaps identified to the Camp Management Agency, so that it can have a clear overall WASH picture. Only if information is transparently shared, can the Camp Management Agency contribute to an overall strategy and planning for humanitarian service provision to the camp. Methods of coordination with the WASH service provider could include: regular meetings; regular information sharing through a jointly-agreed information management strategy; facilitation of access to target groups, community groups and key individuals/leaders within camp populations and negotiating a division of tasks as needed.

Early in the camp operation, the Camp Management Agency and the WASH providers need to agree guidelines, rules and regulations for coordination. These need to comply with the overall rules and regulations for coordination of camp services, best outlined in properly agreed Terms of Reference. The Camp Management Agency and WASH service providers should work closely and clearly

communicate their roles and responsibilities to the camp population and the local administration in order to ensure that:

- WASH services are provided in line with internationally or locally agreed upon standards and indicators
- a well-functioning monitoring and coordination system for the WASH sector is in place
- a community-based monitoring and maintenance system (e.g. WASH committees) is in place to regularly check on WASH infrastructure – such as water supply systems, latrines and drainage – so as to allow quick reporting on gaps
- camp residents, particularly women and girls, are involved in the design, construction and placement of appropriate and culturally-acceptable WASH facilities
- camp residents have sufficient access to personal hygiene materials, such as bathing soap, laundry soap, sanitary materials for menstruation and washable nappies/diapers (if traditionally used).

►► *For more information on non-food items, see chapter 13.*

- agreements for use and maintenance are made with the host community, where water sources outside the camp are being used by the camp population
- the camp residents' and the local sanitation authorities' technical and cultural knowledge and expertise are recognised and used
- government WASH regulations are followed and the national law is respected.

WASH service providers operating in camps ideally have strong technical expertise and good access to materials. Their specific responsibilities and tasks will, however, vary from context to context and much depends on such factors as the involvement of the camp population or the availability of already existing WASH infrastructure inside the camp and the area of displacement. Usually, a WASH Agency will provide:

- sufficient and timely water supply for drinking, cooking and personal hygiene according to standards
- regular quality control of water up to technical standards
- items to store and collect water such as vessels, jerry cans or materials for rain water collection
- hygiene items such as soap and sanitary materials

- WASH infrastructure, such as safe latrines and toilets, bathing and washing facilities, solid waste disposal systems –garbage pits or trash sites – and an adequate drainage system for rain and waste water
- maintenance and cleaning of the camp’s WASH infrastructure in close co-operation with the displaced community
- promotion/sensitisation campaigns of hygiene and hygiene education and the appropriate use of WASH infrastructure and facilities – aiming to make people aware of how diseases are transmitted and how they can be avoided.

The WASH service provider’s staff – such as water engineers, technicians and community mobilisers – will be in contact with the camp population every day, checking on and repairing WASH infrastructure or sensitising and training people. It is therefore important that WASH staff, like all other humanitarian staff working in camps, have a culturally sensitive attitude towards the camp residents and are particularly respectful of women and girls.

 Optimally, the Camp Management Agency should not also have the role as a service provider of other technical assistance programmes in the camp, like WASH. Being responsible for both camp management and service provision can cause tensions, a lack of clarity and conflict of interest. However, a general lack of service providers in the camp, or a rather small number of displaced persons inhabiting a camp may make it necessary for the Camp Management Agency to take on additional responsibilities. In a refugee camp in Burundi, the Camp Management Agency who is a strategic partner to UNHCR, is responsible not only for camp management but also for WASH service provision, distribution and education.

WATER SUPPLY

One of the first priorities in emergencies and camps is the immediate provision of adequate amounts of water. It needs to be safe and appropriate for drinking, cooking and personal hygiene. Although the water quality requires permanent monitoring with professional technical equipment, providing a sufficient quantity of water of average quality is better than only a small amount of high quality water. Often, water quality standards – as outlined by the World Health Organisation (WHO) – cannot be met in camps and/or sufficient amounts of water cannot

be provided. In these cases, the Camp Management Agency and the WASH provider need to inform the camp residents, so that they understand alternative measures, temporary restrictions as well as conservation and sanitation methods that are to apply until the situation improves.

In general, water provided in camps can be broken into two categories – surface water such as from rivers and lakes and groundwater such as from wells, boreholes or springs.

Generally, it is rather difficult to control the quality of surface water. Where water is scarce inside the camp, the camp population will however often choose to fetch water from rivers or unprotected sources in the surroundings, if they exist. Women and girls may then have to walk a long distance through unsafe areas, and are therefore exposed to a higher risk of sexual violation.

Water fetched from groundwater sources is mostly quite clear and of reasonable quality due to natural filtration. Boreholes and wells can often be dug inside the camp, which makes their protection and maintenance as well as water quality control easier. Ground water sources can be categorised into those that are:

- less than three metres deep and considered shallow, such as simple wells, and those
- considered deep (more than three metres), such as boreholes.

Voice from the Field

The Aceh province on the Indonesian island of Sumatra has a tropical climate with heavy rainfalls during the wet season. In coastal regions people never used to have to dig very deep to reach groundwater and individual households depended on their own shallow wells. When the tsunami hit Aceh in 2004, more than a hundred thousand Acehnese lost their lives. Most of the survivors lost, at a minimum, their houses and belongings and became IDPs. Due to the enormous amounts of water that had flooded the coast, many areas became wetland. In the months after the disaster, shallow wells were no longer an option in many places – including camps – because water less than three metres deep was contaminated by the intrusion of saline water.

Particularly during rainy seasons, the collection of rainwater from roofing or through specific rainwater collection techniques might be an additional option. If rain water collection is frequently used the WASH service provider would need to check on the water quality. If possible, rainwater should not be used for drinking but rather for cleaning and personal hygiene only.

Water may also be provided with water trucks from outside the camp and stored in reservoirs and bladders. The WASH provider needs to ensure that water quality is controlled at the source, throughout transport and at camp level before being delivered to the camp population.

! Where urban areas are affected by natural disasters, such as earthquakes or by acts of war, public water and sanitation supply systems are likely to be heavily damaged. Trucking water may then become the only immediate option to support displaced communities. As water trucking is not a sustainable solution for a longer period, WASH providers and the local sanitation authorities should jointly make all efforts possible to get the original WASH infrastructure up and running again if at all possible.

Standards and Indicators for Water Supply

Whereas in refugee camps the mandate and responsibilities of UNHCR usually ensure a water supply up to the organisation's own standards and indicators (outlined in the UNHCR's *Handbook for Emergencies*), it is often more challenging to apply similar standards in IDP camps. Generally, WASH providers operating in IDP camps will plan their interventions using the standards and indicators outlined in the Sphere Project's *Humanitarian Charter and Minimum Standards in Disaster Response*. This does not mean that UNHCR standards and indicators cannot be applied in IDP camps too.

! The Sphere Project sets up three different key standards for water supply in camps: All people have safe access to a sufficient quantity of water for drinking, cooking and personal hygiene. Public water points are sufficiently close to shelters to allow use of the minimum requirement.

Water at the point of collection is potable and of sufficient quality to be drunk and used for personal and domestic hygiene without causing significant risk to health due to water-borne diseases, or to chemical or radiological contamination from short-term use.

People have adequate facilities and supplies to collect, store and use sufficient quantities for drinking, cooking and personal hygiene, and to ensure that drinking water remains sufficiently safe until it is consumed.

The table below compares some the UNHCR's and the Sphere Project's indicators in relation to water use and supply:

	SPHERE	UNHCR	COMMENTS
Minimum requirement of clean water (litres/person/day)	15	15–20	UNHCR's minimum allocation for survival is 7.
Minimum distance from individual shelters to water taps and distribution points (metres)	500	200 (or a few minutes to walk)	
Maximum number of people per water tap	250	80	
Maximum number of people per well/hand pump	-	200	
Water available for hand washing at public toilets (litres/user/day)	1–2	1–2	For cleaning public toilets both recommend 2–8 litres/toilet/day
Water supply to Health centres and hospitals (litres/patient/day)	40–60	40–60	
Water supply to Therapeutic feeding centres (litres/person/day)	15–30	20–30	

►► *For more information on the standards of water per person see chapter 7.*

The table below uses The Sphere Project’s indicator of 15 litres per person/per day and gives an overview of the amounts of water (in million litres) certain numbers of displaced persons would need to be provided with over certain periods:

POPULATION	TIME (DAYS)						
	1	30	60	90	120	180	360
500	0.0075	0.225	0.45	0.675	0.9	1.35	2.738
1,000	0.0150	0.450	0.90	1.350	1.8	2.70	5.475
5,000	0.075	2.250	4.50	6.750	9.0	13.50	27.380
10,000	0.1500	4.500	9.00	13.500	18.0	27.00	54.750
20,000	0.3000	9.000	18.00	27.000	36.0	54.00	108.600
50,000	0.7500	22.500	45.00	67.500	90.0	135.00	273.750
100,000	1.5000	45.000	90.00	135.000	180.0	270.00	547.500
500,000	7.5000	225.000	450.00	675.000	900.0	1,350.00	2,737.500
1,000,000	15.0000	450.000	900.00	1,350.000	1,800.0	2,700.00	5,475.000

Particularly in IDP camps, it is often challenging or even impossible to supply water according to international standards and indicators. Mostly, this is due to a general lack of water in the region of displacement, a shortage of humanitarian funding or an insufficient number of WASH service providers for large numbers of displaced people. In these cases, the relevant humanitarian organisations and the local administration need to agree upon local standards and indicators that still aim to ensure the camp residents’ right to life in dignity and good health. In contexts of internal displacement where the cluster system is activated, the lead role would lie with the WASH cluster in close cooperation with the Camp Coordination Camp Management (CCCM) cluster.

Whether in refugee or IDP situations, the relevant humanitarian organisations, when organising the water supply to a camp and agreeing on standards and indicators, need to take into consideration the availability of water within the host community surrounding the camp. Particularly during dry seasons, the host community may suffer from a significant lack of water, whilst water in sufficient quantities may still be being provided to a camp by humanitarian organisations. A significant imbalance in this regard may lead to serious tensions, and security incidents. There are examples of sabotage of camp WASH infrastructure where members of the host community felt their own problems and needs were being marginalised. Thus, it is preferable that the host community can also benefit to a certain extent from the services provided to a camp.

Voice from the Field

“A refugee camp in Burundi is located on the top of a hill. Driven by a strong generator, water is pumped up daily from a lower situated natural source into concrete water reservoirs in the camp. The water source is appropriately protected, and the entire water system is regularly controlled and maintained by the WASH service provider. Arrangements have been made with the host community, so that they have access to the water source outside the camp, can fetch water and benefit from professional technical follow-up to this infrastructure”.

Rationing Water

Rationing water supplies is very sensitive but may however be necessary, under certain circumstances. The dry season, a continuous drought, a breakdown of infrastructure or restricted access to the camp limiting water supply, may all be reasons why water would need to be rationed for a certain period. In any case, the Camp Management Agency together with the WASH provider need to ensure that:

- water supply to persons with specific needs such as children, pregnant and breastfeeding mothers, older people, those with disabilities, or those with impaired mobility is prioritised
- in consultation with the camp population, particularly with women and girls, a timetable is drawn up when pumps and water taps are open or closed
- any change in or rationing of water supply is transparently communicated to the camp population, so that they know and understand why water is scarce and certain restrictions have been established
- the camp residents are sufficiently sensitised about the need to save water when washing and to limit watering of plants.

 When water is scarce, the «4R» guidelines need to be considered:

- reducing water consumption
- rainwater harvesting
- recycling water
- restoring natural water cycles.

Avoiding Contamination

Next in importance to providing safe drinking water is protecting it. Water needs to be protected at the source itself, during transportation and in storage. While surface water and natural sources or rivers outside the camp are difficult to protect, ground water sources such as wells and boreholes can be more easily controlled. However, contamination of water can take place anywhere, from collection to time of consumption. Poor hygiene practices within households are often a major source for contamination of safe drinking water. Thus, the WASH provider should ensure that:

- where possible the quality of water in wells, pumps, boreholes and water tanks – including any harvested rainwater – is regularly controlled so as to meet technical standards
- water points and taps, wells and boreholes are fenced-off to keep children and animals away
- animals are only watered at a safe distance from water facilities used by the camp population
- safety and security checks at WASH infrastructure are organised through the camp population and the camp’s WASH committees
- ideally, a community-based drainage maintenance and cleaning system is established which focuses on ensuring good drainage around water points and sources, so standing water is avoided
- hygiene promotion activities and sensitisation campaigns are carried out, and understood by the camp population
- individual households have available enough good quality jerry cans, vessels or other adequate items, with lids, to store water safely.

! As a general rule, all water sources should be considered contaminated. They should be tested frequently as ground water and surface water both pose risks and could contain poisonous substances. Treatment of contaminated water needs to always be prioritised. This requires sound technical expertise from WASH providers in order to protect the camp population and the environment. Use of chemicals to disinfect water should be properly controlled.

- ▶▶ See WHO step by step fact sheets for cleaning and disinfecting wells and bore holes in the tools section of this chapter.
- ▶▶ For more information on environmental issues, see chapter 6.

SANITATION

Safe disposal of human waste and excreta is a priority from the very beginning of a camp set-up. Particularly, in longer-term emergencies, adequate sanitation is as important as a sufficient supply of water. Human waste is a major source of pollution and water contamination, and is often responsible for various health problems and diseases such as diarrhoea, dysentery and cholera. Therefore, the provision of proper sanitation services needs to be seen as closely related to health care and of vital importance.

! WHO defines sanitation as the safe management of human waste (excreta) – which includes urine and faeces -through provision of latrines and the promotion of personal hygiene. Environmental sanitation is a broader term, which includes issues ranging from safeguarding water quality; disposal of human excreta, waste water and garbage; insect and rodent control; food handling practices and drainage.

To provide safe access to a sufficient number of latrines/toilets at any time of the day or night, is one of the WASH provider's key responsibilities and needs to be monitored and supported by the Camp Management Agency. Latrines or toilets should be placed not too far from individual shelters, so that particularly women and girls do not have to make long journeys through unprotected or dark areas to reach them. When designing and constructing sanitation facilities, the WASH provider should consider:

- comfort
- hygiene
- safety
- cultural appropriateness.

Sanitation facilities should be as compatible as possible with traditional defecation and cleansing practices, preferred positioning of latrines or other cultural or religious norms. This is best assessed by the camp population itself.

The range and technical sophistication of WASH facilities in camps varies from context to context. Generally however, WASH providers will aim to set up this core infrastructure:

- public or family latrines/toilets including hand washing facilities

- public or family bathing or showering facilities
- public laundry and drying facilities
- systems for regular waste disposal
- drainage systems for waste and rain water.

Standards and Indicators for Sanitation

For sanitation, UNHCR and Sphere often use the same indicators. The table below lists some indicators where figures are used. Other standards are mentioned in the relevant paragraphs of this chapter.

	SPHERE/ UNHCR
UNHCR	
Maximum number of persons per public toilet/latrine	20
Maximum distance from shelter to toilet/latrine (metres)	50
Minimum distance from groundwater sources to toilets/latrines and soakaways (metres)	30
Minimum distance from bottom of latrine to water table (metres)	1.5
Maximum distance from shelter to container or household refuse pit (metres)	15
Number of families per 100-litres refuse container	10

! Often at the beginning of an emergency, when displacement often occurs on a larger scale, the sanitation needs of a camp population and reasonable sanitation indicators cannot be met. In this case, UNHCR recommends a maximum number of 100 persons per latrine as still acceptable. Alternatively, the WASH provider and the Camp Management Agency should think about allocating a site for open defecation if necessary.

Latrines and Toilets

Systems for human excreta disposal in camps and rural areas are generally simple and cheap, such as pit latrines or trench latrines. Knowledge and technical expertise to pitch them can often be found within the displaced community. Several types of latrines and technologies are commonly provided:

- Pit latrines are the most common type used in camps and camp-settings and can be improved with ventilation, so they become Ventilated Improved Pit (VIP) latrines. Ideally, they are used only by single households or a group of households. VIPs can be built with a second pit (Ventilated Improved Double Pit latrines) which is particularly suitable where pits cannot be dug deeply and therefore fill up quickly.
- Trench latrines, are frequently pitched in emergency situations for a greater number of users; they should be dug 1,8 to 2,5 metres deep and 75 to 90 cm wide; recommended lengths per 100 persons is 3.5m.
- Pour-flush latrines are relatively simple in design but need a permeable soil for infiltration. They are only appropriate if enough water for flushing is available and if the camp population is culturally familiar with this type of latrine.
- Borehole latrines, manually or mechanically drilled, are quickly set-up but bear higher risks of smell, fouling, fly breeding and contamination of ground-water.

! Safety and privacy are important to consider when designing latrines and setting up WASH infrastructure. The camp population needs to feel comfortable and familiar with the infrastructure and services provided. Privacy and space should be made available. Thus menstruating women must be able to wash sanitary protection cloths or to appropriately dispose of sanitary protection materials.

▶▶ See UNHCR's *Handbook for Emergencies* (pp. 270–272) for technical information on latrine design.

! The Sphere Project sets two key standards for human excreta disposal in camps. They aim to ensure that people have sufficient numbers of latrines, sufficiently close to their dwellings to allow them rapid, safe and acceptable access at all times of the day and night. Secondly, they have a right to be able to access toilets which are designed, constructed and maintained in such a way as to be comfortable, hygienic and safe to use.

The placement as well as the type of latrines will depend on:

- physical characteristics of the camp site and the surrounding region – such as infiltration and the type of soil, availability of water, wind, rainfall, slope and drainage
- cultural habits and norms of the camp population, such as traditional defecation practices.

In planned camps with sufficient surface, displaced communities will usually benefit from a proper site and camp set-up in line with international standards, including the WASH sector. In spontaneous camps, the placement of latrines and WASH infrastructure can become particularly difficult. Lack of space, densely erected shelters or inadequate geological conditions often make it impossible to respect standards. Hence, Camp Management Agencies and WASH providers will face challenges finding compromises between standards and circumstances.

Over time, pit latrines will have to be emptied or decommissioned – a reality which must be considered when first they are planned. Gullysuckers (vacuum tankers) can be used for removing soft materials and liquids, but they may not be available or may not be able to move close enough into latrine sites. If sufficient space is available, closing latrines, filling up the pits and constructing new ones is sometimes the best or only option. The WASH service provider together with the camp WASH committees are usually responsible for monitoring how full latrines are getting, so that they can make timely plans for appropriate measures.

! In emergencies in urban settings it is difficult or even impossible to dig latrine pits where asphalt covers the ground. Thus chemical toilets or simple drop-hole latrines may often be the only initial options.

- ▶▶ *For information on Sphere and UNHCR minimum standards on site planning and sanitation, see chapter 7.*
- ▶▶ *For information on emergency sanitation see WHO's technical note in the Tools section of this chapter.*

Open Defecation

Although in some rural cultures open defecation is still the common practice, the Camp Management Agency should advocate for camp residents to avoid doing so in camps as far as possible. Open defecation bears an often uncontrollable risk of

diseases and epidemics. In extreme emergency situations however, the pace of latrine construction may not meet initial demand. In this case, open defecation is sometimes unavoidable, and defecation facilities must be provided immediately.

Specific defecation fields located at a safe distance from water points, food preparation and storage sites, living quarters, public buildings or roads need to be designated and fenced-off. Low land that may be flooded should not be assigned for open defecation. However, defecation fields need to be easily accessible particularly for women and girls. The Camp Management Agency and the WASH service provider should make sure that all camp residents are sufficiently informed about the risks open defecation fields involve.

! Ideally, sanitation facilities should be as compatible with traditional defecation practices as possible. However, traditional practices may need to be challenged/changed to reduce serious health risks during large-scale displacement. It will, without doubt, be difficult to provide sanitation to communities primarily accustomed to defecating in open fields, streams or bushes. Hygiene promotion activities are, however, essential to influence behaviour and encourage people to become familiar with the use of latrines.

Drainage

Wastewater from latrines and bathing facilities or produced after cooking and dishwashing carries various micro-organisms. If it is not drained properly it is likely to result in infections, illnesses and epidemics. Standing wastewater or rain-water can easily become breeding grounds for insects such as mosquitoes.

! The Sphere Project sets two key standards for drainage. People should have an environment that is acceptably free from risk of water erosion and from standing water, including storm water, flood water, domestic wastewater and wastewater from medical facilities. Secondly, they should have the means – installations (drainage channels/soak-aways) and tools – to dispose of domestic wastewater conveniently and effectively and to protect their shelters and other family or communal facilities from flooding and erosion.

Depending on human and financial resources and varying from context to context, the establishment and maintenance of a camp drainage system may fall under the responsibility of either the Camp Management Agency, the WASH service provider or even the local sanitation authorities (particularly in urban areas). The involved stakeholders need, however, to agree upon their roles and responsibilities and clearly communicate them to the camp population.

Ideally, a camp site is planned prior to the arrival of IDPs or refugees, preferably on sandy soil and a slightly sloping ground. The type of soil or ground will determine the option for infiltration systems. Infiltration is usually the easiest way to drain and often applied but may not always be the best option; e. g. soak pits in camps built on loamy grounds where soil infiltration is limited may in fact be counter effective.

! Planning and implementation of a camp drainage system are good opportunities for Camp Management Agencies and WASH providers to involve the camp population. Provided with appropriate tools and technical training, households could be made responsible for the maintenance of simple water channels around their individual shelter. If needed, the host community should equally be involved in the planning as drainage systems may affect the environment around the camp.

Unfortunately, the planning of a camp is often not possible. Displacement often happens unexpectedly. Where shelter or tents are erected in an unstructured manner, or where loamy soil makes infiltration of water difficult, the implementation of a drainage system becomes challenging. Still, even small but important improvements of drainage around water points and other WASH infrastructure or distribution sites will help the camp population to improve their living conditions.

! Often the only available play space, wastewater in open channels running through a camp's living quarters, may attract children. When water is scarce, open channels may become a temptation for people to use wastewater for domestic purposes.

Cleaning and Maintenance of WASH Infrastructure

Cleaning and maintenance of WASH infrastructure is not the most pleasant work, but is necessary. Latrines will not be used if they are not clean. To keep all WASH infrastructure in good and useable condition, support from the camp population is essential. Generally, the camp population will be represented in the WASH sector through elected WASH committees. The Camp Management Agency and the WASH service provider need to support, promote and use these community-based committees. Without significant involvement of the camp population it will become very difficult to maintain and clean WASH infrastructure.

In order to set up a well-functioning survey and monitoring system, including the subsequent cleaning and maintenance, the WASH service provider, the WASH committees and the camp population need to agree on roles and responsibilities, rules and regulations. A daily work plan for inspections of WASH infrastructure should be established, and gaps should be reported to the WASH provider. The WASH committees, guided by the WASH provider and trained accordingly, can be made responsible for sensitising the camp population on the proper use, cleaning and maintenance of WASH infrastructure.

Cleaning and maintenance are difficult without required materials and spare parts. Particularly for water supply systems, the WASH service provider needs to ensure the availability of sufficient and technically adequate spare material, such as water taps, pipes and washers. They need to be of good quality to ensure that water pumps and taps do not regularly cease working.

Solid Waste Disposal

Solid waste refers to all non-liquid waste produced by households, medical facilities, market places, food distribution points and other sources. It does not refer to human excreta. Poor or no disposal of garbage and waste increases serious risks such as the pollution of surface water, groundwater and the environment in general. This is a perfect breeding ground for flies and will attract rats and other rodents that are vectors for various diseases.

 The Sphere project sets two key standards for solid waste management, aiming to ensure that people a) have an environment acceptably free of solid waste contamination, including medical wastes and b) have the means to dispose of their domestic waste conveniently and effectively.

Commonly used ways to dispose of waste collected at households, market places, schools and other infrastructure are:

- refuse pits, bins or containers for single households or groups of households
- communal pits and trash sites for larger groups of households.

There are three main techniques frequently used in camps for the disposal of solid waste – burial, burning and composting.

- Burial of waste (also called sanitary land-filling or controlled tipping) in trenches or large pits is relatively simple but caution must be ensured. Proper drainage is essential to avoid contamination of water sources. When drainage is not adequate, trenches may sooner or later become disease-carrying cesspits. Burial pits need to be closed safely with layers of soil when they are full; whether under use or already closed. They should always be fenced off and placed at a safe distance away from shelter and WASH infrastructure.
- Burning or incineration is sometimes the only option when there is insufficient land available for burial. In this case, it should be done off-site since fire and smoke may pose serious hazards in a congested camp setting. Medical waste, however, should never be buried but only burned in a technically appropriate incinerator at health centres and under the supervision of trained medical staff.
- Composting is obviously useful for gardening and agricultural activities but difficult to implement in emergency situations. It may only be feasible in longer-term camps and where there is enough space in and around the camp. It requires specific technical knowledge, training and follow-up. Garbage must be carefully sorted. Larger composting sites and pits also increase the risk of fumes that can pose a health risk for the camp population.

When setting up a camp's waste disposal system, the WASH service provider and the Camp Management Agency should make sure that:

- all material and infrastructure, whether bins, containers, pits or incinerators, are of solid quality and safe for use
- all sites and places for garbage and waste disposal are fenced off, particularly to protect children, and to keep animals away
- in cooperation with the WASH committees and the camp population, a daily work plan and schedule are established for waste disposal and control and maintenance of sites and pits

- roles and responsibilities have been agreed on with the camp population and the WASH committees, so that tasks are clearly distributed: it is recommended to draw up a formal Terms of Reference outlining these
- materials such as wheelbarrows and shovels are available for cleaning and maintenance
- reusable material, such as from construction sites, is collected and given to those who can make use of it.

►► *For information on solid waste disposal see WHO's technical note in the Tools section of this chapter.*

! Waste lying around and not being disposed of creates a demoralising physical environment. A filthy, smelling and unhygienic camp will affect and damage the morale of people already facing many daily challenges.

Disposal of Dead Bodies

The mortality rate in camps and camp-like settings is especially high when displacement is fresh or when people's basic needs cannot be met over a certain period. Epidemics, diseases, malnutrition or injuries from fighting can increase the number of dead in a camp within a short time.

! In some cultures certain illnesses and infections, such as HIV/AIDS, are still regarded as taboo so that people may decide not to report deceased relatives. This is why mortality rates in camps can be much higher than actually reported. Another reason not to report mortalities may be that remaining relatives fear a reduction of their food ration.

Burial is generally the best and simplest way to dispose of dead bodies, if culturally acceptable. When planning a camp, the relevant stakeholders, including the Camp Management Agency, should assign appropriate sites for graveyards and the burial of dead bodies at a sufficient distance to shelter and infrastructure, and where groundwater is fetched. Burial sites should be selected and set up in close consultation with the displaced community.

Burials are in every culture a sensitive and emotional event. Whenever possible, humanitarian organisations should respect the displaced community's traditional ways to bury their deceased. The WASH service provider should support the relatives of the deceased person by making available technical equipment for grave digging and burial as well as burial clothes and shrouds.

Some cultures prefer to cremate their dead. In camps and camp-like settings this may often not be possible due to a lack of space and adequate infrastructure. Additionally, cremation requires a significant amount of fuel or fire wood that may also not be available. In this case, the Camp Management Agency together with the representatives from the displaced community need to find other solutions. Under circumstances of displacement people may be able to change their traditional habits.

 In congested spontaneous camps, burial becomes particularly challenging. IDPs in camps in Northern Uganda for example, had to live for many years in highly congested camps and were not allowed to move outside. Freedom of movement was largely restricted. Hence, they had no other solution than to bury their dead within the camp close to shelter and groundwater.

It is misleading to believe that dead bodies present a higher risk of epidemics. They do not unless the people died of typhus, plague, cholera or haemorrhagic fevers such as Ebola. In these cases, dead bodies should be buried immediately and funeral gatherings limited.

►► *For more information on disposal of dead bodies see WHO's technical note in the Tools section of this chapter.*

 In large-scale emergencies, it may be necessary to construct one or several mortuaries to facilitate identification. In non-emergency settings, a mortuary may also be required for families to conduct a wake and to deal with their loss. A mortuary should be a secure building consisting of four sections – a reception room; viewing room; storage room for bodies not suitable for viewing and a room for records and storing of personal effects.

Hygiene Promotion

Hygiene education and promotion are closely related to health and health education. Whether in well-planned or in spontaneous and congested camps, it is essential for the residents to understand the direct impact that adequate hygiene will have on their physical well-being.

! The Sphere Project sets two key standards for hygiene promotion. All sections of the affected population should be aware of priority hygiene practices that create the greatest risk to health and are able to change them. They should have adequate information and resources for the use of water and sanitation facilities to protect their health and dignity. All facilities and resources provided should reflect the vulnerabilities, needs and preferences of all sections of the affected population. Users are to be involved in the management and maintenance of hygiene facilities where appropriate.

! Hygiene promotion can never be a substitute for proper sanitation and sufficient water supplies which are the key to good hygiene.

The distribution of soap, sanitary material or cleaning tools or the availability of latrines and garbage pits are one matter, their appropriate and regular use another. The Sphere Project defines hygiene promotion as “the mix between the population’s knowledge, practice and resources, and agency knowledge [the WASH provider], and resources which together enable risky hygiene behaviours to be avoided”.

In this spirit, the WASH provider, the WASH committees and the camp population need to prioritise key hygiene issues. It is better to focus first on some of the most crucial hygiene problems instead of overwhelming people with a full range of guidelines and regulations they may not become familiar with. Messages and information should be clear, simple and easy to understand. They should be transmitted in the local language by a team that is familiar with traditional practices and social structures.

! Within displaced communities from remote rural areas, lack of literacy may be widespread especially amongst women and girls. Camp Management Agencies and WASH providers should be aware that written announcements or hand-outs often reach only the male part of the population, but miss many concerned parties.

Sensitisation of a camp population on hygiene aspects and the proper use of WASH facilities can be achieved through various and often creative means and platforms, such as:

- megaphones, radio broadcast or public announcements
- posters, signs, paintings and cartoons
- meetings, focus groups
- celebrations, traditional and community events
- film and video presentations
- dramas, role plays, games and songs.

! A good way to attract particularly children can be to paint WASH infrastructure, such as water reservoirs or latrines with funny but instructive cartoons showing the correct use of WASH facilities and how to ensure proper personal hygiene.

Vector Control

In tropical countries, malaria and diarrhoea are still the vector-borne diseases of greatest public health concern as they present a major risk of sickness and death. Malaria is transmitted by mosquitoes and diarrhoea by flies, but there are other vectors that are considered particularly dangerous in camps where people and animals may have to live together in cramped surroundings.

VECTOR	RISK
Flies	eye infections; diarrhoea
Mosquitoes	malaria; filariasis; dengue; yellow fever; encephalitis
Mites	scabies; scrub typhus
Lice	epidemic typhus; relapsing fever
Fleas	plague (from infected rats); endemic typhus
Ticks	relapsing fever; spotted fever
Rats	Rat bite fever; leptospirosis; salmonellosis; Lassa fever

(Table from the UNHCR Handbook for Emergencies, 2007, P. 275)

To diagnose, address and treat vector-borne diseases, medical assistance from specialists is demanded. To prevent risks and diseases however, much can be done through the camp population. Although not always feasible in the very first beginnings of a camp operation, the Camp Management Agency and the WASH provider should aim for providing proper hygiene education to camp residents, so that they understand the relation between a lack of hygiene and cleanliness and the potential health risks that may arise.

Prevention of diseases and control of vectors starts at household level, but involves all camp sectors. Vector control strategies should focus on reducing the number and density of vectors and contact between human and vector and vector breeding sites. Without active involvement of the camp population, the Camp Management Agency and the WASH provider may fail to make sure that vectors and vector-borne diseases are under control. Local knowledge and experience is important to identify seasonal patterns, typical vector-borne diseases and breeding sites.

Physical control of vector-borne diseases involves all the measures and interventions outlined above which can be used to:

- set up camps and sites where the physical characteristics and the geology are appropriate; swamps and wetland are to be avoided
- provide safe drinking water at maintained water points
- put in place and maintain a sound camp drainage system, so that stagnant water cannot become breeding grounds for mosquitoes
- clean and empty latrines and toilets properly and in a timely manner, so that flies cannot lay their eggs and breed
- distribute safe and adequate storage facilities for households, such as containers and vessels

- clean away and dispose of garbage safely, so that food can be protected against rats and other rodents
- keep domestic animals away from where people live, eat, wash or fetch water.

Chemical control of vector-borne diseases is not the best option in camps but may sometimes be unavoidable. During diarrhoea epidemics space and shelter spraying may be effective to reduce the number of adult flies. Chemical control requires specialist technical follow-up. Concerned staff and camp residents need to be trained accordingly. The WASH provider needs to make sure that sufficient information is available about all chemicals used. Additionally, staff and camp residents need to be equipped and protected adequately when handling chemical substances.

! Particularly in high malaria risk areas it may be necessary to distribute insecticide-treated materials such as mosquito nets, blankets, sheets or tents. Spraying of tents is an established method of preventing infections. Non-tented shelter covered with tarpaulin can also be sprayed.

►► *For more information on vector-borne diseases, see chapter 16.*

! Certain interactive measures to address vector problems may become counter-effective. For example, an increase in the rat population has been reported where stipends were paid for each dead rat delivered at a drop-off point. The camp population failed to see the rodent population as a vector and instead perceived the scheme as a “serious” source of income generation.

PERSONS WITH SPECIFIC NEEDS/PERSONS AT HEIGHTENED RISK

The concerns of persons with specific needs or those at heightened risk are frequently marginalised in camps. In a situation of displacement, this marginalisation may even increase as the community will be under particular stress, traditional social welfare structures can collapse and families may lack capacity to care for others. The Camp Management Agency and the WASH service provider however need to make sure that particular attention is paid to the WASH concerns of persons with specific needs and those at risk:

- Women and girls are usually charged with an enormous number of household tasks and responsibilities such as fetching water for their families. Queuing time at water points and taps should therefore be as short as possible, so that women and girls do not lose hours and hours needed for other activities. Additionally, well-functioning and sufficient water taps and pumps, jerry cans and vessels will decrease the risk for women and girls fetching water outside the camp where it is difficult to offer them protection.
- If possible, public WASH facilities should be well lit and safely placed, so that women and girls do not have to fear to use them in the night. Pathways to WASH infrastructure should be levelled off, so that persons on crutches or in wheel chairs can use them.
- Latrines and WASH facilities should consider the particular needs of small children and physically disabled persons. The WASH provider should design and construct special latrines and bathing facilities that are appropriate and allow these groups to use them safely and easily.
- When water for drinking or non-food items for hygiene and cleaning are in short supply the WASH provider needs to make sure that supply is prioritised to persons with specific needs and those at risk. Babies, children under five, breastfeeding mothers and/or older persons will suffer first from a lack of basics such as water or soap.
- Information campaigns should be launched to address common misconceptions in relation to sick persons – such as the belief that a person living with HIV/AIDS can contaminate shared water points through their physical contact with water. People need to be told that HIV/AIDS can only be transmitted through blood, sperm, sexual fluids and contaminated needles.

CHECKLIST FOR A CAMP MANAGEMENT AGENCY

Roles and Responsibilities

- Camp staff are trained in the protection and care of groups with specific needs, and sign a code of conduct.
- A sufficient number of WASH service providers is operating in the camp; a WASH sector lead is nominated.
- WASH providers have sufficient technical expertise, trained staff and good quality material available.
- Roles and responsibilities in the WASH sector are clarified and agreed upon amongst the Camp Management Agency, the WASH provider, the WASH committees and the local sanitation authorities.
- Terms of Reference (ToR) are fixed.
- The camp population is sufficiently informed about who is doing what, where and when.
- The concerned stakeholders have agreed upon international or local standards to apply in the camp WASH sector.
- WASH services and infrastructures are set-up according to standards, indicators and guidelines and are regularly maintained and monitored.
- An overall monitoring system of WASH interventions is put in place.
- Work plans and data are shared; services, gaps and needs are reported.
- The camp population, particularly women and girls, is sufficiently involved in all aspect of WASH interventions – from planning and design to implementation and construction, to monitoring and coordination, to maintenance and cleaning.
- The Camp Management Agency and WASH provider use a community-based approach and support and promote the community’s involvement through the camp WASH committees.

- Local knowledge and experience is considered and used.
- The Camp Management Agency's and the WASH provider's staff behave in culturally appropriate and sensitive ways vis-à-vis the camp population.

Water Supply

- The current water sources (inside and outside the camp) are known and mapped; alternative water supply has been assessed.
- The level of the groundwater table is known and taken into consideration.
- The camp population has access to sufficient water of reasonable quality according to standards and indicators.
- Water points and sources are easily accessible, safe and protected.
- Water quality is regularly controlled and monitored.
- Particular attention is paid to good drainage around infrastructure for water supply.
- Short-term and long-term water needs are assessed, and the water supply is organised accordingly.
- A contamination risk assessment for water and water sources has been carried out.
- If necessary, water has been treated accordingly to improve the quality.
- Camp residents have enough water storage facilities such as vessels and jerry cans.
- Agreements with the host community are made where water sources outside the camp are being used.
- Possibilities have been assessed whether and how the host community may benefit from camp WASH services provided.

- If water is rationed, the camp population is sufficiently and transparently informed about the reasons why and the alternative measures to apply (see “4R” guidelines).
- Persons with specific needs and those at risk are prioritised when water is scarce.

General Sanitation/Latrines/Open Defecation

- A sufficient number of safe and culturally appropriate latrines, washing and bathing facilities, laundry and drying facilities are available.
- Sanitation facilities are placed safely according to standards.
- The availability of local material for construction is assessed.
- Women and girls have been involved in the design and placement of sanitation facilities.
- Camp residents feel comfortable with the WASH infrastructures and know how to use and maintain them.
- All sanitation facilities consider the aspects of comfort, hygiene, safety, privacy and cultural appropriateness.
- Local traditional defecation practices are known, and considered in relation to hygiene and safety.
- The capacities of latrines in relation to the disposal of human excreta have been considered already in the planning phase.
- Latrines are regularly emptied; all WASH infrastructure is frequently cleaned and maintained.
- Latrines and open defecation sites have hand washing facilities.
- The soil conditions for on-site disposal of human excreta are assessed.
- Open defecation sites are fenced off and designated at a sufficient distance from individual shelter, groundwater and public infrastructure.

- The camp population is sufficiently informed about the risks that open defecation can have.

Drainage/Cleaning and Maintenance

- The camp site is generally clean.
- A technically appropriate drainage system has been established, ensuring the camp site is protected from standing wastewater and flooding.
- The drainage system is regularly maintained through the camp population and the WASH committees.
- The slope of the camp site, the type of soil and the degree of infiltration are taken into consideration when planning and setting-up the drainage system.
- Particular attention is paid to good drainage around WASH infrastructure.
- Tools and material are made available to the camp residents, so that they can protect their shelters and the infrastructure from flooding and wastewater.
- The camp WASH committees and the camp population are mobilised for cleaning and maintenance; mutual roles and responsibilities are clear.

Solid Waste Disposal/Disposal of Dead Bodies

- The local practices of disposing of solid waste are known and taken into consideration.
- The types of solid waste (such as domestic, commercial and medical) are known.
- A regular and sound solid waste disposal system is established and monitored.
- Timetables and schedules for solid waste disposal are established in consultation with the camp population.
- Trash sites, bins and containers are safe, and designated according to standards and indicators.
- Medical waste is burned in incinerators under supervision of trained staff.

- Material such as wheel barrows and shovels are available.
- Reusable material is collected, and given to those that can make use of it.
- The mortality rate in the camp is known and monitored.
- Camp residents report mortalities to the local administration and the Camp Management Agency.
- Appropriate sites for burial and graveyards are fenced-off and designated at a safe distance from individual shelter and groundwater.
- Relatives of the deceased are supported with material for grave digging and burial as well as with burial cloths and shrouds.
- People who died of typhus or cholera are buried rapidly.

Hygiene Promotion/Vector Control

- The local frequency of vector-borne diseases is known; major vector-borne diseases are identified according to their level of risk.
- Major hygiene issues are identified and known.
- A strategy to promote hygiene is drawn up and hygiene education provided to the camp population.
- Clear and simple messages and information are given to the camp population to promote hygiene.
- The camp population understands the relation between inadequate hygiene and vector-borne diseases.
- Women and children are involved in hygiene promotion to the maximum extent.
- Creative means, such as dramas, role-plays, cartoons and paintings are used to communicate with children and non-literate people.
- If chemicals are used for disinfection, they are known and adequately stored and used and concerned staff are thoroughly trained in how to do so.

TOOLS

! Almost all the tools, publications and other documents referred to are available on the Toolkit CD attached to every hardcopy binder. Weblinks are provided for downloadable online resources.

- Best practice guidelines for the on-site decommissioning of emergency and semi-permanent raised level latrines from Sri Lanka
- Framework for decision-making regarding barracks
- Guidelines for the decommissioning of water & sanitation facilities from Sri Lanka
- OXFAM. Instruction Manual for Hand Dug Well Equipment
- OXFAM. Water Supply Scheme for Emergencies
- OXFAM. Low Cost Drainage in Emergencies
- OXFAM. Water Treatment in Emergencies
- RedR, Latrine Decommissioning Training Notes (South Asia earthquake)
- Sphere, 2004. Water Supply and Sanitation Initial Needs Assessment Checklist
- WASH and CCCM clusters – Roles and Responsibilities Matrix
- WHO. Cleaning and Disinfecting Water Storage Tanks
- WHO. Cleaning and Disinfecting Wells in Emergencies
- WHO. Cleaning and Disinfecting Boreholes in Emergencies
- WHO. Emergency Sanitation – planning
- WHO. Emergency Sanitation- Technical Options
- WHO. Essential hygiene messages in post-disaster emergencies
- WHO. Disposal of Dead Bodies in Emergency Conditions
- WHO. Minimum water quantity needed for domestic use in emergencies
- WHO. Rehabilitating small scale-piped water distribution systems
- WHO. Solid waste management in emergencies
- WHO. Water, Sanitation and Hygiene promotion
- WHO. Guidelines for Drinking-water Quality

READING AND REFERENCES

Andrew Chalinder, 1994. *Water and Sanitation in Emergencies. Good Practice Review 1. Relief and Rehabilitation Network.* www.helid.desastres.net/gsd12/tmp/export/who/who93e.pdf

Gender and Water Alliance (GWA), 2003. *The Gender and Water Development Report, 2003: Gender Perspectives on Policies in the Water Sector.* <http://wedc.lboro.ac.uk/publications/pdfs/gwa/gwa-gpopitws.pdf>

Gender and Water Alliance, 2006. *Mainstreaming Gender in Water Management.* www.genderandwater.org/content/download/4545/37857/file/Gender_%20and_IWRM_Resource_Guide_complete_200610.pdf

Peter Harvey, Sohrab Baghri and Bob Reed, 2002, *Emergency Sanitation: Assessment and Programme Design*, Water Engineering and Development Centre. www.who.or.id/eng/contents/aceh/wsh/books/es/es.htm

Inter-Agency Standing Committee (IASC). *Guidelines for HIV/AIDS Interventions in Emergency Settings.* www.unfpa.org/upload/lib_pub_file/249_filename_guidelines-hiv-emer.pdf

International Federation of Red Cross and Red Crescent Societies (IFRC), 2006. *Health and Care. Recommended Publications for Water, Sanitation and Hygiene. Promotion.* www.ifrc.org/docs/pubs/health/water/catalogue-2006.pdf

IRC, International Water and Sanitation Center, 2007. *Roofwater Harvesting. A Handbook for Practitioners.* www.irc.nl/content/download/128067/348520/file/TP49Roofwater_07.pdf

IRC, 2007. *Towards Effective Programming for WASH in Schools.* www.irc.nl/content/download/128071/348559/file/TP%2048%20WASH%20Schools_07.pdf

IRC, 2007. *Sanitation for All? Thematic Overview Paper 20.* www.irc.nl/content/download/127289/343819/file/TOP20_San_07V1.pdf

Oxfam/Emergency Capacity Building Project, 2007. *The Good Enough Guide: Impact Measurement and Accountability in Emergencies.* http://ecbproject.org/publications_2.htm

Oxfam. *Guidelines for Public Health Promotion in Emergencies.* [http://reliefweb.int/rw/rwt.nsf/db900SID/EVIU-6FEE9F/\\$File/Oxfam_PH_2003.pdf?OpenElement](http://reliefweb.int/rw/rwt.nsf/db900SID/EVIU-6FEE9F/$File/Oxfam_PH_2003.pdf?OpenElement)

The Sphere Project, 2004 *Humanitarian Charter and Minimum Standards in Disaster Response*. www.sphereproject.org/component/option,com_docman/task,cat_view/gid,17/Itemid,203/lang,English/

The Sphere Project & World Vision, 2006. *The Sphere Pocket Guide*. www.sphereproject.org/component/option,com_docman/task,doc_view/gid,122/Itemid,203/lang,English/

UNHCR, 2006, *Practical Guide to the Systematic Use of Standards and Indicators in UNHCR Operations*. www.unhcr.org/statistics/STATISTICS/40eaa9804.pdf

UNHCR, 2007 *Handbook for Emergencies*. www.reliefweb.int/rw/lib.nsf/db900SID/AMMF-75TFLQ?OpenDocument

Water, Engineering and Development Centre (WEDC), Loughborough University, 2007. *Excreta Disposal in Emergencies. A Field Manual*. www.unicef.org/eapro/unprotected-EDEprelims.pdf

WHO, 1997. *Vector Control. Methods for Use by Individuals and Communities*. www.who.int/whopes/resources/vector_rozendaal/en/

WHO, 2006. *Guidelines for Drinking-water Quality*. www.who.int/water_sanitation_health/dwq/gdwq0506.pdf

WHO, 2007. *Malaria Elimination. A Field Manual for Low and Moderate Endemic Countries*. www.who.int/malaria/docs/elimination/MalariaElimination_BD.pdf

WHO, Water Supply and Sanitation Collaborative Council, 2005. *Sanitation and Hygiene Promotion. Programming Guidance*. http://esa.un.org/iys/docs/san_lib_docs/Sani_Hygiene_Promo.pdf

World Health Organisation (WHO), 2002. *Environmental Health in Emergencies and Disasters. A Practical Guide*. www.who.int/water_sanitation_health/hygiene/emergencies/em2002intro.pdf