

Policy in the Making



WATER and COMMUNITIES



Discussion Paper No.3

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Save the Children

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Discussion Paper N°3

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WATER AND COMMUNITIES

This is the second set of papers arising from the 1993 water policy meeting. 'Communities: Behaviour and Belief' looks at water from the users' perspective ie as a resource used by communities. It focuses on why people do what they do with water, and as such, it provides a framework for thinking about behavioural change, hygiene education and Information, Education and Communication (IEC) programmes. The paper also argues that devolution of institutional responsibility to the community is likely to be complex and difficult to monitor.

'Maintaining the Flow' takes up this debate in relation to village level operation and maintenance (VLOM). The paper, which draws on substantial experience at community, district and national level, sets out the basic structures that need to be in place, and funded on a recurrent basis, before VLOM can function effectively.

The final paper, 'Relief to Development' is a case study of the refugee water programme in Malawi. It argues that, although refugees were exposed to reasonable levels of service provision, training and 'development' initiatives were not viable in a camp setting. Moreover, the institutional division between refugee aid (emergencies) and resettlement aid (development) meant that the population was in effect dumped by the emergency system into a development vacuum in Mozambique. Again, the phenomenon is familiar in many areas of work, and raises fundamental questions about the international community's relationship with, and commitment to, populations affected by disasters.

Responses to 'Policy in the Making' discussion papers are welcome and encouraged. These should be sent to PDU and will be forwarded to authors and other interested sections in the Overseas Department.

COMMUNITIES: Behaviour and Belief - Why Do They Do What They Do?

WHAT DO WE WANT TO KNOW AND WHY?

Water is as much the staff of life as bread, but there is much more general talk about food production in poor countries than about water. Presumably the reason is that water is not 'produced', and so it seems that there is less scope or need to do something about it. This is of course a mistaken attitude, because a great number of families in rural populations have to expend substantial labour on obtaining water, and until sufficient, clean domestic water is conveniently available to everyone, there will always be something to do about it. Even in drought emergencies, the position of domestic water is underplayed: there are plenty of instances in the Sahel, and elsewhere, of communities who have had to undergo the rigours of migration because they ran out of water some time before they might have lost all access to food.

But given the fundamental importance of water, for practical purposes what do we need to know about it beyond the purview of water engineering? The answers are not as obvious as it may seem.

The first thing we need to know is whether clean water provision is a priority in the usual physical environment of poverty. It seems that there is no doubt here: clean, nearby water is on just about any specialist's list of the top five development priorities, even if it is not a panacea for improved health. It would hardly be controversial to suggest that reasonable access to clean water is of the order of a 'human right', and perhaps especially a 'woman's right' because it is mainly women and girl children who literally bear the burden of providing domestic water.

The second thing we tend to think we need to know is whether there is anything in local beliefs and behaviour which would seriously reduce the positive effects of simple water provision. If so, we have a problem: there is plenty of prescriptive writing in the literature about hygiene education, but very much less description of success.

Before we expend too much time and energy on sensitive field inquiries in this 'social and cultural' sphere, we ought to step back a little and consider two questions:

- Do we really have reason to believe that people's attitudes and behaviour need changing?
- If so, what can we possibly do about it?

STUDYING PEOPLE AND WATER

The current wisdom is that we must change people's behaviour in order to make sure that a dangerous environment is prevented from nullifying the advantages of clean water. There are two relevant views on this, which are not quite mutually exclusive: a) that clean water cannot stand alone against the multiple attacks of an otherwise poor environment; and b) that the effects of proper access to clean water are enough to overwhelm any deleterious beliefs and practices.

If the first view is true, then the logical next step is to decide what other material things are required alongside a water provision project. For instance, there is good evidence that in the village environment, the use of soap in handwashing significantly reduces the transmission of faecal contamination. But soap is expensive: in Ethiopia, for instance, when SCF engages in its regular nutritional surveillance of children, it gives mothers a bar of soap (donated by a British company) as an incentive to cooperation. This is no mean gift: a similar bar of soap on the local market costs the best part of the payment rate for a day's casual labour - or the equivalent of the best part of a day's grain requirement for the family.

People's behaviour in relation to water and hygiene involves a mixture of 'opportunity cost' decisions about the use of time, labour and cash. Perhaps the most obvious addition to a water provision project tends to be a latrines campaign. But such campaigns over a 70-year period in parts of Africa have shown at least as much failure as success, because of a range of problems including cost of construction, available space in courtyards, and disinclination to clean communal facilities¹. 'Attitudes' including beliefs, knowledge, and what people take seriously, are sometimes less easy to explain. All of these are summed up in a quite dizzying example from Egypt, quoted in a new publication of the International Water and Sanitation Centre (IRC)²:

* In the observation sample of 46 households, 43% in the one village and 87% in the other village choose to take their clothes to the canal to wash, even though 32% of them have a water tap connected to the village supply. Their reasons are complex but discernible. The canal water lathers more readily and yields whiter clothes than the ground water pumped in the village pipes. Given the limited capacity of the latrines, septic tanks where they exist, and other sullage facilities, the disposal of waste water in the latrines, septic systems or

¹ S.Cairncross & R.G.Feachem *Environmental Health Engineering in the Tropics: An Introductory Text*. John Wiley & Sons 1983

² IRC & London School of Hygiene & Tropical Medicine (1993) *Actions Speak: The Study of Hygiene Behaviour in Water and Sanitation Projects*. eds. Marieke T. Boot & Sandy Cairncross

the street, carries the hazard of weakening the foundations of adobe houses and pooling water in areas adjoining both adobe and brick houses with subsequent complaints from neighbours. Water quality, cost and the difficulty of sillage disposal are important factors. The women know that washing in the canal has a risk of exposure to bilharziasis but feel there is no viable alternative when they take into account the time and energy of carrying waste water back to the canal, the high premium placed by women and men alike on very white clothes, the objections by neighbours to dumping water in the street and value attached to water quality for washing... These choices might be altered by changes in drainage, in waste collection, in standards of clothing appearance, or in information about health hazards of the canal." ³

Apart from the case itself, there are two other things worthy of note in this quotation. The first is the business about the 'observation sample'. The mechanics of the methods for such observation fill a number of books⁴, and it is doubtful whether that paper would have been published if, instead of stated percentages, we were simply told that 'about half' the households in one village and 'the great majority' in the other choose to take their clothes to the canal. There has clearly been detailed and numerate inquiry here, and a concomitant expenditure of time and money. But do we have to go through all that to gain the basic and interesting information contained in the study? I am willing to bet that in this case it was unnecessary, and that shorter observation and some good conversations with women would have done the trick. On the other hand, we would want proper statistical proof of the effects of soap on faecal contamination. Obtaining field information has serious costs, and we should tailor the techniques to what we want to know. In many areas of information, when practitioners in the field fight shy of pursuing questions and reporting on them without absolute figures, this is a potential waste of good information - for an NGO or anyone else.

The second point to make about the above quotation is how weakly, or optimistically, it concludes. The suggestion for changes in waste collection or drainage is reasonable, although it implies possibly major costs and efforts of organisation. But the call for health education is all but contradictory: we have been told that women already know the major hazard of bilharziasis. And finally, the hope that people - especially the men, who do not do the washing - will alter their standards of clothing appearance, seems pious beyond hope. It is not uncommon to find such conclusions from perfectly good surveys. One instance is of information about disease transmission to children

³ El Katsha, Samiha & White, Anne U. (1989) *Women, Water and Sanitation: Household Behavioral Patterns in Two Egyptian Villages*. In: *Water International*, vol.14, no.3, p103-111

⁴ See, for example, reference 1 and S.Cairncross *et al* *Evaluation for Village Water Supply Planning*. IRC Technical Paper Series No. 15, John Wiley & Sons 1985

from chicken faeces in rural compounds: the conclusion is that the fowl should be corralled - thus negating the point of them as animals that grow almost miraculously on what they can scavenge rather than on regular feeding with grain.

The second view given above, that water provision conquers all, is no doubt wrong as it stands, but is still worth considering. For instance, the sum of field study information seems to show that the amount of water used for washing hands, and the thoroughness with which it is done, is more important than the use of soap, ash or other cleansing agents. Here it would not be too pious to hope that the provision of reasonable quantities of nearby water would of itself encourage hygiene, as it has done in the richer countries of the world.

WHY VILLAGERS DO WHAT THEY DO

This brings us at last to the sub-titled subject of this paper. A full answer to the question posed would deserve several Nobel Prizes; but more humbly, some basic answers can be offered.

- the economic aspect

A great proportion of the habits of Third World villagers are explained simply by poverty. There is no need always to look for exotic, cultural explanations. Aside from tropical vegetation, much of the circumstance of poor villagers today - their environment, their dwellings with their contents, their kinds of labour, their disease load and infant mortality, their limited access to water and food and medicine - would be easily recognisable to the English rural poor of the first half of the nineteenth century if not later. They might be shocked by the fact that in semi-arid regions like the West African Sahel or the mountains of north Ethiopia, women have to walk as much as six hours for water, and families have to survive for up to three days with one donkey-load of perhaps sixty litres. But they would instinctively know better than to suggest that such people use more water to wash their hands, or their children - and so should we.

It would not do to be too deterministic on this score; there is more to human behaviour than economics. But the influence of poverty on habits is probably more than most of us realise, and the best way to appreciate this would be to do what we almost never do: live for, say, a month exactly as villagers do. As the novelty wore off, rather like poorly-organised campers, we would be surprised at the swift drop in our own hygiene standards and in our energy to do things which are not absolutely necessary.

- the belief aspect

Anthropologists have taken us a certain distance in understanding people's beliefs (what we tend to call superstitions) about water and food and illness. They attempt to discover a rationale in beliefs, which means an understandable framework rather than strict rationality. Sometimes they seem to try excessively to find a cohesive pattern, or a social 'function' or social 'meaning', in disparate beliefs which may well be the residue of many distortions over the generations. Sometimes the explanations are convincing but rather general: for instance, illness and accidents seem to happen arbitrarily, and we all tend to look for some reason why it should happen to me or her or him. Therefore we may suppose divine intervention, however inexplicable, or the mysteriously effective malice of a neighbour - witchcraft. We look to the 'why' not the 'how', the more so if we have no tradition of objective expertise, whether embodied in scientists or in acclaimed wizards.

If we cannot often understand quite how or why people pursue certain beliefs and behaviours, do we at least know how to combat them if we think they are harmful, e.g. to the health of children? The all-but-absolute wastage of tens of millions of dollars on nutrition education at the 'grass-roots' level over the last thirty years suggests that we don't know, indeed we cannot even separate, what is economically inspired behaviour from what is 'superstitious'. I do not see why the subject of water should be different, except in one important aspect. It is easier to guarantee people clean water than it is to guarantee them a good and interesting diet. So there are more chances to see how far 'unhygienic' beliefs and behaviour withstand the ready availability of clean water.

- the behaviour aspect

In some ways this is difficult to separate from the world of beliefs. But behaviour implies not simply something in the mind, but also a decision to act - and it is of course potentially visible. We are more likely to be moved to ask anthropologists why people do or don't do things, than why they do or don't think things. One rarely hears the term 'applied anthropology' used these days, but a generation ago it was considered a somewhat separate craft to 'pure' social anthropology - worthy if not abused, but definitely of lower-status. Since then, adventurous souls have invented apparently more respectable branches of anthropology, whose double-barrelled titles (medical anthropology, nutritional anthropology, linguistic anthropology - even Marxist anthropology) give the appearance of special pleading. I do not know of a 'water anthropology', but the matter is negotiable!

Applied anthropologists were supposed to review projects, point out incompatibilities with local society and culture, and generally reduce the clash of ideas between aid people and village people. Sometimes the perceptions gained were apparently very

simple, so that it looked as if you didn't need an anthropologist, just *common sense*. But what was really needed was someone, preferably with a command of the local language, who would talk to and, above all, listen to and observe local people, and do so without too much bias.

One example from the early 1960s concerns a project in Bolivia where a good village water system had been introduced by an aid agency, with the thoughtful addition of well-constructed cement stands for clothes-washing, facing outwards in a wide circle so that each woman had all the room she needed for her individual operation. They soon fell into disuse, and women returned to the far less convenient rocks by the stream. The reason discovered by the anthropologist was that women wanted to face each other and be in reasonably close proximity, because the hard labour of clothes-washing was made easier with conversation. It was a good case of discerning why people do what they do: anyone could have seen that women were chattering together; it took a more acute observer to see that it mattered, because they were making a hard job easier. The real test would be whether the same anthropologist would have made the same comment on the basis of project plans rather than project outcome. That is a moot point: if she or he had spent enough time beforehand in the community, then she might well have predicted the problem. But someone who happens to have undertaken appropriate research locally is not usually available, and keeping a social scientist in the field for a year before you make plans -let alone undertake a project - is an expensive option, without guaranteed returns, and is rarely taken up.

THE FOCUS ON COMMUNITIES

Community participation has become the *street-wisdom of development*. It is worth considering whether this is a necessary idea whose time has come, or a cop-out in the face of funding bankruptcy. The positive view is that projects must begin and end through negotiation with the community, since top-down planning and provision has often failed to deliver the required results, especially in the maintenance of facilities. Most experienced field practitioners will probably find great cogency in this view, although there are many problems to solve as to the resulting relationship between donors and receivers.

The negative view is that we are increasingly loading the burden of paying for service provision - whether in cash or labour - upon poor communities, because the general squeeze on development funding leaves us no option. Put another way, we are colluding with one of the unwelcome outcomes of 'structural adjustment'. There is no need to fly against the inevitable and stop essential work in the field on these grounds, but a clear statement of principle in this new context would help. In particular, it should be recognised that organising virtually everything at the small community level

is the opposite of the principle of public service which has been the mainstay of the development of public provision in the 'West'. There was an acceptance of the notion of the common good in relation to certain necessities of life, as opposed to provision based on the capacity of individuals to purchase it. An economy of scale also guaranteed that the richer minority would generally pay less individually for most public services - including piped water and drainage, and rubbish disposal - than they would if they paid for separate arrangements; and a safer and less smelly general environment benefitted the better-off as well as the poor.

In parts of the rich world the debate has resumed about the balance to be struck in these matters, and there is no reason why this should not be an equally important debate in the poorer world. In particular, it may be suggested that the role of local government is the thing to watch: for good or ill, it is the formal link between the village and the greater world. If local government is to be for the good, it needs amongst other things the power which comes from funding and technical expertise, for this is something for which no outside agency is likely provide a substitute indefinitely, at least for large administrative areas. In this respect, to skip investment in local government in favour of 'communities' is not necessarily to do the latter a favour. Improvement at village level cannot be sustained without investment at local government level (see Kate Wedgwood's paper on VLOM, page 11). There are conscious choices which should be made, whatever the level of funding.

It seems to me that one option which should never be pursued by outside agencies is to get poor people to do things entirely for free: in other words, to engage their labour in cutting and digging and construction without offering some associated material and technical investment. This is sometimes the attitude of government development agents promoting compulsory 'voluntary campaigns', or a distorted version of community development which conveniently costs the authorities nothing. Although there may be somewhere an example of sustainable and sustained benefits to communities which accrue from what is only a step away from *corvée* labour, this sort of thing should be left to governments. Others - whether local NGOs run by the concerned middle-classes, or foreign agencies - should be seen to pay for something: it may be a limited material offering, it may be largely a payment for expert technical services, but it must be recognisably a deal with the community, evidence of an engagement which costs something, as the moral price for community participation. I would propose the general slogan '*No persuasion without provision*', and apply it also to health education programmes.

Communities and Leadership

'What is a community?' is a hoary old question precisely because it is a good one but difficult to answer. It usually comes up when communities do not seem to behave as we suppose they should - and the dictionary implies they should - namely as people with a common territory/common interests. We have to face the fact that the 'they' does not exist unless it wants to or is told to. Anyone who spends time in a village will soon realize that everyone knows everybody else's business, but not everyone likes or cooperates with everyone else. Arguments are on every kind of subject, from adultery to land-disputes, whilst cooperation beyond one or two families concerns a far more limited number of subjects, especially in the economic sphere. In general, it is more profitable to define a community of interest than a community.

Leadership in these circumstances is bound to be more than the simple representation of communally-held opinion. The village chiefship, or the informal committee of elders, is needed partly because people do not always agree with each other or stick to private agreements once they are made. It is also needed because people do not naturally congregate for communal discussion, as opposed to communal festivities. Leadership is therefore a communal requirement, and the one thing the community has to agree to accept. In different societies, such leadership is inherited through one kinship line, or it emerges through the prominence of certain personalities, particularly people who show themselves effective in swaying opinion during communal discussions.

For agencies approaching communities, the message here is that 'participation' requires leadership. It would be convenient, then, to give the advice: forget the community - just find the leader. But these days that is less simple than it might have been in more 'traditional' times. For just as the community has been subject to all sorts of influences from the outside world, so has its leadership. Colonial and new political authorities have hired and fired village 'chiefs', or have given authority to party hacks or 'progressive' cadres whose uniting features are youth, some formal education, and a mission to supersede the traditional authority of the old men. Within villages, a certain amount of the former economic homogeneity and interdependence has given way to more diverse sources of income, of which perhaps the most common is that derived from young men migrating for urban or plantation or mine work. This has both blurred the lines of authority in the community and put the domestic burden, including the field or garden work, still more heavily upon women - although it remains extremely rare for women to be promoted as leaders of the community.

None of this obviates the need for aid provision to be the subject of communal negotiation. On the contrary, it makes it all the more necessary to convene village meetings and promote some sort of communal understanding and acquiescence. But leaders will out: a party agent may well engineer a promise of cooperation with an

officially approved project, without any guarantee that the cooperation will be sustained when he loses interest himself. A traditional leader may similarly engineer agreement, but without any basis of authority which will guarantee communal cooperation beyond the short term.

For all these reasons, the temptation is to have one or two communal meetings, but then to depend on a committee - e.g. the village water development committee - to get things done. In most circumstances this is probably the sensible thing to do, because it diminishes the need for constant attention from the aid-providing body, whilst spreading the communal representation beyond one person where possible. We should be on the lookout against forced labour, but we should also restrain our most extremely democratic feelings. There is nothing which villagers like less than endless community meetings which take up their leisure time, if not their work time too. They will accept a certain amount of direction and social compulsion if they agree with the aim of the project.

Finally, we should avoid also the temptation to pursue greater social issues on the back of a project for which we have the community's attention. For instance, it is one thing to try to persuade villagers that the water committee should have some female representation. It is quite another thing to try to attach to this some wider propaganda about gender equality, just as it would be quite wrong to insert a message about Jesus Christ or Mohammed. That is not part of the deal, and is ultimately exploitative and disrespectful of the community. On the other hand, a water project seems an obvious platform for a campaign of hygiene education, and there is no reason why this should not be a stated part of the deal, if it is carried out inventively rather than with the patronising attitude evidenced in so much 'education material' to date. Otherwise, we should have to review the current, tacitly accepted slogan: '*No provision without persuasion*'.

MAINTAINING THE FLOW: VILLAGE LEVEL OPERATION AND MAINTENANCE

INEVITABILITY OF COMMUNITY BASED MANAGEMENT

Most developing countries face severe financial, technical and institutional constraints to expanding coverage. In many cases the easier less expensive areas, such as provision of water to large easily-accessible roadside communities close to the capital, have been tackled first, leaving the harder tasks ahead. Whilst new construction goes on the problems of keeping existing systems functioning continue to grow. Although there are no global data, it is estimated that at any one time up to one in four rural water supplies is down in most developing countries, and that in some countries construction of new facilities is not even keeping pace with the failure of existing facilities. Down-times of systems may be very long, depending on reporting and repair capacity of the responsible department.

In many cases, maintenance of water supplies has depended heavily on central government for financial and technical support. As more systems are built and commitments grow, pressures on government spending are becoming more acute; the effects of this are compounded in many countries by structural adjustment programmes, leading to cuts in service-oriented departments. In short, there are doubts both about the prospects of sustaining schemes that have been built and extending coverage to those still unserved, unless a different approach is taken.

The fundamental issue at stake is not the complexity of the technology but the top-down approach, which results in the user community regarding their water supply not as their own undertaking, but as something done for them by government - and therefore they do not feel responsible for the supply's maintenance.

BACKGROUND

Since the early 1970s, investments in rural water supplies have increased enormously, particularly during the Water Decade (1981-1990). However, many of the facilities provided broke down shortly after construction, owing to a lack of maintenance. National governments and donor agencies became aware of these maintenance problems and made efforts to overcome some of them.

Common maintenance problems for different types of rural water supplies are listed in Appendix 1.

Over the last twenty years there have been numerous attempts to develop viable maintenance systems focusing on two- or three-tier setups, financed by government and implemented by district agencies. Initially attempts were made to ensure longevity of water supplies by development and provision of very robust technology, eg. "maintenance-free" hand pumps and standposts. This approach failed; the technology was found to break down and its complexity necessitated a high level of technical expertise for repair.

Recognition of this led to a major UNDP/World Bank project to test and evaluate hand pumps in order to promote the development of pumps which could be maintained and repaired at village-level by local trained caretakers, with occasional support from government staff. It became clear that hand pump technology was not the unique determinant for sustainability of the water supply. Thus, the concept of VLOM - village level operation and maintenance - evolved and gradually the shift was towards a community based approach, not least as recognition grew that provision of simpler systems, owned and maintained by the community would be more cost effective. However, it rapidly became clear that successful introduction of VLOM depended on the motivation of users to accept the main responsibility for their water supplies. Corresponding recognition grew of the importance of user participation.

Initially, community participation was introduced to reduce construction costs. Later, simple systems began to be handed over to communities with trained caretakers; often this was largely unsuccessful as there was no clarification of ownership and division of maintenance responsibilities. Also, against a backdrop of free social and health services, communities were often reluctant to contribute to operation and maintenance of their water supply. Previously, governments had tended to promise free provision of drinking water and the common perception of villagers was that water was a free-of-charge service provided by government.

THE CONCEPT OF VLOM

Many attempts have been made over the last decade to design a pump that could be fully maintained at village level by trained village mechanics. The Afridev handpump, widely used in Africa, is termed a VLOM pump and is part of the reason for its choice by various governments as the standard pump. The concept of VLOM varies depending on who is using it. Hand pump producers utilise the acronym as an addition to their trade mark to indicate that their product is fit for most rural communities, for which it will ensure water for years on end as only a few parts need to be changed and this can be done by the users themselves.

Planners see VLOM as a way to privatisation, thereby reducing the burden on government budgets, while government institutions, directly responsible for rural water supply, regard VLOM-pumps as a means of reducing pressure on already overburdened district maintenance teams.

All these views are valid but none takes into consideration the full range of structures needed to ensure a sustainable water supply. Further, none recognises that VLOM is not only a technical concept but equally a socio-economic concept which has a large community development component attached to its introduction and function. Once introduced, VLOM is a dynamic process, needing constant development and refinement to cater for the increased skills obtained by communities, thus increasing the possibility of users taking further responsibility within the system. The concept of Community Based Management (CBM) has grown out of experiences of working with VLOM and is largely superseding VLOM as a goal of water supply programmes.

What to do to Achieve CBM

The need to decentralise maintenance and devolve responsibility for water supply upkeep to the community is widely recognised. How to achieve it is perhaps less clear, although some headway has been made towards developing a methodology for rural water supply operation and maintenance.

Establishment of relatively autonomous district offices to support village level water committees has several advantages: they would be in a much better position to gauge the community's ability and resources required to maintain their water supply; quicker to respond, and more effective in provision of training and follow-up, etc.

Decentralisation of a maintenance system to a community based management system in which borehole/well and caretaker committees are responsible for the care and upkeep of the water point relies on a strong partnership with communities - each community actively involved in problem definition, decision-making, planning, and implementation. Community responsibility, maintenance training, simple and appropriate technology, and the assurance of available spare parts, will help to ensure community capacity to manage their supplies with minimal external assistance. However it is vital that government recognises the importance of remaining involved if the long-term sustainability of well maintenance is to be guaranteed. Government will have a continued role in monitoring, evaluation, training, follow-up and support.

Crucial to CBM sustainability is the implementation of district-wide "concentrated" programmes in which all beneficiary communities are supplied with a VLOM-type handpump, training and support to enable them to manage their own water supplies.

Common Steps in Introducing Community Based Management (CBM)

Experience has shown that the following elements are essential in a CBM programme:

1. **Creation of community awareness and establishment of partnership between the community and government in operation and maintenance of community water supplies.**
2. **Institutionalization of procedures and linkages for inter-ministerial collaboration and coordination for community water supply development.**
3. **Involvement of a range of technologies and service levels which match the needs, water resources, financial/technical/managerial capacities and willingness to pay of different user groups.**
4. **Strengthening of local organisations and train local staff: the most crucial component in introduction of VLOM/CBM is the formation and training of community organisations, eg. borehole/well committees and caretaker committees, and government extension workers in care, repair, maintenance and management of their water supplies. A typical training component of a community based management project is given in Appendix 2.**

Attention must also be paid to the following issues:

- a. **Ensuring the participation of all sectors of the user group, including women and children (see overleaf).**

It is clearly the case that women are keen to improve access to safe water since they are, in general, responsible for provision of household water. In recent years, women have begun to be successfully involved in operation and maintenance of rural water supplies; trained as pump caretakers and members of borehole/water supply committees.

Although most of the reports of women's increased involvement in water-point operation and maintenance are positive, interesting evidence is beginning to indicate the contrary in Malawi: recent projects concentrating on water-point sustainability have tried to ensure that borehole and caretaker committees have a minimum female membership of 70%. Such positive discrimination is not necessarily having the desired effect: men now regard the care and maintenance of water supply as exclusively women's responsibility and, in countries where family financial control is still in the hands of the male head of household, as in Malawi, it often proves difficult to raise the funds required for basic maintenance.

In Malawi, as in many African rural societies, women are largely responsible for survival tasks: growing food, provision of water, gathering fuel and performing most other work which sustains the family. In Malawi in 1966, women accounted for almost 70% of the agricultural labour force. By 1972 this figure had risen to 90%. There are indications, at least in Malawi, that the responsibility of water-point repair and maintenance is viewed as an additional burden, adding to the already highly demanding work load of women.

One of the recommendations of the regional VLOM workshop in Malawi was to actively promote the participation of men, women and children, rather than to highlight the involvement of women.

- b. Use of local products: Wherever possible locally produced equipment and materials should be used. In general most of the equipment and materials will be construction materials which are readily available in country. Rising mains borehole casing and other PVC accessories should also be purchased locally if available and of assured quality. Hand pumps may need to be imported but SCF has in some programmes (eg Malawi) been actively encouraging local manufacture of the fast-wearing spare parts.⁵

⁵ The problem of local hand pump manufacture is that the demand is insufficient to render such an initiative sustainable. However, the Regional VLOM Workshop endorsed the efforts of UNICEF to establish regional production centres for the Afridev hand-pump which is the standard deep well pump for many countries

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- c. Clear clarification of roles and responsibilities.
 - d. Establishing an adequate monitoring system.
 - e. Establishing a local spare part distribution network.
 - f. User education in collection, transportation and storage of water (see hygiene education project in Malawi).

Participants in Community Based Management

There may be several groups involved in establishing a CBM system, including the *community/user group, the private sector, the public authority, the water agency, other relevant government ministries (eg health, community development, agriculture) local NGOs and external support agencies.*

Different operation and maintenance systems have been tested with varying results:

The three-tier system: in this system a village volunteer/caretaker is responsible for day-to-day preventive maintenance; a trained area-based mechanic is responsible for the minor repairs; and major repairs are carried out by a mobile district/regional-based team. This system tends to be centrally directed, expensive to run and limits the scope for community management as well as resulting in long downtimes.

The two-tier system: in this system village-level caretakers carry out preventive maintenance and an area mechanic, usually government-paid, supports the caretakers and assists with repair work. This system has fewer disadvantages than the three-tier system but still restricts opportunities for local initiative and response in part because the issue of supply ownership is still unclear. Furthermore long downtimes may result.

In the single-tier system, village level operation and maintenance, all capacities required are met at a village level by trained village mechanics/caretakers. This system has also been shown to have inherent disadvantages, eg. the mechanics move on and the link between users and responsible institutions is lost.

in the region.

SCF (1994) Regional Workshop on Operation and Maintenance of Rural Water Supplies. Final report to ODA of workshop held in Blantyre, Malawi, Sept 1993.

A relatively successful model is being developed in Malawi in which an inter-ministerial approach is being used to introduce CBM of rural water supplies which involves extension workers from three ministries: water, health and community development. The CBM programme has developed a methodology which depends largely on promotion of community ownership of the water point with a concomitant responsibility to its upkeep. Borehole committees and caretaker committees are elected and trained by trained extension workers from the three collaborating ministries. Further details of this model are given in Appendix 3.

CHOICE OF TECHNOLOGY

Central to the philosophy of the World Bank is that sector development should be driven by government but that the level of service be driven by the user.

This is somewhat of a breakthrough for the donor community although it has been applied in small projects throughout the world: eg. in Bolivia, the UNDP/World Bank pilot water and sanitation project for dispersed high-Andean communities offered a choice of several technologies to users, ranging from a shallow well fitted with a bucket pump to a piped water supply with household connections, although obviously such a range of choices would depend on technical feasibility. The user community is informed of the concomitant costs - they are expected to pay a proportion of the construction costs, not just in labour or contribution of local materials but also a proportion of the cost of the hand pump or pipes - they are also fully responsible for the cost of future operation and maintenance.

Users decide what level of technology they can afford. So far, the system has been relatively successful but there is one real danger - marginalisation of the poorest. In the Bolivia example, what has been increasingly observed is the uptake by groups of more prosperous villagers and even by wealthy individuals of a system of a middling level of technology - shallow well fitted with a locally manufactured direct action hand pump. The system is used not only for domestic water requirements but also for irrigation. The poorer villagers end up with nothing.

Before and during the early years of the decade, the tendency of governments and donors was to opt for relatively sophisticated technical options that depend on conventional sewerage and piped water supply which require costly supplies of fuel or sophisticated engineering skills for their operation. It was as if dams, reservoirs, pipelines, treatment plants, domestic connections, and flush toilets were the only installations worthy of public health engineering attention.

Fortunately, there has been a move away from this to acceptance of handpumps, simple pit latrine and other modest technologies offering an entirely different kind of public service which is not only radically cheaper but is one with the potential for technology transfer, local manufacture and employment.

This move has resulted in the justification for a decentralised approach to management and maintenance of services. Where a community's water and waste disposal system is in the hands of a public funded central authority that controls taps and flows at a distance from the users, management of the service is a specialised affair.

Services based on handpumps and latrines in rural areas are different. No central authority turns on the taps and adjusts the valves. They have to be managed on a day-to-day basis by the users, and if the users are not equipped technically and organizationally to do so, management and maintenance will falter. The repair of broken pumps and pipe lines will depend on visits by engineering authorities who cannot always be in attendance.

It has taken time for these implications to be appreciated at the policy making level. Low-cost, low-technology water and sanitation engineering issues present challenges that are far less complex than the management issues to which financially and organisationally they are inextricably tied. In their turn the operation and maintenance issues are inextricable from the health rationale. Unless services are maintained and sustained they have little chance of realising their potential impact on people's health - an impact which has proved unexpectedly elusive.

Standardisation

Standardisation of handpumps is an important issue to consider, especially set against offering a choice of technologies. At issue is that standardisation will require a limited range of spare parts and probably lead to greater availability at a reduced price. However, in a range of hydrogeological conditions, 100% standardisation is not possible, and in any case it could be argued that competition between manufacturers may lead to an improved product.

FINANCING

Financing is at the heart of water supply management and is, in addition, fundamental to promotion of a sense of ownership.

The theme of cost recovery is strongly promoted by donors. Experiences from many poor countries demonstrate that rural people are willing to make contributions in labour and cash to the construction and maintenance of water supplies where there is a clearly felt need and where the new service is perceived to be a marked improvement over existing sources.

Development banks endeavouring to incorporate willingness-to-pay considerations into the design of rural water projects, frequently assume that rural people are willing to pay a fixed proportion of their income (usually 3 to 5 per cent) for an improved water supply. This assumption has proved to be too simplistic. In some settings people will pay more than 5% and in others much less than 3%. Willingness to pay depends upon many other factors besides income, eg. perceived benefits, level of service, water charges, value of women's time, characteristics of the existing source, etc.

Also important in financial management by the community is adequate book keeping and regular reviewing of accounts. Mistrust of water committees is a common cause of breakdown in collection of maintenance funds. The existence of appropriate financial procedures which are properly reviewed should avoid misuse of funds.

The system of revenue collection must be developed by the community, preferably prior to construction and in close consultation with responsible authorities. Long-term financial viability should include arrangements for replacement or rehabilitation of new systems.

Differences in income level of users may mitigate against a standard charge, and consideration may need to be given to differential tariff systems or provision of different service levels.

OWNERSHIP

There must be clarity over ownership of water supplies. Often there are no legal structures for communities to own their supply. It may be necessary to initiate discussions at a national level with the relevant authorities so that a legal framework is developed within which ownership of drinking water supply ownership is defined. A sense of ownership is crucial to the success of VLDM.

CONCLUDING REMARKS

The discussion started from the position that VLOM is 'inevitable'. The implications of devolution to community level are explored further in Julius Holt's paper (page 2). However, making VLOM work raises questions that are common to many other areas of SCF activity. For example, the importance of a basic system, which is needed to back up the delivery of any service; the importance of a long-term planning frame for the training and supervision of village level workers, with recurrent costs to fund this; and the problems of guaranteeing equity of provision through community mechanisms. There are no clear answers to these problems within the current model of international aid. However, SCF, with its involvement across the social policy field, is in a strong position to disseminate its experience and argue the case for a more rational and appropriate use of resources. Without it, the weakness of institutional systems and support structures is likely to remain a major constraint on the effective devolution of service provision to community level.

APPENDIX 1

Summary of common maintenance problems for different types of rural water supply:

Dug Wells Without Handpumps

- poor construction resulting in collapsing of well lining;
- insufficient recharge due to clogging or insufficient depth;
- formal responsibility for maintenance and repair not defined because it is often not envisaged.

Drilled Wells with Handpumps

- poor borehole construction resulting in sand intrusion in the well;
- inadequate pump selection;
- lack of preventive maintenance;
- lack of repair capacities and spare parts particularly in the long run;
- poor organisational structure;
- no revenue collection.

Piped Gravity Systems with Public Standposts

- insufficient spring protection;
- poor quality control and inadequate construction leading to deterioration of spring boxes, pipes and reservoirs;
- maintenance organisations not legally established;
- inadequate revenue collection systems.

Pumped Schemes with Diesel or Electric Pumps

- insecure fuel supply;
- intermittent power supply;
- variation in power output of electrical system;
- lack of preventive maintenance and monitoring;
- inadequate institutional structures;
- lack of spare parts and repair capacity;
- inadequate revenue collection systems.

Ref: IRC Occasional Paper Series No. 8 Maintenance Systems of Rural Water Supplies

APPENDIX 2

Training

Specifically, training initiatives may include the following:

- technical training of extension workers of the government agency responsible for provision of drinking water, eg. Water Monitoring Assistants: covering operation and maintenance of a handpump, VLOM concept, ordering and distribution of spare parts and behaviour of ground water inside a borehole.
 - integrated training of extension workers: to equip Local Coordinating Teams of extension workers from various relevant government ministries (eg. health, community services, social welfare, agriculture) with the necessary skills to guide communities to take responsibilities in operation and maintenance of water supplies with appropriate sanitation in all households; to enable field extension workers to appreciate the value of multi-sectorial collaboration, in addition to giving them skills necessary to support CBM of water supplies and sanitation facilities.
 - borehole/water point committee training: covering project background, leadership responsibilities of borehole/water point committees, establishment of maintenance funds, financial management, borehole management, hygiene and sanitation.
 - village caretaker committee training: covering borehole construction and functioning, handpump functioning, installation, maintenance and repair.
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APPENDIX 3

The Community Based Management Programme in Malawi

The CBM programme depends upon the use of a VLOM handpump, the Afridev, which has now become the standard Government of Malawi pump for installation on boreholes. Manufacture of fast wearing Afridev spare parts is under way in-country and their distribution to commercial centres is being undertaken by one of Malawi's main distribution companies. From these centres, the spares are sold to small shops in the district where communities are able to purchase on demand. There is a small mark-up by distributor and retailer, but the estimated annual cost of routine maintenance of the Afridev handpump is only a fifth of the annual maintenance cost per year on the present centralised system.

Borehole Committees are established at each water point, comprising ten members elected by the communities, at least 50% of whom are women. These committees are responsible for coordination of all project work from the community side, including operation and maintenance of the water point. They are also responsible for establishing maintenance funds which are used for purchasing spare parts for maintaining the water points.

Borehole committees select a caretaker committee, comprising three members who are technically responsible for carrying out preventative maintenance and repairs of the pumps. Tools have been developed so that all possible hand pump repairs can be carried out at village level. Each caretaker committee is given a set of tools upon completion of VLOM training.

The District Coordinating Team is responsible for:-

1. planning and initiating implementation through 32 extension workers (Health Assistants, Health Surveillance Assistants, Community Development Assistants and Water Monitoring Assistants) in the project area;
2. providing Training of Trainers workshops for extension workers involved in CBM;
3. developing monitoring systems for the CBM programme;
4. developing training materials for use by extension workers during committee training;
5. systems approach and management of the programme, facilitating supervision and follow up by extension workers;
6. seeking support from members of the National CBM Steering Committee and coordination with the National CBM Unit;

Extension workers involved in the programme are responsible for:-

1. creating awareness to communities about the programme;
2. conducting meetings, mobilisation of communities and committee formation;
3. providing training to water committees in leadership, establishment of maintenance funds, financial management, water hygiene and sanitation, technical borehole maintenance;
4. monitoring progress and reporting to the District CBM Team;
5. assisting problem solving at community level to encourage community participation;
6. whilst communities will be responsible for water point maintenance and should be able to effect most repairs unassisted it may at a future time be necessary to solicit the assistance of Water Department technical personnel for help with major breakdowns, eg. silting up of a borehole. Water Monitoring Assistants will need to respond to requests from communities for technical or other support.

RELIEF TO DEVELOPMENT: Save the Children Fund's Refugee Water Programme in Malawi

Since November 1989, SCF has been involved in a Refugee Water Programme in Malawi. The aims of this project are to supply potable water to Mozambican refugees hosted by the Government of Malawi and (summarised from the SCF/UNHCR/Water Department tripartite agreement):

- to strengthen the managerial and technical capacity of the Water Department respond to emergencies; to encourage handpump maintenance based on the principles of community self-help; assist Water Department staff to report field work in a standardised format; have this information fed into a computerised data-base alongside an inventory of all water points in the programme; and to coordinate activities of the programme in the three geographical refugee zones.

An additional unwritten objective has been to extend the programme into Malawian villages surrounding the refugee camps.

Refugee water needs have largely been met through our involvement in a large water point (mostly boreholes and protected shallow wells) construction and maintenance programme with up to 95% of water pumps in operational order at any one time. Efforts in the areas of community involvement and capacity building in Government in this programme have, however, been less successful.

'DEVELOPMENT' IN EMERGENCY PROGRAMMES

Approaches

If we are talking about a development approach/phase in the refugee situation then our experience is that it has been very difficult to address development needs in this refugee situation. The objectives of our involvement certainly included a strong development effort. In addition to supplying potable water to the refugee population, we were also to address strengthening the capacity of the Water Department in management and emergency response and encourage community involvement in pump maintenance. Neither has been addressed to a satisfactory degree in the programme. The project has been strongly reactive, and has operated in an emergency response mode for much of its life, making it difficult to work towards a planned programme let alone a development phase.

In addition, relief and development initiatives in water supply need very different approaches and inputs. Therefore trying to start "development" from "relief" is intrinsically problematic and to the detriment of the former.

Community Participation

Failure of Village Level Operation and Maintenance (VLOM) / Community Based Management initiatives in the refugee water programme.

In the name of VLOM, attempts were made in the first three years of the water programme to encourage refugees to take more responsibility for the maintenance and repair of the handpumps they use. It was hoped that this approach might reduce costs, improve sustainability and generally make the enormous problem of maintenance of over 1,600 water points dispersed over a large area of the country, more manageable.

Unfortunately, it has now been recognised, that for the following reasons, a standard VLOM approach is not a realistic alternative in the refugee context:

- (a) it is difficult to persuade refugees who lack traditional structure, who often have little desire to invest in their temporary homes, and who have taken no part in the construction of a borehole or its maintenance to date, that the borehole is suddenly "theirs" and that they must look after it;
- (b) the wear of "Afridev-type" pumps in the camps is usually much greater than in a true VillageLOM situation. Furthermore, the pump design itself still has problems and cannot be said to be fully in line with the VLOM ideal. Thus, repairs such as the replacement of a holed rising main or a worn/damaged cylinder are quite common. Such repairs could not be safely dealt with by a volunteer trained user group.
- (c) adequate preventive maintenance is the key to the life of any handpump. But, with long impatient queues at most refugee water points, it is difficult for a local caretaker to stop an operational handpump - even for the short time needed to replace a worn bush bearing.
- (d) refugees are aware that the authorities will rush to repair handpumps at the first signs of cholera. This further confuses the issues of ownership and responsibility.
- (e) refugees clearly do not have the ability to pay for the procurement and distribution of handpump spare parts which will always remain the largest component of the maintenance budget. Simple training to instal these spares is unlikely to result in significant savings. There is a real risk that costs will increase if experienced technicians hand over their tools to unpaid, relatively poorly trained, VLOM groups.

In light of the above, it would appear that the original expectations of community participation in a refugee scenario were unrealistic.

Refugee Priorities

A recent survey of Refugee Information Needs, commissioned by SCF, showed water provision to be a low priority for refugees thinking about returning to Mozambique.

Availability of drinking water ranked low on the table comparing the issues on which refugees had obtained information. Of those who had information, over 52% reported that they would revert back to their traditional water sources, most of which were rivers and open ponds. Only 16% stated that water was a problem in their home areas. These results may be an indication of how water is often taken for granted, with people only becoming aware of problematic supplies when they actually confront the situation. The safety of the water sources were barely considered by most respondents (Makanya 1993).

This, and the unwillingness of refugees to take on and look after water points they have not been involved in planning and constructing, might suggest a need to open up dialogue with refugees at an early stage on their needs and involvement.

These observations also demonstrate how advantage was not taken of the opportunity presented by the refugee situation to promote the importance of clean water and its relation to health. The relevance of implementing a hygiene/water-use education campaign in the refugee camps in preparation for repatriation, was pointed out to UNHCR in late 1992. This advice was largely ignored, no funds were made available.

Management

Poor progress in strengthening the management capacity of the Water Department: Our efforts in this area have been hampered by Water Department lack of funds, lack of trained staff, unfamiliar technologies and a poor operational/management structure.

The fundamental strategy adopted was to start by concentrating on formal training for both new and existing Water Department staff. The existing staff had become accustomed to a lack of funds and therefore were not particularly energetic, also they were not familiar with the types of hand pumps being installed. UNHCR provided funds for the Water Department to employ additional field staff who had to be trained. We are now concentrating more on field level supervision and support with less classroom sessions for mid level management training in planning and control techniques.

The programme was designed by the UNHCR technical unit who quite rightly required that the hand pumps installed should conform to the principle of Village Level Operation and Maintenance (VLOM). Although the original design work for these was carried out in Malawi the final design was completed in Kenya and was still largely untried under actual field conditions, particularly for such heavy use (Strickland 1989).

In the second half of 1993, training initiatives were renewed with Water Department field staff in water point operation/maintenance. It is hoped that many of those working on the refugee water programme will subsequently, following repatriation, be absorbed into the National programme and put their acquired skills to good use.

Save the Children Fund has not been able to strengthen the management capacity of the Water Department because the latter was unable to provide government counterparts to the expatriate engineers brought in by SCF. Skills of the former have, however, been passed on to Assistant Engineers, paid by UNHCR and employed by SCF, who continue to work as managers without authority, even as the expatriate engineers leave and are not replaced.

In the unlikely event that these Assistant Engineers were to be employed by the Water Department in the future, then we would inadvertently have achieved our aim. As it is, these Assistant Engineers work very closely with the Water Department District Technical Officers who are undoubtedly benefitting from this contact.

It could be suggested that it was unrealistic to expect to address capacity building in what is essentially an emergency response programme.

A pre-assessment by UNHCR of the Water Department's ability to implement and manage this programme and a better understanding of the financial and manpower constraints faced by them might have resulted in a more realistic programme of work.

The Partnership Issue

Our position in relation to the Water Department hierarchy has been unclear throughout our involvement. The tripartite agreement between UNHCR, SCF and Government of Malawi gave SCF the bulk of the responsibility for the programme but failed to vest in us the necessary authority to run or manage it. This lack of authority has extended to crucial decisions on issues relating to budgeting, human resources, transport, etc.. Decisions which have major implications for the operation of the project have tended to be made at a high level by UNHCR without reference to us, the operational partner.

In our five years involvement in the programme we have attempted to have the constraints listed above addressed. But, little notice has been taken of our input.

A certain amount of lip service has been paid to UNHCR/NGO collaboration. The tendency, despite all the fine words such as "partnership", is for NGOs to end up as cheap sub-contractors for the UN.

The practical difficulties this creates is illustrated in financial management problems which the programme has created for SCF over the last three years. These can be summarised as follows:

- (i) HCR has a more or less unilateral approach to budget setting. Implementing agencies are under pressure to sign agreements even though they may be unhappy with the budgets, since ongoing projects could be seriously hampered by non-payment of instalments (paid only after agreements are signed).
- (ii) Local currency budgets are not suitable in high inflation environments such as Malawi, and HCR has shown no interest in adjusting budgets for inflation.
- (iii) The process of continually revising budget makes for uncertainties in planning, and continual, time-consuming, rounds of budget meetings.
- (iv) HCR's system of using standard costs, especially for vehicle use, leads to unrealistic budget lines.
- (v) HCR often requires NGOs to compensate for the slow and bureaucratized systems in Geneva by employing staff on its behalf, and by serving as a procurement agency. This can be very awkward, and strains the already under-resourced administrative systems of NGOs.
- (vi) HCR is very reluctant to pay administrative costs related to its projects, despite the fact that invariably it solicits the assistance of NGOs, and sets the agenda. (Cammack 1994)

CONCLUSIONS

The refugee water programme in Malawi was conceived with a strong emphasis on development. However, the Malawi experience indicates that UNHCR is not well equipped to operate in a 'development' mode - either in the initial planning stages, or in the repatriation phase. The programme illustrates the point that, although most people would agree that the concept of relief to development is a 'good thing', it is open to many different interpretations. These interpretations are necessarily determined by the particular mandates, aims and perspectives of the agencies, governments and people involved in an emergency and its aftermath.

Donors channelled vast resources into the refugee camps in Malawi from the late 1980s. However, as it is currently constituted, the international community has been unable to capitalise on its emergency investments. During the protracted emergency, refugees were exposed to relatively high levels of service provision, in health, education and water. At the end of the emergency, there has been very little organised follow through in the process of repatriation and resettlement. There is an obvious explanation for this: repatriation and reconstruction crosses the fine bureaucratic line between humanitarian relief and development aid. Which begs the question: who was the emergency intervention actually for?

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