

## Integrating Hygiene Edn with Water Supply and Sanitation

by Marieke T Boot

THE need for hygiene education directly follows from the general objectives of water supply and sanitation projects. These are:

- to help prevent water and sanitation-related diseases; and
- to help improve living conditions.

To meet the objectives, it is not sufficient just to construct improved water supply and sanitation facilities. New facilities have to be used, continuously by everybody and in a safe way. This requires an interest from both communities and officials in having safe, reliable and accessible facilities constructed, used and maintained. Hygiene education aims to be instrumental in this

twined, as in discussions on the siting of a new water point, the day-to-day care of facilities and the safe disposal of human excreta.

### Related Areas

Water supply and sanitation projects may often be embedded in other programmes, such as slum improvement or low cost housing, solid waste disposal, surface water drainage and conservation of the natural environment. In such cases, hygiene education can also cover the wider aspects involved, to help maximize potential health benefits.

Conservation of the natural environment is becoming increasingly important in helping to protect the quality and reliability of water supply sources.



Girl children are key in creating good hygiene habits.

process as it promotes an optimum use of water supply and sanitation facilities.

Thus, technical aspects and educational aspects together create conditions for meeting the general project objectives, which can be further elaborated as follows:

### Improving Living Conditions

Adequate water and sanitation are basic human needs. Water and sanitation projects address these needs, and so help to improve living conditions. New water supplies may result in:

- less burden of water collection, reducing the overall workload, especially of women and children;
- time and energy gains used for better family care, schooling and productive activities;
- use of surplus water for small-scale economic activities.

### Linking Technical Facilities and User Practices

To maximize potential benefits of water supply and sanitation projects, technical and behavioural measures must go hand in hand. Benefits of a safe water supply will easily be lost if water is not collected and handled in such a way as to prevent contamination before it is drunk. And latrines may become a hotbed of diseases when they are not used and cleaned properly. For example, research in rural Thailand indicated more reported diarrhoeal disease in households where women use latrines than in those where defecation took place in the field.

### Community Participation

As an integrated component of water supply and sanitation project, hygiene education is closely linked to community participation. Community participation here refers to active involvement of the men and women in practice, community participation and hygiene education activities are often inter-

linked, as in discussions on the siting of a new water point, the day-to-day care of facilities and the safe disposal of human excreta.

However, the water reserve is being increasingly threatened by the lowering of underground water level during the 2-3 months of the dry season and unilateral withdrawal of the Ganges water.

On the other hand, the

# WATER AND SANITATION

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## Rural Drinking Water and Sanitation Situation in Bangladesh

by Philip Wan

With regards to sanitation and hygiene, encouraging developments have taken place in the recent years. The political commitment has been made at the highest level, with the inauguration of the February 1992 conference on social mobilization for sanitation by the Prime Minister. These initiatives need to be accelerated and sustained, if sanitation is to become a way of life.

THE International Drinking Water Supply and Sanitation Decade (1981-1990) stimulated Bangladesh to achieve practically universal access to safe drinking water, thus adding to the quality of life of the communities. The Bangladesh water programme, supported largely by the Danida and SDC, has many positive characteristics, including appropriate and affordable technologies, elements promoting sustainability, and community involvement, which can be a model to other developing countries. However, inadequate use of safe water, poor hygienic practices and pollution of the environment by human excreta have resulted in only marginal impact in the incidence of diarrhoeal diseases. The increasing use of sanitary latrines in the rural areas, particularly in the rural areas, is an encouraging trend.

Two recent national surveys, conducted in 1991, 1993, has shown that about 95 per cent of the rural population drink tubewell water and 85 per cent have access to a tubewell within 150 metres. This improvement has significantly reduced the burden of women and girls who are primarily the water collectors. About 90 per cent of the tubewells are in working conditions, however, stagnation of waste water were observed at about 15 per cent of tubewell sites, and 30 per cent of tubewell platforms require repair, only 16 per cent use tubewell water for all domestic needs as may still resort to unprotected sources for non-drinking needs. Ingestion of water, for example during swimming in polluted pond waters, is prevalent. Furthermore, studies have also revealed the high level of pollution of drinking water from the water source to the mouth, due to unhygienic home management of water. This should be addressed more intensively through hygiene education.

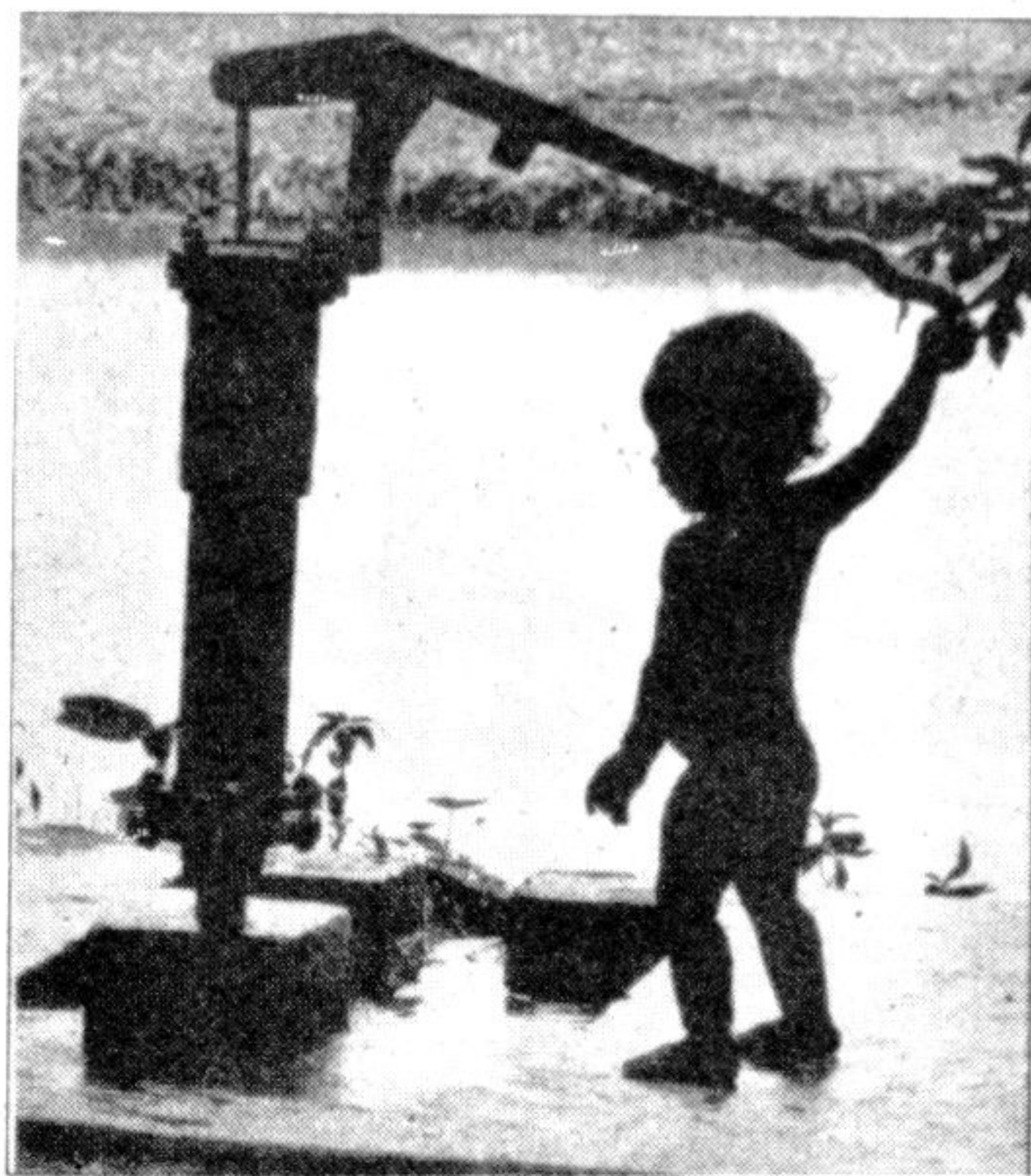
Community involvement and the private sector play important roles. Communities contribute partly to the costs of water systems installed by the Government. This however, can and need to be further increased for sustainability. The Department of Public Health Engineering (DPHE) has, through pilot studies, demonstrated that the community can buy spare parts and maintain suction tubewells; this system will shortly be introduced nationally. The DPHE tubewell mechanics will attend only of the major repairs, thus providing them more time to motivate the people to improve their hygienic practices and human excreta disposal.

The Bangladesh Standards

and Training Institute will provide a national standard for the suction (No 6) and Tara pumps by end 1994. This will promote the local manufacture of improved quality pumps to meet the increasing public demand. In fact, as a result of the transfer of low cost and simple drilling technology by DPHE of the last decade, about 1.5 million private suction pumps have been installed in the high water table area. Communities should be further encouraged to provide for their own tubewells in this hydrogeological belt.

Although the tubewell coverage is high nationally, with an average of 90 persons per pub-

lic tubewell, underserved areas still exist, particularly in the coastal belt, parts of the Chittagong Hill Tracts and low water table area, where a tubewell serves more than 200 persons. Investment in rural water supply installation should therefore be directed to these underserved areas to reduce disparity.



Making the link between technology and survival.

A major challenge is to develop low cost and simple technologies to rehabilitate suction tubewells affected by water table declining below the suction limit during the peak dry season of April to May, due to increased irrigation abstraction. Presently, about 20 per cent of the country is affected; a study is being commissioned by DPHE-UNICEF to predict future trends. Research and Development works are underway to address the technological issue.

conference on social mobilization for sanitation by the Prime Minister. These initiatives need to be accelerated and sustained, if sanitation is to become a way of life.

At the end of 1993, 33 per cent of the rural population have access to sanitary latrines, where the excreta are confined into a pit, thus keeping the environment free from pollution; one third have insanitary latrines and the remaining practice open defecation. The increase in the use of sanitary latrine in the last few years is primarily the result of the large number of do-it-yourself (homemade) covered pits latrines which constitute about 60 per cent of the hygienic latrines. About 90 per cent use the latrines regularly; however, use by children is below 10 per cent. This is an area which ne-

eds increased attention. Privacy and convenience, particularly by female members, followed by health and status are reasons for latrine usage. About 28 per cent of the rural families wash their hands using ash or soap after defecation and 3 per cent use soap for hand washing before handling food.

The homemade pit latrine is both acceptable and affordable by many families. It is constructed, using materials available at home, and consists of a pit of 2 metre deep covered by a wooden squatting platform which incorporates a hole; the latter is covered with a lid when the latrine is not in use. A 1993 WHO study showed that 43 per cent of the families spend less than Tk 100 for homemade latrine. For the better-off families, the waterless latrines sold by DPHE and the growing private producers have proved to be popular. About 35 per cent spend less than Tk 500 on the waterless latrine.

Despite the high water supply coverage, diarrhoeal disease and epidemic are still prevalent. Studies worldwide have shown that improved drinking water alone has limited impact on diarrhoeal incidence unless it is complemented by improved sanitation and hygiene.

Unlike water, which is a very high felt-need, sanitation is generally a less attractive issue and given low priority in the context of many development programmes. Needs assessment studies have shown that knowledge and information on low cost sanitation have not been adequately passed on to the community.

With the growing national consciousness about the need to protect the environment, improved disposal of human excreta should receive the highest priority as it directly affects the lives of millions, including those who practice good sanitation but share the same environment. About 260,000 children under five die annually of diarrhoeal diseases. The technology is at hand. Useful experiences have been gained which can be replicated. Many channels are available to interact and motivate community members, such as Union Parishads, the schools network, the NGO communities, and field level workers. Increased commitment by decision makers at all levels, and concerted actions at the sub-national levels to intensify activities through existing channels and required to give sanitation promotion the big boost it deserves.

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## Rural Women in Water and Sanitation Programmes

by Bilqis A Hoque, K M A Aziz, Kh Zahid Hasan and M Y Patwary

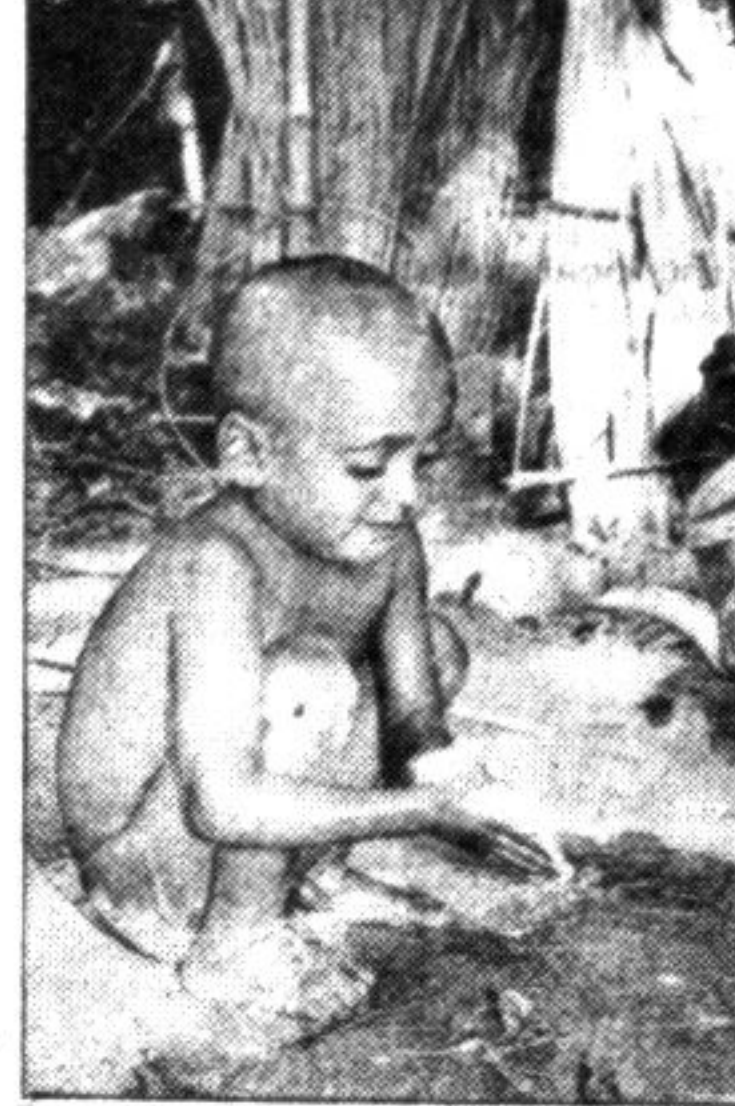
ALTHOUGH investments in water supplies has grown rapidly in the post-war years, sanitation has been largely neglected in 1985 the percentage of population in rural areas of developing countries with adequate access to sanitation facilities was 18 per cent compared to 41 per cent in water supply of the same area in the South Asia.

This study presents benefits experienced in a rural sanitation programme by involving local women in its different stages. The sanitation programme is a component of the Mirzapur Handpump Project which aims at mainly to evaluate the health impacts of integrated water, sanitation, and hygiene education intervention.

The intervention population comprised approximately 800 households and 4856 people. About half of the people were female and approximately 89 per cent of the adult women were housewives.

Around the end of 1984 the people of intervention area was formally approached with the concept of latrines. More than 97 per cent of the people are habituated in fixed place, unsanitary way of defecation practice. Following this community approach of motivation extensive door to door visits were undertaken to make the housewives realise the importance of latrines in health benefits.

Housewives of every household were requested to contribute about US \$10 for a latrine, which is about 30 per cent of the actual cost. After some motivation the relatively more wealthy families agreed to buy latrines, and these served as demonstration latrines to encourage other household to invest.



Towards better health.

Total 754 households agreed to take latrines and 2.6 per cent of the households paid the requested full payment. But 54 per cent (409) of the households contributed some money with the agreement of paying more at later dates. Since pro-

ject staff contracted housewives it was them who motivated the male members of their families to take the latrines.

The children in the intervention area experienced 25 per cent less diarrhoea than the children in the control area and there is little doubt that such an achievement could not be possible without success in the sanitation programme. In this study local women were found to participate in all phases of the project.

There are obviously economic constraints in a poor community such as Mirzapur, and it is likely that other household expenditures were given priority over sanitation. Thus, it was encouraging to observe that the housewives of the majority of the households could convince their male members to accept the proposal. Studies could be undertaken for recovery of full cost by providing alternate cheap technologies or system for collection of money in instalments.

Women's participation in site selection and latrine installation had implications for likeness, comfort, convenience, and ownership feelings, and hence, for effective use.

Women in the fencing construction groups helped the project to promote the use of latrine in women community where male cannot get easy access due to purdah tradition. Furthermore, when household women saw that the women labours were constructing their fences they came forward to help them in every possible ways.

The participation of local women in the emptying of pits was another significant achievement for the project. Desludging

of the pit was not foreseen and so its cost was not included in the project budget. At that closing period of the study the project could not have afforded to hire the professional scavengers who intentionally demanded a high cost and were planning to take actions against the project.

Local women helped out the project at 20% of the demanded cost and the work within the span of the framework. Desludging by local women has an implication for sustained and effective technology transfer in the community. Because, desludging in general, belongs to a professional group of the society. Local women doing the job without objection from the community could be taken as an indication for community acceptance of such act.

The writers are associated with the International Centre for Diarrhoeal Disease Research, Bangladesh.

## Still Miles to Go before Attaining the Goal

by Rashed Mahmud Titumir

According to a report, prepared for the Unicef, 25.6 per cent rural households have a sanitary latrine.

The inadequate coverage leads to indiscriminate defecation near homes, in open fields, river banks and ditches.

Use of tubewell water by 96 per cent population is being shown as a huge progress in the rural water supply and sanitation programme by the concerned agencies.

To evaluate how successful we are with water and sanitation system, it is not enough to show the numbers of tubewell. We need to know whether they are used, and if so, by whom, to what extent, for what purpose, and how.

Despite availability of hand pump system, use of water from it still remains low.

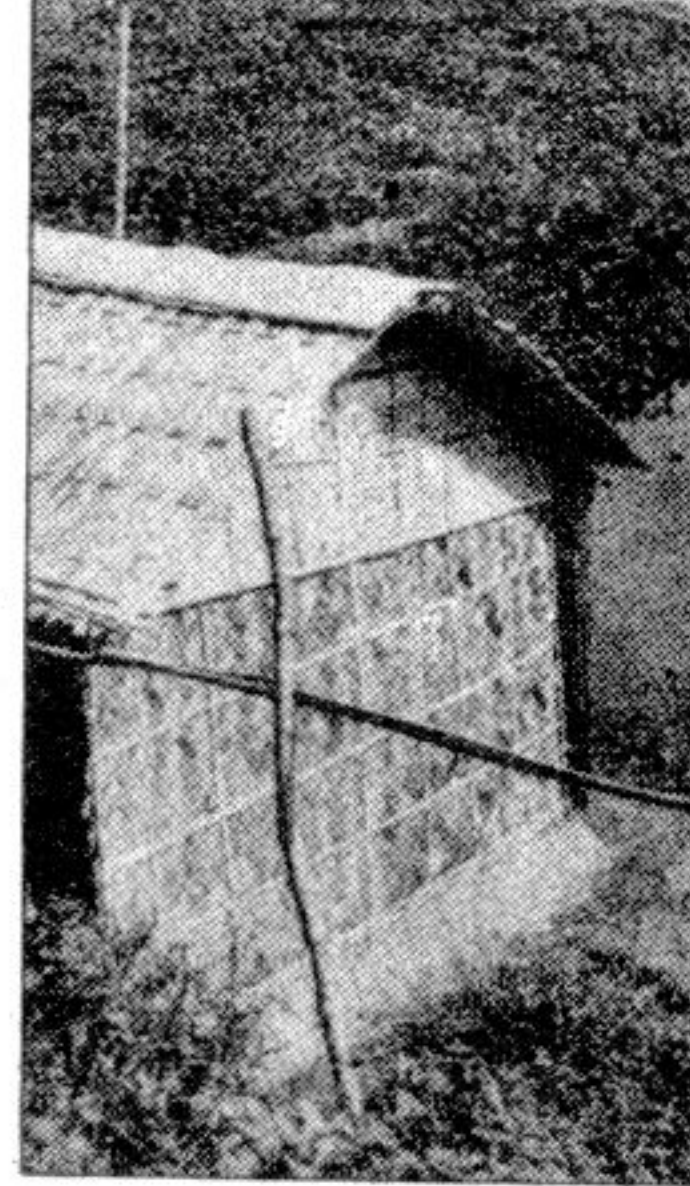
In the rural area, according to a study of the Unicef, only 16.3 per cent of households use tubewell water for all domestic needs.

Sanitary means of excreta disposal in Bangladesh is quite poor. Although some studies have claimed accelerated access and use in recent years. However, people, both for and against are of the same opinion that things need to be improved.

years old, each year.

The quality and the maintenance of the tubewells are primarily the concerns of women. However, few women have been trained or made familiar with such knowledge.

From the date, it is clear



Hanging latrines — a major threat.

One of the foremost causes of the widespread out-break of diarrhoeal diseases during floods is the contamination from flooded latrines.

Another study says that 80 per cent of diseases in Bangladesh is related to unclean water. Diarrhoea is the underlying cause of death of 2,50,000 children under five

that the poor, specially women and children are the main victims of disease, directly attributable to lack of the essential services.

Access to safe water and adequate sanitation are basic human rights and are fundamental to improvements in human health, happiness and development. Yet today, the

benefits of these basic services, like sanitary latrines, are confined to only 26 per cent of the total populace.

So, the achievement, we have made in the areas of water and sanitation still leaves no scope for us to be very complacent.

To be successful in our hygiene programmes, we have to take into account human behaviour. So to start with and to reach the target, we need to investigate what behaviours are posing health risks requiring to be addressed by hygiene education activities.

Before starting new water supply sanitation and hygiene education activities, experts feel it necessary to understand the existing social, economic and cultural setting. They maintain it these to be the foundations for the success of the projects.

Many experts have demonstrated that water and sanitation facilities are necessary, but not sufficient factors, to bring about improvements in health.

They say that measuring the health impact of water and sanitation programmes may only be useful, if it is based on appropriate objectives and use correct indicators.

The experts feel that further agreements needs to be reached on the approaches and methods for involving the community.

According to them, sustainable community programmes are hindered by district level government staff who do

not know how to deal with community involvement and management.

Last but not the least, if the access to and control of resources by the majority do not increase, the target cannot be attained and sustained.

The challenges are many, although many things have been streamlined, still there are many miles to travel and thousands of barricades to overcome before attaining the desired objectives.

Problems in Water Supply	
Problems	Related Issues
Access	Distances between the source and the user's household The time cost of water collection Social differences for selection of water sources by males, females, (castes)
Quantity	Number of users per source Minimum quantity of water required to show health impact Data on water use patterns and their determinants
Quality	A generally agreed upon definition of microbiologically safe water
Beliefs	User's beliefs concerning hygiene and water use
Appropriate technology	Water quality at its source and during storage
Operation and Maintenance	Ownership and responsibility Lack of skills and resources Women's participation
Community participation	At all levels of the projects
Integration of water supply	with other services

Problems in Sanitation	
Problems	Related Issues
Inadequate coverage	Low priority for sanitation Poor maintenance Inadequate low cost Inadequate appropriate technology and lack of options
Lack of public health awareness	lack of perceived needs (demands) Low usage Abuse of latrines Need to link sanitation to water supply Lack of understanding of existing practices and their determinants Lack of understanding of health implications of disposal of other domestic wastes, including animal waste and solid waste, and waste water Inadequate disposal of children's faeces
Lack of participatory approach	Lack of community participation at all levels: design and planning, implementation, financing and maintenance, and monitoring and evaluation
Possible health hazards from waste disposal technologies	Ground water pollution by on-site sanitation Use of night soil for fertilizers