Chapter 4

Background information

It is important that well-documented records are kept of all background information that may have a direct or indirect effect on the programme. Reliance on non-documented information held by a single member of staff should be avoided at all costs, and all members of the assessment team should be encouraged to record activities, observations and data gathered.

4.1 General information

Before a rapid assessment is carried out general information can be recorded in a table such as Table 4.1 below. This may prove very useful as a cover page for the assessment report for the agency headquarters, for subsequent field staff or for other agencies working in the area.

Table 4.1. Assessment cover page

Location	*IFRC/TRCS Camp Lugufu, Tanzania*
Date	*05/03/01*
Organisation carrying out assessment	*WEDC*
Name and position of assessor(s)	*Peter Harvey and Bob Reed (researchers)*
Dates of assessment	*03/03/01 – 04/03/01*
General location of affected area or site	*Lugufu I refugee camp, Western Tanzania, secondary scrub woodland, 100km East of Kigoma, camp established 1997*
Nature of emergency and likely resolutions	*Civil strife/unrest in DRC, no indication of likely resolution or return to DRC*
Origin of affected population	*DR Congolese refugees, few local Tanzanians*
Seasonal/climatic implications	*1000mm/year rainfall, wet season Nov.-Apr.*
Government involvement	*Ministry of Home Affairs present at camp, responsible for security*
Relationship between local and displaced populations	*Low local population but relationship reported to be good with minimal conflict*
Other organisations working in the area (current and planned activities)	*IFRC/TRCS – watsan, health, shelter; UNHCR – co-ordination; WFP – food distribution; CARE – environment; CORD – schools and social services*

4.2 Demographic data

The affected population includes all those people whose sanitation practices or facilities have been affected by the emergency situation. It includes refugees, internally displaced people, local populations whose sanitary facilities have been destroyed but remain in the area, and host populations who have accommodated refugees and internally displaced people and share their facilities with them.

It is important that reliable data is used and figures quoted by others are followed up to ensure that the source of these is reliable. The likely population increase over the coming month may be difficult to determine but a rough estimate can help in planning appropriate responses, especially in the immediate and short term. For this reason, the total affected population figure should include the current population **and** the expected increase in population over the next month.

The total affected population will be used to find out the total ratio of facilities to the affected population.

Total affected population = present population in the affected area + potential increase in population over next month

Ratio of facilities = total affected population ÷ total number of facilities

This gives the number of people per facility.

Furthermore, if necessary the gender/age profile can be used to find the ratio of facilities available to different groups. It will also help the assessor to identify the most vulnerable groups in the affected area and determine any imbalances that may affect programme implementation.
e.g. Ratio of facilities (for females) = total affected population (female) ÷ total number of facilities available to them

A table such as Table 4.2 can be used to record the demographic structure of the affected population.

Table 4.2. Demographic profile

Age range	*Male*	*Female*	*Disabled*	*Total*	*Remarks*
0-5 years	*4,262*	*4,365*	*No data*	*8,627*	
5-18	*11,875*	*11,033*		*22,908*	
19-60	*11,479*	*12,171*		*23,650*	
60+	*485*	*736*		*1,221*	
Totals	*28,101*	*28,305*		*56,406*	
% of totals belong to vulnerable groups				*2% (1,006)*	*Widows>50; + disabled*
Number of households				*11,280*	*Avg family size = 5*
Likely increase in population over next month				*0*	*New arrivals directed to Lugufu 2 camp*

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4.3 Physical features

In addition to background information concerning the affected population, it is important that information on the physical environment is recorded. This can include any or all of the following:

- Large-scale features such as mountains, forest, marshland, vegetation and water sources
- Human features including settlement patterns, public places, industry, roads and institutions
- Concentration of affected population
- Areas where future expansion is likely
- Rock and soil types
- Groundwater levels (if known)
- Location and types of existing sanitary facilities with estimates of key distances
- Location of indiscriminate dumping of solid waste
- Location of indiscriminate dumping of medical waste
- Areas of indiscriminate defecation
- Water storage and distribution points
- Pooling of wastewater
- Burial / cremation sites
- Slope directions and drainage patterns

Much of this is best shown on a map. In addition to such features, the physical space available is a key factor in selecting and designing appropriate emergency interventions. The total area available can be used to calculate the average area per member of the affected population.

The average area available per member of the affected population =

$$\frac{\text{Total affected population}}{\text{Total area available for affected population}}$$

The total area should be large enough to be used for shelters, roads, sanitation facilities, water supply facilities, schools, health centres and feeding centres / markets.

UNHCR (2000) gives the following recommended minimum area requirements for refugee sites:

Ideally, the recommended minimum surface area is 45m^2 per person when planning a refugee camp (including garden space). However, the actual surface area per person (excluding garden space) should not be less than 30m^2 per person.

4.3.1 Maps

The most effective way of presenting the prevalent physical features is through the production of appropriate maps. This is likely to include an environmental map of the entire affected area or region, as well as a larger scale sketch map of the camp or dwelling areas.

Information for maps can be gathered through interview and discussion and other participatory approaches (see 12.6). Global Positioning Systems (GPS) can also be used for rapidly producing to-scale maps.

Environmental sketch maps are typically of a scale of 1:5000 or 1:10,000 and can be produced from observation, existing maps, aerial photographs and satellite images. Such maps are designed to show the key physical and human environmental features of the area. Figure 4.1 shows an example map from Tanzania.

A sketch map of the camp or dwelling areas can be very useful to indicate the location of key practices, facilities and problems affecting the population. This is generally a schematic map and not to scale. An example from Tanzania is shown in Figure 4.2.

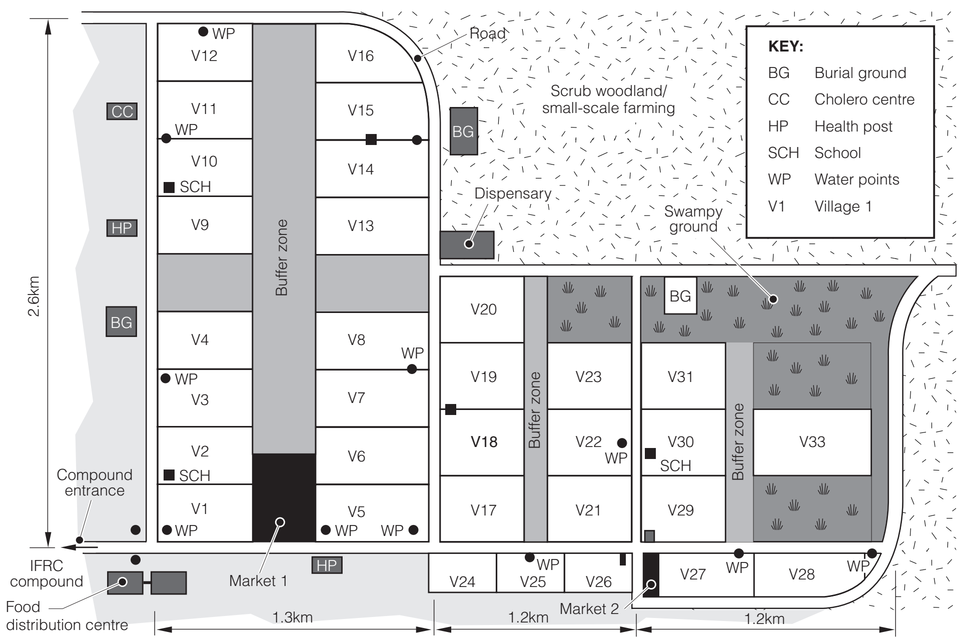

Figure 4.1. Sketch map of the affected area

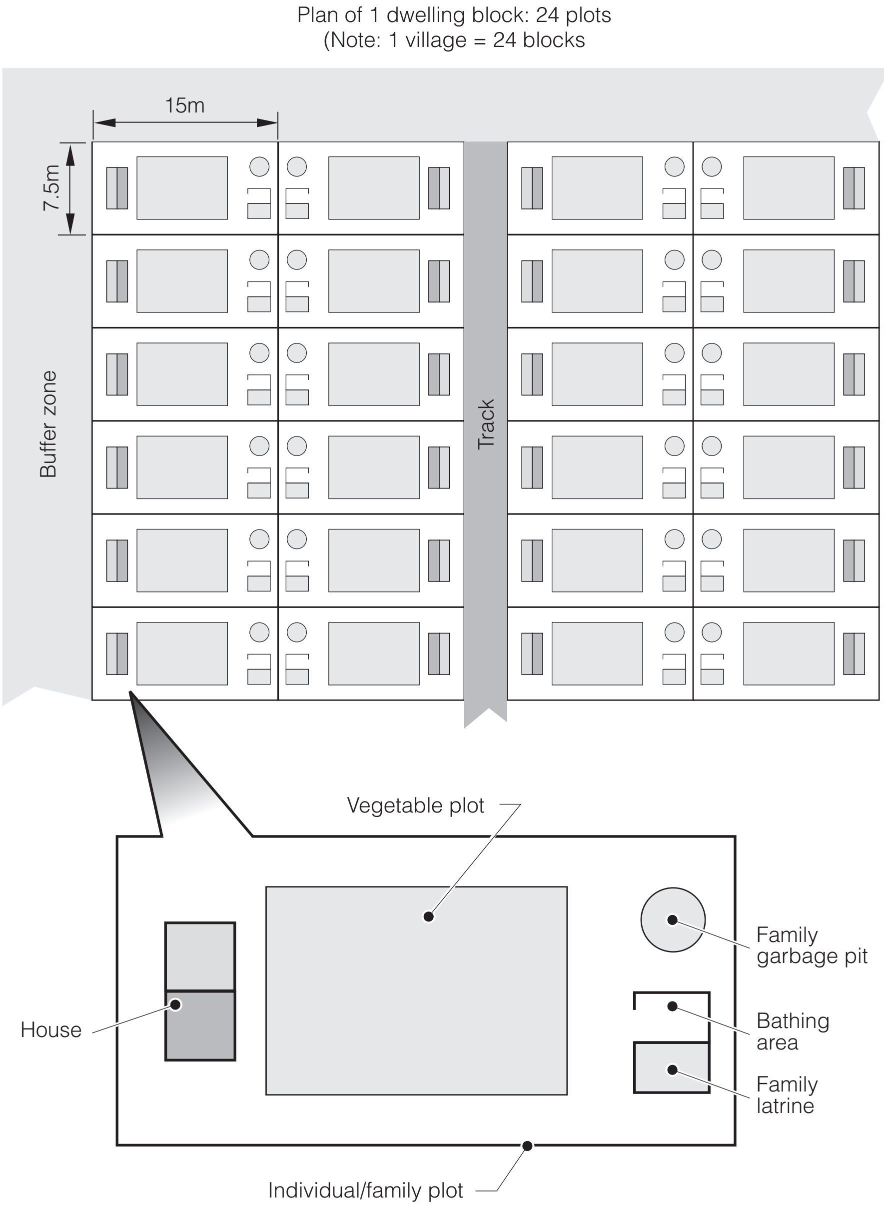

Figure 4.2. Sketch map of dwelling area

4.3.2 Ground conditions

The soil and rock condition is particularly relevant in wastewater management and excreta disposal where pits or soakaways are to be used, and is a key factor in the selection of appropriate actions.

Hard rocky ground may make manual excavation impossible, whilst heavy clayey soil is likely to limit infiltration severely. Unstable sandy soil will also make excavation difficult if the pit walls collapse easily whilst digging.

Table 4.3 gives guideline infiltration rates for clean water and wastewater in different types of soil and simple descriptions to assist soil identification. Note that infiltration rates for wastewater are much lower than those for clean water and are also likely to decrease with time as the soil becomes saturated and blocked.

Where the information is insufficient to determine the suitability of ground conditions a simple method to estimate infiltration in the field can be used. One such method is highlighted below (adapted from Davis and Lambert, 1996). This will give a general feel for the infiltrative capacity of the soil under test and provide relevant information for infiltration from soak pits or latrines. Such a test should be undertaken at the same depth as the base of the pit to ensure that the test is not distorted by any variation in material with depth.

Table 4.3. Soil infiltration rates[a]

Soil type	***Description***	***Infiltration rate litres/m²/day (mm/day)***	
		Clean water	***Wastewater***
Gravel, coarse and medium sand	Moist soil will not stick together	1,500-2,400	50
Fine and loamy sand	Moist soil sticks together but will not form a ball	720-1,500	33
Sandy loam and loam	Moist soil forms a ball but still feels gritty when rubbed between fingers	480-720	24
Loam, porous silt loam	Moist soil forms a ball which easily deforms and feels smooth between fingers	240-480	18
Silty clay loam and clay loam	Moist soil forms a strong ball which smears when rubbed but does not go shiny	120-240	8
Clay	Moist soil mould like plasticine and feels very sticky when wetter	24-120	Unsuitable for soak pits

[a]*Source: Reed and Dean, 1994*

Method: Force an open steel cylinder (i.e. without ends) of about 300mm diameter a few centimetres into the soil so that it stands upright. Place an upright ruler or gauge stick marked in millimetres into the cylinder. Fill the cylinder with clean water and measure the fall in water level at convenient intervals (5, 10, 20, 30 minutes) as water infiltrates into the soil.

Interpretation: Determine the infiltration rate during each time period and take the average of the results. This will give a very rough guide to the infiltration rate, which is likely to be all that is required for this application.

$$\text{The percolation value (or infiltration rate) in mm /day} = \frac{\text{drop in level (mm)}}{\text{time (days)}}$$

e.g. If the water level drops 12mm in 30minutes:

$$\text{Infiltration} = \frac{12}{30} \times 60 \times 24 = 576 \text{ mm/day (typical value for sandy loam)}$$

*Note: The value in mm/day is always **equal** to the value in litres/m^2/day*

For soakpits or pit latrines to function correctly the infiltration rate for **clean** water should be **at least** 120mm/day (see Table 4.3).

4.3.3 Groundwater level

In addition to the rock and soil conditions, groundwater levels may be a vital physical factor in determining appropriate actions. This is especially the case where high water tables are predominant, which may make traditional infiltration methods for excreta or wastewater disposal impossible. However, this will depend on whether there is sufficient dry space above the water table to create a hydraulic gradient and contribute to the infiltration area.

Seasonal variations should also be taken into account, pits which are dry during the dry season may fill with water during wetter periods of the year. Estimates of groundwater levels can be made through observation of nearby wells and interviews with local people. If the water table is so deep that this is impossible then groundwater is not likely to pose a serious constraint in terms of pit construction or infiltration.

4.3.4 General description of affected area

A general description of the affected area may be useful in complementing the maps. This can include any information that it was not possible to show in the maps, such as vulnerability of area to natural threat, available space per affected person, available space for construction of new sanitary facilities, soil condition and groundwater levels.

A completed example is presented in the Case Study.

4.4 Other organisations

It is important for an agency to interact with other organisations working in the affected area. These may include other aid agencies, host institutions (churches, hospitals, etc.) and government authorities. Agency staff should establish key contacts within such organisations and ensure that regular consultation occurs. This should avoid unnecessary duplication of activities and will minimise tension or conflict between organisations. Regular inter-agency meetings should be set up and should be open to relevant government personnel.

References and further reading

Adams, John (1999) *Managing Water Supply and Sanitation in Emergencies*. Oxfam: Oxford.

Davis, Jan and Lambert, Robert (1996) *Engineering in Emergencies: A practical guide for relief workers*. RedR / IT Publications: London.

Médecins Sans Frontières (1994) *Public Health Engineering in Emergency Situation*. Médecins Sans Frontières: Paris.

Reed, R. and Dean, P.T. (1994) Recommended Methods for the Disposal of Sanitary Wastes from Temporary Field Medical Facilities. *Disasters* Vol 18, No 4.