



At a price? The truth about community construction

Sally Sutton

Do communities have to be involved in construction work, to feel a sense of ownership? Sally Sutton argues that careful programme-software design, appropriate hardware selection, and sensible training can bring about cost-effective and sustainable water and sanitation solutions.

The ways in which people are involved in decision-making are far more important than whether they have wielded a spade.

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In the 1980s, community participation was generally regarded as a cash-equivalent contribution to the finished supply facility. Later, this was combined with an assumption that being involved in construction engendered a stronger feeling of ownership, built up people's expertise in well maintenance methods, and enhanced their capacity to manage labour and funds. The costs of this approach are seldom weighed against the benefits, nor are the assumptions tested. Recent projects in Zambia and Mozambique suggest that the ways in which people are involved in decision-making are far more important to long-term functioning of the supply than whether they have wielded a spade.

Costs of involvement

The costs of mobilizing communities are high. It is not always possible to isolate those that relate just to construction, since other processes, such as training in management and maintenance, may be carried out at the same time. A participatory review of constraints to progress and elements of cost with the Dutch Rural Water for Health Project (RWHP) in 1995 illustrates some of the features commonly found:

- twenty-five per cent of total costs were attributable to direct project (motivation and training) support to the community prior to and during construction;
- of the non-productive time on site, 40 per cent (almost one month per well) was due to workers in the community being unavailable (attending ceremonies, cultivating plots etc);
- one support visit to the community cost more than the initial cash contribution it was asked for as a qualifying criterion for assistance in water-supply construction (around £20); and

- per capita costs were high (generally £30 or so) because of the low number of supplies which can be completed in a year (overheads, therefore, being high per unit).

The overall costs attributable to community involvement in construction added up to between £1800 and 3000 per well in most projects, equivalent to the cost of one borehole. RWHP subsequently reduced this considerably but, among many projects, the monitoring of elements of 'software' costs are commonly given less attention than the technical costs.

We made it, we care for it

The RWHP approach included community inputs from the start, both in decision-making and implementation. In the same area, however, there also existed some 90 wells previously constructed under drought relief (early 1980s), with no community involvement in any aspect. The RWHP participatory education programme for the former group was then applied also to the latter, to develop a feeling of responsibility, an understanding of maintenance needs and costs, and to explain the shift of ownership from government to users. A study of these two groups of wells in 1992, and again in 1994, failed to find significant differences in their condition, or in the degree of activity of the management committees – almost all communities coped successfully with the problems they were trained to solve.

In Zambia's Western Province, Norwegian funding has been used to construct over 1000 boreholes and hand-dug wells. Community Education and Participation teams (CEPs) found working with communities with boreholes, who had not helped in the actual construction, no more difficult than working with those who had been involved in the construction



Giacomo Pirozzi/Panos Pictures

Community latrine-building in Malawi — is wielding a spade crucial to long-term success?

Long-term commitment to maintenance is usually underestimated during preliminary discussions on technical options.

of their own communal hand-dug wells. Handpumps were installed on boreholes from 1986 onwards and, of over 560 supplies, 88 per cent were found to be functioning in 1996, as a result of community-based maintenance and management. This compares with some 55 per cent of hand-dug wells still in use.

The CARE programme in Inhambane Province, Mozambique has a similar tale to tell: since 1994, 100 communities have gained new borehole supplies. At the end of 1997, 97 per cent of these were working, and almost all communities with supplies over a year-old had bought spare parts for their pumps. As an example of well-developed ownership, one well which had had over 1000 users served several communities as much as 5km away. The further-flung communities were trying to raise funds to pay the initial contribution (£215) to qualify for assistance for a borehole, but those near the existing source also decided to contribute. They reasoned that this would help reduce pressure on their own supply and, therefore, their maintenance burden. It would also give them access to an alternative source if they had problems that could not be solved instantly. These are not the actions of people who regard the supply as belonging to those who constructed it, but who realize that, as with ownership of a radio, the fact that you cannot make it yourself does not mean you cannot take sensible decisions to care for it.

Maintenance

Villagers who work down the well-shaft become used to entering the well. They can learn to re-point between rings, to

repair the cracks through which surface-water returns to the well, and to clean out debris. There are numerous cases, however, of individuals being reluctant to go down the well after construction is completed, of wells which go dry, of fallen buckets not retrieved, and of wells abandoned as drinking-water sources because the quality has deteriorated. Few ever seem to identify and react to problems of dirty surface-water returning to the well, by repairing cracks, or re-pointing liners. But the same communities may efficiently raise funds for new buckets or chains, and organize rotas for women to clean around the well. The maintenance of the lifting device seems more easily accepted than that of the well itself. Why should that be, with the experience gained during construction?

The answers appear to relate to perceptions of:

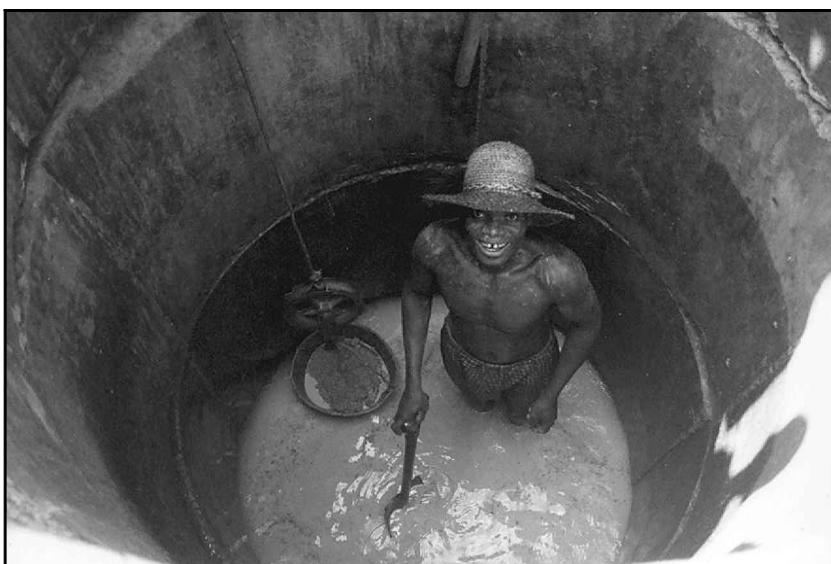
- the equipment used during construction being stronger than the everyday windlass for water lifting, inspiring more confidence in its safety;
- reliance on de-watering equipment which may not be essential; and
- dependence on the skills of outside supervisors to clean out and chlorinate wells after contamination, and to demand prompt communal inputs.

Technical education?

Working with the foremen is usually regarded as sufficient training in itself, and foremen are seldom trained in participatory techniques for education. No attempt is made, for example, to discuss how the normal windlass could be safely used to descend into the well, including tips on how to strengthen the bucket or replace it by a loop in the chain as a foothold during descent. Nor, in most programmes, is there an attempt to enable communities to solve most water-quality problems on their own. Technical education is usually carried out to a fixed programme designed without reference to the problems identified by the communities themselves, in contrast to management training, during which they are encouraged to identify problems and think up solutions relevant to their social structure and environment.

In Zambia and Mozambique, among seven, large, bilateral-funded programmes and a further three, smaller NGO programmes, none has successfully addressed the problems of well

Local well-digging equipment which may worry a Safety Officer but is still likely to be available for future maintenance works. (Well-digging in Zambezia, Mozambique.)



assume nothing

maintenance. But all of them involve communities in construction, and successfully shift responsibility to them for long-term maintenance of the lifting device and area surrounding the well. Thus technical training for such rural water supplies needs to look beyond the skills acquired during construction. It is necessary to identify — with communities — the additional expertise needed to maintain the well itself: to what degree can this be provided locally, and how much will outside assistance cost? Long-term commitment to maintenance is usually underestimated during preliminary discussions on technical options.

Conclusions

Appropriate software

If the community facilitation is appropriately designed, a sense of ownership and management capacity are

developed; and pride in, and technical understanding of the supply are created, *whether the community provides inputs to construction or not*. Conversely, involvement in construction does not in any way guarantee these things, and is an expensive element of any programme. Perhaps, therefore, it should be given a lower priority in project planning.

Choice of construction method

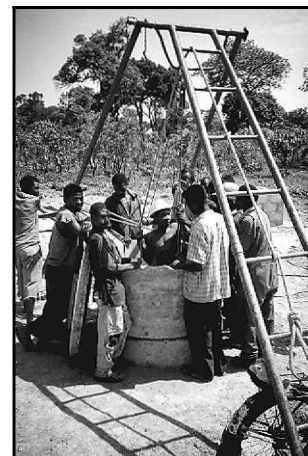
Communities could be given more choice in how their well is constructed. For example, they could be offered the alternative of paying a larger initial contribution instead of contributing their own labour. Alternatives include employing the supervising teams as contractors, or developing local teams of well-diggers who can return to carry out, inexpensively, well-deepening and cleaning out. Drilling is also an alternative which should not be regarded as such a threat to community spirit, especially over the large areas where water-tables are falling as a result of climatic change and deforestation, making well-deepening a continual problem.

Training

Construction techniques often call for the use of specialized equipment to speed up progress, conform with foreign ideals for safety standards and achieve depths below the water-table which increase the reliability of supply in the dry season. Training should not be regarded as adequately provided just by involving community members in construction. In addition, it is necessary to:

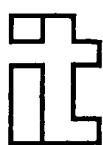
- use, for at least part of the time, only equipment and tools available to the community when construction teams move elsewhere;
- devise simple methods for well-cleaning and chlorination (for example, locally available laundry bleach), and incorporate them into a demonstration, on well completion; and
- establish which wells can be bailed clean and at what times of the year.

Otherwise, most communities will tend to remain unable to cope with even the simpler problems that arise in maintaining a shallow well. Building up relationships with local contractors then becomes a better long-term solution and usually more cost-effective during construction. ■



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Well construction in Zambia's North-western Province. The heavy tripod, imported rope and safety helmet promote confidence — but perhaps not sustainability



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about the author

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