3.
Programme Design

Effective planning and design is the key to the success of any excreta disposal programme. The OUTLINE programme design should identify the immediate objectives, priorities and actions, and the DETAILED programme design should define the longer-term objectives and activities based on detailed consideration of technical and social factors.

3.1 Outline programme design

The objective of the outline programme design is to use the information collected in the initial assessment to set objectives for intervention, identify intended outputs and outline the key activities required to achieve these. Every programme should have (a) clear:

- **Goal** – the overall aim of intervention (e.g. to sustain or improve the health and well-being of the affected population);

- **Purpose** – the reason for implementing an excreta disposal programme (e.g. to reduce the incidence of excreta-related disease and create a pleasant living environment);

- **Outputs** – the key objectives that should be met by the programme (e.g. to ensure adequate excreta disposal in line with Sphere minimum standards);

- **Activities** – the actions required to achieve the outputs (e.g. latrine construction, hygiene promotion); and

- **Inputs** – the resources required to implement the activities identified (e.g. raw materials, tools, equipment, finances, personnel).

Setting objectives

The objectives of any excreta disposal programme must be clear from the onset. These will be similar in most emergency situations, and linked to the overall programme goal of sustaining or improving the health and well-being of the affected population, and the purpose of reducing the incidence of excreta-related disease and creating a pleasant living environment.

Typical immediate objectives include:

- to ensure containment of human excreta and separation from food and water sources;

- to ensure that all sections of the community have access to safe and acceptable excreta disposal facilities; and

- to ensure that community members are aware of what they can do to minimize immediate health risks and are mobilized to take action.

Setting priorities

Once the overall output objectives have been decided upon, the priority 1st phase intervention activities must be identified. These should be based on the **key public health risks** that affect the largest number of people (identified during the assessment process) and, consequently, determination of the **immediate chronic needs**.

There is a common tension between starting to construct facilities as soon as possible to meet urgent needs in high-risk situations – and the need to have at least minimal consultation with the affected community to determine priorities and preferences. Needs and priorities will be context-specific and each setting must be assessed fully. Several activities may start at the same time or may need to continue into the next phase of the programme. Some examples of typical activities are presented below, though these will not be appropriate in all situations.

- It may be necessary to immediately start a clean-up campaign if there has been open defecation which is causing an obvious health hazard. The population can be mobilized, using rapidly identified and recruited public health promoters (community mobilizers) and

given the resources (lime, spades, wheelbarrows, sacks) to mobilize people to do the clean-up. It may be necessary to pay workers to do this, but care should be taken in making such decisions, since once people have been paid it will be more difficult to mobilize voluntary participation for other programme activities.

- In the 1st phase of an emergency, public health promoters would also need to initiate an information exchange. The people need to be informed about where they can and cannot defecate and why indiscriminate defecation is a problem in areas of high population density. They may also need to be reminded of the importance of handwashing especially following defecation and after handling children's stools.

- As part of the sanitation team, the public health promoters also need to obtain information about which system of excreta disposal is most appropriate and where facilities should be sited. As soon as possible, find out about social norms and preferences and feed this information into construction plans.

- If appropriate, start shallow trench defecation enclosures immediately, while beginning the planning for communal or family latrine construction (see Chapter 4 for more details).

- Consider whether there need to be special facilities for children through discussions with the public health promoters.

- Dig a number of trial pits around the camp to determine: soil stability and permeability, depth to bedrock and depth to water-table. This will influence the decision to build lined or unlined pits, raised latrines or to go for more technical solutions such as septic-tanks, small sewage systems or small treatment systems.

- If appropriate, start building communal latrines and ensure that latrine attendants have been selected and trained.

- It may be possible to initiate a family latrine programme at the same time as providing a minimum of communal latrines – if families are willing to dig latrine pits themselves. They may want to borrow tools for digging. This aspect of the programme could be managed by the public health promoters.

- It is also important to consider whether it is possible to upgrade any existing sanitation facilities in the location.

Action plan

An action or activity plan (see Table 3.1) must be developed once the key priorities have been decided. Each activity should be allotted an appropriate time period to produce a schedule for the initial stage of the programme in the form of a Gantt chart.

Table 3.1. Example activity plan

Activities	Week number					
	1	2	3	4	5	6
Recruit and train five mobile sanitation teams – each with a supervisor – to organize excreta clean-up within three days of arrival	▓					
Recruit and orientate five public health promoters to collect baseline data and information about community latrine-design preferences	▓					
Establish communal latrine system for entire population within two weeks including handwashing facilities and trained latrine attendants	▓					
Hold regular community meetings with camp leaders and representatives (ensuring representation from women, elderly and disabled) to discuss family latrine programme and operation and maintenance	▓		▓	▓	▓	▓
Distribute potties to each family with children aged between one and five (one potty for every two children) and nappies for children under one (four nappies per child)		▓	▓			
Establish family pit latrines for 10,000 families within two months ensuring privacy and safety for women			▓	▓	▓	▓

Immediate action

Once the outline programme design has been drawn up to produce a rough plan for the overall programme, immediate action should be taken. Such action should entail the implementation of first-phase technical options (as described in Chapter 4). The outline design should be produced within one or two days to avoid any unnecessary delay in implementing emergency measures. It is important, however, that longer-term objectives are clearly defined before rushing headlong into action, to minimize mistakes and ensure that time and resources are used efficiently.

While immediate action is underway, the outline programme design can, if necessary, be submitted to the donor or agency headquarters for approval.

3.2 Detailed programme design

The detailed programme design is an extension of the outline design which contains more detail regarding activities, designs, materials, resources and timeframes, especially for the longer term. While immediate emergency measures are being implemented the outline design should be expanded to produce a more comprehensive plan of action for second-phase interventions. The foundation of this should be a logical framework.

Logical framework

The logical framework is a useful planning tool which is increasingly required by donors to ensure that objectives are well-defined. Its use can also encourage more effective monitoring and evaluation and ensures a more rigorous and accountable approach to emergency response. In a rapidly changing environment, it is accepted that such a framework will be less than perfect and may need to change frequently to accommodate the situation on the ground.

The example logical framework in Table 3.2 assumes a population of 50,000 newly displaced people in a camp setting and considers the excreta disposal requirements only. In reality, close co-ordination and collaboration would also be needed with those involved in the provision of water and health services. Key design criteria based on Sphere Minimum Standards (Sphere, 2004) have been used to promote familiarity but output objectives should be more specific if presenting this framework to donors. Activities and inputs should be defined more comprehensively during the detailed design process and form the basis of a more detailed action plan for the longer-term.

Table 3.2. Example logical framework

Narrative summary	Measurable indicators	Means of verification	Key assumptions
Aim/Goal:			
To contribute to improving the health of the at-risk population.	Crude Mortality Rate and morbidity rates from all causes (where possible)	Clinical data Community surveys	Assumes that stability is maintained and that further migration does not take place, assumes easy access to population.
Purpose:			
To reduce the incidence of diseases associated with inadequate excreta disposal for population X for Y months.	Mortality and morbidity rates from diarrhoeal diseases (though other external factors may affect morbidity rates) Proxy indicators: • acceptability of facilities • use of facilities • perceived improvements	Clinical data Community surveys Latrine monitoring forms Observation Pocket voting Focus group discussions (FGDs)	Assumes that the major cause or risk of mortality and morbidity is associated with excreta-related disease and that community members see the project as a priority need for them.

Table 3.2. Example logical framework continued ....

Narrative summary	Measurable indicators	Means of verification	Key assumptions
Output:			
To ensure adequate excreta disposal in line with Sphere minimum standards within six months. All sections of the community are enabled to practice safer hygiene in a dignified and culturally appropriate manner.	• 1 latrine constructed per 20 people after community consultation OR 1 latrine per household • No faecal matter observed in the target area • Hand washing facilities at all latrines and are maintained • Each household reports the presence of soap on random weekly visits	Latrine monitoring forms Reports by latrine assistants Observation Weekly random transect walk Random household visits Handwashing demonstrations with children	Assumes government support for project continues and land is available for the construction of latrines Assumes project meets a felt need of the community
Activities:			
1. Recruit & train personnel 2. Design & construct latrines 3. Monitor programme activities and indicators .... etc.	Numbers of staff and training completed Etc…	Project records, training evaluation Etc…	Assumes availability of willing/able people Etc..
Inputs:			
	Tools and resources	Logistics and financial records	Resources and finances are rapidly available

Key design criteria for excreta disposal

(Based on the Sphere Minimum Standards in Hygiene, Water Supply and Sanitation, Sphere, 2004)

Coverage
Sphere indicator: **Maximum of 20 people per latrine** (in the initial phase it is reasonable to aim for 50 p/p/latrine).
Trench latrines should be designed for a maximum of 100 people per 3.5m length of trench at 1m deep and 300mm wide.
Separate toilets may need to be provided for women and men, the distances to which should be determined following consultation with the intended users. Toilets and facilities for people living with disabilities, the elderly and children should also be provided.

Location
Toilets should be **no more than 50m from dwellings**. Pit latrines should be a minimum of 6m from dwellings. Latrines should be at least 30m from any groundwater sources. Latrines should be available in public places such as markets, health centres and food/non-food distribution points.

Pit depth
The bottom of the latrine should be **at least 1.5m above the water-table**. In fine unsaturated soils and unconsolidated strata within 1.5m, virtually all bacteria, viruses and other faecal organisms are removed. This distance will increase in large-grained soils, gravels or fissured/fractured rock.

Accumulation rates
Sludge accumulation rates are useful indicators for designing and sizing pits for excreta. Approximate rates are given below:

Solids: 0.5 litres/person/day in emergencies (<0.15m^3/person/year in stable situations)

Liquid: 0.8 litres/person/day where water is not used for anal-cleansing or 1.3 l/p/d where water is used for anal-cleansing.
Note: Where there are no bathing facilities people may wash in latrines, in which case the accumulation rate could be 8–10 l/p/d.

User issues
All latrine doors should be lockable from the inside. Handwashing facilities and, if necessary, water or other materials for anal-cleansing should also be provided. There should be a ratio of 3:1 for female to male cubicles. Special rails, access ramps and larger cubicle spaces may also be necessary to assist disabled, elderly or chronically sick people. Provision of spaces for washing and drying menstruation cloths may also be necessary.

3.3 Planning for the needs of people

It is essential that the detailed programme design incorporates the needs of the different groups of people within an affected community. This may include consideration of ethnic and family groups, age, gender, disability, and ill health. This can only be achieved through active and ongoing consultation with all relevant groups within the community.

Dignity

Although protecting public health is usually the primary purpose for ensuring safe excreta disposal in emergencies, there are also other reasons as to why this is important. Not least is the provision and enhancement of dignity. Dignity is an inherent characteristic of being human, it can be subjectively felt as an attribute of the self, and is made manifest through behaviour that demonstrates respect for self and others (Jacelon et al., 2004). Excreta disposal programmes can, therefore, affect the dignity of users, both in the way in which they are designed and the way in which they are implemented. Some key aspects of programmes that enhance human dignity are:

- **Mutual respect** – programmes should be planned and implemented in a way that does not treat beneficiaries as helpless dependants, but as equal human beings.

- **Empowerment** – community members should be consulted in the programme design process and given decision-making opportunities.

- **Essential-means provision** – affected people should be provided with essential means to ensure personal and family hygiene.

- **Privacy** – excreta disposal facilities must provide sufficient privacy, especially for women and girls.

- **Accessibility** – facilities must be accessible to all, including the very young, very old, chronically sick and disabled people; they must also be located where risks to personal safety are minimized.

- **Cultural sensitivity** – consultation and planning approaches should show respect for traditional community leadership structures and practices.

Family or communal facilities

In many emergency situations it is necessary to make a choice between providing family, communal or shared excreta disposal facilities. Field experience tends to indicate that the fewer people there are per facility, the greater the involvement of that population in O&M activities. Consequently, it is widely accepted that family facilities are, in general, preferable to communal facilities. In the initial stages of an emergency, however, it is often necessary to construct communal latrines, as there is insufficient time to implement family-based facilities. However, due to management and maintenance problems associated with communal services, communal latrines are normally seen as only a short-term measure before family latrines can be built, or for use in public places such as markets, food and health centres.

Family toilets

Where possible, it is preferable, in order to promote ownership, care and maintenance, for family members to build their own latrines. In some cases the population may be rapidly mobilized to dig their own family pit latrines, and there may be no need for communal facilities even in the initial phase of an emergency.

If community members are to build their own latrines, it may be necessary to provide tools and equipment and additional help to those who may be unable to do this, such as female-headed households, families with disabilities, and the elderly. In many cases, families are given latrine slabs and are expected to construct the pit and superstructure themselves, using local materials.

Communal facilities

In some initial disaster situations, especially where there is limited space or resources, and in public places, it is necessary to construct toilets for communal use. In such situations it is very important to establish systems for the effective regular cleaning and maintenance of these facilities. Responsibility for O&M of communal latrines is often the source of tension or resentment, especially where this relies on voluntary inputs and, as a result, facilities may not be adequately maintained – leading to increased health hazards.

It is likely that in the following scenarios communal latrines will be the most appropriate or only option:

- hard shelters (schools, public buildings, factory buildings, emergency centres);

- enclosed centres (prisons, hospitals, orphanages, feeding centres etc.);

- difficult physical conditions (e.g. rocky ground, high water-table level);

- over-crowded peri-urban areas;

- crowded camps with little available space (population density >300 per hectare);

- transit camps where facilities are temporary; and

- where the local authorities do not permit family units.

It is usually necessary to employ people to maintain and clean communal latrines, as it is difficult to encourage users to undertake this on a purely voluntary basis.

Shared facilities
An effective compromise between family and communal facilities is the provision of shared facilities whereby one toilet is shared by four or five families. Where the families have been consulted about its siting and design, and have the responsibility and the means to clean and maintain it, a shared facility is generally better kept, cleaner and, therefore, more regularly used than a communal facility. It is important to organize access to shared facilities by working with the intended users to decide who will have access to the toilet and how it will be cleaned and maintained. Efforts should be made to provide easy access to facilities for disabled people and those living with HIV/AIDS.

There are many advantages and disadvantages of both communal and family latrines. The final decision will depend on a variety of factors as outlined in Table 3.3.

Table 3.3. Advantages and disadvantages of communal and family latrines

Factor	Communal	Family
Speed of construction	Can be constructed fast by well-trained and well-equipped team, although rate of construction limited by number of staff and equipment.	May take considerable time to train families in the initial stages, but large numbers of latrines may be built quickly.
Technical quality	Quality of design and construction easier to control but innovative ideas from users may be missed.	Potential for innovative ideas of users, but more difficult to ensure good siting and construction.
Construction costs	Use of materials can be easily controlled but labour must be paid for.	Construction labour and some materials free of charge; families may not have time or skills.
Maintenance costs	Maintenance, repair and replacement costs easier to predict and plan; staff required to clean and maintain facilities in long-term.	Users take responsibility for cleaning and maintenance but recurrent costs are less predictable.
Technical possibilities	Heavy equipment and specialized techniques may be used where necessary (e.g. rocky ground).	Families may not be able to dig in hard rock or build raised pit latrines where the water-table is high.
Cleaning and hygiene	Users do not have to clean latrines, but these are often dirty, and a greater mix of users increases the risk of disease transmission.	Latrines are often cleaner but many users may prefer not to be responsible for construction, cleaning and maintenance.
Access and security	Latrines may be less accessible and more insecure, particularly for women.	Latrines are often more accessible (closer to dwellings) and safer.
Development issues	People may lose or not acquire the habit of looking after their own latrine.	People keep or develop the habit of managing their own latrine.

Source: adapted from Adams, 1999

Gender considerations

Emergency interventions and life-saving strategies have a greater impact when there is understanding of different gender impacts, and of men and women's different needs, interests, vulnerabilities, capacities and coping strategies. The equal rights of men and women are explicit in the Humanitarian Charter. Rights and opportunities for both men and women should be enhanced and not compromised by aid interventions. Increased protection from violence, coercion and deprivation in emergency situations, particularly for women and girls, but also for specific risks faced by men and boys, are essential to effective emergency relief.

It is also important to pay attention to the impact of programmes on women's roles and workloads, access to and control of resources, decision making powers, and opportunities for skill development, in order to make sure that interventions support and do not diminish the role of women.

Excreta disposal is a sensitive socio-cultural issue and in many societies there are particular cultural beliefs relating to excreta disposal practices and facilities. In some cases the sharing of facilities by people of different gender is a taboo, even within family groups. Where possible latrines should be segregated by sex and there should be a typical **ratio of 3:1 for female to male latrines.**

There is also often a need for facilities and resources for menstruation which must be considered when providing latrines. Some issues to consider with respect to menstruation are as follows:

1. Ask women and girls about how they normally deal with their menstrual periods.

2. In a camp situation, sanitary pads can be provided, but should be avoided where possible because of the risks of inappropriate disposal. Where they are the only culturally appropriate solution care must be taken to ensure that correct disposal options are discussed and provided (burning / incinerating / burying).

3. The problem with using cloth which is washable in a camp environment is that once used the cloth needs washing and drying. Unless a specific space – that has a degree of privacy – is made available for this, it will be very difficult for women to dry their sanitary cloths. Private places for washing menstruation cloths can also be useful for women or girls to wash soiled underwear or clothing.

4. Women should be asked about what would be appropriate in terms of facilities for washing and drying their cloths. Possible options include constructing separate 'menstruation' or 'hygiene' units in a few reasonably private locations, or constructing units within existing latrine and bathroom screened-unit blocks. Privacy is a key issue here as women may not want others to know when they are menstruating.

5. If units for washing and drying sanitary cloths are to be constructed, make sure that the run-off water, which will be bloody, cannot be seen (i.e. bury the waste pipe under the ground into a soak pit) and also make sure that the drying lines cannot be seen from outside the unit.

6. If sanitary cloth is to be provided in hygiene kits make sure that it is a dark colour and not white. If it is white, the blood will leave dark stains and this will make the embarrassment of drying the cloths even more difficult.

As menstruation is a little talked-about subject in many cultures, some staff may be embarrassed or feel uncomfortable about using the term 'menstruation unit' and hence an alternative term such as 'hygiene unit' could be developed which would be more culturally appropriate (see Section 7.6).

Privacy and security in relation to using excreta disposal facilities is a key issue (see Box 3.1). Women's safety may be compromised if toilets are too far from their dwellings and they may not use them if they think they are not safe. Night lighting may be provided to avoid this problem, although this is rarely possible. Sexual harassment often increases in the confines of a camp or in an emergency situation and the location of sanitation facilities should ensure that the risks to women are minimized.

Disability considerations

Disasters and armed conflict are major causes of disability. Millions of children are killed by armed conflict, but three times as many are seriously injured or permanently disabled whether from amputations, head injuries, untreated stress or other trauma. In some emergency situations, as many as 20% of the affected population may be disabled. Disasters not only create disability, but destroy the existing infrastructure and services that were meeting their needs.

Box 3.1.

Privacy and security for women

Privacy and security are vital if people are going to use latrines. In Albanian refugee centres women were forced to go to the toilet in pairs because the toilets had no locks on the doors.

Due to a lack of appropriate latrines in IDP camps in northern Uganda women and girls have been sexually assaulted and even killed when going into the bush to defecate at night. Children, both boys and girls, have also been abducted by rebels in similar situations.

Access to sanitation for people with physical impairments is often extremely difficult in emergency situations. Most excreta disposal facilities provided in emergencies are inaccessible for physically disabled people, this may force them into unhygienic practices such as open defecation and lack of handwashing and, consequently, their health is often at increased risk (Jones et al., 2002). Families struggling for their survival are often too busy to consider the needs and health of disabled members. Consultation with disabled people and their families is an essential part of the assessment and programme design process.

Unless there are no disabled people within an affected community, excreta disposal facilities should be designed to cater for their specific needs. Requirements will depend on the nature and extent of impairments and it is important that people with disabilities are consulted to determine individual practices and needs. In general, the following aspects of design and operation should be considered:

- ensure easy access to latrines by locating them closer to households with disabled people, where possible avoiding steps, steep inclines and slippery surfaces, and providing handrails;
- provide bigger cubicles for physically disabled people and construct handrails and raised pedestals where necessary;

- ensure door handles and locks are not situated so high that people with limited reach – and children – cannot use them;

- provide easily accessible handwashing facilities that are simple to operate and provide support to facilitate handwashing if required;

- raise awareness among staff and family members to avoid overprotection, pity, teasing or rejection, and to ensure that appropriate support is provided.

Many features that improve accessibility and usage for disabled people also benefit elderly people, pregnant women, young children and people who are sick, including those living with HIV/AIDS. Section 7.6 illustrates some practical measures that can be taken to design appropriate super-structure facilities for disabled people.

More detailed information on practical options can be found in Jones and Reed (2005) *Water and Sanitation for Disabled People and Other Vulnerable Groups: Designing services to increase accessibility*. WEDC, Loughborough University: UK.

Considering HIV/AIDS

HIV/AIDS also has special relevance to excreta disposal in emergencies because people living with HIV/AIDS are more vulnerable to diarrhoeal and faeco-oral diseases due to their impaired immune systems. The Inter-Agency Standing Committee Task Force on HIV/AIDS in Emergency Settings (IASC, 2003) describes a number of key actions related to excreta disposal and people living with HIV/AIDS. Some of these key actions include:

- Provide hygiene education for family and caregivers with clear instructions on how to wash and where to dispose of waste when providing care to chronically ill persons.

- Consider the appropriate placement of latrines and waterpoints to minimize girls' and women's risk of sexual violence en route.

- Help to dispel myths about contamination of water with HIV, thereby reducing discrimination against people living with or affected by HIV/AIDS.

- Facilitate access to sanitation for families with chronically ill family members; people living with HIV/AIDS may have difficulty accessing

services due to stigmatization and discrimination – and limited energy to walk long distances or wait in queues. Options such as improved bedpans may be used for chronically ill people where latrines are too far away from houses.

- Include appropriate sanitation facilities in health centres and education sites, and provide hygiene education in emergency education programmes.

- Make extra efforts to ensure that the voices of people living with HIV/AIDS are heard either directly or indirectly by representation; infected people and their families can be inadvertently or intentionally excluded from community-based decision-making.

CAFOD has developed an approach to analysing the interconnectedness of emergencies and HIV/AIDS (see Appendix 2). This analysis suggests a set of key questions that can be asked by practitioners working in sectors such as water supply and sanitation, to ensure that activities are planned and carried out with an awareness of HIV/AIDS. Direct consultation with people living with HIV/AIDS is an essential part of this process.

Children's and infants' excreta

Children's faeces are generally more infectious than those of adults since the level of excreta-related infection among children is frequently higher, children's immune systems take several years to develop, and many young children are unable to control their defecation. Consequently, pre-venting indiscriminate defecation by children is a high priority in many emergency situations. Some key points related to children's and infants' excreta are outlined below:

- The implications for proper disposal of excreta are immense: diarrhoea, which is spread easily in an environment of poor hygiene and inadequate sanitation, kills about 2.2 million people each year, most of them children under five.

- Children under five often make up a significant proportion of the population in many poorer countries – up to 20% in some instances, and this may be considerably higher in some emergencies.

- People often feel that sanitation facilities are not appropriate for children, or that children's faeces are not harmful.

- Children are both the main sufferers from excreta-related diseases and also the main excreters of the pathogens that cause diarrhoea (UNHCR, 2000). Special measures must be taken to ensure the safe disposal of children's and infants' excreta – and to provide adequate and specialized facilities for children.

- This issue must be discussed with mothers especially to identify whether nappies, potties or specially designed latrines will be necessary. The unsafe disposal of child stools, and failure to wash hands with soap (or ash) after coming into contact with stools, are probably the main practices which allow microbes into the environment of the vulnerable child.

Depending on the age of the child, the principal defecation sites for young children are in potties, appropriately designed toilets, nappies, and on the ground in or near homes.

To ensure the proper use of latrines by children, they must be made safe for children and must be usable at night (which may entail the provision of lighting and guards). While in emergency events it may not be possible to incorporate many aspects of child-friendly designs into latrines, it is nevertheless important to plan facilities taking into account certain considerations, such as smaller latrines and squat holes, so that the greatest uptake by children is encouraged. A number of different response options are summarized in Box 3.2.

Even if it was the case before the emergency, children should be discouraged from defecating directly on the ground due to the potential public health risks which could be encountered due to high numbers of children often in a relatively small area in camps. This should be particularly communicated with parents of children who are mobile (generally children older than 12 months of age) as greater mobility allows children to get out of view of the parents more quickly and they may be able to defecate without their parents' awareness. In such instances it is important to monitor toddlers and make sure that stools are disposed of adequately.

Box 3.2.

Excreta disposal solutions for infants and children

In Rwanda in 1994 special children's latrines were provided in IDP camps and used by children aged two and above. The latrines had smaller squat holes and were open as children were afraid of using enclosed latrines. A similar approach was used in IDP camps in Uganda in 2006 (see photograph).

In camps in Freetown, Sierra Leone in 2000, potties were distributed to all families with children under five (one potty between two children).

In Albania and Macedonia in 1999 disposable nappies were provided in some of the hygiene kits distributed to refugee families by aid agencies. Whilst they were convenient they were also difficult to dispose of and were often found to be creating an additional public health risk as they were often found littered around the camp. Washable nappies would have been preferable and mothers claimed they preferred them as it was what they were used to.

In the cyclone-affected areas of Sindh Province, Pakistan, in 1999 the normal practice was to cover infants' faeces with mud and discard them outside the house. In response, a hygiene promotion programme was launched to raise awareness of the associated health risks. It successfully persuaded mothers to bury infants' excreta further away from their dwellings.

3.4   Selecting appropriate technologies

In order to determine what excreta disposal technologies should be selected for a given situation, technical, environmental, social and managerial issues should be considered. Even during chronic emergencies, there should be a participatory approach to selecting appropriate interventions. Consultation and thorough assessment are essential to ensure that appropriate options are selected that will be accepted and used properly by the affected community.

The key criteria that should be considered are:

- cultural practices/preferences
- available space
- ground conditions
- time constraints

- design life
- availability of resources
- operation and maintenance
- financial constraints

In addition, water availability, anal-cleansing materials, menstruation, user-friendliness (e.g. for children and disabled people), political issues and logistical requirements should also be considered.

It is important that technologies are not pre-decided before adequate assessment and consultation. In some cases latrine construction might not be the most appropriate option. For example, in rural communities where people go to the bush to defecate and population densities are low, it may be perfectly acceptable to continue this practice while encouraging people to bury faeces.

The approach that should be used in selecting appropriate technologies with respect to the following chapters of this manual is outlined below:

1. Conduct a rapid assessment of technical, environmental and social factors. Consult different groups within the affected community to determine usual excreta disposal practice.

2. Determine whether it is possible to implement the technology/ practice that the population is accustomed to in the current environment and in the required time-frame.

3. If action is required immediately (i.e. within hours or days) select the 1st phase option which is closest to current practice and begin community mobilization* (**Chapter 4**).

4. Determine whether the existing environmental conditions are creating an especially difficult situation (e.g. high water-table, difficulty in excavation, flooding, crowded urban areas).

5. If it is not a difficult situation select the 2nd phase option which is closest to current practice and begin community mobilization* (**Chapter 5**).

6. Otherwise, select an option for difficult situations which is closest to current practice and begin community mobilization* (**Chapter 6**).

7. Determine whether family, shared or communal latrines should be constructed (**use Table 3.3**).

8. Determine design specifications and select construction materials (**Chapter 7**).

* Community mobilization refers here to hygiene promotion activities to encourage appropriate use of selected technologies. This process should also involve consultation to ensure that alternative suggestions from community members are considered and that they are in agreement with the selected option.

Note: Options for implementation in the 1st and 2nd phases of an emergency are presented in Chapters 4 and 5 respectively. Alternative options for difficult situations are presented in Chapter 6.

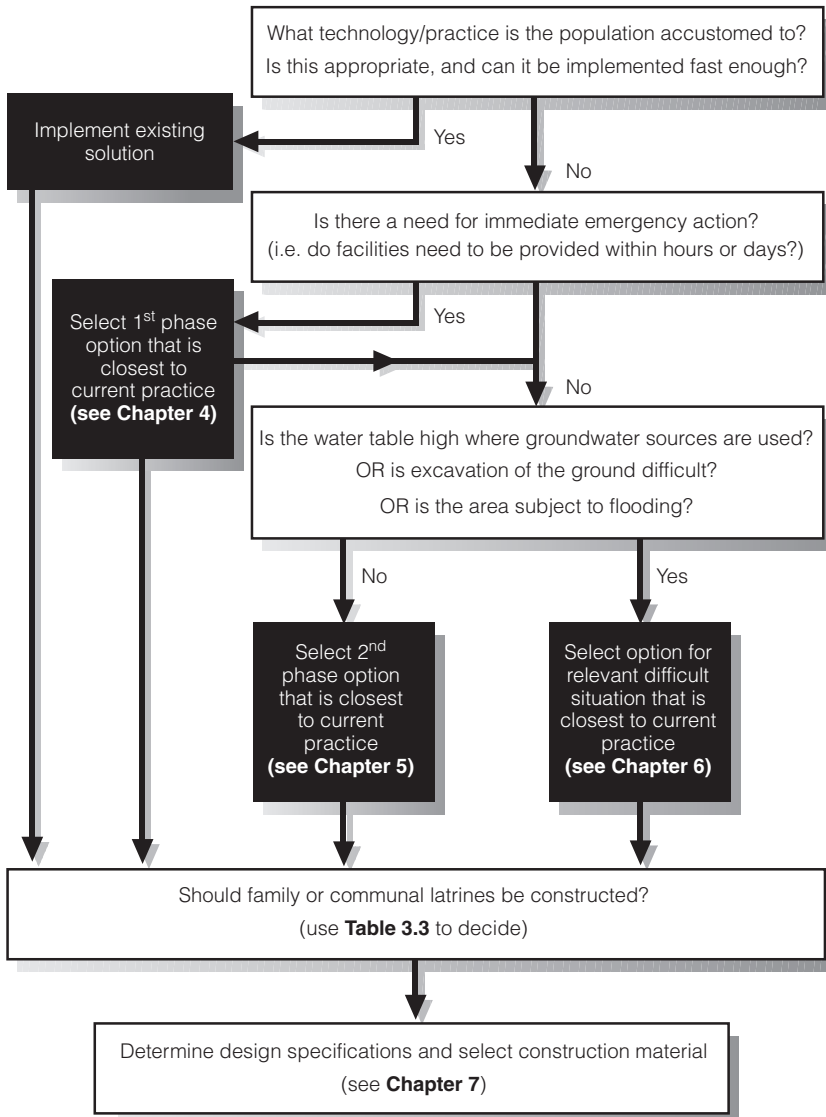A simplified technology-selection process for excreta disposal is summarized on page 44.

Figure 3.1. Technology selection process for excreta disposal

3.5 Implementation

Emergency implementation is rapidly transforming a planned programme into reality in the field. To ensure that implementation runs smoothly and quickly it is first necessary to have a properly thought-out plan, or programme design. Once the planning has been done, implementation is simply a question of managing the various programme components as efficiently and effectively as possible.

The primary goal of any excreta disposal programme is to:

Improve and sustain the health and well-being of the affected population.

Such a goal is crucial and should be kept in mind at all times during implementation. All activities should be geared towards this ultimate goal. Implementation targets are simply a means to an end and should always be viewed as such.

The term 'implementation' should not apply solely to the practical implementation of activities outlined in the detailed programme design. It should also apply to the day-to-day planning of those activities and how they are to be managed or co-ordinated. It also includes how contingencies are to be planned for and managed, and how the programme is to be monitored.

Implementation involves managing, planning for, and monitoring the seven key components indicated below. These components can then be used to form frameworks for implementation and monitoring.

- **Staff** – ensure fair recruitment and remuneration; look for existing professionals among the affected population; provide job descriptions, appropriate training, supervision, and security.

- **Resources** – use locally available materials and tools wherever possible, to stimulate and contribute to the local economy and to avoid extensive delays caused by ordering, purchase and transportation of resources from international sources.

- **Finances** – in preparing budgets, generous margins should be made to allow for contingency plans, operation and maintenance costs; in most situations it is best to budget for the long-term, as it is likely to be easier to secure funds in the earlier stages of an emergency.

- **Time** – ensure time is managed effectively and that activities are prioritized; break down activities into short, distinct time-bound targets; allow realistic time-frames for logistical procedures and training needs.

- **Outputs** – completed facilities or services, effective operation and maintenance systems and improvements in hygiene practice must be constantly monitored to assess progress and priorities.

- **Community** – community members should be involved in programme development and in various areas of implementation (i.e. not just by providing construction labour); ways in which to promote and sustain the capacity and self-sufficiency of the affected community must be sought continually.

- **Information** – develop an information-flow system that runs through the technical team, hygiene promotion team, logistics and finance; develop reporting formats, schedules and a regular meeting plan with the team and other key stakeholders.

Programme management

A common problem affecting emergency-relief programmes is ineffective management of the components listed above. Programme management can be defined as the planning, organization, monitoring and control of all implementation components. This must, however, be coupled with motivating all those involved in a programme to achieve its objectives. The management and co-ordination of activities is necessary to:

- achieve the programme objectives and targets;

- take immediate corrective actions for problems encountered;

- promote better communication among technical and hygiene staff in order to harmonize resources and activities for the achievement of project objectives; and

- establish communication between the affected population and other stakeholders.

The programme co-ordinator or manager is responsible for ensuring that these aims are met. The key roles of any manager are to:

- plan;

- lead;

- organize;

- control; and

- motivate.

Management can involve any or all of the following:

- self-management

- recruitment and training

- motivation and supervision

- contract negotiation

- conflict resolution

- information and record keeping

- communication and report writing

- financial management

This is not an exhaustive list; a good manager should, however, be adept at each of these and adopt a management style suitable for the current situation. For example, in the immediate stage of an emergency it may be appropriate to adopt a directive management style, whereby decisions are made rapidly with minimum input from subordinates. It is unlikely that such an approach would be appropriate in later stages of the programme, however, where a more consultative style may be more effective. Therefore, a flexible management style is likely to be necessary.

Managing implementation
A simple way to manage programme implementation is to use implementation milestones. This technique can be used with a multidisciplinary management team and usefully feeds into the monitoring process. A milestones table should be produced for each intended project output in the logical framework. Each table lists time-bound specific targets or 'milestones' which are necessary to achieve the project output. The table also includes who is responsible for achieving each milestone and when they should be completed. The final column is to be used by the management team to monitor programme progress, identify any problems or constraints, and make changes to implementation plans and time-frames.

Table 3.5 shows the typical framework for a milestones table with examples of the type of milestone and responsible bodies that may be included.

Table 3.5. Implementation by milestones

Selected milestones (general examples)	Who	When (date)	Current status
Recruitment	Agency staff		
Training of staff	Agency staff		
Resource procurement	Logistics team		
Construction of latrines	Construction team; Community		
Hygiene promotion activities	Hygiene promotion team; Community		
Monitoring activities	Agency staff; Community; Other agencies		

Contingency planning

Due to the unpredictability of many emergency situations, a key aspect of managing an emergency programme is the ability to undertake contingency planning for unforeseen events. In any emergency situation, it is difficult to plan for everything and impossible to predict exactly what will happen during the implementation phase. It is worth considering what assumptions have been made during programme design, and what is likely to happen if these assumptions prove to be wrong.

Whilst it is not necessary to make detailed contingency plans, it is good practice to consider possible emergency situations such as an influx of a large number of refugees, an outbreak of cholera or an increased security threat. Contingency plans may include:

- **Training**: appropriate training of staff in contingency procedures
- **Equipment**: local storage of small stocks of equipment in case of emergency

- **Sites**: identification of possible sites for relocation/settlement of refugees

- **Logistics**: identification of most efficient transport types and access routes

Co-ordination

One common problem in sanitation programmes is the lack of communication and collaboration between technical staff and hygiene promotion staff. This is largely a result of the fact that personnel with different professional backgrounds and interests are usually employed for each. Hygiene promotion activities are an essential part of any sanitation programme and hence all activities should be integrated from the onset of implementation. Orientation for the whole team is important to highlight the shared objectives. Joint work planning, co-ordination of field visits (including transport), and regular information-sharing meetings are key factors in achieving this aim.

It is also essential that there are good communication links between the affected community and other stakeholders, in order to avoid conflict and promote co-operation. These links should be co-ordinated by the programme manager.

The manager may also be responsible for co-ordination with other programmes and agencies working in the programme area. Ideally, different activities within the same agency should be integrated, and co-operation or collaboration with other agencies should be encouraged where possible. Integrated programmes may include sanitation, hygiene promotion, water supply, food distribution and health care activities.

Agencies can also work together in the form of water and sanitation clusters to agree on common goals and co-ordinated, consistent strategies. Such working groups can also work together to develop appropriate guidelines for a particular emergency situation. An example from Pakistan is presented in Appendix 3.