3. The Operating Environment: General Considerations

This chapter aims to draw attention to the various contexts in which emergency water and sanitation programmes might be implemented. The circumstances in which decisions are made and the way programmes are conducted can have a significant effect on their success or failure. Being aware at the early stages of the influences and pressures which can be brought to bear on an emergency programme can go some way to smoothing the process and avoiding major interference.

3.1 The political context

The political realities within a country or region are probably the most significant external influence on an emergency programme. They are also the one aspect over which agencies can have virtually no influence, if they are to avoid jeopardising their ability to continue working in the country.

Assuming that political circumstances make it possible for refugees to enter a country or for displaced people to remain within it, political considerations can frequently influence other aspects of an emergency. Take the issue of camp location. Where a camp is to be sited can be an intensely sensitive political issue. Governments may prefer to keep refugees close to their borders and in difficult circumstances in order to discourage a lengthy stay; tribal and ethnic borders frequently differ from geographical borders and it may therefore be inappropriate for a government to allow people from neighbouring countries to settle in a camp within an area that is dominated by opposing political opinions; a government may be afraid of ethnically incited conflict spilling over into its own territory. The situation in Burundi in early 1994, where both Rwandan Hutu and Tutsi refugees and Burundian Hutu and Tutsi returnees were settled in camps amongst sometimes hostile displaced and resident populations, is an example of this; the potential for violence is enormous. Field workers should be aware that in certain circumstances, governments may have their own motives for inducing violence.

The combination of ethnic, national and international politics had a great influence on the fortunes of Somali refugees fleeing to Ethiopia in 1988. Hartisheik camp was sited where it was, because it was ethnically difficult to cross the nearby clan boundaries, and the Ogaden desert had recently been the battleground between Ethiopia and Somalia. The Horn of Africa was also strategically important during the Cold War; Soviet influence was strong in Ethiopia and US influence in Somalia. This is why water had to be tankered in from 75km away.

Limiting access to water sources can also be used for political ends. As is discussed in Section 4.1, supplying water can sometimes justify an inappropriate site; similarly the type of infrastructure constructed in a camp may be influenced by political considerations. If large-scale investment has been put into constructing a water system at one site, it makes it more difficult for the government to move a refugee camp to a less appropriate one. Agencies involved in the emergency provision of water need to be fully aware of the implications of their decisions. Water is vital in these situations and because all sides need it, it can become a very powerful bargaining tool. This has to be recognised, and agencies need to make decisions with an eye to their future relevance both in terms of provision of the service and from a political standpoint.

Political influence can be brought to bear on a water and sanitation programme by the role local authorities decide to adopt. Whilst sometimes displaying a major commitment to an emergency programme, various local authorities can also feel a widely differing degree of responsibility for it, particularly where they take over responsibility for its co-ordination. The level of commitment can differ greatly from that of the agency, and this may have a direct impact on a water and sanitation programme. For example, the speed with which a local authority conducts negotiations over the land for pipelines or treatment sites once it has agreed to do so, can have a significant impact on the operation's progress.

Agencies have to ensure that their legal responsibilities are met when they are working in emergencies. Legal restrictions can limit their options in a number of sectors. For example, when an agency wanted to form a temporary dam during the dry season across the low flowing River Atbara in East Sudan, it had to obtain permission from the authorities, because interruption to the flow of water was restricted as the Atbara was a main tributary of the Nile.

Political circumstances can make it very difficult for people to settle for any length of time in one camp or area. This raises the question of how to provide water to a transient population. One way is as the International Committee of the Red Cross (ICRC) does, namely to use mobile water treatment units, which can be towed or mounted on the back of trucks or pickups. They are self-contained treatment plants and can produce good quality water in varying quantities depending upon their capacity and the quality of the raw water. The ICRC in Geneva can be contacted for information about its field experience.

3.2 Conflict areas

Operating in conflict areas imposes peculiar limitations on all sectors of an emergency programme. Interventions in the water and sanitation sector may place staff in particularly dangerous situations. For example, if a water source is some distance away from a refugee camp and people are working in relative isolation, they will be especially exposed. This applies particularly to local staff. If a water source is close to a frontier it will be open to interference, and staff manning the installation will be at risk. When surveying possible water sources, pipelines, etc., the possibility of mines should always be considered; infrastructure such as wells, pipelines and pump houses are commonly mined.

Populations may well be unstable and frequently on the move. Some means of coping with this has to be found. Intervention in the water sector will often result in rehabilitation operations; in these circumstances careful surveys of the actual work to be done should be undertaken (see Section 7.8). It is very important that agencies are seen to be non-partisan. Working with groups of

people from one side of a conflict can be construed as a political statement and can place field workers in precarious circumstances. For example, an agency working on the rehabilitation of borehole supplies in Hargeissa, Somaliland in 1992 was perceived by local clan leaders to be working with an opposing clan. The result was that staff were placed in a highly dangerous position and one engineer was expelled from the country.

Conversely, working on water programmes in conflict zones can provide access to areas which are banned to other interventions. This may be because everyone needs water, or perhaps, because, unlike food or medical provisions such as drugs, the transport of water equipment into an area may not be perceived as being directly beneficial to an opposing military force. Drugs keep wounded soldiers alive and food feeds armies. In the Luwero Triangle, in Uganda in 1984, OXFAM which was operating only in the water sector, was able to continue its work uninterrupted by the government forces. Similarly, in Lebanon in 1982, OXFAM, again working only on water programmes, was permitted access to areas which were prohibited to other agencies[2].

This gives rise to the question of the responsibility of agencies as witnesses. If an agency working on a water programme can access areas which are otherwise inaccessible, it will have an opportunity to monitor human rights issues. In such a situation, the agency and its staff will have wider obligations than just the provision of water.

Staff working in conflict situations will require good negotiating skills. It is likely that they will have to negotiate their way out of situations, into locations and around sensitive issues.

[2] P. Sherlock - personal communication.

3.3 Technological considerations

Water and sanitation infrastructure in developed countries will typically be similar to urban supplies in developing countries. It will be dependent upon a high level of technology and this has important implications for an emergency programme. However, a developing country will almost certainly be at a disadvantage when it comes to being able to sustain the provision of technological inputs, as a result of under-resourcing and financing.

A high level of technology means that specialised spare parts; high levels of skill and technical knowledge, and an existing pool of trained and skilled personnel are required, and the whole operation is dependent upon power supplies. This means that agencies will require specialists who are familiar with the technology; the rehabilitation work is likely to be expensive; alternative power sources may be required; and agencies are likely to be funders rather than directly operational.

The checklist below is put forward to help agencies assess the necessary skills and resources required to work in a situation where a high level of technology has been used:

* Are the skills required for a professional assessment available within the organisation?
* If not, can the expertise be found locally, e.g. in government departments, other agencies or local consultants?
* If not locally available, can international consultants be hired?
* Are sufficient funds available to act on the assessment?
* If not, should the agency find them or ask another agency to take over?
* Does the agency have the necessary expertise to implement and manage the proposed programme?
* Is the agency in a better position to act on its own or to advocate action by other agencies?

The emergency-affected population will previously have benefitted from the reliable provision of water and sanitation services. They will probably be used to piped water in their own homes and good individual and water sealed toilet facilities. This could well pose a problem if they are now being asked to live in a camp where they have to collect water from communal water points and to share very basic latrines with other families.

3.4 Climatic considerations

Climate will have a major impact upon a water supply system. From an emergency point of view, constructing systems during the summer months in countries that experience winter and summer extremes can prove extremely challenging. The issue of freezing is the most obvious one to address and plan for.

The Tajik refugees came into Northern Afghanistan during December 1992. Temperatures were below freezing and the wind chill made it excruciatingly cold. Burying the pipes was possible and so they were not the main concern. It was the exposed parts of the distribution network, such as the small-diameter pipes to tapstands, gate valves and pumps that were most vulnerable. Large bodies of stored water are less of a problem than smaller quantities. Ways can be explored for burying storage tanks, or providing some form of insulated cover. Roofs over storage tanks need to be designed to withstand snow. Chlorine becomes far less effective with reduced temperatures and contact times therefore need to be significantly increased (see Annex 7). Consideration should also be given to how far people have to walk to collect water. Will this exposure time be a risk to them? What about snow and ice on the paths? This is particularly relevant in hilly areas.

Emergency programmes in the former Soviet Union and the former Yugoslavia have also had to deal with these problems.

3.5 Common characteristics of displaced and resident populations

Displaced Populations. When an emergency involves the displacement of a population, the agency charged with the provision of water and sanitation is usually working from a basis of little or no infrastructure. The population will probably have settled where it feels safe and is within reasonable access to water. It is likely that the site it has chosen, or which has been chosen for it by the government or an international agency, will be remote, undeveloped and will offer little in terms of natural resource potential. Indeed, the fact that the land is available almost certainly means that the local populations have chosen not to utilise it for those very reasons. Under such circumstances an agency is faced with the enormous task of establishing appropriate water supply and sanitation systems in the shortest possible time.

The displaced population will have moved, if possible, as a unit, e.g. as a family, village, or district. Full use should be made of this factor as communities of this kind will have brought their own social structure with them, and this will be very helpful in terms of organising responsibilities, labour and the management of systems.

There will be large numbers of people in a confined area. In effect, virtually overnight rural populations are faced with living in conditions of very high urban population density. For many rural people this will be the first time they have experienced such living conditions and they will be unaware of the implications the situation has for their health.

In contrast, there are occasions when the small numbers of people settling in a particular area make it difficult to deliver, or possibly to justify the expense of, the level of service that is needed. This is most likely to be the case with people who have been displaced within their own country and who prefer to settle as near as possible to their home area. This was the situation on a large scale in the Ruhengeri region in northern Rwanda when overnight 900,000 people were displaced by fighting in February 1993. Large numbers of people settled in many small settlements.

Refugee populations typically contain a much higher than normal percentage of women and children. It is also probable that there will be a large number of sick, wounded and disabled people. All these groups will have their own special needs.

For these reasons it is crucial that there is a rapid and immediate response. Delays in making decisions, debating technical solutions and deploying staff can prove tragic.

Resident populations. Working with resident populations poses very different challenges for the intervening agency. The problem usually is that the established infrastructure can no longer provide the level of service required. For example, wells may have dried up or pumps broken down. The need therefore is to look at ways of rehabilitating, improving or upgrading systems so that they can continue to provide for the community.

There is a much greater need for sensitivity with respect to ongoing development initiatives in the area. For example, if there has been a long established community management structure for the maintenance of wells and an agency, seeing an emergency need, takes it upon itself to rehabilitate those same wells, it is probable that long-term damage can be imposed on the community management.

In the same context, it is important that any technical work should be sustainable. The village will continue to exist long after the emergency has run its course; attention must therefore be paid to the community's ability to live with the solutions that have been decided upon to address the immediate needs of an emergency.

Emergencies affecting resident populations will be either slow-onset i.e. drought or sudden-onset, i.e. natural disasters. In both instances the most important aspect is to identify the potential emergency as quickly as possible. If it is recognised early on that there is going to be a problem of water supply and/or sanitation with a resident population, there are less likely to be any negative

long-term impacts as solutions can be carefully considered and more appropriate to the long-term needs of the community. In this context, early warning systems and disaster mitigation measures play an important role.

3.6 Social and economic considerations

Of particular relevance to the discussion will be the cultural practices of the community with which the agency is working. These are mainly highlighted in hygiene practices and, once again, the reader should use his/her own knowledge of local circumstances to adapt interventions accordingly.

Of relevance to all components of emergency programmes is the local, social and economic context in which the programme is taking place. Large influxes of displaced people can have a significant effect on local economies. Small trade items can generate a great deal of activity. Conversely, large numbers in receipt of food aid can have a significant effect on local food prices as they will often sell some of their ration in order to take part in the cash economy. Staples can drop dramatically in value. This can have disastrous consequences for the local residents, and can cause serious tension between the two populations, with an effect on all agencies involved with the provision of services.

Problems can also arise when the level of service being offered to displaced people is better than that received by locals. This applies particularly to the provision of water in regions where water is scarce. Wherever possible, attempts should be made to make provision for the local use of any new installations. When this is not possible efforts should be made to assist the resident populations as well as the incomers. This is not only in the interest of good relations between the two communities, but also because it is appropriate to benefit the locality for the long as well as the short term. Money is made available during emergencies, and many opportunities therefore exist to add value to local livelihoods a well as within refugee camps. In 1993 UNICEF did just this in north-east Kenya when it rehabilitated a number of local borehole

supplies around Somali refugee camps; this helped to reduce tensions between the local population and the refugees.

Where refugees are amongst their own ethnic grouping, an inordinate strain will probably be placed upon local coping mechanisms. This needs to be recognised and programmes designed not only to provide a service to the displaced populations but also to reinforce local capacity to cope with the additional people. Water and sanitation programmes can play a large part here by helping to provide a better environment for the whole community.

3.7 Management considerations

Water and sanitation infrastructure installed during an emergency will always need maintenance. The requirement will be determined by how well the system has been designed and constructed, and how well it is managed. Technically complicated systems will require a high degree of maintenance.

Pumped water systems are always problematic. A regular supply of diesel or petrol must be secured. Mechanics need to be trained and workshop facilities established. Standby capability is a necessity, and reserve pumps, generators and spare parts must be budgeted for and made available.

If water is being chemically treated, stock levels need to be maintained to provide at least sufficient capacity to guarantee the provision of water until replacement orders arrive. Planned procurement and replacement of hardware must be organised. Similarly, stock levels of water fittings such as valves have to be maintained. This implies a high degree of management and a good level of stock control, and all this becomes doubly important, as donors are increasingly demanding greater accountability for the funds they make available in emergencies.

Staff employed to operate the system must be well trained not only to perform their daily tasks, but also to understand why they are doing so. This, if

something goes wrong, they will be better equipped to correct it. Until this level of training has been reached, the systems will need a high level of technical supervision and staffing. All too often water systems costing considerable sums of money are installed, and the 'experts', who have usually been flown in to supervise the installation, leave the project to be run by semi-trained local staff, who, through no fault of their own, have difficulty providing the service expected. Training of staff plays a vital part in the long-term success or failure of a programme.

Water and sanitation programmes use large amounts of manual labour, whether for digging pits for latrines or trenches for pipelines, for mixing concrete for water point or washing areas, for constructing storage reservoirs, for guarding installations and stock, or for operating pumps. A labour force of this size requires a great deal of management. Accurate records have to be kept of daily attendance; tools have to be provided; work needs to be supervised to ensure quality; and people have to be paid regularly. From the outset, a clear policy must be decided. How often and at what rate will people be paid? And on a daily or piece rate? Will some of the work e.g. constructing latrines be on a contract basis? What are the daily working hours? Will refugees or residents be used? Will people be working on religious days?

Box 4

As a result of inexperience, an expatriate engineer found himself threatened by a group of labourers who had been laughing and joking with him only the previous day. Local people had been employed to construct latrines on a greenfield site to which refugees were to be transferred. After the refugees arrived he continued to use local labour. It was then suggested that refugee labour might now be used. He agreed and without any warning, when the locals arrived for work the next day, they were told there was no more work. From the outset, the labour force should have been kept informed about the amount of work they would be receiving. Difficult situations can be avoided if consideration is given to actions beforehand.

Such issues need to be clear to the programme co-ordinator and to the people who are employed. It is worthwhile taking time to resolve these issues at the outset. If other agencies are working in the area, it is a good idea to have an agreed rate of pay and agreed working hours so that there is unanimity of conditions between agencies. If these issues are not resolved a great deal of time and energy can be taken up on an almost daily basis resolving personnel issues - time that should be spent elsewhere. It can also lead to problems of security for local and international, staff as was recently the case in Rwanda.