Minimum Standards in Water Supply and Sanitation

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For the general glossary and acronyms, see Annexes 1 and 2 at the end of the book..

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Introduction

The minimum standards for Water Supply and Sanitation are a practical expression of the principles and rights embodied in the Humanitarian Charter. The Charter is concerned with the most basic requirements for sustaining the lives and dignity of those affected by calamity or conflict, as reflected in the body of international human rights, humanitarian, and refugee law. It is on this basis that agencies offer their services. They undertake to act in accordance with the principles of humanity and impartiality, and with the other principles set out in the *Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief*. The Humanitarian Charter reaffirms the fundamental importance of three key principles:

* the right to life with dignity
* the distinction between combatants and non-combatants
* the principle of non-refoulement

The minimum standards fall into two broad categories: those that relate directly to people's rights; and those that relate to agency processes which help ensure people acquire these rights. Some of the minimum standards combine both of these categories.

1 The importance of water supply and sanitation in emergencies

People affected by disasters are more likely to become ill and to die from diseases related to inadequate sanitation and water supplies than from any other single cause. The most important of these are diarrhoeal diseases and others transmitted by the faeco-oral route. Their transmission is encouraged by inadequate sanitation, poor hygiene and contaminated water supplies. Other water and sanitation-related diseases include those carried by vectors associated with solid waste and water.

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 faeco-oral diseases and exposure to disease-bearing vectors. A further important objective is to help establish the conditions that allow people to live and to perform daily tasks, such as going to the toilet, and washing with dignity, comfort and security.

In most emergency situations the responsibility for procuring water falls to women and children. However, when using communal water and sanitation facilities, for example in refugee or displaced situations, women and adolescent girls are also more vulnerable to sexual violence or exploitation. It is important therefore to encourage women's participation in water supply and sanitation programmes wherever possible. Their involvement will help to ensure that the entire affected population has safe and easy access to water supply and sanitation services, and that services are equitable and appropriate.

2 Finding your way around this chapter

The chapter is divided into eight sections (analysis, excreta disposal, water supply etc), each of which includes the following:

*** The minimum standards**: these specify the minimum levels to be attained in each area.

*** Key indicators**: these are 'signals' that show whether the standard has been attained. They provide a way of measuring and communicating both the impact, or result, of programmes as well as the process, or methods, used. The indicators may be qualitative or quantitative.

*** Guidance notes**: these include specific points to consider when applying the standard in different situations, guidance on tackling practical difficulties and advice on priority issues. They may also include critical issues relating to the standard or indicators, and describe dilemmas, controversies or gaps in current knowledge. Filling these gaps will help improve the minimum standards for water supply and sanitation in the future.

Further relevant information, including a bibliography, is supplied in the Appendices. The particular good practice features for the water and sanitation sector are described in Appendix 3.

The organisation of the chapter reflects the division of activities and responsibilities that commonly occurs in emergency situations. Action in each of these areas contributes to the overall aims of the water and sanitation programme as defined above, and is closely linked both epidemiologically and operationally to the objectives and activities of the other sectors. The analysis standards proposed for assessment, monitoring and evaluation relate to all areas within the water supply and sanitation sector.

Progress in achieving standards in one area determines the importance of progress in other areas. For instance, in situations where excreta disposal and hygiene facilities are inadequate, it is more urgent to reach the minimum water quantity standard than in situations where the environment is relatively free of pathogens due to adequate sanitation and hygiene conditions. Priorities should be decided on the basis of sound information shared between sectors as the situation evolves.

Reference to other sectors' technical standards is made where relevant. The purpose of this is to highlight how work in one sector is closely linked to work in other sectors, and that progress in one is dependent on progress in other areas.

The Minimum Standards

1 Analysis

Programmes that meet the needs of disaster-affected populations must be based on a clear understanding of the current situation, including political and security factors, and anticipated developments. The people affected by the disaster, agencies, donors and local authorities need to know that interventions are appropriate and effective. Analysis of the effects of the disaster, and of the impact of the water supply and sanitation programme itself, are therefore critical. If the problem is not correctly identified and understood then it will be difficult, if not impossible, to make the right response.

Standardised methods of analysis that are used across the sectors have great potential to rapidly identify acute humanitarian needs and to ensure that resources are directed accordingly. This section sets out agreed standards and indicators for collecting and analysing information to identify needs, to design programmes, to monitor and evaluate their effectiveness, and to ensure the participation of the affected population.

The standards for analysis apply before any programme takes place and throughout the programme cycle. Analysis starts with an immediate initial assessment that identifies the impact of the disaster and whether and how to respond. It continues with monitoring, which identifies how well the programme is meeting needs and determines whether changes are required; and with evaluation, which determines the overall effectiveness of the programme and identifies lessons for the future. The sharing of information and knowledge among all those involved is fundamental to achieving a full understanding of the problem and coordinated assistance. Documenting and disseminating information from the analysis process contributes to a broad understanding of the adverse public health and other consequences of disasters, and can assist in the development of improved disaster prevention and mitigation strategies.

Analysis standard 1: initial assessment

Programme decisions are based on a demonstrated understanding of the emergency situation and on a clear analysis of the health risks and needs relating to water supply and sanitation.

Key indicators

* An immediate initial assessment that follows internationally accepted procedures is carried out by appropriately experienced personnel.

* The assessment is conducted in cooperation with a multi-sectoral team (water and sanitation, nutrition, food, shelter and health), local authorities, women and men from the affected population and humanitarian agencies intending to respond to the situation.

* The information is gathered and presented in a way that allows for transparent and consistent decision making.

* Data are disaggregated by sex and by age, where feasible.

* The information gathered identifies needs and health risks related to water supply and sanitation for different gender, social and age groups, and provides baseline data for monitoring and evaluation.

* All working and damaged water and sanitation systems are inspected.

* The assessment considers the national standards for water supply and sanitation in the country where the disaster has occurred, and in the country where humanitarian assistance is provided, if different.

* In situations of prevailing insecurity, the assessment includes an analysis of factors affecting the personal safety and security of the affected population.

* Recommendations are made about the need for external assistance. If assistance is required, recommendations are made on priorities, a strategy for intervention and resources needed. There is consideration of:

    - The social and political structure of the population, including cultural and gender factors relating to access and use of water and sanitation facilities.

    - The estimated number of people affected and demographic characteristics.

- Local capacity and resources.

- Special attention for groups at risk.

- Access to the affected population and constraints on their freedom of movement.

- Political, security and operating environment.

- The possible long-term implications and environmental impact of the interventions proposed.

* The specific security threats faced by vulnerable groups, especially women and girls, are taken into account in the design of water and sanitation facilities.

* An assessment report is produced that covers key areas and appropriate recommendations.

* Assessment findings are made available to other sectors, national and local authorities, participating agencies, and male and female representatives from the affected population .

Guidance notes

1. **Internationally accepted procedures for initial assessment**: see Davis, J and Lambert, R (1995), and Pesigan, A M and Telford, J (1996).

2. **Timeliness**: timeliness is of the essence for the initial assessment, which should be carried out as soon as possible after the disaster. If required there should be an immediate response to critical needs at the same time. As a general rule, a report should be generated within a week of arrival at the site of the disaster, though this depends on the particular event and the wider situation.

3. **People conducting the assessment**: people who are able to collect information from all groups in the affected population in a culturally acceptable manner should be included, especially with regard to gender analysis and language skills. Ideally there should be a balance in the numbers of men and women taking part.

4. **Assessment procedure**: the procedure for conducting the assessment should be agreed upon by all participants before field work begins and specific tasks contributing to the assessment should be assigned accordingly.

5. **Gathering information**: there are several different techniques for information gathering and these should be chosen carefully to match the situation and the type of information required. As a general rule, information should be gathered more frequently when the

situation is changing more rapidly, and when there are critical developments such as new population movements or an epidemic outbreak of diarrhoea. Initial assessments may be quick and unrefined but analysis improves as more time and data are available. Checklists are a useful way of ensuring that all the key questions have been examined. See Appendix 1 for an example checklist.

6. Sources of information: information for the assessment report can be compiled from existing literature, relevant historical material, pre-emergency data and from discussions with appropriate, knowledgeable people including donors, agency staff, government personnel, local specialists, female and male community leaders, elders, participating health staff, teachers, traders and so on. National or regional level preparedness plans may also be an important source of information. Group discussions with members of the affected population can yield useful information on beliefs and practices.

The methods used for collecting information and the limits of its reliability must be clearly communicated. Information should never be presented in such a way as to provide a misleading picture of the actual situation.

7. **Underlying issues**: an awareness of the rights of those affected by disasters, under international law, should underpin the assessment. Initial assessment and subsequent analysis should demonstrate an awareness of underlying structural, political, security, economic, demographic and environmental issues operating in the area. It is imperative that prior experience and the views of the people affected by the disaster are taken into consideration when analysing the dynamics and impact of the new emergency. This requires inclusion of local expertise and knowledge in data collection and analysis of resources, capacities, vulnerabilities and needs. The current and pre-emergency living conditions of displaced and non-displaced people in the area must also be considered.

8. **Groups at risk**: the needs of groups that are at risk of additional harm such as women, adolescents, unaccompanied minors, children, elderly people and people with disabilities must be considered. Gender roles within the social system need to be identified.

9. **Recovery**: thinking and analysis concerning the post-disaster recovery period should be part of the initial assessment, so that interventions to meet immediate emergency requirements can serve to foster recovery among the affected population.

10. **Relationship with host population**: providing water and sanitation facilities for displaced populations in settlements can cause resentment among communities in the area, especially where existing resources such as water sources are inadequate or have to be shared with the new arrivals. In order to minimise the potential for tension, the hosts

should be consulted, and (where appropriate) work done to enhance the existing infrastructure. Likewise, where displaced populations are dispersed amongst a host population, planning should take account of the fact that they will place additional stress on the infrastructure and available resources.

Analysis standard 2: monitoring and evaluation

The performance of the water supply and sanitation programme, its effectiveness in responding to health problems related to water and sanitation, and changes in the context are monitored and evaluated.

Key indicators

* The information collected for monitoring and evaluation is timely and useful; it is recorded and analysed in an accurate, logical, consistent and transparent manner.

* Systems are in place that ensure systematic collection of information on:

    - Water consumption.

    - Water quality.

    - Water supply system and operation.

    - Access to water points.

    - Access to toilets.

    - Activities in vector control, solid waste management and drainage.

* The use of water and sanitary facilities and goods is monitored.

* Access to water and sanitation, and water supply and sanitation-related health problems for the population surrounding the emergency settlement are monitored.

* Safety of water and sanitation facilities for vulnerable groups, particularly women and adolescent girls, is monitored.

* Women, men and children from the affected population are regularly consulted, and are involved in monitoring activities.

* There is regular analytical reporting on the impact of the water supply and sanitation programme on the affected population. There is also reporting of any contextual changes and other factors that may necessitate adjustment to the programme.

* Systems are in place that enable an information flow between the programme, other sectors, the affected population, the relevant local authorities, donors and others as needed. There is a regular exchange of information between the water supply and sanitation sector and the health information system. (See Health Services, chapter 5.)

* Monitoring activities provide information on the effectiveness of the programme in meeting the needs of target groups within the affected population.

* The programme is evaluated with reference to stated objectives and agreed minimum standards to measure its overall effectiveness and impact on the affected population.

Guidance notes

1. **Use of monitoring information**: emergencies are volatile and dynamic by definition. Regular and current information is therefore vital in ensuring that programmes remain relevant. Information derived from continual monitoring of programmes should be fed into reviews and evaluations. In some circumstances a shift in strategy may be required to respond to major changes in the context or needs. See Appendix 4for suggested reading on assessment, monitoring and evaluation.

2. **Cooperation with other sectors**: information generated by the assessment process is used as an initial baseline for the health information system (see Health Services, chapter 5) and for monitoring and evaluation activities for the water supply and sanitation programme. Monitoring and evaluation activities require close cooperation with other sectors.

3. **Using and disseminating information**: information collected should be directly relevant to the programme, in other words it should be useful and should be used. It should also be made available as needed to other sectors and agencies, and to the affected populations. The means of communication used (dissemination methods, language and so on) must be appropriate for the intended audience.

4. **People involved in monitoring**: when monitoring requires consultation, people who are able to collect information from all groups in the affected population in a culturally acceptable manner should be included, especially with regard to gender and language skills. Women's involvement should be encouraged.

5. **Use of facilities**: people's use of the facilities and goods provided may be affected by factors such as security, convenience, quality, and whether they are appropriate to needs and customs. For example, monitoring of water points and toilets is critical to the safety of women and children because sexual violence often occurs at these locations. Wherever possible factors that limit the use of facilities should be dealt with through changes to the programme. It is essential to ensure that consultation before and during the programme includes adequate discussion with women, for whom the constraints on use are likely to be greatest.

6. **Evaluation**: evaluation is important because it measures effectiveness, identifies lessons for future preparedness, mitigation and assistance, and promotes accountability. Evaluation refers here to two, linked processes:

a) Internal programme evaluation is normally carried out by staff as part of the regular analysis and review of monitoring information. The agency must also evaluate the effectiveness of all its programmes in a given disaster situation or compare its programmes across different situations.

b) External evaluation may by contrast be part of a wider evaluation exercise by agencies and donors, and may take place, for example, after the acute phase of the emergency. When evaluations are carried out it is important that the techniques and resources used are consistent with the scale and nature of the programme, and that the report describes the methodology employed and the processes followed in reaching conclusions. Outcomes of evaluations should be disseminated to all the humanitarian actors, including the affected population.

Analysis standard 3: participation

The disaster-affected population has the opportunity to participate in the design and implementation of the assistance programme.

Key indicators

* Women and men from the disaster-affected population are consulted, and are involved in decision-making that relates to needs assessment, programme design and implementation.

* Women and men from the disaster-affected population receive information about the assistance programme, and have the opportunity to comment back to the assistance agency about the programme.

Guidance notes

1. **Equity:** the participation of disaster-affected people in decision-making, programme design and implementation helps to ensure that programmes are equitable and effective. Special effort should be made to ensure the participation of women and balanced male and female representation within the assistance programme. Participation in the water supply and sanitation programme may also serve to reinforce people's sense of dignity and worth in times of crisis. It generates a sense of community and ownership which can help ensure the safety and security of those who are receiving assistance, as well as those who are responsible for its implementation.

2. **People can be involved in water supply and sanitation programmes in different ways**: for example through involvement in the assessment team; involvement in decision-making (eg establishing conditions that allow people to go to the toilet and wash with dignity, comfort and security); disseminating information including cultural and gender factors relating to access and use of facilities; assisting in identifying security issues.

3. **Coordination committees**: coordination committees help ensure people's involvement in the assistance programme. Gender, age, ethnicity and socio-economic status should be taken into consideration in order to ensure that committees adequately represent the affected population. Acknowledged political leaders, female and male community leaders and religious leaders should also be represented. The roles and functions of a coordination committee should be agreed upon when it is set up.

4. **Seeking views and opinions**: participation can also be achieved through regular polling and discussions. This can take place during distribution, through home visits or when addressing individual concerns. Group discussions with members of the affected community can yield useful information on cultural beliefs and practices.

2 Water Supply

Water is universally essential for drinking, cooking and personal and domestic hygiene. In extreme situations, there may not be enough water available to meet physiological needs, and in these cases a survival level of potable drinking water is of critical importance. In most cases however, the main health problems associated with inadequate water supply are caused by poor hygiene due to lack of water, and by the consumption of water that is contaminated at some stage.

Water supply standard 1: access and water quantity

All people have safe access to a sufficient quantity of water for drinking, cooking and personal and domestic hygiene. Public water points are sufficiently close to shelters to allow use of the minimum water requirement.

Key indicators

* At least 15 litres of water per person per day is collected.

* Flow at each water collection point is at least 0.125 litres per second.

* There is at least 1 water point per 250 people.

* The maximum distance from any shelter to the nearest water point is 500 metres.

Water supply standard 2: water quality

Water at the point of collection is palatable, 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.

Key indicators

* There are no more than 10 faecal coliforms per 100 ml at the point of delivery for undisinfected supplies.

* Sanitary survey indicates low risk of faecal contamination.

* For piped water supplies to populations over 10,000 people, or for all water supplies at times of risk or presence of diarrhoea epidemic, water is treated with a residual disinfectant to an acceptable standard (eg residual free chlorine at the tap is 0.2-0.5 mg per litre and turbidity is below 5 NTU).

* Total dissolved solids are no more than 1,000 mg per litre (approximately 2,000 µs/cm electrical conductivity for simple field measurement), and water is palatable to users.

* No significant negative health effect due to chemical or radiological contamination from short term use, or from the planned duration of use of the water source, is detected (including carry-over of treatment chemicals), and assessment shows no significant probability of such an effect.

Water supply standard 3: water use facilities and goods

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

Key indicators

* Each household has two water collecting vessels of 10-20 litres, plus water storage vessels of 20 litres. Water collection and storage vessels have narrow necks and/or covers.

* There is 250g of soap available per person per month.

* Where communal bathing facilities are necessary, there are sufficient bathing cubicles for bathing at an acceptable frequency and at an acceptable time, with separated cubicles for men and for women.

* Where communal laundry facilities are necessary, there is 1 washing basin per 100 people; private laundering areas are available for women to wash and dry undergarments and sanitary cloths.

Guidance notes

1. **Needs***:* the exact quantities of water needed for domestic use may vary according to the climate, the sanitation facilities available, people's normal habits, their religious and cultural practices, the food they cook, the clothes they wear etc. In some situations water may be needed in large quantities for specific purposes, for instance for pour-flush toilets, to keep an existing sewer system or urban water distribution system functioning, or to water animals which may be vital to the livelihoods and well-being of the people affected by the disaster. Quantities needed for these uses are not included in the standards and should be added to the minimum figure if necessary. Quantities of water needed for health centres, therapeutic feeding centres, orphanages etc are not included in the standard figures, and should be added if necessary. See Appendix 2 for guidance on the additional quantities needed.

2. **Microbiological water quality***:* in most emergency situations, water-related disease transmission is due as much to insufficient water for personal and domestic hygiene as to contaminated water supplies. When applying standards for microbiological water quality in an emergency situation, consideration should be given to the risk of excess infection from water-borne disease posed by the water supplied, and what other water sources people may be likely to use. For longer-term supplies, refer to WHO *Guidelines for Drinking Water Quality*(1984).

3. **Water disinfection***:* water should be treated with a residual disinfectant such as chlorine if there is a significant risk of water source or post-collection contamination. This risk will be determined by conditions in the settlement, such as population density, excreta disposal arrangements, hygiene practices, the prevalence of water-borne disease etc. As a general rule, any piped water supply for a large and concentrated population should be treated with a residual disinfectant such as chlorine, and in the case of a threat or existence of a diarrhoea epidemic, all drinking water supplies should be treated before distribution or in the home.

4. **Chemical and radiological contamination***:* where hydrogeological records or knowledge of industrial activity suggest that water supplies may carry chemical or radiological health risks, those risks should be assessed rapidly. A decision that balances short - term public health risks and benefits should then be made. A decision about using possibly contaminated water for longer term supplies should be made on the basis of a

more thorough assessment and analysis. For longer-term supplies, refer to WHO *Guidelines for Drinking Water Quality* (1984).

5. **Palatability**: while taste is not a direct problem for health, if the safe water supply does not taste good to the consumers they may drink from unsafe sources and put their health at risk. This may also be a risk when chlorinated water is supplied. Palatability depends on what the consumer is used to and should therefore be verified in the field to make a final decision on whether or not the water is acceptable, or whether promotional activities are needed to ensure that only safe supplies are used.

6. **Water quality for health centres**: apart from small quantities of very pure water needed for some medical equipment, water supplied to health centres does not need to be of better quality than that supplied to the general population, unless the concentration of certain chemicals is particularly high. However, given the likely numbers of pathogenic organisms present in health centres and the vulnerability of patients, water should be disinfected with chlorine or another residual disinfectant, and water storage equipment designed and managed to control contamination. Very young children may be susceptible to certain chemical contaminants and this should be checked with medical staff.

7. **Quality / quantity**: during the emergency attention must be given to the quantity of water that is available as well as its quality. Until minimum standards for both quantity and quality are met, the priority should be to provide equitable access to an adequate quantity of water of intermediate quality, rather than to provide an inadequate quantity of water which meets the minimum standard for quality. If there are serious doubts about the microbiological quality of the water, it should be treated with a residual disinfectant as a first measure to improve quality.

8. **Access and equity**: even if a sufficient quantity of water is available to meet minimum needs, additional measures may be needed to ensure that access is equitable. Unless water points are sufficiently close to their dwellings, people will not be able to collect enough water for their needs. In urban situations, it may be necessary to have water supplied into individual buildings to ensure that toilets continue to function. Water may need to be rationed to ensure that everyone's basic needs are met. If water is rationed or pumped at given times, this should be at times that are convenient to women and others who have responsibility for collecting water. Women and men from the affected population should be informed about their entitlements, and should also be involved in monitoring the equitable distribution of water.

9. **Water collection and storage:** people need vessels to collect water, to store it and to use it for washing, cooking and bathing. These vessels should be hygienic and appropriate to local needs and habits, in terms of size, shape and design.

10. **Communal washing and bathing facilities**: people may need a space where they can bathe in privacy. If this is not possible at the family shelter, some central facilities may be needed. Washing clothes is an essential activity for hygiene, particularly for children, and cooking and eating utensils need washing. It is not possible to define universal standards relating to these activities, but if some facilities are needed for them to be carried out then they should be available. The design, numbers and location of these facilities should be decided in consultation with the intended users, especially women. Among the essential factors to consider are the safety, appropriateness and convenience of facilities for the users, especially women and girls, whose views on siting and design should be sought. As with latrines, facilities that are remote from the centre of a settlement are likely to pose additional risk of attack to female users.

3 Excreta Disposal

Proper disposal of human excreta creates the first barrier to excreta-related disease, helping to reduce disease transmission through direct and indirect routes. Excreta disposal is therefore a first priority, and in most emergency situations should be addressed with as much speed and effort as water supply. Appropriate facilities for defecation are one of a number of emergency interventions essential for people's dignity, safety, health and well-being.

Excreta disposal standard 1: access to, and numbers of toilets

People have sufficient numbers of toilets, sufficiently close to their dwellings to allow them rapid, safe and acceptable access at all times of the day and night.

Key indicators

* Maximum of 20 people per toilet.

* Use of toilets is arranged by household(s) and/or segregated by sex.

* Toilets are no more than 50 metres from dwellings, or no more than one minute's walk.

* Separate toilets for women and men are available in public places (markets, distribution centres, health centres etc).

Excreta disposal standard 2: design and construction

People have access to toilets which are designed, constructed and maintained in such a way as to be comfortable, hygienic and safe to use.

Key indicators

* Technically sound design and construction specifications, approved by the intended users, are used for all forms of household and public toilets.

* Cleaning and maintenance routines for public toilets are in place and function correctly.

* Toilets are designed, built and located to have the following features:

- They are easy to keep clean enough to invite use and not to present a health hazard.

- They are accessible and easy to use by all sections of the population including children, old people, pregnant women and physically and mentally disabled people.

- They are lit at night if necessary for security or convenience.

- Hand washing facilities are close by.

- They minimise fly and mosquito breeding.

- They allow for the disposal of women's sanitary protection, or provide women with the necessary privacy for washing and drying sanitary protection cloths.

- They provide a degree of privacy in line with the norms of the users.

* Latrines and soakaways in most soils are at least 30 metres from any groundwater source and the bottom of any latrine is at least 1.5 metres above the water table. Drainage or spillage from defecation systems does not run towards any surface water source or shallow groundwater source.

* People are provided with tools and materials for constructing, maintaining and cleaning their own toilets if appropriate.

Guidance notes

1. **Acceptable facilities***:* successful excreta disposal programmes are based on an understanding of peoples' varied needs, and on the participation of the users in the use of facilities they may not be accustomed to and which they may not find easy or attractive to use. Design, construction and location of toilets must take account of the preferences of all the intended users.

2. **Children's faeces***:* particular attention should be given to children's faeces, which are commonly more dangerous than those of adults because the level of excreta-related infection among children is frequently higher. Parents or caregivers need to be involved, and facilities should be designed and installed with children in mind. It may be necessary to provide parents or caregivers with information about safe disposal of infant faeces and nappy (diaper) laundering practices.

3. **Anal cleansing**: water should be provided for people who use it. For other people it may be necessary to provide some sort of paper or other material for anal cleansing. Users should be consulted on the most appropriate materials.

4. **Hand washing***:* users should have the means to wash their hands after defecation, with soap or an alternative, and should be encouraged to do so if necessary. This provides an important barrier to the spread of disease.

5. **Menstruation***:* women and girls of reproductive age should have access to suitable materials for the absorption and disposal of menstrual blood. If these materials are to be provided by the agency, women should be consulted on what is appropriate. Where cloths are washed, dried and re-used, women should have access to a private place to do this in a hygienic way.

6. **Hygienic toilets***:* if toilets are not kept clean they may be a focus for disease transmission and people will prefer not to use them. Cleaning and maintenance of all types of toilet should be addressed. Toilets are more likely to be kept clean if users have a sense of ownership. This is encouraged by having them close to where people sleep, avoiding large blocks and involving users, where possible, in decisions about their design and construction.

7. **Shared facilities***:* it is not always possible to provide one toilet per 20 people or per family immediately. In the short term, shared facilities are usually needed. Access to these shared facilities can be ensured by working with the intended users to decide who will have access to the toilet and how the sharing and responsibility for cleaning will be organised. It may be that men and women use different toilets, or that several families all use the same toilet. As the numbers of toilets are increased the sharing arrangements will change. In some situations it may be necessary to provide, clean and maintain public toilets for some or all of the population. It is important both that sufficient numbers of toilets are available and that every person can identify and gain access to a toilet when necessary.

8. **Distance of defecation systems from water sources:** the distances given above may be increased for fissured rocks and limestone, or decreased for fine soils. Groundwater pollution may not be a concern if the groundwater is not consumed.

9. **Security**: especially in crowded settlements, it is vital to consider the security of those using sanitation facilities, in particular women and girls. Latrines that are far from inhabited areas, or which are poorly lit, expose women and girls to additional risk of attack.

4 Vector Control

Vector-borne diseases are a major cause of sickness and death in many emergency situations. Although malaria is probably the vector-borne disease of greatest public health concern, a number of others can pose a major threat to health. Flies may play an important role in the transmission of diarrhoeal disease. The control of vector-borne disease involves efforts in several areas, including health services, shelter, site selection and planning, and environmental health services, including water supply, excreta disposal, solid waste management and drainage. Although the nature of vector-borne disease is complex and addressing vector-related problems often demands specialist attention, there is much that can be done with simple and effective measures once the disease, the vector and their interaction with the beneficiary population have been identified.

Although not of primary public health concern, so-called nuisance pests, such as bed bugs, can cause significant discomfort and loss of sleep and are often worthy of attention for their indirect impact on health.

Vector control standard 1: individual and family protection

People have the means to protect themselves from disease vectors and nuisance pests when they are estimated to be a significant risk to health or well-being.

Key indicators

* All populations associated with a vector-borne disease risk have access to shelters equipped with insect control.

* Control of human lice is carried out to an agreed standard where louse-borne typhus or relapsing fever are a threat.

Vector control standard 2: physical, environmental and chemical protection measures

The number of disease-bearing vectors and nuisance animals that pose a risk to people's health and well-being are kept to an acceptable level.

Key indicators

* Vulnerable populations are settled outside the malarial zone.

* The population of malaria-bearing mosquitoes is kept low enough to avoid the risk of excessive malaria infection.

* Vector breeding or resting sites are modified where necessary and practicable.

* Rats, flies and other mechanical and nuisance pests are kept within acceptable levels.

* Intensive fly control is carried out in high density settlements when there is a risk or presence of diarrhoea epidemic.

Vector control standard 3: good practice in the use of chemical vector control methods

Vector control measures that make use of pesticides are carried out in accordance with agreed international norms to ensure that staff, the people affected by the disaster and the local environment are adequately protected, and to avoid creating resistance to pesticides.

Key indicators

* Personnel are protected by the provision of training, protective clothing, supervision and a restriction on the number of hours handling pesticides.

* The purchase, transport, storage and disposal of pesticides and application equipment follows international norms, and can be accounted for at all times.

* People are informed about the potential risks of pesticides and about the schedule for application. They are protected during and after the application of pesticides according to internationally agreed procedures.

* The choice of pesticide and application method conform to national and international protocols.

* The quality of pesticide and of treated bednets conforms to international norms.

Guidance notes

1. **Links with other sectors:** *s*ite selection is important in limiting the exposure of the population to vector-borne disease risk. The risk of vector-borne disease is one of the key questions considered when choosing possible sites. Health service activities may help reduce pathogen prevalence by effective treatment, immunisation or prophylaxis, and vector-borne disease control should be undertaken with activities in both the health sector and the water supply and sanitation sector. Both health service and nutrition activities can help reduce vector-borne disease incidence by their impact on general health and nutritional status.

2. **Defining vector-borne disease risk***:* decisions about vector control interventions should be based on an assessment of excess disease risk, as well as on clinical evidence of a vector-borne disease problem. Factors influencing this risk include:

- Immune status - previous exposure, nutritional stress and other stresses.

- Pathogen type and prevalence - in both vectors and humans.

- Vector species and ecology.

- Vector numbers (season, breeding sites etc).

- Existing individual protection and avoidance measures.

3. **Individual protection measures**: it is recommended that if there is a risk of excess malaria, individual protection measures such as treated bednets are provided systematically and at an early stage. Impregnated bednets have the added advantage of giving some protection against lice, bedbugs and sandflies. Other individual protection measures which may be appropriate and which are commonly used already by people familiar with mosquitoes include the use of long sleeved clothing, household fumigants, mosquito screens and repellents. It is vital to ensure that users can accept and use these individual protection measures if they are to be effective.

4. **Environmental and chemical vector control**: there are a number of basic environmental engineering measures which can be taken to reduce the opportunities for vector breeding within the settlement. These include disposal of human and animal excreta and refuse for controlling flies, and drainage of standing water for controlling mosquitoes. Most priority environmental health measures such as excreta disposal and refuse disposal will have some impact on the populations of some vectors, but not all. However, it may not be possible to have sufficient impact on all the breeding, feeding and resting sites within and nearby the settlement, even in the longer term, and localised chemical control measures or individual protection measures may be needed. In some circumstances, space spraying may be justified and effective in reducing numbers of adult insects, for example for reducing fly numbers in anticipation of, or during, a diarrhoea epidemic.

5. **Household and personal insecticide treatment***:* household treatment with residual insecticide can be effective in controlling the spread of malaria. Louse-borne typhus and relapsing fever may be avoided by personal treatment for the control of body lice by means of a mass campaign, and as newly displaced people arrive in a settlement.

6. **Indicators for vector control programmes***:* the simplest indicators for measuring the impact of most vector control activities are disease incidence and parasite counts (for malaria). However, these are insensitive indicators which should be used with caution and interpreted in the light of other factors.

7. **Designing a response:** vector control programmes may have no impact on disease if they target the wrong vector, use ineffective methods, or target the right vector in the wrong place or at the wrong time. Health data can help identify and monitor a vector problem, but designing an effective response requires more detailed study and, often, expert advice. This advice should be discussed with national and international health organisations, to ensure that national and international protocols are followed to identify the appropriate response and to ensure the correct choice and application of any chemicals used. Local advice should be sought on local disease problems, breeding sites, seasonal variations in vector numbers etc.

5 Solid Waste Management

If organic solid waste is not disposed of, the major risks posed are fly and rat breeding (see vector control) and surface water pollution. Uncollected and accumulating solid waste and the debris left after a natural disaster or conflict may also create a depressing and ugly environment, discouraging efforts to improve other aspects of environmental health. Solid waste may block drainage channels and lead to environmental health problems associated with stagnant and polluted surface water.

Solid waste management standard 1: solid waste collection and disposal

People have an environment that is acceptably free of solid waste contamination, including medical wastes.

Key indicators

* Domestic refuse is removed from the settlement or buried on site before it becomes a nuisance or a health risk.

* There are no contaminated or dangerous medical wastes (needles, glass, dressings, drugs etc) at any time in the living area or public spaces.

* There is a correctly designed, constructed and operated incinerator with deep ash pit within the boundaries of each health facility.

* There are refuse pits, bins or specified areas at markets and slaughtering areas, with a daily collection system.

* 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.

Solid waste management standard 2: solid waste containers/pits

People have the means to dispose of their domestic waste conveniently and effectively.

Key indicators

* No dwelling is more than 15 metres from a refuse container or household refuse pit, or 100 metres from a communal refuse pit.

* One 100 litre refuse container is available per 10 families, where domestic refuse is not buried on site.

Guidance notes

1. **Refuse type and quantity**: refuse in emergency settlements varies widely in composition and quantity, according to the amount and type of economic activity and the staple foods consumed. The extent to which solid waste has an impact on people's health should be assessed in a logical manner to identify whether action is needed and what that action should be. If solid waste is recycled within the community this should be encouraged, as long as it presents no significant health risk. Distribution of commodities that produce a large amount of solid waste because of the way they are packaged or processed on site should be avoided.

2. **Participation***:* most solid waste management programmes depend on the participation of the population concerned for placing their refuse in containers provided, or burying it where appropriate. Parents and children should be made aware of the dangers of playing with or recycling medical wastes.

3. **Medical waste:** special provision is needed for medical waste. It should be disposed of within the perimeter of a medical facility, cholera isolation centre, feeding centre etc, and not mixed in with the general settlement refuse. Responsibility for disposing of medical waste should be clearly defined.

4. **Market waste**: most market waste can be treated in the same way as domestic refuse. Slaughter house waste may need special treatment and special facilities to deal with the liquid wastes produced, and to ensure slaughtering is carried out in hygienic conditions.

5. **The dead***:* mortality rates are often high during the early stages of emergencies, or directly after a natural disaster, demanding mass management of dead bodies, usually by burial in large graves. Graveyards and mass graves must be located at least 30 metres from groundwater sources used for drinking water, with the bottom of any grave at least 1.5 metres above the groundwater table.

A common myth associated with natural disasters is that human remains are responsible for epidemics. In many cases, the management of human remains rests on the false belief

that they represent an epidemic hazard if not immediately buried or burned. In fact, the health hazard associated with dead bodies is negligible. However, in special cases such as during cholera or typhus epidemics, human remains may pose special health risks. In general, families should be allowed to bury or cremate their own dead in their traditional way. Cemeteries or cremation facilities should be planned for and provided early on in the life of a new settlement, in consultation with members of the affected population. Provision should be made for monitoring funerals for mortality data. It may be necessary to provide cloth or other materials for families to wrap their dead before burial or cremation. Depending on circumstances, the recovery and identification of the bodies of family members may be the primary concern of survivors. When those being buried are the victims of violence, forensic issues should be considered.

6. **Disposal of solid waste**: whatever means of final disposal is chosen, for instance burial or incineration, this should be done in such a way as to avoid creating health and environmental problems.

6 Drainage

Surface water in and near emergency settlements may come from household and water point wastewater, leaking latrines and sewers, rain water and rising floodwater. The main health problems associated with this water are contamination of water supplies and the living environment, damage to latrines and shelters, vector breeding and drowning. Surface water in and near the settlement may provide health and other benefits, enabling people to wash themselves, their cooking utensils and their clothes. An appraisal of the benefits and risks presented should be made when deciding whether or not to drain such water bodies. This section addresses small scale drainage problems and activities. Large scale drainage is generally determined by site selection and development. (See Shelter and Site Planning, chapter 4.)

Drainage standard 1: drainage works

People 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.

Key indicators

* There is no standing wastewater around water points or elsewhere in the settlement.

* Storm water flows away.

* Shelters, paths and water and sanitation facilities are not flooded or eroded by water.

Drainage standard 2: installations and tools

People have the means (installations, tools etc) to dispose of domestic wastewater and water point wastewater conveniently and effectively, and to protect their shelters and other family or communal facilities from flooding and erosion.

Key indicators

* Sufficient numbers of appropriately designed tools are provided to people for small drainage works and maintenance where necessary.

* Water point drainage is well planned, built and maintained. This includes drainage from washing and bathing areas as well as water collection points.

Guidance notes

1. **Site selection and planning***:* the most effective way to avoid drainage problems is in the choice and lay out of the emergency settlement. (See Shelter and Site Planning, site selection standards, in chapter 4.) It may not be practicable to address the drainage problems of some sites, or of nearby water bodies.

2. **Promotion**: where small-scale drainage works are necessary to protect latrines and shelters, and to avoid stagnating household and water point wastewater, it may be appropriate to involve the population concerned. Technical support and tools may then be needed. It may also be necessary to provide information and alternatives if nearby water bodies pose health risks such as schistosomiasis or hazards from consumption of the water.

3. **Drainage and excreta disposal**: special care is needed to ensure that latrines and sewers are protected from flooding in order to avoid structural damage and leakage.

7 Hygiene Promotion

Hygiene behaviour is a crucial factor in the transmission of water and sanitation-related disease, and hygiene promotion is widely considered to be an essential element of an effective emergency water supply and sanitation response. It is difficult measure the impact of hygiene promotion programmes in emergencies. However, such programmes may be effective if they are assessed, planned and implemented in a systematic way, and if they focus on a very small number of important practices which can be rapidly influenced. It must be stressed that hygiene promotion should never substitute for good sanitation and water supplies, which are the key to good hygiene.

Definition of hygiene promotion

Hygiene promotion is defined here as the mix between the population's knowledge, practice and resources, and agency knowledge and resources which together enable risky hygiene behaviours to be avoided. Effective hygiene promotion relies on an exchange of information between the agency and the affected community in order to identify key hygiene problems, and to design, implement and monitor a programme to promote hygiene practices that will deal with these problems. This definition recognises that hygiene behaviour and the material means for healthy living should be promoted together.

Hygiene promotion standard 1: hygiene behaviour and use of facilities

All sections of the affected population are aware of priority hygiene practices that create the greatest risk to health and are able to change them. They have adequate information and resources for the use of water and sanitation facilities to protect their health and dignity.

Key indicators

1. Water supply

* People use the highest quality of readily available water.

* Public hygiene facilities (showers, laundry basins etc) are used appropriately and equitably.

* Average water use for drinking, cooking and personal hygiene in any household is at least 15 litres per person per day.

* Covers (where provided) are placed on water containers.

* Mean faecal contamination in potable water containers is indicated by less than 50 faecal coliforms per 100 ml.

2. Excreta disposal

* People use the toilets available and children's faeces are disposed of immediately and hygienically.

* People use toilets in the most hygienic way, both for their own health and for the health of others.

* Household toilets are cleaned and maintained in such a way that they are used by all intended users and are hygienic and safe to use.

* Parents and other caregivers demonstrate awareness of the need to dispose of children's faeces safely.

* Families and individuals participate in a family latrine programme by registering with the agency, digging pits or collecting materials.

* People wash their hands after defecation and handling children's stools and before cooking and eating.

3. Vector control

* Bedding and clothing is aired and washed regularly.

* In malaria-endemic areas:

    - People with treated mosquito nets keep, use and retreat them correctly.

    - People avoid exposure to mosquitoes during biting times using the means available to them.

    - Containers which may be mosquito breeding sites are removed, emptied of water regularly or covered.

4. Solid waste management

* Waste is put in containers daily for collection, or buried in a specified refuse pit.

* Parents, other caregivers and children are aware of the danger of touching needles and dressings from medical facilities, in cases where the minimum standard for the disposal of medical waste is not met.

5. Drainage

* Areas around shelters and water points are free of standing wastewater, and local stormwater drains are kept clear.

* There is a demand for tools for drainage works.

* People avoid entering water bodies where there is a schistosomiasis risk.

6. Funerals

* People have the resources and information necessary to carry out funerals in a manner which respects their culture and does not create a risk to health.

Hygiene promotion standard 2: programme implementation

All facilities and resources provided reflect the vulnerabilities, needs and preferences of all sections of the affected population. Users are involved in the management and maintenance of hygiene facilities where appropriate.

Key indicators

* Key hygiene risks of public health importance are identified in assessments and in the objectives for hygiene promotion activities.

* The design and implementation process for water supply and sanitation programmes includes and operates a mechanism for representative input from all users.

* All groups within the population have access to the resources or facilities needed to achieve the hygiene practices that are promoted.

* Hygiene promotion activities address key behaviours of importance for public health and they target priority groups.

* Hygiene and behaviour messages, where used, are understood and accepted by the intended audience.

* Users take responsibility for the management and maintenance of water supply and sanitation facilities as appropriate.

Guidance notes

1. **Agencies and the affected population share responsibility for hygiene practice:** as with all of the other standards, action by agencies on hygiene promotion will not necessarily be required, but these are points which need monitoring so that action can be taken if necessary. The ultimate responsibility for hygiene practice lies with all members of the affected population. The responsibility of humanitarian agencies is to enable hygienic practice by ensuring that both knowledge and facilities are accessible, and to be able to demonstrate that this is achieved. As a part of this process, they should engage women from the affected population in developing hygiene messages and in distributing related materials and supplies to the community.

2. **Targeting priority hygiene risks and behaviours**: the objectives of hygiene promotion activities and communication strategies should be clearly defined in order to avoid diluting key messages, confusing people or sending messages to the wrong people. The understanding gained through assessing hygiene risks should be used to plan and prioritise material assistance, so that information flows usefully between the agency and the population concerned.

An assessment is needed to identify the key hygiene behaviours to be addressed and the likely success of promotional activity. This assessment should look at resources available to the population as well as behaviours, so that messages do not promote the impossible.

3. **Reaching all sections of the population**: hygiene messages must be delivered by people who have access to all members of the population. For example, in some cultures it is not acceptable for women to speak to unknown men. Materials should be designed so that messages reach illiterate members of the population.

8 Human Resource Capacity and Training

All aspects of humanitarian assistance rely on the skills, knowledge and commitment of staff and volunteers working in difficult and sometimes insecure conditions. The demands placed on them can be considerable, and if they are to conduct their work to a level where minimum standards are assured, it is essential that they are suitably experienced and trained and that they are adequately managed and supported by their agency.

Capacity standard 1: competence

Water supply and sanitation programmes are implemented by staff who have appropriate qualifications and experience for the duties involved, and who are adequately managed and supported.

Key indicators

* All staff working on a water supply and sanitation programme are informed of the purpose and method of the activities they are asked to carry out.

* Assessments, programme design and key technical decision-making are carried out by staff with relevant technical qualifications and previous emergency experience.

* Staff and volunteers are aware of gender issues relating to the affected population. They know how to report incidents of sexual violence.

* Staff with technical and management responsibilities have access to support for informing and verifying key decisions.

* Staff or volunteers involved in information gathering are thoroughly briefed andregularly supervised.

* Staff or volunteers involved in hygiene education have the ability or aptitude for this activity and receive appropriate training and supervision.

* Staff and volunteers involved in construction and other manual activities are trained, supervised and equipped adequately to ensure their work is carried out efficiently and safely.

Guidance notes

1. **See**: ODI/People In Aid (1998), Code of Best Practice in the Management and Support of Aid Personnel.

2. **Staffing:** .staff and volunteers should demonstrate capabilities equal to their respective assignments. They should also be aware of key aspects of human rights conventions, international humanitarian law and the Guiding Principles on Internal Displacement (see the Humanitarian Charter).

Providing training and support as a part of emergency preparedness is important to ensure that skilled personnel are available to deliver quality services. Given that emergency preparedness cannot be assured in many countries, humanitarian agencies should ensure that qualified and competent staff are identified and properly prepared before eventual assignment to an emergency situation.

When deploying staff and volunteers, agencies should seek to ensure that there is a balance in the number of women and men on emergency teams.

Appendix 1

Initial Needs Assessment Questions, Water Supply and Sanitation

This list of questions is primarily for use to assess needs, identify indigenous resources and describe local conditions. It does not include questions to determine external resources needed in addition to those immediately and locally available.

1. General

* How many people are affected and where are they?

* What are people's likely movements? What are the security factors for the people affected and for potential relief interventions?

* What are the current or threatened water and sanitation-related diseases? What is the distribution and expected evolution of problems?

* Who are the key people to consult or contact?

* Who are the vulnerable people in the population? What special security risks exist for women and girls?

2. Water supply

* What is the current water source?

* How much water is available per person per day?

* What is the daily/weekly frequency of the water supply?

* Is the water available at the source enough for short term and longer term needs?

* Are water collection points close enough to where people live? Are they safe?

* Is the current water supply reliable? How long will it last?

* Do people have enough water containers of the right size and type?

* Is the water source contaminated or at risk of contamination (microbiological and chemical/radiological)?

* Is treatment necessary? Is treatment possible? What treatment is necessary?

* Is disinfection necessary, even if supply is not contaminated?

* Are there alternative sources nearby?

* Are there any obstacles to using available supplies?

* Is it possible to move the population if water sources are inadequate?

* Is it possible to tanker water if water sources are inadequate?

* What are the key hygiene issues related to water supply?

* Do people have the means to use water hygienically in this situation?

3. Excreta disposal

* What is the current defecation practice? If it is open defecation, is there a designated area? Is the area safe?

* Are there any existing facilities? If so are they used, are they sufficient and are they operating successfully? Can they be extended or adapted?

* Is the current defecation practice a threat to water supplies or living areas?

* Is the current defecation practice a health threat to users?

* Are people familiar with the construction and use of toilets?

* Are people prepared to use latrines, defecation fields, trenches etc?

* What are current beliefs and practices, including gender-specific practices, concerning excreta disposal?

* Is there sufficient space for defecation fields, pit latrines etc?

* What is the slope of the terrain?

* What is the level of the groundwater table?

* Are soil conditions suitable for on-site excreta disposal?

* What local materials are available for constructing toilets?

* Do current excreta disposal arrangements encourage vectors?

* Do people have access to water and soap for washing hands after defecation?

* Are there materials or water available for anal cleansing?

* How do women manage issues related to menstruation? Are there appropriate materials or facilities available for this?

4. Vector-borne disease

* What are the vector-borne disease risks and how serious are those risks? (See Vector Control section for determining risk.)

* If vector-borne disease risks are high, do people at risk have access to individual protection?

* Is it possible to make changes to the local environment (by drainage, scrub clearance, excreta disposal, refuse disposal etc) to discourage vector breeding?

* Is it necessary to control vectors by chemical means? What programmes, regulations and resources for vector control and use of chemicals are there?

* What information and safety precautions need to be provided to households?

5. Solid waste disposal

* Is solid waste a problem?

* How do people dispose of their waste?* What type and quantity of solid waste is produced?

* Can solid waste be disposed of on site, or does it need to be collected and disposed of off site?

* Are there medical facilities and activities producing waste? How is this being disposed of? Who is responsible?

6. Drainage

* Is there a drainage problem? (Flooding shelters and latrines, vector breeding sites, polluted water contaminating living areas or water supplies.)

* Do people have the means to protect their shelters and latrines from local flooding?

Appendix 2

Water Quantities in Addition to the Minimum Standard for Basic Domestic Consumption

Public toilets	1-2 litres/user/day for hand washing 2-8 litres/cubicle/day for cleaning toilet
All flushing toilets	20-40 litres/user/day for conventional flushing toilets 3-5 litres/user/day for pour-flush toilets
Anal washing	1-2 litres/person/day
Health centres and hospitals	5 litres/outpatient 40-60 litres/inpatient/day Additional quantities may be needed for some laundry equipment, flushing toilets etc
Cholera centres	60 litres/patient/day 15 litres/carer/day
Therapeutic feeding centres	15 -30 litres/person/day 15 litres/carer/day
Livestock	20-30 litres/large or medium animal/day 5 litres/small animal/day

Appendix 3

Good Practice in Water Supply and Sanitation Programmes

Emergency water supply and sanitation programmes should have the following good practice features in order to support the implementation of the standards. They:

* Respond to unmet needs identified by an assessment which meets minimum standards (see Analysis section).

* Consult with and encourage the participation of women in formulating objectives and identifying key public health issues that relate to the special needs of women.

* Are based on clear objectives which address priority public health issues.

* Ensure sustained, equitable application of minimum standards or better within three to six months.

* Are coordinated to ensure that priorities are met and gaps and overlaps are avoided.

* Are phased, addressing immediate needs then achieving minimum standards as quickly as possible, giving priority to the most important needs at the time.

* Are routinely and systematically monitored to ensure the progress of planned activities and to allow timely programme changes where needed (see Analysis standards).

* Involve a representative, gender-balanced cross-section of the affected population in decision making and in project implementation (design, construction, operation and maintenance), in line with their capacity to participate in these activities.

* Complement and build on local capacities, respect local programmes and involve local authorities as appropriate.

* Consider the local context - economic, social, political and environmental - in planning and implementation.

* Recognise the needs of local people as well as those directly affected by the disaster, including avoiding pollution of local water supplies.

* Use equipment and provide facilities which are sensitive to the traditional practices of the affected population and which ensure a minimum level of dignity and comfort.

* Are sensitive to the varied needs of different social groups, at the household level and at the population level, and the impact of the programme on them.

* Are rapid in impact, but long-term in perspective, and create favourable conditions for positive developments.

* Ensure the safety of staff, volunteers and other members of the affected population involved in programme implementation and participatory activities.

* Are implemented by staff with appropriate qualifications and experience for the duties involved, who are adequately managed and supported.

* Use equipment and techniques that may be managed and maintained with local skills and resources.

Appendix 4

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