Not a numbers game — making policy for maximum impact and sustainability
by Richard C. Carter, Desta Demessie, and Mogus Mehari

General policy statements about improving access to safe drinking-water are not enough. Objectives must be precise, user-centred and verifiable, with a strong emphasis on 'software'.

ETHIOPIA'S KALE HEYWET (Word of Life) Church (KHC) has been running a rural, community water-supply programme since 1986. Beginning with spring-capping and the construction of gravity schemes, and diversifying into water-well drilling and handpump installation, the programme quickly developed a strong capability in water-source construction and maintenance. By the early 1990s, the programme had an enviable record both in terms of the number of sources its technicians constructed annually, and the number of people served.

It is this successful track record which, recently, has made possible a closer partnership between KHC and the main external donor (the UK-based Tear Fund), a partnership which focuses on maximizing programme impact and sustainability.

Tear Fund initiated evaluations of the programme in 1990 and again in 1995. Even before the second of these evaluations, there were concerns about effectiveness and likely sustainability. There was little doubt that the programme was achieving valuable outcomes in terms of numbers of new sources constructed, but were people really spending less time collecting water? Was the water being used better quality? Had their health improved? And would their new sources continue to function for the foreseeable future? In other words, was the programme having a real — and sustainable — impact?

KHC aims

Like many water-supply programmes, KHC stated aims focused firmly on numbers of sources constructed, rather than on impact, and which were inherently difficult to verify or evaluate. KHC's aimed to 'provide safe drinking-water and to improve quantity and quality of water available within a reasonable distance of the users'. This statement begs a number of questions:
● What, precisely, should be the water-quality target? (What does safe mean?)
● What measures will be taken to preserve water quality between the point of supply and the point of consumption?
● What should be the designated per capita water quantity available?
● What measures will be taken to encourage increased actual usage of water up to this?
● How close is 'a reasonable distance'?
● Will any measures other than closer proximity be taken to alleviate the burden on water carriers?

These are all issues of programme strategy, which a clearer statement of objectives would make explicit.

In a 1996 report, the authors set out a much more specific set of programme objectives (for handpump projects) which (a) are focused on the users and usage of water, rather than the supplier, and which (b) are much more readily verifiable in the absence of pre-project or baseline data.[1]

The purpose of phrasing programme objectives in this manner is to focus attention on impact, not just on the outputs (new sources) produced by the programme. For example, the programme may design and construct sources which can supply 20 litres per head per day of good-quality water, but, if the consumers only use half this quantity, and if they contaminate it between the source and the point of consumption, it is unlikely that they will realize any significant health benefit (although closer proximity may mean that they spend less time and energy hauling water). Studies have demonstrated that the quality of water consumed in the home can be significantly poorer than at source, and also that consumers often do not use the designated quantities of water.

The more specific the objectives of a water-supply programme, the greater its chances of success.

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Guiding principles for well-handpump water-supply programmes

Overall aims

The aim of such projects and programmes is to bring about health improvements, and reductions in time and effort spent in water hauling. These benefits are to be achieved through increased consumption of water, of satisfactory quality, from sources close to the users' homes. These goals should be achieved at acceptable capital and recurrent costs.
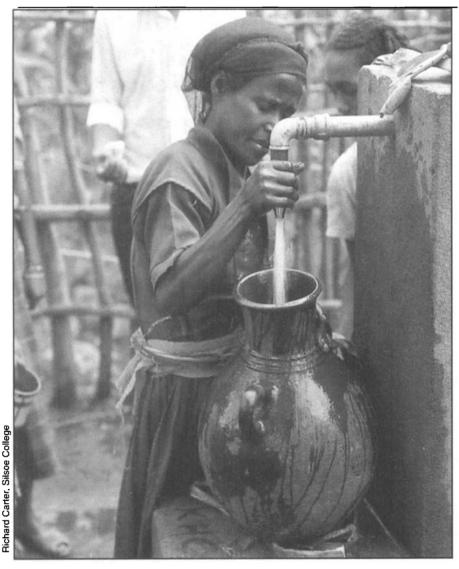
Specifically, the objectives should be:
● to bring about per capita daily consumption of 15-25 litres, of which a minimum of 15 litres per head per day should be used in the home;
● to provide one well and handpump for every 250 users;
● to reduce time spent in water-hauling to a maximum of one woman-hour per day;
● to bring about significant improvements in water-hauling technology;
● to achieve a water-quality target of less than 10 faecal coliforms per 100ml at the point of use;
● to achieve pump downtimes of no more than 2 per cent (7 days per year);
● to supply these services at a per capita capital cost of no more than £15;
● to supply these services at a per capita recurrent cost of no more than £1 per year.

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The actual numbers shown in the box on page 21 are debatable, and should be determined locally; in Ethiopia we have agreed several variations. What is important here is the principle of setting user-centred, verifiable targets.

Emphasis on software

By phrasing programme policy in terms of outcomes for the user (or impact), it quickly becomes clear that far more than hardware is needed to achieve success. There is an English proverb which says 'you can lead a horse to water, but you cannot make it drink'. In community water-supply programmes, one can construct well-engineered sources, but that does not guarantee that people will gain the maximum benefit from them. Health and hygiene education, building of management capacity in the community, training, and maintenance all take on at least as much importance as the 'hardware' of water supply.

In a recent workshop, KHC water-programme staff acted out dramatic sketches to illustrate this point; one is presented in the box opposite.

There are many other reasons why new waterpoints may not be adopted with immediate enthusiasm and used to their full potential:
● an unfamiliar taste;
● inconvenience (eg clothes washing);

● despite easier access, there may be no great incentive to use more water;
● children may continue to suffer from diarrhoea (picked up from sources other than dirty water); or
● users are asked to pay.

Community education should help to overcome these initial objections, and to change lifetime habits, but it is a long and time-consuming process.

Stakeholders

In any NGO-operated community water-supply programme there are likely to be four sets of stakeholders or parties with an interest in the programme: the communities (villages/towns/districts) with all their variety and internal complexities, the implementing agency (in this case KHC), the Government, and the foreign donor or donors. Each stakeholder has a slightly different idea of what he or she wants from the programme.

The usual community priority is better access to water — time-saving; while the implementing agency wants to report success in terms of results; both numbers of water sources and beneficiaries. This may be the Government's preoccupation too, but often with an additional political agenda. The donor's aims — usually complex — include health, time-saving, and community empowerment, as well as being able to report back to its constituency — focusing on the number of new sources, and people served, and value for money.

Getting the full picture

Amarech was a very shy young woman. She watched with interest when the drilling rig came to her village, and marvelled at the speed with which it found water. She watched from a distance as the handpump was installed, and the concrete apron constructed. She watched, but was too shy to help, as others in the community brought stones and fencing material to protect the area around the pump. [Actress gazes from afar]

Very early one morning, as she was going to the usual stream to fetch water, long before the other women were up, Amarech thought she might try the new handpump. She had seen her neighbours going there, and had heard the project community-workers telling them that the water from the handpump was cleaner than that from the stream. When no one was looking she thought it might be safe to try the new water. [Actress looks round furtively, then goes to pump]

Amarech had never handled such a machine before and, at first, was not sure what to do. She had seen her neighbours using it and knew that the

handle went up and down and water came out of the spout. [Actress examines pump from all angles, then starts to pump]

Very carefully, she raised and lowered the handle: up and down, up and down. But no water came out. She pumped for 10 long minutes, always afraid that someone would come along and tell her she was doing it wrong. Finally she gave up, and went down to the stream instead. There she would get water as she had always done, from the muddy pool by the fig tree. [Actress pumps, increasingly desperately — no water]

What Amarech did not know was that just the day before, a small part inside the pump had broken. The caretaker had reported it to the committee, and the committee chairman had sent a message to the drilling crew who were still working nearby. The pump would be fixed later that day, but because Amarech did not know this, she would not trust the new machine to give her water. She would stick to what she knew — the muddy pool by the fig tree. [Actress shakes her head over the pump]

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Should programmes spread themseleves thinly — or concentrate their activities on achieving targets for fewer people?

These viewpoints need not be in conflict. What is important is that the various major stakeholders understand each other's, the pressures on them, and that a serious attempt is made to bring all the points of view into line. This may require adjustments on all sides, and education of all parties. But ultimately there must be a consensus that 'success' is judged in terms of sustained beneficial impact on the consumers of water. The numbers game is not an adequate measure of success.

Sustainability

It is now widely recognized that, for beneficial impact to be sustained, the community must have a major stake in the ongoing success of their water supply — they must be highly motivated. Secondly, for hardware to continue to serve its purpose for many years, the local people must have a good deal of control over the upkeep of the technology, but it must also be able to call on help when needed; a well thought-out and functioning maintenance system needs

to be in place. And thirdly, given that any engineered water-supply system costs money to maintain, and that neither governments nor NGOs are in a position to financially support an increasing portfolio of water-supply schemes, a functioning system of cost recovery from the community needs to be in place.

These three links — motivation, maintenance, and cost recovery — form a chain, the strength of which determines programme sustainability. If any one link should fail, then the chain will break.

Unknown factors

Some important issues which determine programme strategy remain unknown. For example, where water-users presently only consume about three or four litres per head per day (where water sources are very distant, involving round-trips of up to four hours), we simply do not know the shape of the relationship between potential health benefits and increased consumption. Is it better for

the programme to spread itself thinly, and increase consumption to, say, 8 litres, or to concentrate its activities and achieve the target of 20 litres for fewer people? This issue was raised more than 25 years ago by researchers in East Africa,[2] and remains unanswered.

The issue of water quality in the home, and contamination between source and point of use, also needs further research, although findings to date would suggest that even more emphasis should be placed on hygiene education in the community.

The issues discussed in this article reflect some of KHC and its main external donor's continuing explorations of programme policy and strategy. Much remains to be done before programme software matches the hardware. Many other water and sanitation programmes would benefit from similar processes of policy and strategy development, to maximize their impact and increase their likelihood of sustained operation.

References

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