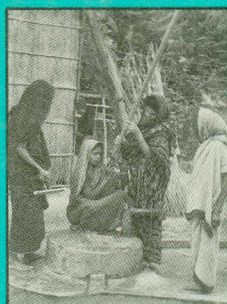
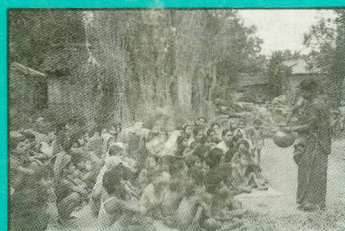
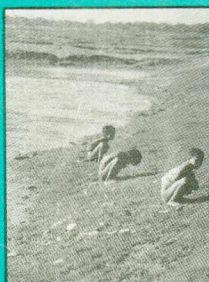
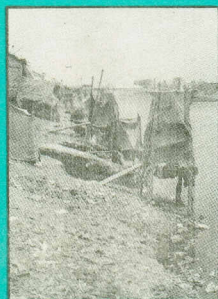


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Partnership for Improving
Water, Sanitation, Solid Waste and Hygiene
Education System in Rural Bangladesh



Environmental Health Programme, Community Health Division
International Centre for Diarrhoeal Disease Research, Bangladesh

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Water, Sanitation, Solid Waste and Hygiene
Education System in Rural Bangladesh**



**Bilqis Amin Hoque
Shafiul Azam Ahmed
M.H. Munshi
A.H. Baqui
A.M. Zakir Hussain**



CENTRE
FOR HEALTH AND
POPULATION RESEARCH

**Environmental Health Programme, Community Health Division
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PREFACE

The International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) is an autonomous, nonprofit making organization for research, education, training and clinical service. ICDDR,B's mandate is to undertake and promote research on diarrhoeal diseases and the related subjects of nutrition and fertility, with the aim of preventing and controlling diarrhoeal diseases and improving health. ICDDR,B has also been given the mandate to disseminate knowledge in these fields of research, to provide training to people of all nationalities and to collaborate with other institutions in its fields of research. The Environmental Health Programme of ICDDR,B aims at working on environmental health problems, including descriptive and intervention studies, risk factor analysis, other applied research studies, promotion and dissemination of research findings, and appropriate training.

This multi-agency project, approved by the Ministry of Local Government, Rural Development and Cooperatives (MLGRD&C), is a team effort of the Government of Bangladesh (GOB), NGO, UN, donor and ICDDR,B members concerned with water, sanitation and hygiene education intervention and work for sustainable development of this sector.

Mr. Syed Alamgir Farrouk Chowdhury, Secretary, MLGRD&C, has participated in the planning and at major stages of the Project, and has conducted meetings to understand the constraints experienced in implementing the GOB programmes in this project. Overall, he has provided necessary guidance and support to this project. MLGRD&C has also provided support as needed.

Mr. Amin Uddin Ahmed (Department of Public Health Engineering), and Mr. Abdul Gofran (Local Government Engineering Department) are co-investigators, and provided inputs as required. Mr. Ashraf Hossain (Thana Nirbahi Officer, Singair) is a key partner in this team work. The Concerned Women for Family Planning is a collaborating NGO. The Water and Environmental Sanitation Section of UNICEF, Dhaka, is also collaborating.

Dr. K.M.A. Aziz, Dr. R. Bairagi and Professor D. Habte of ICDDR,B, Professors R.E. Black and R.B. Sack of Johns Hopkins University, USA and Mr. P. Tschumi and W. Meyer of Swiss Development Cooperation have advised the Project in planning and implementing its activities.

Chairmen of Singair Thana (Mr. Muhammad Mohidur Rahman, Mr. Fazlul Huq Khan, Mr. Dewan Mohammad Ali, Mr. Abdul Qader Dhali, and Mr. Abdul Ali) participated in planning and implementing the project activities. Mr. M. Mohidur Rahman and Mr. Abdul Ali, in particular, came up with innovative ideas that often provided guidance to the Project.

Lastly, the project and NGO workers have made this study possible. Mr. Abdullah Al-Mahmud, with the assistance of Mr. Shabbir Hossain, coordinates the activities in Singair. Mr. Shamsul Islam Khan, Mr. Zahid Iqbal and Mr. M.A. Rahim edited this report.

ACKNOWLEDGEMENTS

This project was supported by the Swiss Development Cooperation (SDC) and the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B). The ICDDR,B is supported by countries and agencies which share its concern for the health problems of developing countries. Current donors include: the aid agencies of the Governments of Australia, Bangladesh, Belgium, Canada, China, Denmark, Germany, Japan, the Netherlands, Norway, Republic of Korea, Saudi Arabia, Sri Lanka, Sweden, Switzerland, Thailand, the United Kingdom and the United States; international organizations including Arab Gulf Fund, Asian Development Bank, European Union, the United Nations Children's Fund (UNICEF), the United Nations Development Programme (UNDP), the United Nations Population Funds (UNFPA) and the World Health Organization (WHO); private foundations including Agha Khan foundation, Child Health Foundation, Ford Foundation, Population Council, Rockefeller Foundation and the Sasakawa Foundation and private organizations including American Express Bank, Bayer A.G., CARE, Family Health International, Helen Keller International, The Johns Hopkins University, Macro International, New England Medical Centre, Procter Gamble, RAND Corporation, SANDOZ, Swiss Red Cross, The University of Alabama at Birmingham, the University of Iowa, and others.

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Table of Abbreviations

BRAC	Bangladesh Rural Advancement Committee
CWFP	Concerned Women for Family Planning
DPHC&DC	Directorate of Primary Health Care and Disease Control
DPHE	Department of Public Health Engineering
EHP	Environmental Health Programme
GOB	Government of Bangladesh
HML	Home-made Latrine
ICDDR,B	International Centre for Diarrhoeal Disease Research, Bangladesh
LGED	Local Government Engineering Department
MLGRD&C	Ministry of Local Government, Rural Development and Cooperatives
MOHFW	Ministry of Health and Family Welfare
NGO	Non-government Organization
SDC	Swiss Development Cooperation
SOC-MOB	Social Mobilization
TARD	Technical Assistance for Rural Development
TNO	Thana Nirbahi Officer
TOR	Terms of Reference
UN	United Nations
UNICEF	United Nations Children's Fund
UP	Union Parishad
VIP	Ventilated Improved Pit
WATSAN	Water and Sanitation
WS	Water and Sanitation
WSSH	Water, Sanitation, Solid Waste and Handwash

1

INTRODUCTION

1.1 Background

Evidences accumulated during the International Decade for Drinking Water Supply and Sanitation suggests that maximum health benefits will only occur if facilities are functioning properly and are well utilized (1, 2). There is a vast range of direct and indirect benefits which water and sanitation facilities are likely to provide (3). Direct benefits may include reduction in morbidity or mortality from several diseases, increased time for women to engage in non illness-related child care activities, enhancement of agriculture and commerce, improved school attendance, reduced cost for health care, freeing of health service for attention to other problems, and an easing of the physical burdens of daily life. The indirect benefits are potentially more numerous and diverse, although these may be difficult to document or quantify (4)

★ (Bangladesh is one of those countries where surface water is abundant and within convenient reach for most users, but faecal pollution of this water is unacceptably high. The country, therefore, has an extensive programme for tubewell/handpump water supply in the rural areas. During the International Decade for Drinking Water Supply and Sanitation, in which the population increased from about 90 million to 110 million, access to safe water increased in the rural areas from 37% to 96% (5). The access reported, however, is based mainly on sources of drinking water. In Bangladesh, only 16% of the households use tubewell water for domestic purposes besides drinking. In comparison, the sanitation coverage is still low, and only 26% of the households possess sanitary latrines.

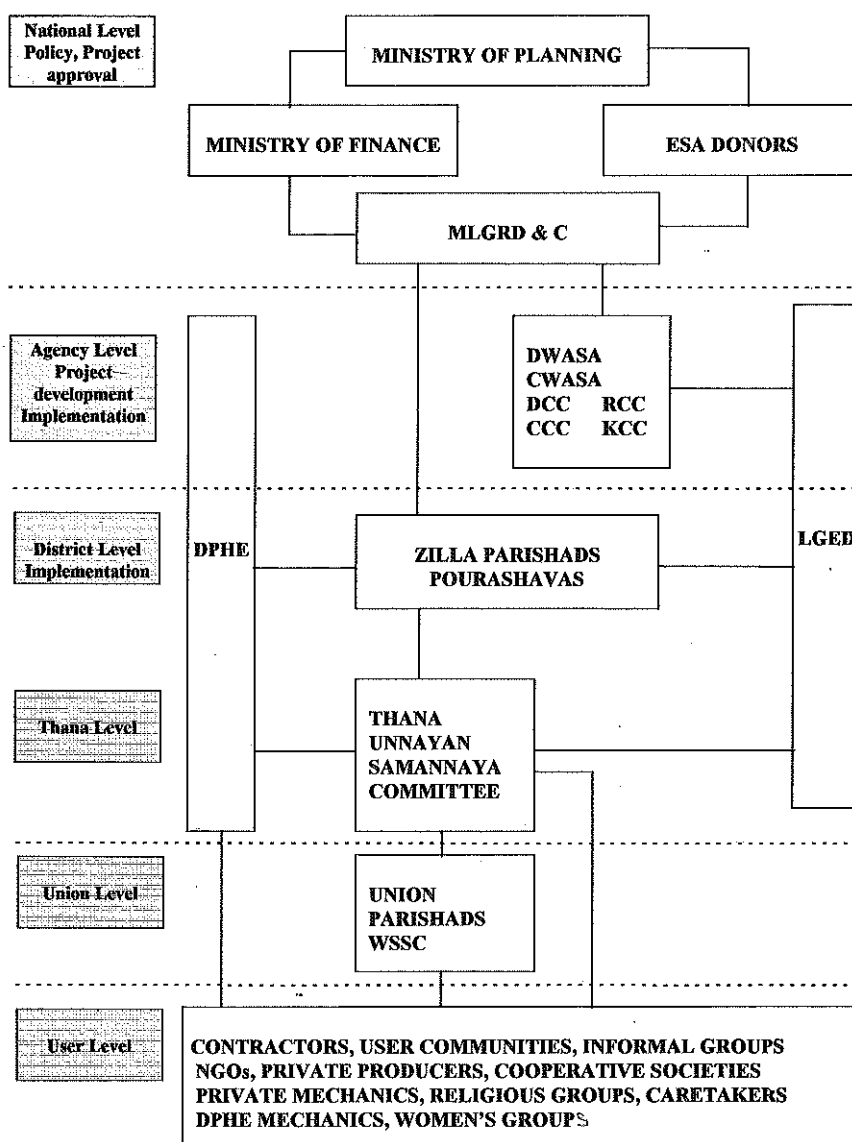
(Water-related diseases still remain the major cause of mortality and morbidity in the country (6). Realizing the need for effective and sustainable integrated water, sanitation, solid waste and hygiene education (WSSH) intervention, the Government of Bangladesh launched its "Social Mobilization for Sanitation" (SOC-MOB) project in late 1994. The objective of the SOC-MOB Project was to improve excreta disposal, personal hygiene practices, and the use of safe water for all domestic purposes aiming at reducing diarrhoeal diseases and improving the quality of life of the rural people (7).

The strategies of SOC-MOB are to increase the involvement of the community people in planning and implementation of WSSH programme, strengthen programme communication and training, forge alliances with various partners, and conduct advocacy for political and social commitment.

Formation of the Water and Sanitation (WATSAN) committees in every union (the lowest local government unit comprising several villages) has been one of the major steps. The WATSAN committees are chaired by their respective Union Parishad (UP) chairmen. It may be mentioned that the Ministry of Local Government, Rural Development & Cooperatives (MLGRD&C) takes care of this sector in the rural areas, mainly through its Department of Public Health Engineering (DPHE) with

specific support from the Local Government Engineering Department (LGED). The Thana is the lowest level of the Central Government administration in the rural areas, while the Union, with an average population of about 25,000 people, is the lowest level of self-government (Fig.1). In 1993-1994, the local government system was reorganized to provide more power and local accountability to the Union Parishads which liaise and work closely with the government administration.

Fig 1. Existing Institutional Arrangements



The WATSAN committees have been given the responsibilities of increasing the demand for sanitary latrines and disseminating water, sanitation and health messages. The WATSAN committees are the bottom tier of a continuous line-up starting from the grassroots to the Ministry level. These committees act as the channels for ventilating the local demands, complaints and innovative ideas to the government officials. Implementing and operationalizing these committees are still in the pilot phase.

MLGRD&C has approved the Environmental Health Programme (EHP) of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) to undertake, in collaboration with the GOB agencies, an action research project entitled "Action Research and Impact Studies on Community Water, Sanitation and Hygiene Education Interventions in Rural Areas." The Project was launched in early 1995. The Ministry has formed a National Task Force on Action Research and Impact Studies on Community Water, Sanitation, Solid Waste and Hygiene Education Interventions in Bangladesh to discuss the experiences gained in applied research in this sector. The members include GOB, UN, donor agencies and ICDDR,B. The objectives of the Task Force are to facilitate (a) coordination of activities of different agencies working in the field of rural and urban water, sanitation and hygiene education, and (b) sharing of the findings of the projects and experiences to bridge the gap between the rural and urban sectors and to formulate the future programmes and policies in this regard.

Studies on WSSH interventions have reported significant reduction of diarrhoeal diseases in Bangladesh (8, 9, 10). The Mirzapur project (8) attempted specific community participation in selected aspects (11), achieved encouraging results (8) during and after the project period (12), but the WSSH provisions were provided almost free of cost. Overall, studies which have shown positive impact were conducted under conditions where the WSSH provisions were provided by the project at free or token cost and, real community and GOB participation was hardly incorporated during the study periods. The research and real challenge is to conduct a widely replicable and sustainable WSSH programme.

The SOC-MOB programme is a well-conceived programme with sustainability potential, there is still scope for applied research on the operational issues, coordination and collaboration among allies, community participation, WSS education/promotion and evaluation of impacts (behavioural, health, and environmental). Currently, the project (action research) activities are being carried out in partnership with the Ministry of Local Government, Rural Development & Cooperatives, DPHE, LGED, Director General of Primary Health Care (Ministry of Health & Family Welfare), and ICDDR,B.

This report presents specific experiences gained and activities initiated during February-October 1995 in Singair. It is expected that this dissemination effort will have implications for planning, programming and policy formulating at the local, regional and global levels concerned with similar activities.

1.2 Project Goal

The goal is to contribute toward the GOB's efforts for improved and sustainable WSSH conditions.

1.3 Project Objectives

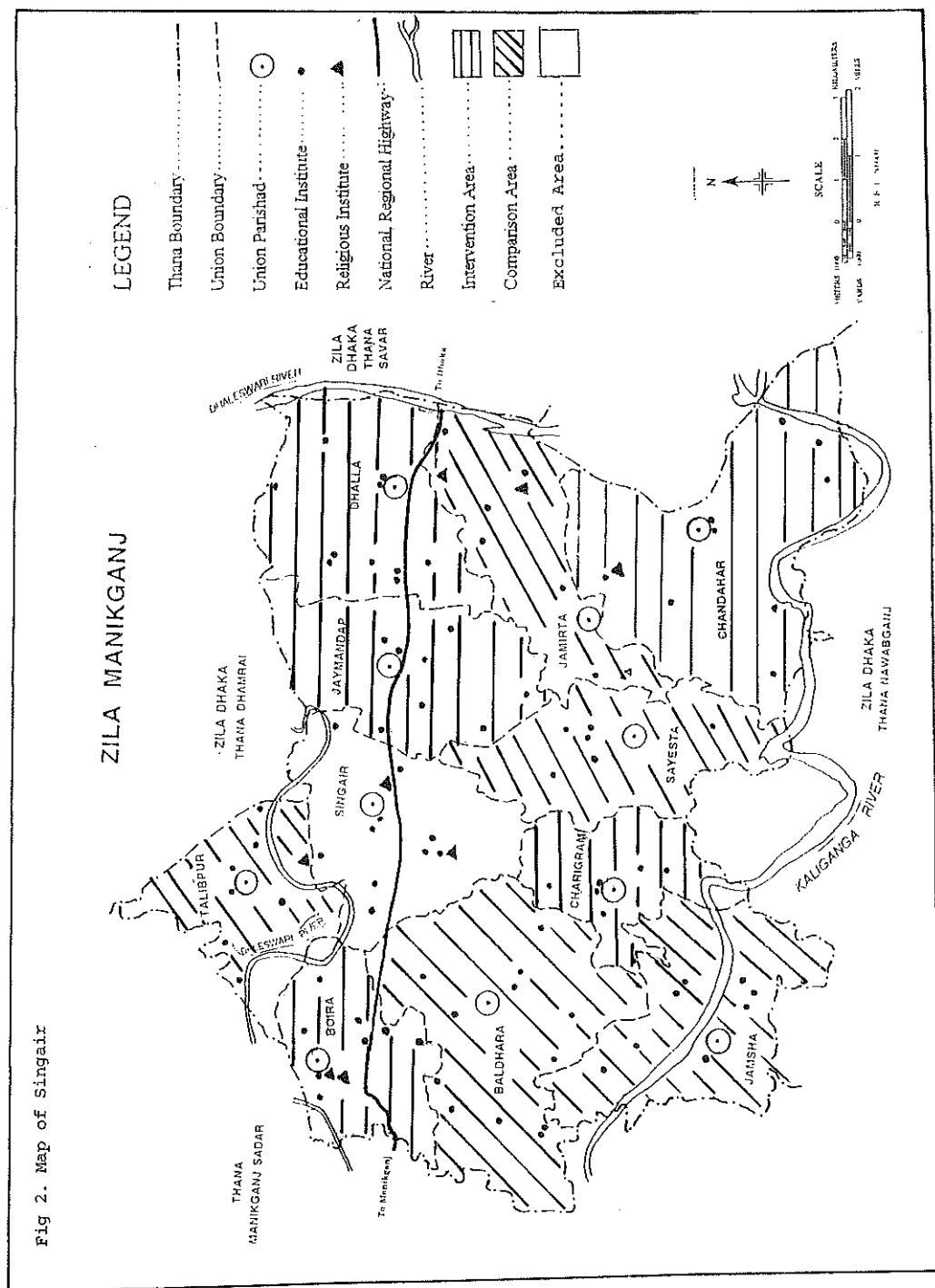
The objectives of this project are to conduct applied research on SOC-MOB and the related WSS programme to further develop them and to assess the health and behavioural impacts.

1.4 The Project

After evaluating several other prospective thanas, Singair thana in Manikganj was selected as the project site based on its poor sanitation coverage and low-lying terrain. Of the 11 unions of Singair thana, 10 were selected for the project activities. Singair union with the thana headquarters was excluded due to its relative urbanization. There are about 230,000 people in those unions. The 10 selected unions were randomly divided into comparison and intervention areas with five unions in each group (Fig. 2). The five intervention unions are Joymontop, Dhalla, Chandhar, Baira, and Charigram. The five comparison unions are Jamirta, Baldhara, Jamsha, Shayestha, and Talibpur. The intervention unions will receive the project-facilitated SOC-MOB interventions and other GOB programmes (as stated in GOB documents) in the first 18 months, while the comparison areas will be left to go on as in other parts of the country. This comparative longitudinal study will help detect the benefits of SOC-MOB in addition to developing the pilot-tested guidelines. After an 18-month period, the whole thana will be included under project intervention. The process and impact (behavioural and health) indicators will be monitored in both comparison and intervention unions throughout the study period.

The activities of this longitudinal community participatory project will be monitored and evaluated using the baseline and various needs assessment surveys and cross-sectional surveys at the household, institution and special community group levels. Environmental samplings of water and hygiene practices are included. Development of specific appropriate technologies, communication materials and technique and pilot-testing of various strategies for an improved WSSH system will be attempted as well.

Fig 2. Map of Singair



EXPERIENCES GAINED DURING FEBRUARY-MAY 1995

2.1 Selected data from baseline/needs assessment summary

Ninety-seven percent of the 3,220 families under study claimed that they drank tubewell water. About 38% reported that they used tubewell water for bathing purposes. Of these study families, about 11% had a ring slab (sanitary latrine), 9% home-made (acceptable as hygienic) latrine, 1% septic tank (sanitary latrine), and 79% open (unsanitary) latrines. Specific characteristics of the study population are shown in Table 1. The socioeconomic, demographic, and water and sanitation characteristics were found to be similar to other rural parts of the country.

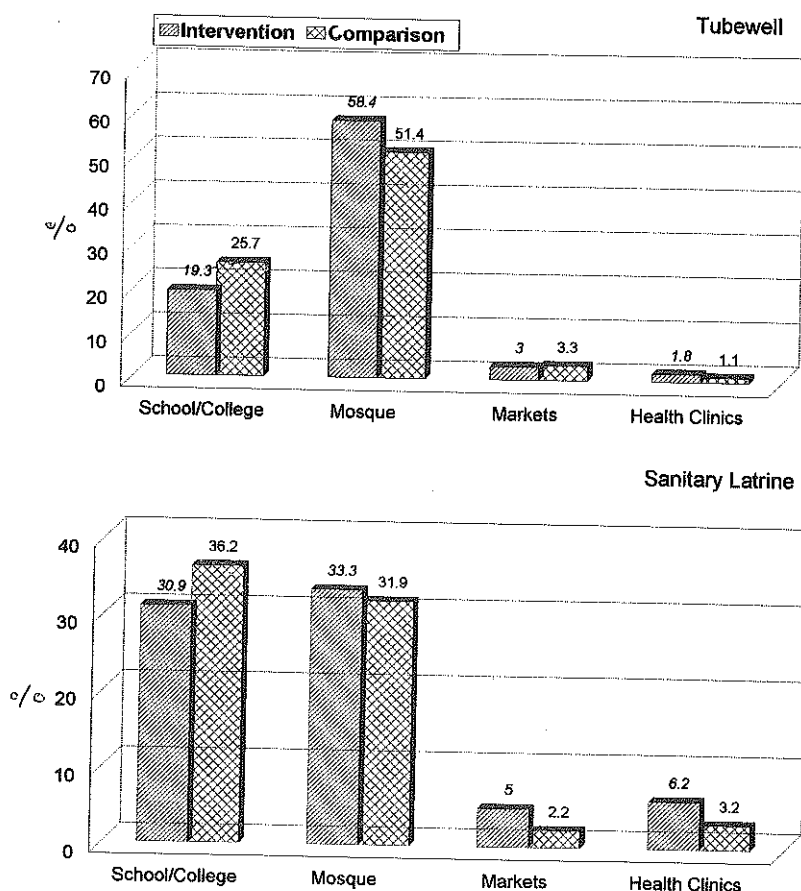
Table 1 : Characteristics of Population Studied in Singair

Characteristics		Intervention Unions	Comparison Unions
No. of Surveyed Households		1,633 nos	1,587 nos
Mean Family Size		5 persons	6 persons
Education of Family Head			
Male	No schooling	61 %	65 %
	Schooling	38 %	36 %
Female	No schooling	75 %	84 %
	Schooling	25 %	16 %
Profession of Family Head			
Agriculture		35 %	37 %
Non-agriculture		65 %	63 %
Tubewell water usage by adults			
Drinking		97 %	97 %
Bathing		42 %	34 %
Latrine usage by females			
Sanitary		23 %	21 %
Non-sanitary		77 %	79 %

It was reported that the family welfare and health workers of GOB visited about 33% of these families. About 66% and 33% of the respondents visited by them mentioned that they promoted the use of safe water and sanitary latrines respectively. Overall, only the GOB field workers were reported to promote WSSH at the household level.

The basic water and sanitation (WS) facilities were lacking at public places and/or at institutions that provide public services (Fig. 3). About 50% of those did not have the sanitary WS facilities, and even those that did were mostly found to be inadequate compared to the number of users.

Fig. 3 : Water and Sanitation Facilities in Institutions at Singair, Manikganj, 1995



Although the tubewell water samples collected from the source and storage containers both showed the presence of faecal coliform bacteria (Table 2), the stored tubewell water was found to be significantly more contaminated than at the source. The handwash samples also indicated that their hands were contaminated even though all women claimed that they washed their hands after defecation, after household activities, before eating, etc.

The water facilities outweighed all the desired priorities, followed by the latrines and health clinics when housewives were asked to list specific facilities like schools, water, dustbins, latrines, cooking, health and family planning in order of their first three priorities for health (Fig. 4).

2.2 Union Water and Sanitation (WATSAN) Committee

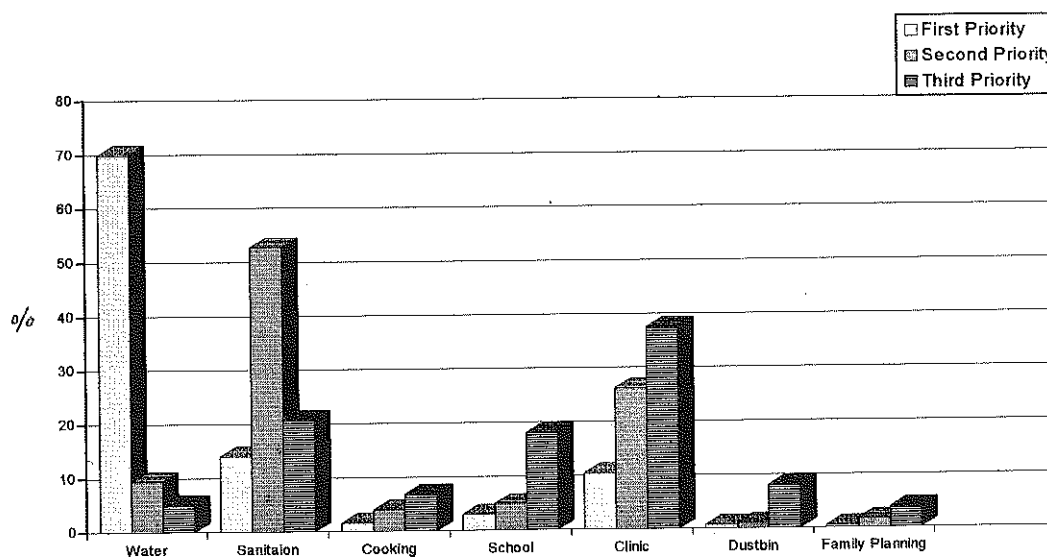
In Singair, most of the union WATSAN committees were formed in January 1995. The survey on the WATSAN committees revealed that the first round of WATSAN committee meetings started in May.

Table 2 : Results of Selected Environmental Health Samples

Variable	Number of Samples	Geometric Mean (FCU/100 ml)
Tubewell water		
at source	200	219
at storage container	200	2,884
Surface water		
pond	35	7,943
river	19	16,982
canal	65	10,000
ditch	71	10,965
Handwash		
women	201	8,511
children	199	8,913

1995 in a few unions only. In all of these meetings, participation by the community and GOB members was extremely poor. According to the terms of reference (TOR) of the WATSAN committee, a village is to be represented by a woman. In reality, women hardly participated in any WATSAN committee meetings. During discussions with the chairmen and ward members, it was found that these committees were formed hurriedly by a few concerned persons without consulting the members who were included in the committee. The orientation of the WATSAN committee members as suggested in SOC-MOB is yet to be completed.

Fig 4 : Order of priority for health as stated by studied families



Two workshops were held with the WATSAN committee members and community representatives from Singair (in Joymontop and Baira) on the existing problems and on how to make the WATSAN committees effective. These workshops were chaired by the Thana Nirbahi Officer (TNO) of Singair. The major findings and suggestions made during the workshops in relation to the WATSAN committee activities are presented in Table 3. The need for revising the committee membership was agreed to by all the participants. It was also requested that their suggestions be considered as appropriate by the concerned authorities.

Effective functioning of the WATSAN committees is being hampered due to lack of fund and appreciation for operating the committees. Although the committees have been entrusted with the responsibility of conducting the SOC-MOB programme, no fund has been allocated for the communication materials, such as banners, public address systems, festoons, etc. or promotional activities. Currently, the committees are being run on a voluntary basis. There is also a gap in communication and coordination between the committees and different GOB and NGO agencies. In absence of any formal communication mechanisms, the grievances, suggestions, and comments of the committee members cannot be addressed effectively by the GOB/NGO agencies.

2.3 Communication and Promotion

This is a major activity of the SOC-MOB programme, but severe shortcomings exist in communication and promotional materials. The orientation and training of the GOB, NGO and WATSAN workers are yet to be carried out as suggested. It is essential to build inter-sectoral allies at the union, district and division levels, in addition to capacity-building. The communication materials were hardly found at the union or village level. The chairmen of the union WATSAN committees and various social groups reported that they were never provided with any of these materials.

These skill-building approaches are likely to be adversely affected unless appropriate promotional and training materials are made available. The available promotional materials and communication aids collected from DPHE, UNICEF and some NGO groups were tested at the field level. Most of those were found to be too general and difficult for the common people to extract the message for use in the real life situations. It may be pointed out that the majority of the people are illiterate. The promoters, who could read, were also observed to be unable to transmit these messages properly to the community people in readily understandable terms. However, DPHE and UNICEF are presently in the process of developing appropriate communication materials.

2.4 Installation and Maintenance of Public Handpump

GOB has attempted to involve the community in its handpump supply system. Under the current programme, a public shallow handpump is given to a group of families when the following main conditions are fulfilled:

1. No fewer than 10 families can apply for a handpump, and both men and women must sign the application.
2. The site will be selected in consultation with 10 women who have applied.
3. The applicants will select a caretaker family, responsible for the maintenance of the pump.
4. Both men and women of the caretaker family will receive training on how to maintain the handpump in presence of all the applicants.
5. The applicants will pay the equivalent of about US\$ 18 toward the cost of the tubewell, which is about 30% of the actual cost.
6. The applicants will repair and maintain it properly at their cost.
7. Each applicant family will install a sanitary latrine.
8. The site will be inspected by a DPHE worker.

Fifty application forms of groups from the Singair thana, who had received public tubewells were randomly selected and studied. The forms were all found to be completed as suggested. No woman was found to be a signatory as a caretaker.

An in-depth discussion with 12 caretakers randomly selected from that list of groups who had received public handpumps revealed/suggested that :

- site selection is usually done by the Chairman and Ward members in consultation with the local people. However, women were not involved in any of these site selections. Women's involvement is likely to increase the effective use of the handpumps by them.
- less than 10% of the caretakers have been given training on installation and/or maintenance of those pumps.
- signatories as caretakers were all men (also verified in the list), although it was felt that some women could have been identified and selected as caretakers.
- those who were not given training were also not provided with maintenance tools.
- the repair and maintenance cost as well as related responsibilities are borne by the applicants (mostly by the caretaker family). There were no major problems in this regard. The criteria for latrine installation by those getting a handpump have hardly been followed.

Table 3 : Major findings of the workshop on how to make *WATSAN* Committee effective

Component	Stated in TOR	Observed and discussed issues	Suggestions/question
1. Structure	Structure: Chaired by: Union Chairman Member: All Union Parishad members One female representative from every village. One health worker One BRDB Corporation worker One primary school headmaster One high school headmaster One social/religious leader One family welfare worker	1.1 The committees include 31-53 members. It may become too big in some Unions 1.2 It is difficult for the SAE, DPHE, to organize WATSAN meetings in every union. His participation is important and should be regular	1.1 Could it be reduced? 1.2 SAE, DPHE could be assisted by a locally selected WATSAN committee member
2. Selected method	No guideline	2.1 A guideline will be helpful	2.1 Must consult and get consent from the selected members 2.2 The selected persons should be told of their TOR before being selected
3. Attendance	No mention	3.1 Extremely poor 3.2 Women's attendance is poor. However, in other NGO meetings, their participation is more functional and regular 3.3 The members are expected to meet regularly and carry out substantial continued voluntary responsibility. Their absence will hinder the process 3.4 Women's representation from some remote villages is difficult	3.1 Incentives are essential - Transportation cost amounting to about Tk. 20 /meeting - Certificate as WATSAN member from TNO/GOB - Award for best volunteer 3.2 More than 1 village could be combined or a male representative considered

Component	Stated in TOR	Observed and discussed issues	Suggestions/question
4. Women's village representation	A woman must represent a village	4.1 Suggestion of representation by women is appreciable	4.1 Member to be selected should be contacted directly. Their husband/guardian may be consulted also.
		4.2 No woman was consulted before including her as a member. They were selected from better-off families	4.2 The date of each meeting should be notified several days ahead of the event or on a fixed date so that women can organize their household activities accordingly
		4.3 Their participation was extremely poor. This will lead to many villages remaining un-represented in the process	4.3 During the selection of women members their social activities/exposure should be considered instead of their family background 4.4 Women who are willing to participate and/or NGO/health workers in those villages may be considered, instead of their social status
5. Frequency of meetings	5.1 Once every month	5.1 Too frequent	5.1 May be once in two months
6. Execution	6.1 No mention of mechanism of how the members will pursue their role at the household level	6.1 The members hardly pursue it at village or household levels	6.1 Village committees should be formed to carry on the activities 6.2 Village representatives in WATSAN should chair their committees
	6.2 Orientation of WATSAN members	6.2 Orientation workshops have not been conducted	6.3 These should be 7-11 member committees, which will include social leaders and tubewell mechanics 6.4 The elected ward members should be given specific responsibilities in these committees 6.5 They should meet once a month 6.6 The members should be given certificates as WATSAN village volunteers 6.7 Orientation workshops should be immediately completed

Component	Stated in TOR	Observed and discussed issues	Suggestions/question
7. Activities by WATSAN	Many	7.1 Since the activities are yet to be undertaken, it is too early to consult on the feasibility of all stated activities. However, a few have been identified as being difficult to carry out	7.1 DPHE can assist in construction of demonstration latrines 7.2 WATSAN should be consulted about the distribution of public tubewells
8. Monitoring	8.1 A monitoring form has been provided. It is to be filled in by WATSAN and given to SAE fortnightly	8.1 It is too frequent and complex	8.1 Should be discussed during WATSAN meetings 8.2 The ward members and village committees may assist in data collection. 8.3 The form may be revised to include precise indicators related to major activities instead of latrines only 8.4 The possibilities of linking with other GOB workers should be studied 8.5 Requires more inputs before it can be undertaken at field level
9. Reporting	9.1 Every member will report during WATSAN meetings. The Chairman will synthesize a report and give copies to SAE, DPHE & TNO	9.1 Appreciated	9.1 The link between WATSAN and thana should be strengthened 9.2 Should be included in the Thana Unnoyon Parishad agenda

2.5 Women's Participation

To boost women's participation, GOB issued instructions that the WATSAN Committees include a woman representative from each village. In reality, it was observed that women's participation in the WATSAN committees was poor. Several reasons have been identified for the poor attendance. Firstly, the women members were not consulted about their inclusion in the committee. Secondly, it is burdensome on women to bear the transportation cost for which they do not get any allowances. However, some WATSAN committees have already been revised. Some women members have been dropped and others included in their place after proper consultation with them. There has been a noticeable increase in participation by women due to this measure.

It was also found from discussions with the caretakers that women were rarely consulted in selecting sites for installing the public tubewells, although it was mandatory to get women's signature on the application for the public tubewells. They were also not involved in maintenance of the tubewells. However, the caretakers (all men) agreed that women should be involved in selecting sites since they are the ones who most often use the pumps. They also reported that, with help from the male family members, women can take the responsibility of maintaining the tubewells.

2.6 Health and Family Planning Worker

A focus group discussion with the grassroots level GOB and NGO health workers was held. It was observed that the promotion of the WSS activities is one of their mandates. They have personnel (sanitary inspectors) to monitor and take appropriate actions against practices that affect health such as keeping latrines that contaminate the living environment. They also have Health committee at the union level. They are hardly involved in planning and implementation of the WSS activities by DPHE. There is also scope and need to improve their skills in this field which could be carried out by their respective agencies in coordination with DPHE.

It was pointed out that the Ministry of Health and Family Welfare (MHWF) is the only ministry which has work force at the village level. Planned coordination among DPHE, DPHC and DGHS is essential at every stage for effective promotion of WSSH. Lack of such coordination was mentioned by senior officials as well as field workers.

2.7 Emergency Challenges

A significant area of Singair thana was flooded, and as the Project was in its preparatory phase, it was not studied. However, a lack of planned WSS activities during the flood was observed. About one-third of the area is flooded every year and in the future this project will address these activities.

2.8 Coordination

Coordination among the WATSAN, GOB and concerned agencies has been identified as a major activity of the programme. Forging allies have been greatly emphasized. This part needs to be detailed out above the union level.

Coordination between the WATSAN, DPHE and other GOB workers was found to be lacking in Singair thana. Although faults in the formation of WATSAN committees led to their unsatisfactory performance, doubts have also been expressed about adequate inter-sectoral coordination.

The SOC-MOB programme of GOB suggests the formation of the coordination committees for the WSS activities at the district, divisional and ministerial levels. These committees have been formed (according to documents) but their activities are yet to be observed in Singair. It is recommended that all these committees be made active as soon as possible and that the thana level committees be formed since they can play the most vital role in making union WATSAN committees effective.

As the WSSH issues cross-cut other sectors, its promotion will require support from and coordination of other ministries. High level inter-ministerial coordination will be helpful.

MAJOR ACTIVITIES DURING JUNE-OCTOBER 1995

Since conducting the baseline survey during February-May 1995, and disseminating the findings at selected levels, certain major activities have been carried out and/or initiated as follows:

3.1 WATSAN Committees

The membership, especially that of women representatives, has been revised by the community in all five WATSAN committees of the Intervention Unions. The Comparison Unions have formed committees earlier as usual but have hardly initiated any activities. The major activities carried out by the Intervention Unions are shown in Table 5.

Table 5 : Activities carried out by the WATSAN Committees

Activity	Name of Union				
	Joymontop	Dhalla	Baira	Charigram	Chandhar
Formed village committee	15 (53.57%)	13 (76.47%)	11 (50.00%)	06 (100%)	10 (31.25%)
Average number of members in village Committees	11	11	13	15	11
Female members in village committees	29.5%	29.1%	37.9%	13.4%	47.2%
Village general meeting	10	04	04	01	-
Average participation	155	110	88	56	-
Women's participation in these meetings	40.7%	22.2%	28.9%	10.7%	-
Conducted WATSAN meetings	03	02	02	02	02

The village committees have been formed by the local people in consultation with the respective UP Chairmen and Ward Members (both elected representatives). The member-secretaries of all village committees are female. These women have been incorporated into the WATSAN committees as village representatives.

The village committees with support from the chairmen have organized meetings, which have created significant awareness among the people. The WATSAN and Village committees are making lists of the families that are willing to buy pit latrines. It may be pointed out that neither the project nor the GOB programme has any funds for supporting any of these activities. The fund constraint is being repeatedly mentioned by these people. The immediate need for communication aids is repeatedly demanded by the WATSAN, and village committees and their volunteers.

3.2 Demand and Supply

One of the main objectives of SOC-MOB is to mobilize people to construct and use sanitary latrines. The various options commonly available/promoted are as follows:

- 'Home-made' Latrines (HML), consisting of an inlined pit covered with a platform with a hole in it. It is cheap and simple to build and maintain, and is used in the urban and rural areas.
- Ventilated Improved Pit (VIP) with lined pit(s). The vent controls flies and creates the updraft removing smell. It is cheap, simple and sanitary, but not in wide use.
- Water Seal Latrine with concrete platform, pan and single lined pit. When the pit fills up, a new pit has to be dug and the superstructure relocated, or the pit has to be emptied. It is simple and sanitary, and used in the urban and rural areas.
- Twin Pit Water Seal Latrine is the same as a single pit except that it has two offset pits used alternately. When the first pit fills, users switch to the second pit, leaving the first pit contents for 18 to 24 months to complete biological degradation before the removal of harmless contents. When the second pit fills, the first pit is used again.
- The most widespread versions in use for rural sanitation are the 'home-made' and single pit, water seal latrines. The pit is lined with up to five concrete rings, the slab is either of ferrocement or reinforced concrete, and the water seal pan is of ferrocement. Burnt clay rings are used where available.

Following the workshops, two of the WATSAN committees immediately carried out surveys on families who would right away buy latrines. The experiences in Joymontop Union showed that within a few months about 1,500 families in the Union were willing to install ring-slab latrines. It is expected that if the WATSAN committees perform satisfactorily, a demand for latrines will be created in that area and, therefore, meeting the demand appropriately is an important activity of the SOC-MOB programme. Despite DPHE's sanitary latrine production programme and various suggestions to enhance it, difficulties have been observed in meeting the demand. DPHE has one permanent latrine component production centre at the thana headquarters, but it is impractical to carry/transport latrine components from there to the user households. DPHE sells these latrine components (one platform and five rings) at about US\$ 10.00 (subsidized cost). The actual cost of producing similar components by NGOs is about US\$ 14.00. However, it is claimed that the quality of GOB-produced latrines is better

than that of those produced by others. The responsibilities of constructing superstructures and installation of substructure are borne by the user. The suggested/feasible options for meeting the demands are:

1. DPHE Mobile Sanitation Centre

The WATSAN committees were informed that a DPHE Mobile Sanitation Centre could be installed at the union level. They were required to submit a list and an advance payment for the latrines to be installed in their areas. The buyers, however, were unwilling to make such an advance payment. In addition, the WATSAN/Chairman is expected to make arrangements for establishing the DPHE Mobile Centre. Establishment of such a Centre, even with a bamboo roof, requires a few hundred US dollars, and the Chairmen expressed their inability to pay such an amount. Subsequently, DPHE has established a Mobile Centre there with bamboo poles, tin sheets, etc. so that the materials can be dismantled and taken away when immediate high demand is met. This is being treated as a test case. It is yet to be determined how the demand in other unions or in the country will be met.

2. NGO Initiatives

NGOs active in these areas include Grameen Bank, Proshika, TARD, BRAC, and CWF. Of these, the Grameen Bank, Proshika, BRAC and TARD promote sanitation among their members. The Grameen Bank provides loans for housing programmes that include latrines, but the construction of latrines *per se* is not a mandatory activity of any NGOs. Proshika and Grameen Bank suggest the loanees (members) to buy sanitary latrines in installments when they borrow money for housing purposes. They sell the latrines at an actual cost, which is about US\$ 15.00.

3. Sanitation (latrine distribution) Programme by NGO-Forum/NGO Bureau

GOB recently launched a huge sanitation programme through the NGO Bureau in which the NGO Forum will sell latrines (one platform and 5 rings) at about US\$ 7.50 to its members only. The chairmen of the WATSAN committees will certify the installation of those latrines. The Ministry of Local Government, Rural Development & Cooperatives has distributed this circular to all union chairmen. This offer has created a lot of interest among the people, but in Singair, the programme is yet to start. This has created a severe hindrance to the progress of sanitation, but MLGRD&C and concerned agencies are considering immediate appropriate strategies to solve the problem.

4. Private Producers

There are few private producers. They are reluctant to produce more latrines or challenge the demand as the subsidy in GOB and NGO sector is affecting their business.

3.3 Partnership with Proshika

Proshika is one of the largest national NGOs in Bangladesh and has the credit loan programmes as well as extensive sanitation and other welfare programmes. It has been agreed that they become a partner of the Project. They provide loans without interest to their members (poor families) for latrines in urban slums and rural areas. The Project will provide training to their workers (which is a part of the project activities), and they will promote and motivate their members. One of the criteria that could be included for loans to their members may be the installation of a sanitary latrine. It is also being suggested that women (members) be trained to make components of latrines (slabs, platforms). Groups of women will be formed and given loans to produce and sell latrines. It is being also discussed that the possibilities of making, selling and promoting soap by women (their members) at local level be pilot-tested.

3.4 Coordination

MLGRD&C is making appreciable efforts to bridge the gaps between the GOB and NGO agencies working in this sector.

The local government infrastructure in Singair has been coordinating the activities locally. The Thana Nirbahi Officer of Singair (Mr. Ashraf Hossain) has included the reporting of WATSAN activities in the agenda of Thana Unnoyan Parishad meetings. These meetings are attended by the chairmen and all GOB officials at the thana level once every two months to plan and discuss the developmental activities. This is likely to bring about an effective coordination among the partners interested/working in the WSS activities. This has encouraged an intersectoral collaboration/coordination of the WSS activities. Increased coordination efforts are being implemented at the district level. District officials have been observed to participate in activities at all levels as considered appropriate.

3.5 Other Major Activities

The baseline findings were presented in a recent meeting of the National Task Force which was chaired by the Secretary of Ministry of LGRD&C. Selected senior policy makers and Programme Executives, elected representatives, and representatives from various donors and researchers working in the rural and urban sectors participated in this meeting. Although specific issues discussed in the meeting are being considered at the policy level, the Project was requested to test the various options to overcome the problems faced.

One important discussion was about the union-level coordination of the Health and WSS activities by the elected representatives and local leaders on instruction from the Ministry of Health and Family Welfare and the Local Government Engineering Department respectively. The community

representation strongly felt that these are closely linked and require extensive voluntary social mobilization efforts. It would be difficult for them to work separately for these causes, and they should be combined into one committee.

The Project is facilitating various training and orientation sessions with school teachers, religious leaders, and imams. Trainers from these groups are being trained by the Project.

Women's participation is being facilitated and studied in all phases. Special emphasis is being given to make their participation effective in (i) decision making processes, such as in site selection for handpumps, in WATSAN and Village Committees and in (ii) WSSH promotion integrated with income-generation, such as promoting, constructing and selling of latrines, selling of soap, etc.

Preparation of communication materials by the Project is in progress. The local people are being directly involved in this activity. The Thana Nirbahi Officer and Chairman, Joymontop Union are team members in this effort. DPHE is posting billboards with water and sanitation messages beside roads and highways and in public places.

Weekly diarrhoeal and skin surveillance in randomly selected households has been carried out since July 1995.

Action research on how to make the health workers more effective promoters for the WSSH issues has been initiated in the selected areas. The reporting system of DGPHC is also being studied to see how it can be improved to monitor the rural WSSH issues more effectively. Merging of the union health and WATSAN committees is also being tested as a part of this research.

DISCUSSION AND CONCLUSION

4.1 Future Action Plan

In addition to the activities mentioned earlier, the following issues will be studied to achieve more effective and sustainable results.

1. Ways to implement ingestion of safe water

A brief exploratory study has shown that tubewell water at the source was more or less acceptable. The geometric mean of faecal coliform count was 2/100 ml for samples collected directly from the source, but the samples collected from containers storing water from the same source (after 9-11 hours) showed a faecal coliform count of 2510/100 ml (13). The same study indicated that bacteriological count of tubewell water may increase with storage hours, and several thousand bacteria were scraped off the bottom of the storage containers.

2. Ways to improve performance and maintenance of low-cost latrine options

A study of three thanas (selected after discussion with local UNICEF) revealed that the home-made latrines failed to protect environmental contamination (Table 6). The home-made latrines were not extensively promoted by GOB in Jhalakathi. The NGO programmes that promoted the home-made latrines hardly made any mention about the designs and the purpose of installing these latrines. People used indigenous temporary materials to line the pits, or just made a hole with most having no platforms. The pits were observed to leak heavily, overflow, collapse but were still being used though they were broken. When the pits filled up, the users dumped the contents in open water bodies.

Table 6 : Functioning Condition of Latrines in Three Studied Thanas of Bangladesh

Type of Latrine	Thana		
	Lohagara (n=733) NGO Prog.	Ramgati (n=721) NGO Prog.	Jhalakati (n=700) GOB Prog.
Open (%)	12	73	55
Home-made (%)	61	14	25
Pit latrine(5 RCC rings+1 CC platform) (%)	27	13	20
Functioning home-made latrine (% of home-made latrines) *	40	69	97
Functioning pit latrines (% of pit latrines) *	85	96	99

* The rest of the latrines were performing in unsanitary way with leaking broken and/or collapsed pits

3. Ways to make handwashing more effective and widely replicable

An earlier study has reported that about 80% of the rural people claimed that they could not afford soaps to wash their hands (15). Their hands were found to be highly contaminated with bacteria right after they washed their hands. The same study showed that similar acceptable results are obtained if the hands are properly washed with soil, soap or ash. However, this study was conducted under controlled conditions.

4. Ways for effective women's participation in the WSSH programme

Studies have shown that rural housewives/women can maintain handpumps (12,16,17) and latrine (11) efficiently and their participation in site selection of handpumps contributes toward improved status of women in the society (17).

5. Ways to involve religious leaders in the WSSH programme

Role of religious leaders in WSSH programmes has been suggested, but effective involvement of these leaders in such programmes is yet to be implemented (18).

4.2 Discussion

Any debate about the importance of WSSH is beyond the scope of this report. However, there is a tendency to find the role of WSSH services in relation to health in national context without giving proper considerations to the WSSH issues really practised by the people. Such practice may have policy and programmatic implications which would affect the overall development of the country. For example, in Singair, a child from a family that uses tubewell water for all domestic purposes goes to a school or a health clinic that does not have a safe water facility. The child drinks unsafe water and becomes sick. Should the WSSH, health or school programme be blamed? The improvement achieved in WSSH conditions in Bangladesh is not comparable to the improvement in industrialized countries where these services are more or less available conveniently in all common living conditions. Here the WSSH challenges in appropriate services, effective implementation of programmes and appropriate monitoring indicators should be considered in any attempt to link WSSH with other issues.

A similar project is underway with GOB in urban Dhaka. The experiences gained in these two projects are shared and implemented with modification, as considered appropriate.

4.3 Conclusions

The Project, which is a team effort of GOB and selected NGO agencies with ICDDR,B to contribute toward the sustainable development of the WSS sector, is more or less on course.

This GOB, NGO and ICDDR,B effort at working in a multi-disciplinary and multi-professional environment may have been slow, but it has been helpful in realizing issues in real terms and working with the concerned partners and with the communities.

The investigators are aware of the complexities involved in this endeavour and will appreciate any comments or suggestions. Partnership from the local, regional or global agencies will be encouraged.

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