

Community Participation

Sanitation for rural communities: first win the people's support

Samson Rao, Madhukar Pai, A. Iyanar, & Abraham Joseph

A latrine project in an Indian village which failed because the inhabitants were scarcely brought into its planning and execution is contrasted with a moderately successful scheme in another village where a concerted effort was made to educate the community about the value of latrines and to obtain the people's participation.

In 1981, at the start of the International Drinking Water Supply and Sanitation Decade, various rural sanitation programmes were initiated in India as a response to the spread of *Vibrio cholerae*, outbreaks of diarrhoea, and many other matters of concern in public health. Yet by 1994 only 14% of the country's rural population had access to adequate sanitation. Why was so little progress made in this field? We try to answer this question by referring to two village projects for latrine construction in southern India, one a failure, the other moderately successful.

Many latrines, few usable

A project in one village, funded by the government and routed through a non-governmental organization, had limited community involvement. A few individu-

als were given contracts to build latrines, and the village leader said it would be good if the people accepted the project. As the price being asked was only Rs 50 (app. US\$ 1.40) per latrine, most families did accept, albeit in a passive way. The masons asked family members to provide manual labour but they refused.

Today, of the 132 households in the village, 100 have latrines but only 15 are in use. Some have pans but no leach pits. Some have everything but pans. A few so-called latrines consist of four walls and nothing else. Nobody has bothered to protest about this state of affairs.

As it turned out, most villagers wanted the latrines so that they could use them as bathrooms. A construction worker informed us that some households asked that a cement floor be put in but not a latrine pan. However, some people who did want toilets were disappointed. One mother showed us her latrine: the pan was crushed and dangerously sunken.

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What people say about latrine construction

"After we paid the money they asked us to dig the pit and build the foundation. We said we'd paid, so why should we do the work? That's why they didn't finish the construction."

"I have two daughters and because I didn't want them to go out of the house I accepted the latrine. I helped to dig the pit and gave the construction workers the equipment they asked for. One day, after it had been raining, the older girl sat on the latrine and suddenly the pan and the foot slabs sank."

"Since it is very near the house, it is convenient for us. It is also very convenient for women who are pregnant or who have had surgery. It is difficult for them to go looking for hidden places."

"In the towns we see men urinating against walls. Can women do that? – Very difficult in towns. In the village also it is difficult for women."

"Sometimes, not regularly, when men are at home they use the latrines. When they go to work in the fields they use the fields."

"Sometimes we wash with soap, sometimes only with water. We use soap when we aren't in a hurry. When we are in a hurry, we wash with just water."

"We are a farming community. When we return home from work we are so hungry we expect to be served food immediately. Who can be bothered about washing their hands?"

"People have to go to the fields at 4 a.m. They have no time to use latrines. So when they go to the fields they sit here or there. In the towns there is no space, but we have lots of space – we can go wherever we want."

"Those who have been used to going to the fields for many years do not feel like spending money on a latrine."

"Latrines are not important enough for people to get together and pool money so that they can be built."

A qualified success

The Community Health and Development Programme of the Christian Medical College, Vellore, began facilitating the provision of low-cost latrines for rural people in Kaniyambadi Blocz, Tamil Nadu, in 1986, with the assistance of the District Rural Development Agency. Funds from governmental and other sources have made it possible to build 650

latrines up to the present time in accordance with the following procedures.

- Before a project begins, all field staff undergo a training programme on sanitation.
- Village leaders and other influential people are informed about the project, and village meetings are then held to educate people about latrines and advise them as to what is intended. A substantial sum is earmarked for this work.

- After each meeting, anyone interested in acquiring a latrine is asked to complete an application form. No attempt is made to press people to accept latrines.
- People wishing to have latrines installed are asked to pay 10%–15% of the total cost, mainly in order to induce an attitude of responsible ownership.
- The women masons who supervise most of the construction work are initially educated about latrines and sanitation.
- Each family chooses a site for its latrine, and as far as possible this choice is respected.
- Much of the manual labour of digging pits and laying foundations is required to be provided by families, who, in this way, learn about latrine structure and have their feeling of ownership reinforced.
- After the construction of a latrine, educational sessions are organized for users so as to deal with any remaining doubts, particularly about the nature of the leach pits.

In one of the villages covered by the Programme, 24 of the 41 households acquired latrines. More families had been

In the village where the community was gradually and deliberately mobilized to participate actively in planning and implementation, all the households that accepted latrines continue to use them today.

willing to accept latrines but, because the terrain was rocky, additional construction proved impossible. Ten years after the latrines were installed, all were still in use

and in reasonably good condition. In conversations with the villagers it emerged that most women and children used the latrines, whereas the men rarely did so, preferring to defecate in the open air.

Although most families that had acquired latrines were using them, their hygiene left much to be desired: it was uncommon, for instance, for people to wash their hands after defecation. Most villagers did not have a clear understanding of the hazards of faecal contamination.

Are latrines important for rural people? Do they perceive a real need for them? Our experience suggests that people, especially men, are disinclined to acquire and use latrines because of the availability of open spaces in villages and because of poor access to water facilities. The absence of privacy does not seem to bother people. For years they have defecated in the fields and this is an accepted feature of their lives.

People often lack the will to undertake latrine construction even if loans are provided. They prefer to wait for government subsidies.

When the project began it was expected that additional families, seeing the satisfaction of the first users, would soon try to obtain their own latrines. However, since then only one more family has acquired a latrine.

Historically, people have acquired latrines for reasons of health, convenience and privacy. In the Indian villages studied by us, convenience and privacy were the only perceived benefits of latrines. Time and

experience are needed for people's ideas, desires and behaviour to change.

In the village where the community was gradually and deliberately mobilized to participate actively in planning and implementation, all the households that accepted latrines continue to use them today. The introduction of sanitation on a large scale in rural areas is unlikely to succeed without community education and participation. However, even if these things are secured it would be unrealistic to expect rapid progress in the voluntary acquisition of latrines or in the improvement of standards of hygiene. Many people in rural areas appreciate the convenience that latrines offer but it is also true that there is often no felt need for them. Nevertheless,

once a good functional latrine has been installed there is a reasonable prospect that at least women and children will use it.

The construction of large numbers of inferior latrines simply to fulfil targets is likely to discourage people from pursuing initiatives of their own in this field. Mass sanitation projects need community involvement, without which poor utilization is probable. Such projects can succeed only when people begin to think of latrines as indispensable parts of their houses. ■

Acknowledgements

We thank the villagers who shared their experiences with us.

Importance of sewage disposal

So much depends on how communities deal with human faeces. At least 2500 million people in developing countries lack an adequate system for disposing of their faeces. For the poor in many developing countries, faeces deposited near their homes constantly threaten household hygiene, by direct contact with people or by being inadvertently carried into homes and kitchens by children, domestic animals or insects. Domestic, neighbourhood or district water supplies such as wells, tanks and reservoirs may be contaminated by poorly designed or maintained sewage disposal systems.

■ *The world health report 1996 – Fighting disease, fostering development.* Geneva, World Health Organization, 1996: 43.

Water and dirt – matters of life and death

Albertha A. Nyaku & Stanley K. Diamenu

Poor hygiene and sanitation are responsible for much of the disease burden in two rural communities in the Volta Region of Ghana. A study produced recommendations for educational activities on personal and public hygiene and the creation of improved water supply and sanitation facilities through community participation and the use of local resources. These steps are now being taken.

In Ghana's Volta Region more than 60% of morbidity is caused by malaria, diarrhoea and intestinal worm infections, conditions associated with deficiencies in hygiene and environmental sanitation. In many communities there are no latrines and refuse disposal is unsatisfactory.

In 1993, following an agreement between Denmark and Ghana, the Volta Rural Water Supply and Sanitation Project became responsible for the provision of water supply and sanitation facilities in the Region. An investigation into people's behaviour, perceptions and willingness and ability to pay for improved water supply and sanitation was undertaken in the villages of Avega and Avevi, the worst affected by dracunculiasis in Akatsi District, which had populations of 619 and 549 respectively. Neither village has a health facility but both benefit from outreach services. The people are mainly crop farmers and charcoal-burners. Educational, housing and sanitation conditions are of a low standard. The main source of

water for domestic services in each community is a reservoir.

Knowledge, habits and amenities

With the aid of a structured questionnaire, 217 heads of household and 49 other reliable informants were interviewed. Three focus group discussions, involving 10 schoolchildren, 10 adult males and 10 adult females of average age 12, 48 and 35 years respectively, were held in each village.

The average monthly cash income was very low and only 37% of the people interviewed had received any formal education. Only 9% of the interviewees claimed to have access to latrines. The others said they defecated anywhere in the vicinity of the villages. Refuse collection bins or boxes were available to 29% of the interviewees, and 28% had access to a bathroom with a soakaway.

The only communal latrines were temporary shallow holes that were filled fairly often. In one of the communities a large log was used as a public latrine. The use of urinals is infrequent, as is hand-washing after defecation or urination. In many households the bathroom, a temporary

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structure, is used for both urinating and washing.

There are no proper waste storage facilities and no designated refuse disposal sites. Instead, waste is deposited indiscriminately behind houses, providing a breeding habitat for mosquitos. The people are unaware of the health hazards associated with this practice.

Bathrooms with soakaways are scarce, and the soakaways that exist are inefficient. In houses with no soakaways, wastewater escapes to the surrounding area. If a bathroom is in the centre of a compound and is used by many people the wastewater may run into nearby houses.

The interviewees appeared to have a substantial knowledge of good hygiene habits. Without prompting, some mentioned the need to keep their surroundings clean, to use latrines, to dispose of children's faeces properly, and to wash their hands with soap and water after urinating or defecating. After prompting, more than 88% mentioned some good hygiene practices. Unfortunately, the application of such knowledge is very limited:

- most people have indiscriminate defecation habits, causing pollution of water sources;
- children's faeces are not properly disposed of;
- some houses have animal pens but they are often dilapidated, and domestic animals are allowed to wander about the villages;
- crude waste-dumping practices are widespread.

Education and construction

Such behaviour can, of course, be changed through education (1). Following the study an intensified health education programme was recommended in order to heighten awareness of the importance of correcting unhygienic practices, using clean utensils, maintaining a clean environment, and filling soakaways with stones. Another recommendation was that the communities should receive help in identifying sites suitable for the dumping of all refuse where it could be regularly burned.

The Volta Rural Water Supply and Sanitation Project has collaborated with the Ghana Education Service and the Ministry of Health to make curriculum guidelines on hygiene education in schools. All schools have been encouraged to form health committees consisting of teachers, students and community representatives. The committees that have been established have received orientation on hygiene and have been given responsibility for planning school health programmes. Ten such committees have started constructing improved pit latrines using local resources,

The Project has a hygiene education component that covers hand-washing, the use of latrines, and the suitable disposal of children's faeces.

and hand-washing facilities consisting of taps attached to water pots have been financed by the schools development fund.

The Project has a hygiene education component that covers hand-washing, the use of latrines, and the suitable disposal of children's faeces. Among the Project's objectives are the following.

- After four years, 80% of the population in each target community should be able to recognize and describe health hazards associated with water supply and sanitation. This is to be assessed in terms of new knowledge acquired on the disposal of refuse and human excreta, the penning of animals, the cleaning of water sources, and other matters.
- After four years the members of the target communities should be regularly washing their hands and also doing so thoroughly at critical times. For instance, mothers and children should be washing their hands before eating or feeding, and after urinating or defecating. Hand-washing facilities should be available near latrines.

"We are just not being serious about latrines in this community because we think we can just go to the bush and do anything that pleases us. It's all laziness."

– Male participant in a focus group discussion.

"Many people don't know the importance of latrines and the problems their absence brings on the community, so they choose to defecate anywhere. Most of us go to the farm very early so we find it convenient to do it there."

– Female participant in a focus group discussion.

Latrine artisans are being trained in marketing skills so that they can promote household latrines. The communities are acquiring sanplat, Mozambique slab and other types of latrine. Community awareness of the importance of environmental sanitation is being reinforced, and training is being provided for committees charged with water and sanitation management and

with encouraging people to participate in promoting good hygiene practices. User education, conducted by environmental health officers, concentrates on excreta-related diseases, latrine operation and maintenance, the disposal of cleaning materials, and hand-washing.

Unfortunately, the incomes of the people in the villages do not match their expressed willingness to pay for a good permanent latrine in every house. Nevertheless, there is scope for encouraging the communities to provide themselves with improved household latrines constructed with locally available materials. Most participants in focus group discussions said they would not be able to pay token fees for the use of new latrines. Latrines would evidently not be properly managed in the absence of maintenance funds from sources outside the communities. Any attempt to impose user fees would probably lead to limited use of the facilities and a consequent deterioration of sanitation and health status.

It is expected that education and the provision of resources will lead to improved hygiene and that the prevalence of some diseases associated with shortcomings in these areas will consequently decline. ■

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Copepod filters for guinea-worm control – users have their say

H.A. Akinsola & O.O. Kale

In Nigerian communities where dracunculiasis is endemic a sewn filter is commonly used to remove the copepod intermediate host of guinea-worm from drinking-water. Unfortunately, it is not easy to handle, and the bucket lid filter used on a much smaller scale is comparatively expensive. A field investigation revealed that a large majority of people favoured the introduction of a user-friendly plastic funnel filter developed in India. Under Nigerian conditions this device requires the diameter of its outlet to be increased to permit a suitably fast flow of water and thus to avoid excessively rapid blocking of the monofilament filter material.

At the inception of the Nigeria Guinea-worm Eradication Programme in 1988, six major types of intervention were introduced in communities where dracunculiasis was endemic, with the objective of breaking the cycle of infection:

- surveillance;
- health education and community mobilization;
- case management;
- vector control with temephos;
- provision of safe drinking-water;
- use of household filters to remove the copepod intermediate host of the

guinea-worm from contaminated drinking-water.

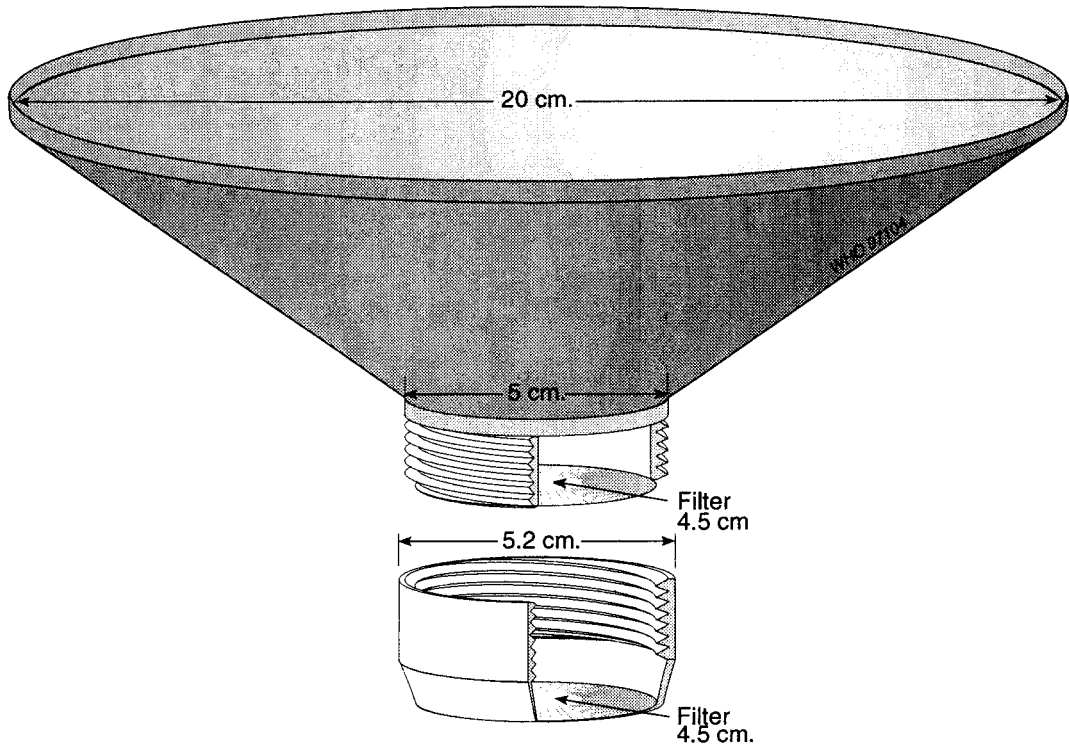
The filtering of water at the point of collection through monofilament cloth to remove the intermediate host is an important short-term measure in eradication campaigns if resources are insufficient for the provision of safe water in every community where the disease is endemic. It is a responsibility of village-based health workers to distribute filters to every household in such areas, to train the inhabitants to use them, and to monitor their use. Because supplies of monofilament cloth have declined it has become necessary to restrict its distribution to communities where the need is greatest and to adopt filter designs that require the material in reduced amounts.

Filtering out ...

Where the filtering of drinking-water is necessary, about 90% of people use the

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A type of funnel filter widely used for interrupting guinea-worm transmission



sewn filter, which is approximately 50 cm square and has two strings attached to facilitate handling. It is simple and inexpensive to produce but requires much filter material. The bucket lid filter, on the other hand, used by relatively few people, does not require a lot of filter material but is much more costly to produce.

Funnel filters have been in use in India since 1981, where they were introduced for removing cyclops. They are now widely used in India and in several African countries to filter drinking-water for the pro-phylaxis of dracunculiasis. One such filter designed in India consists of a plastic funnel with a base 20 cm in diameter, an apex 5 cm in diameter, and two layers of filter material 4.5 cm in diameter, one of

which is glued to the bottom end or apex while the other is glued to a cylindrical plastic attachment that is screwed to the apex (see figure).

A study was conducted in villages where endemicity was high in Nigeria's Oyo, Ogun and Ondo States in order to assess the acceptability and adequacy of this device. Youth corps members, trained as interviewers and assessors, demonstrated the use of the funnel filter to villagers at least twice and then completed a checklist on the skills shown by respondents while using it. They also issued a pretested questionnaire to 192 people selected by systematic random sampling, 148 copies of which were properly completed, predominantly by household members but also by

village-based health workers and supervisors. The questionnaire covered:

- personal data;
- awareness of the purpose of using filters in general and the funnel filter in particular;
- preferences for the different types of filter;
- the convenience and adequacy of using the funnel filter;
- whether interviewees would recommend that the funnel filter should replace the sewn filter and the bucket lid filter.

... *the best filter*

The main reason for using monofilament cloth was correctly identified by 89% of respondents as the removal of cyclops. The high level of awareness of the purpose of filters was undoubtedly attributable to the following aspects of the eradication programme.

- Large-scale distribution of bucket lid filters and sewn filters had occurred in all communities where dracunculiasis was endemic.
- With the help of the mass media, village heads, heads of household, schoolteachers, village-based health workers and others, messages had been disseminated on the causes, prevention and methods of eliminating the disease.

About 90% of respondents were aware that a funnel filter had two parts, and, when asked what kind of container was most suitable for use as a funnel filter, a similar proportion correctly mentioned a keg or pot with a narrow mouth. With regard to preferences, the funnel filter was favoured by 38% of respondents, of whom 85% considered it very easy to use,

80% believed it would be adequate for use in their communities, and 81% said they would be prepared to recommend that it should replace the other types of filter. However, 36.5% of respondents said they preferred the bucket lid filter and 25.5% that they preferred the sewn filter. That the sewn filter was the least popular, notwithstanding its use by over 90% of respondents, was possibly a reflection of its being less easy to handle and use than either the bucket lid filter or the funnel filter.

It emerged that, on average, 82% of respondents adopted correct procedures in so far as they selected a container with a narrow mouth, dismantled and washed the device before using it, and washed it after use. On being asked to comment generally, 56% of the respondents remarked that the funnel filter was portable and easy to use and maintain, while 44% said that its outlet was too narrow, that water flowed out too slowly, and that this would result in frequent blockage of the filter pores with silt and colloidal soil suspensions.

The introduction of the funnel filter as an alternative to the bucket lid filter and the sewn filter would evidently be welcomed by people in the areas of Nigeria covered by the present study. However, it is suggested that the diameter of the outer end of the funnel should be doubled so as to reduce resistance to the flow of water. It should be noted that there is a risk that people who collect filtered water in buckets will recontaminate it, especially if they are children. Concerted health education campaigns perhaps offer the best hope of overcoming this hazard.

It would be of great value if the production and distribution of funnel filters were taken up by nongovernmental organizations and others wishing to help communities where dracunculiasis is endemic. Furthermore, state and local government authorities should be made fully aware of the need to ensure the uninterrupted supply, replacement and monitoring of the filters. ■

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Hope for eradication

Dracunculiasis (guinea-worm disease) is the only parasitic disease that may be totally eradicated from the world in the near future. Although widely distributed at the beginning of the 20th century, the disease is now found only in sub-Saharan Africa, the Arabian peninsula and India. . . . Horribly painful and incapacitating, [dracunculiasis] can affect 50% or more of the population in areas where the disease is endemic. Incapacity results from pain and secondary infections associated with the emergence of guinea worms (which are 60–100 cm long and 0.2 cm in diameter) through the skin of the hands, feet or other parts of the body. Those affected do not develop immunity, so people may suffer repeatedly from the disease. . . . WHO, together with national programmes, is taking measures to break the transmission cycle and put an end to the scourge.

- *The world health report 1996 – Fighting disease, fostering development.* Geneva, World Health Organization, 1996: 39–40.