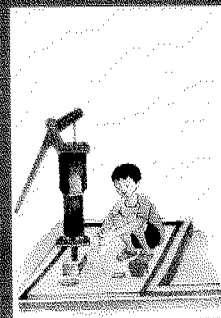
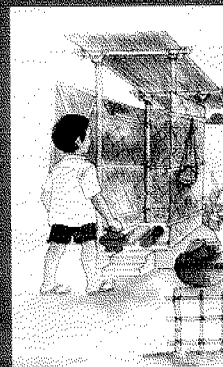


REPORT ON

**THE SEMINAR-CUM-WORKSHOP ON  
LESSONS LEARNT ON  
WATER SUPPLY AND SANITATION**

APRIL 25, 2000; DHAKA



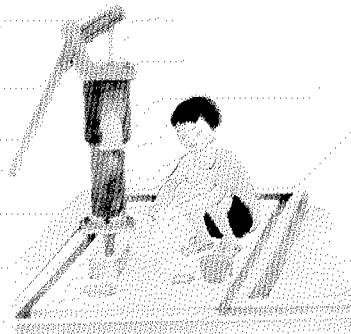
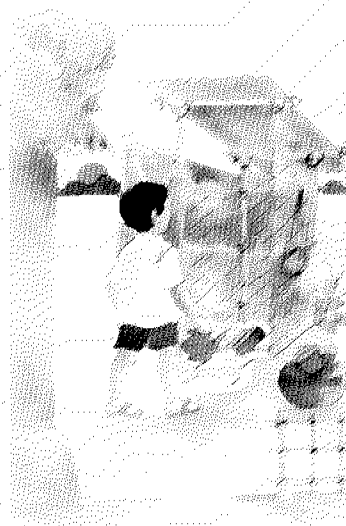
COMMUNITY BASED WATER SUPPLY AND SANITATION PROJECT (CWSSP)  
SUSTAINABLE ENVIRONMENT MANAGEMENT PROGRAMME (SEMP)  
Department of Public Health Engineering  
Kakrail, Dhaka, Bangladesh



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# REPORT ON THE SEMINAR-CUM-WORKSHOP ON LESSONS LEARNT ON WATER SUPPLY AND SANITATION

April 25, 2000; Dhaka



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April, 2000

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## EXECUTIVE SUMMARY

Although Bangladesh has made significant physical progress in provision of water supply and sanitation services to her people during the last two decades, the basic objective of interventions in the sector remains at a level far below expectation. Apart from prevalence of water borne diseases and inequities in access to service provisions, the service sustainability has now surfaced as a major sectoral issue.

The National Environment Management Action Plan (NEMAP) developed during 1992-1995 identified environmental sanitation sector as number one among major environmental concern areas in the country. As a follow up, under an umbrella technical assistance (TA) programme a new project entitled "Community Based Water Supply and Sanitation Project (CWSSP)" has been set in motion to try out innovative approaches for enhanced coverages and development of sustainable programme.

In this backdrop a seminar-cum-workshop has been organized on April 25, 2000 to draw lessons from both ongoing and recently completed WSS projects in order to assist CWSSP to design an effective action plan.

The following key elements came up as important lessons from the output of this workshop:

- Demand responsive service delivery should be practiced;
- User community should be involved in all stages of the service provision;
- Social mobilization involving stakeholders is very effective in promotion of WSS;
- Transparency of the management builds trust in the community and encourages participation, which in turn develops sense of ownership of services and ensures beneficiaries responsible for O & M of the services;
- User communities are willing to pay for quality services;
- Market development through promotional work invites private entrepreneurs for participation in the sector;
- Private sector acts as promoter of WSS and it needs technical supports;
- Hardware and software interventions should proceed hand in hand for smooth progress and enhancing service coverage.
- Retention of skilled manpower in the sector is essential for better performance in service delivery;
- Cost recovery in installments appears to be an effective approach;
- Development and management of services need approaches that match well with the local situation;
- Gender issue is an important element in WSS; and
- Sanitation needs more attention for balanced improvement in WSS.

For details, the contents of the report may be consulted.

## Preface

The Community Based Water Supply and Sanitation Project (CWSSP) of the Sustainable Environment Management Programme (SEMP) organized a Seminar-cum-workshop on Lessons Learnt on Water Supply and Sanitation at DPHE conference room on April 25, 2000. The purpose of the seminar-cum-workshop was to draw lessons from the Water Supply and Sanitation (WSS) projects/programmes implemented in the recent past and also those that were ongoing. The reason for drawing such lessons was to provide direction to design an appropriate intervention process for CWSSP towards meeting its envisaged goals. It was also expected that future projects in the sector would also be benefited.

The consultation process in the seminar-cum-workshop went on through presentation of 10 papers and subsequent discussions on them as well as participatory group exercises on three major WSS issues : (i) awareness raising (ii) participation and (iii) technological options and their delivery mechanism. The consultation provided an opportunity for the participants to exchange information on their experiences on the key issues of water supply and sanitation and to recommend possible solutions to overcome such issues.

Based on deliberations of this consultation, this document has been prepared aiming at providing ample guidelines for the sector planners, specialists and implementers towards sustainable WSS service development.

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## Introduction

**B**angladesh made commitment in the Rio Earth Summit in 1992 to conserve nature and environment and to promote a sustainable balanced development. Consequently, Ministry of Environment and Forest (MoEF) developed National Conservation Strategy (NCS), Environmental Policy (1992), Environmental Protection Act (1995) and National Environment Management Action Plan (NEMAP). As a follow-up of the NEMAP, an initiative entitled 'Sustainable Environment Management Programme (SEMP)' with the financial assistance of the UNDP was formulated in 1997. It is now under implementation to support in five broad areas namely: (i) Policy and Institutions, (ii) Participatory Ecosystems Management, (iii) Community Based Environmental Sanitation, (iv) Awareness and Advocacy, and (v) Training and Education.

As Water Supply and Sanitation was identified to be top priority concern in NEMAP exercise, Community Based Water Supply and Sanitation Project (CWSSP) was formulated with due consideration under broad area of Community Based Environmental Sanitation. The CWSSP is now one of the priority areas of overall 26 components of the SEMP. The project objectives are:

- (i) development of a demand-responsive planning and implementation of WSS services;
- (ii) development of a mechanism of community management of WSS services;
- (iii) development of a methodology of adaptive project design; and
- (iv) mainstreaming the achievements to macro-level WSS interventions through policy reforms.

Thus the development objective of the project is to generate a sustainable water supply and sanitation programme.

Quite a number of WSS projects/programmes have been implemented in the country with a history of successes and failures. The lessons are useful in formulation and implementation of future WSS projects. The CWSSP organized this seminar-cum-workshop with an intention to bring these lessons together and to come up with a specific set of recommendations that might help the stakeholders to promote and establish sustainable water supply and sanitation.

## **Objectives**

The objectives of the seminar-cum-workshop were:

- (i) to collect, collate and analyze the lessons of the implemented WSS projects/programmes and document them for the use of future project activities including the CWSSP; and
- (ii) to have a specific set of outcomes/recommendations through participatory group exercises for the use of the CWSSP as well as of other WSS projects.

## **Format of the Seminar-cum-workshop**

The detailed programme of the seminar-cum-workshop has been attached as Annex-I with this report. The day round seminar-cum-workshop has two distinct divisions. Division one includes paper presentation followed by discussion on the papers. The second half involves participatory group work for the outcomes/ recommendations on (i) awareness raising (ii) participation and (iii) technological options and their delivery mechanism.

A list of the participants is given at Annex-II.



## **Presentation of Papers and Lessons Learnt**

A total of 10 resource papers as listed in the detailed programme at Annex-I were presented.

Important lessons covering the major areas like awareness, participation and technological options, service delivery and O&M were quoted by the paper presenters. These lessons have been summarized in the subsequent paragraphs.

The three major outcomes are:

- (i) the community or the user groups need to be aware of the importance and impacts of WSS on health and socio-economic conditions;
- (ii) active participation of the user community and the support service organizations is essential element towards successful and sustainable WSS service development; and
- (iii) a range of appropriate technological options should reach the community to cater their needs. Such options must consider the geographical, socio-economic and religious culture of the community.



## Lessons Learnt

**Lesson 1:** The user community should be well aware of the benefits of WSS.

Once the community will understand the importance of health, economic and social benefits of water supply & sanitation, significant demand for WSS services will then be generated leading to demand responsive planning. The women folk should be given priority for awareness raising.

**Lesson 2:** Appropriate Information, Education and Communication (IEC) materials play a vital role towards awareness raising, motivation and promotion of WSS in a community.

Appropriate IEC materials help to develop awareness in different profiles of communities. The sensitization on WSS enhances when the stakeholders put concerted promotional initiatives.

**Lesson 3:** Sanitation needs more attention for the balanced improvement in WSS.

Sanitary latrine is yet to be considered by the community as important as water supply. The sanitation coverage is far behind that of water supply. The sector policy should stress more on motivation of people towards using sanitary latrines.

**Lesson 4:** Awareness generation and motivational activities are the driving forces.

Once the community is substantially aware and motivated towards health and hygienic practices, there will be increased demand for WSS services. In this respect the local organizations like schools/colleges, local governments, elites, CBOs, women organizations and other institutions and the government functionaries can play an important role in disseminating information and mobilizing communities.

**Lesson 5:** Government needs policy reforms in response to the need of the time.

Policy reformations are needed at times to make it compatible with the need of the working environment favorable for the stakeholders. This will facilitate development of an enabling environment for all concerned required to encourage greater participation in a concerted manner.

**Lesson 6:** All available institutions/channels should be utilized for communication and social mobilization.

Different profiles of population have access to different media in varied degrees. Informal institutions may also play important role in the promotion of the WSS.

Utilization of established institutions/channels (like schools/colleges, mosques and other religious institutions, CBOs, women groups, etc.) for communication and social mobilizations has the advantages because of their strong linkages with the community. In the long run their supports are likely to continue without external assistance.

**Lesson 7:** It is the school community that receives sanitation awareness substantially.

Hundreds of children representing their families can be aware of the WSS benefits and can motivate their families towards WSS. As the school is an established local institute and as the teachers are well respected, if are trained in WSS, they can motivate the students and the community. The teaching has multi-fold effects.

**Lesson 8:** Private sector acts as promoter of WSS.

For market development the private sector promotes its products and services. It needs promotional aids for strengthening its participation in the WSS.

**Lesson 9:** Social volunteers are found active if they are given incentive in any kind.

If the responsibility brings honor or some benefits in cash or kind to a volunteer, he enjoys the work entrusted with and takes interest with added vigor.

**Lesson 10:** Well-trained and committed support organizations are found very effective in all stages of service development.

For HRD, the community needs should be assessed and the local support organizations should address the needs accordingly at the inception of the projects for empowerment of the communities. Such empowerment facilitates participation of the communities in all stages of service development.

**Lesson 11:** Multidisciplinary human resources development to be viewed as an essential element for sustainable WSS services.

WSS issues are interrelated and interacted with such issues as literacy, training, human rights, income generation, WID, gender issues, health etc. For example, the increased income of a family adds to the willingness for improved living standard including higher service level in WSS. Actors should be chosen on the basis of comparative advantages.

**Lesson 12:** WSS services support improvements synergistically in other sectors and vice versa.

WSS services effect health, economic and social benefits, which in turn encourage a desire for upgradation of WSS service level and lead to sustainability of the services.

**Lesson 13:** Gender issue is an important element of WSS programme.

Women in our society maintain the household environment along with care for their babies/children. They are the main users and handlers of water. Women should be articulated with WSS programme. to play due role in all stages of service development and management.

**Lesson 14:** Availability of quality services/commodities at the neighborhood is likely to increase demand.

If the WSS services and components are available at the door steps of the users at affordable prices, the demand is likely to rise. Private entrepreneurs can maintain mobile centers in remote areas for business.

**Lesson 15:** The country experiences a direct relationship between significant reduction in 'mortality & morbidity' and increase in WSS coverage geared with public awareness in recent years.

With an increase in WSS coverage and public awareness and motivation towards improved health and sanitation practices, the country, though below expectation, experiences substantial reduction in child mortality and morbidity rate. A more investment in WSS sector should therefore be realized.

**Lesson 16:** Participation of the user communities in all stages of project development is essential.

Active participation of the beneficiaries from the very beginning of a project to all subsequent stages develops sense of ownership and responsibility for O&M. This leads to solve many issues by mutual understanding of concerned people in the community. The participation should be viewed in terms of time, group/committee formation, decision making, management support and other contributions in kind or cash.

**Lesson 17:** Demand-driven rather than supply-driven approach works well in WSS.

Demand can be generated with awareness raising and other related HRD activities like education, income generation etc.

Social mobilization raises demand supported with commitment for participation and develops market for WSS. Private sector emerges with support services and thus enhances coverage of the services. On the other hand, supply-driven approach may lead to vandalism.

**Lesson 18:** Felt need at place of acute scarcity of safe water plays an important role.

The demand for safe water will obviously generate once the community feels the need for safe water. The felt need is associated with willingness and ability to participate in the provision of services. Areas of acute scarcity of water draw attention of the stakeholders for necessary intervention. The synergy effects smooth implementation of the projects.

**Lesson 19:** WSS efforts/initiatives should come up locally.

As WSS services are group based, the group members should unite for satisfying their felt needs. A local initiative of a group needs mobilization of the people for the common goal.

**Lesson 20:** WSS fund can be generated locally provided that all parties concerned agree and move forward accordingly in a concerted manner.

Once the community feels severely the need for WSS services, substantial fund with contributory participation can be generated for the services. They feel encouraged if the stakeholders exhibit supportive attitudes and develop a good working environment.

**Lesson 21:** People pay for WSS services of quality.

A proven technology performing a long way very well has the demand to the people and people are willing to pay for it. Even people are using public toilets and water points with payment and the caretakers are operating and maintaining the toilets with benefits.

**Lesson 22:** Each and every beneficiary, irrespective of the extent of participation, should participate.

For developing sense of ownership, right of use and sustainable services, each of the beneficiaries should participate whatever the extent is.

**Lesson 23:** Transparency of management in the implementation and O & M of services attracts participation of the people.

Transparency in the management develops mutual trust and beliefs among the members of a community that leads a fair and smooth project implementation and O & M. Regular meeting of the community's project management committee can ensure such transparent accountability with the beneficiaries as well as by showing on display board the budget/expenditures. The trust encourages participation of the user community in the process. Participation develops sense of ownership which in turn leads to responsibility for development and management of the services.

**Lesson 24:** Commitment of the stakeholders is necessary.

WSS stakeholders should be committed of their responsibilities to sustained WSS services. This is particularly needed in providing the support services that are exclusively needed to the community and to be expressed through sincerity in action and supports, in time, in a practicable approach. The role of the stakeholders should be facilitative.

**Lesson 25:** Both hardware and software supports should continue simultaneously until universal coverage of WSS is achieved.

The demand generated with the promotion of software should be met simultaneously with the hardware delivery. Meeting hardware demand has also demonstration effects. Otherwise the target groups get discouraged and lose interest for the services.

**Lesson 26:** Site selection of the facilities for common use needs careful consideration.

The locations of WSS services for common use should be such that the users can have easy access and acceptance to them. Otherwise, people will either not use them or be debarred from the service and will not take part in cost sharing, operation and maintenance.

**Lesson 27 :** An effective coordination among all local level stakeholders is the key to the success of WSS projects/programmes.

Coordination among the WSS stakeholders eliminates the duplication of works and conflicts otherwise developed and wastage of resources. It further develops unified policies and adds impacts synergistically. The rules/policies should be well communicated.



**Lesson 28:** Agreement among project management, support organizations and the community is an effective tool for smooth implementation.

A concrete agreement among the concerned parties clearly identifies and distinctly assigns the responsibilities to be borne by each party. A regular meeting improves the communication among them. Accordingly each party is likely to be conscious of its responsibility and performs in a concerted manner to achieve the desired goals.

**Lesson 29:** Private sectors can help increase WSS coverage.

The private sectors have been taking WSS as business and increased WSS coverage substantially throughout the country in recent years. Particularly, the small scale entrepreneurs have found sanitary latrine business as profiting element and self-employment. However, in some cases the private entrepreneurs need technical as well as financial supports. Once demand is generated, the private sector will emerge in large scale and they will meet the demand and enhance coverage under the WSS.

**Lesson 30:** Private sector needs market development, technical assistance and in some cases a modest financial support.

For survival and profit, private sector needs market/demand. For quality product and performance it needs training and for a few cases small-scale entrepreneurs need financial support for their business.

**Lesson 31:** Service standards should be based on the socio-economic conditions of the community.

Upgradation of the service levels or technological options should be based on the socio-economic condition of a community. For improvement of financial capacity, HRD activities like literacy, income generation etc. should be strengthened. Similarly, appropriate cost recovery mechanisms like down-payment, installments/credit etc, should be applied.

**Lesson 32:** Research should continue to develop appropriate technological options and upgrading the same as the time needs.

Appropriate low-cost technical options that require low and easy cost maintenance, as well as perform well, will have higher acceptability to the consumers. Efforts should be given to the research in this area to meet the demand according to standard of living.

**Lesson 33:** Unique/stereotype approach can not be applied in different areas of diversities.

Because of diversities in hydrogeology and socio-religious-economic culture, the same approach for WSS is not applicable throughout the country. Rather, an approach suiting the local needs is appropriate.

**Lesson 34:** Monitoring and evaluation are necessary to observe the WSS performance and select the future strategy of actions.

Documentation of lessons learnt from the monitoring and evaluation can help selection of future course of actions and approaches.

**Lesson 35:** Adaptive project design works well in WSS.

"Implement and Learn and Then Improvise" is the basic philosophy of the adaptive design process. Applying this philosophy, encouraging results in WSS projects/programmes have been achieved.

**Lesson 36:** DPHE should develop the WSS services in urban areas.

Because of its capacity, the national sector agency, the DPHE should develop the WSS services in the urban areas. The DPHE then can hand over the services to the Pourashava/local institution upon imparting training to the Pourashava/local institution personnel and/or recruiting skilled manpower for its operation and maintenance. The necessary financial support should be generated through water tariff collection.

**Lesson 37:** WSS services in Pourashavas can be self-sustained.

The people are willing to pay for the quality services. The fund for the O&M and expansion or replacement of the service facilities can be generated through regular billing and efficient collection of water tariff.

**Lesson 38:** For successful operation and management of the WSS services, skilled manpower needs to be put in permanent payroll.

After establishment of WSS services in an urban area through a project, its skilled manpower should be retained permanently there for the successful operation and maintenance of the services. Otherwise, the service levels would collapse. At present the Pourashavas lack in skilled manpower necessary for sustainable O&M of WSS services.

**Lesson 39:** Cost recovery of Pourashava WSS services is possible.

The consumers are willingly to use water at an affordable price. With regular billing and efficient collection system the financial status could be improved contributing to sustainability of the services. The WSS service provision on credit has been found successful.

**Lesson 40:** Dissemination of lessons learnt can avoid duplication of research work.

Coordination of stakeholders, documentation and dissemination of findings help project/programme formulation and avoid duplication of research work.

**Lesson 41:** Financial capacity of people rises if they take part in savings and credit programme.

It is found that the affordability of any services including WSS increases with rise in income level. Beneficiaries need to give support to increase their economic level before/or along with support for WSS.

### ***Group Exercise***

As identified, success of WSS programme largely depends on three such broad areas as awareness raising, participation/contribution, and technology and its delivery. The seminar participants were divided into three groups and participated into these pre-defined issues. Detailed findings of the group work are summarized herein in the tabular form .

**Group 1: Awareness Raising**

<b>Issues</b>	<b>Problems</b>	<b>Probable Solution</b>	<b>Approach/Methodology</b>	<b>WSS Actors</b>
<b>Information, Education and Communication(IEC) Materials:</b> Poster, Sticker, Leaflet, Video, Audio etc	<ul style="list-style-type: none"> <li>▪ IEC materials not developed according to the need of the target group and the socio-economic culture there in.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Need assessment based upon the target group perception and the socio-economic culture and the proposed project need/objectives.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Media-mix approach;</li> <li>▪ Local level meeting;</li> <li>▪ Audio-video presentation.</li> </ul>	<ul style="list-style-type: none"> <li>▪ GOB/Donor/ NGO/CBO/Local leaders.</li> </ul>
<b>Local allies;</b> <ul style="list-style-type: none"> <li>▪ NGO;</li> <li>▪ Health workers;</li> <li>▪ UP members;</li> <li>▪ Upazila Parishad;</li> <li>▪ Private Producers;</li> <li>▪ School/College Teachers.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Lack of coordination and cooperation among the allies;</li> <li>▪ Lack of working infrastructure/office;</li> <li>▪ Lack of regular programme</li> <li>▪ Lack of follow-up &amp; monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Community mobilization programme;</li> <li>▪ Campaign and motivational programme on regular basis.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Proper strategy for working with all allies;</li> <li>▪ Regular discussion /dialogues among the allies.</li> </ul>	-Ditto-
<b>Approach.</b>	<ul style="list-style-type: none"> <li>▪ Supply-driven rather than demand driven.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Approach to be selected based upon the people's views/perception.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Community could be organized and have their views from joint meeting</li> <li>▪ Social mobilization towards WSS.</li> </ul>	-Ditto-
<b>Human Resource Development (HRD) Component.</b>	<ul style="list-style-type: none"> <li>▪ Lack of skill.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Need based training;</li> <li>▪ Adequate professional training;</li> <li>▪ Follow-ups.</li> </ul>	<ul style="list-style-type: none"> <li>▪ PRA/PLA;</li> <li>▪ Demonstration;</li> <li>▪ Refresher course;</li> <li>▪ Community approach.</li> </ul>	<ul style="list-style-type: none"> <li>▪ GOB/NGO/CBO.</li> </ul>
<b>Hardware Demonstration.</b>	<ul style="list-style-type: none"> <li>▪ Lack of demonstration;</li> <li>▪ Lack of uniformity;</li> <li>▪ Lack of integrated approach ;</li> <li>▪ Lack of multiple options.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Standard and appropriate hardware supply and demonstration.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Demonstration at a suitable location;</li> <li>▪ Promotional materials</li> </ul>	<ul style="list-style-type: none"> <li>▪ GOB/NGO/CBO.</li> </ul>

## Group 2: Participation/Contribution

Issues	Problems	Probable Solution	Approach/Methodology	WSS Actors
<b>Time to be given by the target groups.</b>	<ul style="list-style-type: none"> <li>▪ Men are not available in day-time;</li> <li>▪ Women are not willing to talk in absence of their husbands.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Need to contact at off-time such as at night or before 8 am;</li> <li>▪ Appointment to be taken to sit together in advance.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Interpersonal communication;</li> <li>▪ Group meeting on holiday/off-day.</li> </ul>	NGO/CBO/DPHE/Local leaders.
<b>Opinion/Advice to be taken from the target groups.</b>	<ul style="list-style-type: none"> <li>▪ Ignorance;</li> <li>▪ Lack of awareness, confidence &amp; shyness;</li> <li>▪ Husband dependence;</li> <li>▪ Lack of suitable environment.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Contact and talk to individuals;</li> <li>▪ Build rapport and strong-relationships.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Interpersonal relationship;</li> <li>▪ Let the people be actor;</li> <li>▪ Briefing them about the project objectives and issues;</li> <li>▪ Segregate people according to economic and social status and then arrange participatory meeting with each group.</li> </ul>	-Ditto-
<b>Participation with manual labor.</b>	<ul style="list-style-type: none"> <li>▪ Lack of willingness;</li> <li>▪ Labors otherwise engaged;</li> <li>▪ Lack in ownership feelings;</li> <li>▪ Lack in community feelings.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Labors should be compensated;</li> <li>▪ Awareness and ownership feelings development ;</li> <li>▪ Training.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Group meeting;</li> <li>▪ Active participation at all stages of project;</li> <li>▪ Motivation through group meeting.</li> </ul>	-Ditto-
<b>Participation with money/contribution.</b>	<ul style="list-style-type: none"> <li>▪ Inability to pay;</li> <li>▪ Unwillingness to pay;</li> <li>▪ Lack of community feelings.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Demand creation;</li> <li>▪ Credit programme;</li> <li>▪ Income generation;</li> <li>▪ Awareness.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Social mobilization;</li> <li>▪ Improve affordability through income generation activities.</li> </ul>	-Ditto-
<b>User Committee</b>	<ul style="list-style-type: none"> <li>▪ Problems in site selection of the WSS facilities in common use;</li> <li>▪ Lack of group working experience.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Selection of the group chairman and secretary taking people's views and then distribute the responsibilities.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Open discussion for conflict management;</li> <li>▪ Involve public representatives;</li> <li>▪ Appropriate technique for committee formation.</li> </ul>	-Ditto-
<b>Management.</b>	<ul style="list-style-type: none"> <li>▪ Lack of knowledge and experience;</li> <li>▪ Lack of coordination towards integrated views/interest;</li> <li>▪ Lack of capacity.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Train the community on how to form the management committee and distribute the responsibilities.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Appropriate management techniques and operation procedures.</li> </ul>	DPHE/NGO.



### Group 3: Technology and Delivery Mechanism

Issues	Problems	Probable Solution	Approach/Methodology	WSS Actors		
<b>Technology</b> <b>(a)Water Supply;</b> <b>(b) Sanitation.</b>	<ul style="list-style-type: none"> <li>■ Arsenic;</li> <li>■ Iron;</li> <li>■ Salinity;</li> <li>■ Non-aquifer</li> <li>■ Rock.</li> </ul>	<ul style="list-style-type: none"> <li>■ Deep TW;</li> <li>■ IRP;</li> <li>■ PSF;</li> <li>■ RWH;</li> <li>■ Spring Dev.</li> </ul>	<ul style="list-style-type: none"> <li>■ Boring is slow;</li> <li>■ Poor maintenance;</li> <li>■ Clogging of filter;</li> <li>■ Cover is weak;</li> <li>■ Parts are not available;</li> <li>■ Leakage in channels;</li> <li>■ Wastage.</li> </ul>	<ul style="list-style-type: none"> <li>■ Boring technology to be improved;</li> <li>■ Ensure regular maintenance;</li> <li>■ Improved design of collection of rain water.</li> </ul>	<ul style="list-style-type: none"> <li>■ R&amp;D for improved boring method;</li> <li>■ Import appropriate boring rig;</li> <li>■ R&amp;D for improved design and awareness raising.</li> </ul>	<ul style="list-style-type: none"> <li>■ DPHE</li> <li>■ DPHE/NGO/ SO</li> </ul>
<b>Mode of Installation.</b>	<ul style="list-style-type: none"> <li>■ Through conventional (contractor) system; poor skill</li> <li>■ Through community participation; lack of initiative</li> </ul>	<ul style="list-style-type: none"> <li>■ Training of contractor;</li> <li>■ Awareness raising.</li> </ul>	<ul style="list-style-type: none"> <li>■ Need based training;</li> <li>■ Motivation.</li> </ul>	<ul style="list-style-type: none"> <li>■ DPHE/Private sector</li> <li>■ DPHE/SO</li> </ul>		
<b>Private Sector Encouragement.</b>	<ul style="list-style-type: none"> <li>■ Lack of skill ;</li> <li>■ Lack of capital;</li> <li>■ Lack of information on demand.</li> </ul>	<ul style="list-style-type: none"> <li>■ Skill development;</li> <li>■ Provision of credit</li> <li>■ Dissemination of information on demand.</li> </ul>	<ul style="list-style-type: none"> <li>■ Training;</li> <li>■ Loan from Bank/ support organizations;</li> <li>■ Assessment of demand.</li> </ul>	<ul style="list-style-type: none"> <li>■ DPHE/NGO</li> <li>■ DPHE</li> </ul>		
<b>Skill Development.</b>	<ul style="list-style-type: none"> <li>■ Lack of adequate and appropriate skill;</li> <li>■ Lack of proper education.</li> </ul>	<ul style="list-style-type: none"> <li>■ Training for skill development;</li> <li>■ Conduct education programme.</li> </ul>	<ul style="list-style-type: none"> <li>■ Need based Training;</li> <li>■ Formal and informal education.</li> </ul>	<ul style="list-style-type: none"> <li>■ DPHE</li> <li>■ NGO/CBO</li> </ul>		
<b>Materials &amp; Equipment.</b>	<ul style="list-style-type: none"> <li>■ Inadequate supply;</li> <li>■ Materials below specified quality.</li> </ul>	<ul style="list-style-type: none"> <li>■ Encourage private sector;</li> <li>■ Quality control.</li> </ul>	<ul style="list-style-type: none"> <li>■ Assessment of demand for private sectors;</li> <li>■ Promote marketing;</li> <li>■ Monitoring and surveillance.</li> </ul>	<ul style="list-style-type: none"> <li>■ DPHE</li> <li>■ BSTI/Private sector</li> </ul>		
<b>Support Services.</b>	<ul style="list-style-type: none"> <li>■ Non-availability of spare parts;</li> <li>■ Non-availability of fund;</li> <li>■ Non-availability of skilled labor.</li> </ul>	<ul style="list-style-type: none"> <li>■ Increase delivery channel;</li> <li>■ Loan from Bank/other institutions;</li> <li>■ Train-up and develop private sectors.</li> </ul>	<ul style="list-style-type: none"> <li>■ Encourage private sector;</li> <li>■ Raise demand;</li> <li>■ WSS policy implementation.</li> </ul>	<ul style="list-style-type: none"> <li>■ GOB/Private sector</li> <li>■ GOB</li> </ul>		



## Annex – I

### Community Based Water Supply and Sanitation Project (CWSSP) Seminar – cum-Workshop on Lessons Learnt on Water Supply & Sanitation

April 25, 2000; DPHE Bhaban, Kakrail, Dhaka.

#### Programme

Date	Time	Activities
25.04.00	0930	Inauguration
	10:00	Tea break
	10:15	The Community Based Water Supply and Sanitation Project (CWSSP) And Sustainability of WSS Programme- Mr. M. Mofazzal Hoque, Project Coordinator, CWSSP
		Experiences of :
		(a) Study tour in India Mr. M. Mofazzal Hoque, PC,CWSSP.
		(b) DPHE-UNICEF Water Supply Projects (including Soc-Mob project) Mrs. Afroza Ahmed, PO,UNICEF.
		(c) Grameen Sanitation Project Mr. Ahmed Mofazzal Hoque,XEN-1
		(d) DPHE-DANIDA Projects Mr. Azhar Ali
		(e) 18 DTP Mr. Abul Basher Khan
		(f) 2nd ADB Project (9 towns) Mr. Robin Raihan, XEN
		(g) HTMP Mr. A. Motaleb
		(h) NGO Forum's Programme Mr. S.M.A. Rashid, ED
		(i) Gramen Bank Programme Mr. Mahbubur Rahman
		(j) BRAC Programme Mr. Jalaluddin Ahmed
	1230	Discussion
	1300	Lunch
	1400	Formation of Groups and briefing
		(i) Awareness raising
		(ii) Beneficiary participation
		(iii) Technology and hardware delivery.

## Annex – I

1430 Group Work

Facilitators : Mr. A.J. Shamsuddin  
Mr. M. Mofazzal Hoque  
Mr. Sayedur Rahman Khan

1630 Presentation of Group Work  
(Chaired by Mr. Kazi Nasir Uddin Ahmad,  
Addl. Chief Engineer, Planning, DPHE  
& Focal Person, CWSSP).

- (i) Awareness raising
- (ii) Beneficiary participation
- (iii) Technology and hardware delivery

Concluding remarks by the chairperson.

Refreshment

Close

### Inauguration Programme

0930 Guests and participants take seats

0935 Recitation from the Holy Qūran  
Mr. Ahmed Mofazzal Hoque  
XEN, VS-1, DPHE

0940 Objectives and Welcome Address  
Mr. Kazi Nasir Uddin Ahmad  
Addl. Chief Engineer, Planning, DPHE  
& Focal Person, CWSSP

0950 Inaugural Address by the Chief Guest  
Mr. Md. Quadiruzzaman  
Chief Engineer,  
DPHE

1000 Vote of thanks  
Mr. M. Mofazzal Hoque  
Project Coordinator,  
CWSSP

1005 Refreshment

**Community Based Water Supply and Sanitation Project (CWSSP)  
Seminar – cum-Workshop on Lessons Learnt on Water Supply & Sanitation**

**DPHE Seminar Room, April 25, 2000**

**Participants**

**DPHE**

1. Mr. Abu Muslim, Addl. Chief Engineer
2. Mr. M. Mustafizur Rahman, XEN, Training
3. MR. AKM Ibrahim, XEN, Design
4. Mr. M. Rafiqunnabi, XEN, P&C
5. Mr. Shamsul Gafur Mahmud, XEN, SIR
6. Dr. Ali Azam, XEN, DPHE-UNICEF Project
7. Mr. S. M. Ihtishamul Hoq, XEN, R & D
8. Mr. Ahmed Mofazzal Hoque, XEN, VS-I
9. Mr. Shahbaj Hossain, XEN, Bhola
10. Mr. Rabin Raihan, XEN , 9 DTP
11. Mr. Nizam Uddin, SAE, Tajumuddin
12. Mr. S. M. Kayes, SAE, Dacope, Khulna
13. Mr. Shahabuddin, XEN, Bandarban
14. Mr. Shahjahan, SAE, Ruma, Bandarban
15. Mr. Nizam Uddin Howlader, XEN, Mymensingh
16. Mr. A. Hamid, SAE, Bhaluka, Mymensingh
17. Mr. Md. Fazlul Hoque (Incharge), XEN, Rangpur
18. Mr. M. Tofazzal Hossain, SAE, Gangachara, Rangpur
19. Mr. Sudhir Kumar Ghosh, XEN, 9 DTP
20. Mr. Mohiuddin Khan, Chief Hydrogeologist
21. Mr. S. M. Nazrul Islam, SAE, IDB Project

**PMU-SEMP, MOEF**

1. Dr. Mahfuzul Haque, Programme Coordinator
2. Mr. Mamunul Hoque Khan, HRD Specialist

**WORLD BANK**

1. Dr. Babar N. Kabir, Country Sector Leader, WSP-WB
2. Mr. Abu Jafar Shamsuddin, WSP-WB, Dhaka
3. Mr. Tanveer Ahsan, WSP-WB

**UNDP**

1. Ms. Sussane Giessen, PO

**UNICEF**

1. Ms. Afroza Ahmed, PO

**NGO**

1. Mr. S M A Rashid, Executive Director, NGO Forum for DWSS
2. Mr. Md. Mahbulul Haque, Grameen Bank
3. Dr. Zia, Coordinator, CARE
4. Mr. Jalaluddin Ahmed, Programme Manager, RDP-Essential Health Care, BRAC

**Consultants**

1. Mr. Abul Basher Khan, 18 DTP
2. Mr. Zafar Ahmad, NACOB
3. Mr. A. Motaleb, DASCOH
4. Mr. Azhar Ali, DPHE-Danida