Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Cooperatives
Department of Public Health Engineering

UNICEF, Bangladesh

Report on an Organizational Study of the Department of Public Health Engineering July - October 1993

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November 1993

Matrix Consultants in Development Management
Utrecht
The Netherlands

Associated Consulting Engineers (BD) Ltd
Dhaka
Bangladesh

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The Chief Engineer of DPHE Mr Aminuddin Ahmed and his Deputy Mr A.B.M. Siddique were always willing to facilitate Team activities and respond to their requests for information. Their staff, too, were most cooperative. The Team was cordially hosted by the Superintending Engineer (Planning Circle) Mr Fariduddin Ahmed Miah and his staff in DPHE Headquarters, and relied heavily day-to-day on the logistical support and guidance provided by them.

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Finally, to all others consulted during the Study, whose names appear in Appendix 3, the Team wishes to express its thanks for their information, advice and contributions to the Study.

PREFACE

This Report is a record of a four-month Organizational Study of the Department of Public Health Engineering. As such, it attempts to encapsulate a large amount of information and impressions, in a form which is digestible and above all useful to those who will be responsible for taking the process of organizational change in DPHE forward in the future.

The report has been structured accordingly. The Main Report (Sections 1 - 6) has been made as succinct as possible. Much of the detail has been put into Appendices. These Appendices are in several categories:

- Records of Events or Workshops during the Study (Nos. 2 - 6).
- Basic Information about DPHE (Nos. 7 & 8).
- Results of analyses conducted during the Study (9 - 12).
- Papers for Discussion in Workshops proposed for Phase 1 of the Transition strategy (Nos. 13 - 22).

For the future, the latter category is the most important. The papers are put forward as a stimulus to discussion.

There may well be some errors of fact or interpretation in the Report. The Study was very wide-ranging and intensive, with too-few opportunities for reflection during the Study period. The Team apologises for any such errors in advance.

The Organizational Study Team has attempted to provide in this Report a sound contribution to the continuing process of change in DPHE over the next five years, and wishes the staff of DPHE and other parties to the RWSS programme well in this process.

LIST OF ABBREVIATIONS

ACE	Associated Consulting Engineers (BD) Ltd.
ADB	Asian Development Bank
ADP	Annual Development Plan
AE	Assistant Engineer
Addl.CE	Additional Chief Engineer
BDCP	Bangladesh Disaster Preparedness Centre
BMDC	Bangladesh Management Development Centre
BRAC	Bangladesh Rural Advancement Committee
BRDB	Bangladesh Rural Development Board
BUET	Bangladesh University of Engineering and Technology
CDD	Control of Diarrhoeal Disease
CDP	Comprehensive Sector Development Plan Formulation Project - Water Supply & Sanitation Sector
CE	Chief Engineer
CM	Community Management
CR	Cost Recovery
CTF	Caretaker Family (of a Tubewell)
DANIDA	Danish International Development Agency
DGIS	Dutch Directorate General of International Cooperation
DHS	Department of Health Services
DPHE	Department of Public Health Engineering
DTP	District Towns Project (18 DTP - Dutch Aid Project)
DTW	Deep Tube Well
EE	Executive Engineer
ERD	External Relation Division (of Ministry of Finance)
ESA	External Support Agency
FFYP	Fourth Five Year Plan (1990-95)
FY	Financial Year (July - June)
GOB	Government of Bangladesh
HE	Health Education
HEO	Health Education Officer
HES	Hygiene Education Section
HRD	Human Resource Development
IA	Integrated Approach
ICDDRB	International Care for Diarrhoel Disease Research, Bangladesh
ID	Institutional Development
IGA	Income Generating Activities
IRP	Iron Removal Plant
JGUAG	Joint Government - UNICEF Advisory Group
JS/DG	Joint Secretary/Director General

KAP	Knowledge, Attitude & Practice
Kolshi	Pitchers made of clay or brass for transporting and storing water. Women usually carry the pitchers on one hip.
LG	Local Government
LGED	Local Government Engineering Department
LGRD&C	Ministry of Local Government, Rural Development and Cooperatives
LWT	Low Water Table
MHFW	Ministry of Health & Family Welfare
MIS	Management Information System
MP	Member of Parliament
MoE	Ministry of Establishment
MoF	Ministry of Finance
NGO	Non-Government Organization
NILG	National Institute of Local Government
NP	National Plan
OMR	Operation Maintenance Rehabilitation
O&M	Operation & Maintenance
ORT	Oral Rehydration Therapy
OS Team	Organization Study Team
PA	Planning Area
PCIS	Programme Communication and Information Section (UNICEF, Dhaka)
PCS	Pourashava Conservancy Section
PD	Project Director
PHP	Public Health Promoter
PP	Project Proforma
PPWS&H	Physical Planning, Water Supply & Housing Section (Pourashava)
PSP	Pond Sand Filter
PWD	Public Works Department
PWSS	Pourashava Water Supply Section
PU	Planning Unit
PZ	Planning Zone
R&D	Research and Development
REB	Rural Electrification Board
RS	Rural Sanitation
RWS	Rural Water Supply
RWSG-SA	(UNDP/World Bank) Regional Water Supply and Sanitation Group - South Asia (Technical Support Agency)
RWSSP	Rural Water Supply and Sanitation Programme

SAE	Sub Assistant Engineer
SDE	Sub Divisional Engineer
SDC	Swiss Development Cooperation
SE	Superintending Engineer
SMP	Social Mobilization Project
SST	Shallow Shrouded Tube-well
STW	Shallow Tube Well
SWOT	Strong points, weak points, opportunities and threats
SWT	Shallow Water Table
TAPP	Technical Assistance Project Proforma
TOR	Terms Of Reference
TOT	Trainers Of Trainers
TW	Tube Well
TWM	Tube Well Mechanic
UNDP	United Nations Development Programme
UNICEF	United Nations Childrens Fund
UP	Union Parishad
US	Urban Sanitation
VDP	Village Defence Party
VIPP	Visualization in Participatory Programmes
VSC	Village Sanitation Centre
VSST	Very Shallow Shrouded Tubewell
WASA	Water and Sewerage Authority
WATSAN	Water and Sanitation
WDC	Women Development Cell
WES	Water and Environmental Sanitation Section (UNICEF, Dhaka)
WHO	World Health Organization
WID	Women In Development
WSS	Water Supply and Sanitation
WSSC	Water & Sanitation Surveillance Committee

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Background - The Need for Change

This Report describes the outcome of an Organizational Study of DPHE - one of the oldest, most widely known, and geographically dispersed government Departments in Bangladesh. The Study seeks to support a process of organizational change and development within that Department, with particular reference to its work in the rural water supply and sanitation sector.

The role of DPHE is to implement the policies of the MLGRDC in promoting the health of the population of Bangladesh by planning, designing and providing water supply and sanitation infrastructure and related services in all areas except Dhaka and Chittagong cities, and by supporting the work of other actors in the sector - particularly local authorities and NGOs.

Since the early 1970s, donor agencies, particularly DANIDA and SDC through UNICEF have assisted DPHE with financial and material support and technical advice for the provision of rural water supplies and sanitation development. The specific aims of this assistance have been to improve the health of children and reduce the incidence of diarrhoeal diseases - the biggest single cause of mortality and morbidity in the young in the 1970s.

Quantitative progress has been generally good with tubewell installation, and as a result Bangladesh has a relatively good coverage of tubewell water provision (over 80%). Progress with sanitation has been less satisfactory, but a recent study showed that 33% of the rural population has some form of latrine; this was an improvement over previous estimates. There have been technological as well as motivational problems, and as a result, incidence of diarrhoeal diseases in children is still a major problem.

Concerns on the part of the donors for the Rural Water Supply and Sanitation Programme emerged in the early 1990s. These concerns revolved around the mode of implementation being pursued by DPHE and its performance. The donors were of the opinion that while DPHE had achieved most of its quantitative targets for installation of tubewells and construction of latrines through its Village Sanitation Centres, it appeared to the donors that more attention should be paid to improvements in the qualitative dimensions of RWSS services (particularly to maintenance of tubewells), involvement of women in the programme, and to training and health education. The donors recently observed that there had been progress in these areas.

The GoB and the donors agreed that the implementation of a study of DPHE as an organization (with final ToRs as at Appendix 1) should be a component of the 1992-95 RWSS programme.

The Consultants
MATRIX Consultants in Development Management of Utrecht, Netherlands, and Associated Consulting Engineers (Bangladesh) Ltd. were independently selected in May 1993 to undertake the Study. They began the Study proper in early July 1993. This report contains an analysis of DPHE, and a series of proposals for strengthening the organization. The aim of the Study is to promote sustainability of the Rural Water Supply and Sanitation programme, and to improve the effectiveness of DPHE as an engineering organization.

Approach Followed
The approach followed was agreed by all parties. It appeared that a consultative, participative approach both at central and local levels with a very wide range of interested parties would be essential if all issues were to be adequately aired and addressed, and if all parties concerned could be expected to be committed to taking the necessary future actions.

The Consultants' approved proposals contained provision for addressing the gender issue in RWSS, and for examining the finance and budgetary control aspects of DPHE's work, although these issues were not explicitly mentioned in the ToR.

A series of seven consultative workshops - with participants drawn from top, middle and field management DPHE staff - were conducted in a positive atmosphere with firm leadership from the Chief Engineer and his Deputy. Most of the principal issues identified in the ToRs were discussed in such gatherings, on the basis of reports of field research conducted by the OS Team, or on the basis of structured discussion papers. A workshop was also held for Union Parishad Chairmen from all over the country to permit them to articulate what they considered as the most important factors affecting the quality of RWSS services, and to express their views on roles and relationships between DPHE, other agencies and their constituents - the consumers of rural water supply services.

Structure and Main Contents of the Report
In the **Introductory Section 1** the Report reviews the tasks set in the ToRs - i.e. the initiation of a process of change. It also notes some of the Study's limitations. These included its predominantly rural orientation as per the ToR, and the difficulties which resulted in restricting an Organizational Study in this way. Manpower and time allocation precluded large scale surveys or travel to all parts of the country.

The Report in **Section 2** defines an **Analytical Framework** for the Study. These are the factors which have guided the Team's analysis of DPHE's role in the WSS sector. These include constraints, basic principles and the orientation of the Study.

- In the case of constraints it is unclear at the time of writing whether it will be acceptable or feasible for GoB to provide additional budget and staffing support for the organization.

- A vital principle is accountability within the organization. There are however problems of maintaining such accountability amongst the staff of such a large organization, spread so widely throughout Bangladesh. The Report suggests in addition the promotion of a spirit amongst DPHE fieldstaff of "client orientation" and therefore "local accountability" to the people DPHE serves. These include poor rural women, whose role in the sector is of profound importance.
- The orientation of the study was to seek areas where organizational change was needed in future and to identify how potential for change could best be mobilized.

Section 3 DPHE - Past and Present sketches the history and performance of DPHE, and the current organizational set-up, which dates from 1982. The description stresses DPHE's *positive achievements*, in expanding the coverage of public rural water supplies via the installation of nearly one million tubewells, and growth of sanitation coverage. DPHE's record has also been impressive in its response to emergencies. The latest and most disastrous being the cyclone of 1991, in which DPHE distinguished itself, and mobilized its fieldstaff with remarkable speed to restore sanitary water facilities to a beleaguered coastal population. The Section concludes with an assessment of DPHE's relationship with UNICEF, the MLGRDC, and MHFW.

Section 4 is an **Organizational Analysis** of DPHE. This is not an evaluation of the agency, but is essentially an analysis of where there are areas of its function which are in need of further development, and where change is required. The Team's analysis indicates that DPHE's mandate has evolved over time. Over the last 40 years, the agency has been primarily responsible for implementation of WSS infrastructure development. In order to meet contemporary demands, both quantitative and qualitative, and to promote impact on the health of the rural population, the agency has to seek a role which more effectively contributes to the overall goal of improving health for all through the universal provision of water and sanitation by the year 2000.

An orientation to DPHE's clients will be a prerequisite to respond to these challenges. The aim is to improve health, and to provide for sustainability - not just of the facilities, but of DPHE itself as a professional engineering institution.

In seeking such a role, the agency will have to reconcile sometimes conflicting pressures and paradoxes. On the one hand, demand for WSS services is growing; DPHE itself does not have the capacity to meet it alone. If the qualitative aspects of service provision are not given enough attention, then facilities and supply systems are not sustainable. DPHE is made up of professional engineers capable of advising on WSS policy development, yet concentrates on implementation of projects. DPHE is a government Department, yet operates in a context where the private sector is playing an increasingly important role.

Some of the symptoms of the perpetuation of the historic "implementation" orientation in the agency have come to light during the Study. These include a lack of general awareness of its current mandate ([1]) and a consequent "hardware" orientation (despite the progressive emergence recently of the agency's role in relation to other non-engineering agencies in the sector); limited capacities for planning, research and development, human resource development and "public relations"; an organizational set-up not well attuned to the contemporary role of the Department, and qualitative imbalances between the numbers of professional staff and the numbers of junior and manual staff, and between the number of men and women employed by DPHE.

Symptoms of management problems related to day-to-day operations include overloading of top management with routine matters better delegated; limited autonomy enjoyed by top management; gaps in supervision and quality control; internal communication being limited to target setting and progress reporting, and monitoring procedures which involve much duplication of effort.

The report notes that many of the above characteristics are generic - they exist to some extent in all public sector Departments and many parastatals in Bangladesh. Some are not of the Department's own making: its senior managers have limited authority in some areas - staffing issues particularly.

However, it is vital that DPHE addresses these issues constructively in future.

The Section concludes with a detailed review of DPHE's key functions - Planning, R&D, Health Education and Social Mobilization, Training, Finance, and Emergency Procedures.

In Section 5, the report summarizes how DPHE management came to accept that there was a **Need for Change in DPHE**. In this case, the *development of optional scenarios*, for DPHE consideration has proved useful.

In short, the scenarios were:

Scenario 1 - "Business as Usual"
In such a case, no major changes would be made in the present role and situation of DPHE.

Scenario 2 - "DPHE Expands to meet growing demands"
Extra finance and staffing would be provided within the present set-up.

Scenario 3 - "Business Better than Usual"
This would provide for improvements in the efficiency and effectiveness of DPHE as the lead WSS sector engineering institution, including the ability to respond to its clients.

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[1] Discussions held with senior officials during the Study helped clarify policy on DPHE's mandate. However, it is clear that a concise formal statement regarding the role of the Department would provide a valuable guide to the agency's staff and be much appreciated by donors.

Scenario 4 - "Helping others help themselves in WSS"

DPHE would develop an "enabling" role and capacities in the engineering field to support local authorities, NGOs, the private sector, and communities in the WSS sector.

Scenario 5 - "Comprehensive WSS Sector Support and popular mobilization"

DPHE would itself take on major non-engineering tasks related to WSS (e.g. social mobilization, and support to local authority finance functions connected with WSS).

The *Scenario selected by DPHE Top Management* is a composite based on Scenario 3, but with elements of 4 and 5. It has the aim of strengthening the organization's effectiveness in its core WSS sector "engineering" functions, improves operational efficiency, while enabling it to coordinate other agencies' efforts in the "software" functions, and to respond better to the people it serves. It builds on the strengths of DPHE, and leaves the onus for implementing the "software" functions in other specialized agencies.

The Organizational Study Team agrees that this is the best way forward. It is the most feasible, and the most desirable in at least the medium term, while other developments within DPHE and outside it take place.

In **Section 6**, the report develops a **Strategy for the Transformation of DPHE** towards the Scenario chosen and further developed by its Top Management. The planning horizon should be at least five years, divided into three Phases.

- **Phase 1:** **Strategic Planning**, which will last one year and will have a Strategic Plan as output.
- **Phase 2:** **Transition**, which will last two years and will have a Transformation Plan as output.
- **Phase 3:** **Implementation of change**, which will last at least two years and will have a "transformed DPHE" as output.

The three phases can be described in more detail as follows:

Phase 1: Strategic Planning.
This period of one year would encompass the discussions which would have to take place to digest the Study, develop consensus amongst the parties as to whether a change in orientation is required, and if so, to come up with a Strategic Plan.

The Strategic Plan should include harmonization amongst the donors of approaches to support the sector (and for supporting DPHE within it). A (limited) organisational study of DPHE's capacities to respond to the demands it faces from the urban WSS sector should be conducted.

The first Phase of the Transition Process should also address the implementation of the Social Mobilization Programme (SMP). It is unclear to the Team whether the arrangements for implementation of the recently-approved SMP in DPHE will be feasible. DPHE is an engineering organization - and will be in the immediate future. It has corresponding patterns of expertise and professional interest built up over the years. These do not readily absorb non-engineering disciplines within the organization. However, The SMP assumes that "software" oriented professionals will be absorbed and utilized effectively. The Team (in Appendix 17) suggests a review of implementation arrangements for SMP in the light of this Study. Given the urgency of this matter this review should take place during the first phase of the change process.

As a vehicle for the Strategic Planning process, the Team suggests a series of workshops for top management of DPHE. Inputs will be required from management consultants specializing in Strategic Planning to facilitate the planning process and these workshops. One category of Appendices (numbers 13 - 22) comprises a set of papers produced by the Study Team which are intended as inputs into these workshops, and thus to contribute directly to the process of planning for the realization of the optimal scenario for DPHE's development.

Phase 2: Transition.

The Transition period (about two years) would prepare for the transformation of DPHE. It would involve five foci during the transition towards DPHE's chosen "scenario". These are:

- the development of Strategic Management capacities
- the improvement of Operational Management
- the development of new roles and orientations
- the investigation of new services
- the development of a new organizational and staffing structure

Strategic Management

Priority should be given to moulding attitudes amongst DPHE management towards a long term orientation to their role in service provision, and the benefits of collaboration with non-engineering professionals in other agencies. In view of their relevance to the emergence of a long term Strategic Management orientation in DPHE, the Planning and Research and Development functions should be strengthened along the lines in Appendices 13 and 14.

Action to develop top management capacities for strategic planning might include "retreats" led by management consultants to develop a "client-oriented" vision amongst DPHE's top management and the teamwork which will be essential.

Operational Management

Improvements in operational management encompass the day to day management of the organisation including training, job definition and performance appraisal, MIS, and improving the cost-effectiveness of its operations.

The report points out the dangers of regarding "training" as a panacea. Matters which should be carefully considered in proceeding with urgent *establishment of the training function in DPHE* are presented in Appendix 19. These include the need for a statement of training policy, schemes of service, career development plans, decentralization, the importance of good needs analysis, trainer training and trainer-motivation, monitoring and evaluation, and links to the R+D function. It suggests that DPHE could usefully learn from the experience of a client-oriented institution in Bangladesh in this regard. The Rural Electrification Board has set up a training function, and the lessons it derived from that experience could be very valuable to DPHE.

This category of action should include detailed *job analysis* and definition of realistic standards of performance of key cadres, investigation of possibilities for more *delegation of authority* (involving the Ministry/CE relationship, as well as within DPHE as far as Codal Rules permit), and improvements of the working of the *performance appraisal system, internal communication and public relations functions*.

A *Management Information System* (see Appendix 20) is likely to produce major advantages in terms of time saving, data accuracy and relevance, and motivation through performance feedback and the stimulation of "competition" between zones to achieve better performance - qualitatively not just quantitatively.

Appendix 21 summarizes the Team's findings and suggestions in the field of *finance, budget, accounting, stores and audit*. These functions have to date had a low profile in DPHE; the Transformation Strategy should encompass actions to strengthen these functions.

Developing New Roles and Orientations

On the basis of the analysis in the Report, steps should taken to develop a "client orientation" through local accountability within the organization.

This should be possible since the management of DPHE have discussed and broadly agreed a series of *measures for improving local accountability* (see Appendix 16). Possible local experiments could include reactivation of the District, Thana and Union WSCs; clarifying standards of performance of DPHE fieldstaff for UP Chairmen; coordinating EE visits with TDC meetings; provision of information from an improved Management Information System (MIS) relevant to UP Chairmen; obliging EEs to visit a certain number of remote TW sites each year; consulting the experienced NGOs on approaches to communication and support to the poorest; rewarding good fieldstaff performance, and investigating poor performance.

Orientation of all staff in DPHE towards *the role of women in the WSS sector* is essential if the organization is to be more responsive to their needs and the constraints they face. Some of the implications for DPHE are mentioned in Appendix 15, which can be used as a focus for discussion in the transition process. The problems run much deeper than ignorance and poverty; the analysis points to a major research agenda on the gender aspects of the WSS sector, which DPHE is in an excellent position to commission. The implications are wide-ranging and very urgent. This Study has only been able to scratch the surface of what is a major issue for all concerned with the sector.

Investigation of New Services

It is suggested that DPHE could investigate the possibilities for providing other Departments or the private sector with technical assistance related to groundwater extraction. These could lead to new "markets" for DPHE's services (e.g. for groundwater extraction technology transfer in other sectors).

New structure and staffing

A major concern of DPHE is its organizational structure and staffing. Various possibilities have been discussed, but the definition of a comprehensive proposal for *DPHE's Organizational Structure and Staffing* can only be done at the end of Phase 2 of the transformation programme when the implications of DPHE's new role and orientation are clearer. In addition, the Team has pointed out that they were asked to address rural concerns rather than the urban development work which DPHE undertakes.

However, the Team has made suggestions regarding temporary (Development budget) structure and staffing changes which are essential if the Transformation Strategy programme is to go ahead. (Please refer to Appendix 22).

Phase 3: Implementation of change

The last phases of two or more years would involve implementation of the Transformation of DPHE on the basis of the experience of Phase 2. Restructuring and final staffing arrangements could be formalized then. Jobs could be defined clearly. Large scale training programmes to meet those better defined roles could be mounted with training capacity built up in Phase 2, and through external agencies.

Proposals are made in the Report regarding the coordination, management and monitoring of change, and for the type of technical assistance which might be given to DPHE to assist it in its transformation process.

MAIN REPORT

SECTION 1 - INTRODUCTION

1.1 BACKGROUND TO THE ORGANIZATIONAL STUDY

The suggestion that an Organizational Study of DPHE should be made originated in 1991, with the Appraisal Team for the 1992-95 Rural Water and Sanitation Programme. They Drafted Terms of Reference as an Appendix to their report, and these were later modified in discussions between UNICEF and DPHE. The final version is presented in Appendix 1.

The principal concerns of the Appraisal Team which had motivated their suggestion for a Study included:

- apparent need for orientation on the part of DPHE staff towards the qualitative and non-engineering aspects of the RWSS;
- the fact that the Organizational set-up of DPHE had not been reviewed since 1982, while its role had expanded both quantitatively and qualitatively.

The execution of the Study became a component of the 1992-95 RWSS programme. The original plan was to have the Study executed in the first half of 1993. In practice, the selected consultant teams mobilized only in early July 1993.

1.2 TERMS OF REFERENCE

1.2.1 Apparent Omissions

There was no explicit reference to gender issues in the ToR for the Organizational Study, nor to assessment of the financial and budgeting systems of DPHE. However, in their proposals, the Consultants proposed such assessments be made, given the importance of the issues for the sector and its resource management.

1.2.2 Sectoral Emphasis

The emphasis in the ToR was on DPHE's role in rural water supply and sanitation. The urban sector was not mentioned.

1.3 CONSULTANTS' STAFFING

1.3.1 Contract structure

The ToRs indicated that the expatriate firm would be the lead consultant and therefore be responsible for the execution of the entire assignment. They were to be teamed with a group of Bangladeshi consultants, concurrently and separately selected and contracted by UNICEF with DPHE approval.

1.3.2 MATRIX Staffing

The final staffing from the MATRIX side was as follows:

David Watson	Team Leader (Phase II onwards)
Jeroen van Luijk	Team Leader (Phase I)
Dr Sultana Alam	Gender Issues Adviser * ([1])
Dr Kees van der Poort	Urban Development and Institutional Specialist
Ad Hordijk	Transformation Strategy Adviser

Short-Term assistance in Bangladesh was also obtained from:

- Barbara Whitney (Independent Consultant in VIPP Methodology)
- Afsana Wahab (Consultant in VIPP Workshop facilitation from the Centre for Woman and Child Development, Dhaka)
- Azam Ali (Ditto)

1.3.3 ACE Staffing

Associated Consulting Engineers (Bangladesh) Ltd. (ACE) fielded the following team for the length of the assignment:

Engr. Firoze Ahmed	Public Health Engineer (Coordinator)
Nur M Akon	Institutional Expert
Dr Nurul Islam	Community Development Specialist
Dewan Nazrul Islam	Financial Analyst *

Expert advice regarding computing aspects was provided by Atiqul Haque Mazumder, ACE's Technical Director.

Salauddin Ahmed was responsible for logistic support, and Md. Golam Sarwar Mostafa Khan was the computer operator.

1.4 INTERPRETATION OF THE TERMS OF REFERENCE

The ToRs call for a report containing recommendations for modifications in DPHE as an organization which are sustainable in the long term and can deal effectively with both hardware and software aspects of RWSS. These recommendations were to be used as the basis for the discussion and planning of possible future institutional assistance to DPHE from donors.

The purpose of the Study is to provide the basis for a process of change in DPHE. The present report attempts to record the consultants' analysis of DPHE's function, and of the need for organisational change. It also records principal agreements reached with DPHE and other parties during the Study, on the optimal future development strategy for DPHE, related to the issues in the Terms of Reference.

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[1] * Indicates substitution compared to original proposals.

1.5 APPROACH ADOPTED

1.5.1 Participation and Consensus-Building

Consistent with their interpretation of the ToR, and with the endorsement of UNICEF and DPHE, the consultants have adopted a highly participative approach. Thus extensive consultations have been made, not only with officers of all grades of DPHE - the primary focus of the Study - but also with a wide range of actors in the sector at central and local level.

The initiative for the Study lay with the donors, therefore the consultants regarded it as vital that an informed consensus should be reached which would in turn result in DPHE itself being able to develop its own vision of what changes it needed to make, in order for its goals to be attained in the future. The Study Team is happy to report that the scenario for change and future development of DPHE has been generated on the basis of a formula developed together with DPHE. The Team strongly endorse this formula.

1.5.2 Phasing

A Phased approach was applied. Phase 1 comprised a review of the sector as a whole, and of DPHE's role within it. Field visits to Barisal and Rajshahi were undertaken, and the phase culminated in the first of two workshops for Executive Engineers, followed by the first of four workshops for the Top Management of DPHE.

Thereafter, the Organizational Study proper started with a week's field visit to the Comilla area. The team split up each day and discussed the full range of issues, problems and possible solutions with all categories of DPHE staff, rural consumers, NGOs, private producers and UP Chairmen.

The second Top Management workshop on 21 August discussed the feedback from the fieldwork, and a report of a special workshop for EEs on the detail of their job, held in Comilla. (See Appendix 6). It also included a practical management-of-people exercise to demonstrate leadership skills, to provide a common "language" to future discussions on management themes.

File studies in DPHE and UNICEF ensued, before another workshop - this time for SAEs from all over the country - was held in Dhaka. A field trip to Rangpur to discuss the Zonal SEs role, and a wide range of further consultations were made. The Third management workshop discussed accountability, and SAEs' jobs and status. It also covered training and organizational structure principles for DPHE. (See Appendices 5a and b). Later, facilitators were mobilized to run a workshop using VIPP methodology for 28 Union Parishad Chairmen from all seven zones of the country in Dhaka (see Appendix 5c for a record of proceedings).

Thereafter the Consultants had a week of consultations on the Study strategy for the final phases. A range of optional scenarios for the future of DPHE were developed. The purpose of introducing alternative scenarios was to avoid a situation where only a single "consultants'" proposal became the focus of discussion.

The development options for DPHE were presented in the fourth Management workshop on 4 October. MIS proposals were also tabled at the workshop. The record of this workshop is at Appendix 5d.

Briefings for the donors and for the Secretary MLGRDC were held, before the preparation of the Draft report started in early October. With the addition of Dr van der Poort to the MATRIX Team on 5th October, more detailed study could be conducted into urban development issues and challenges for DPHE. To this end, together with the ACE Coordinator, he visited Manikganj and Mymensing.

This Final Report has benefitted from the intensive inputs of the Working group set up by the Chief Engineer on the First Draft, and comments from the MLGRDC, the donors and from UNICEF.

The Draft Executive Summary of the report was presented to the Secretary and senior officials of MLGRDC, MoF, MoE, DPHE and the Donors on 26 October 1993. Please refer to Appendix 5e for a record of the proceedings of this meeting.

1.6 LIMITATIONS OF THE STUDY

1.6.1 Study orientation particularly to the rural sector

The Team encountered problems in restricting the study to the rural aspects of DPHE's functions. The role of many of its circles and fieldstaff can only be properly understood if their work in urban development is also considered. In many cases, rural and urban roles are quite different; implementation and management of donor-financed projects is for example on a completely different basis for urban and rural areas. Suggestions are made in Section 6 for a limited study of the organizational aspects of DPHE's urban development role in future.

1.6.2 Data Sources

The Study Team did not collect primary data via surveys, and could not conduct structured literature reviews. However, over 350 people were either interviewed, or were participants in structured consultative workshops.

Secondary data was collected from DPHE and UNICEF files, reports, and records.

1.6.3 Geographical and Sectoral Coverage

The Team could not visit all regions of the country. However, participants from all areas came to two workshops (for SAEs and UP Chairmen); in addition, all zonal SEs were regular participants of four workshops for top management. Rural areas were visited more than urban areas. This was because of the emphasis given to the former in the Terms of Reference.

1.6.4 Detail of Jobs - Job Analysis and the Observation of procedures at work

Several key cadres were extensively consulted in their work stations about what they did, and the amounts of time they spent performing various tasks. Workshop sessions were also used to elicit this information. This did not, and could not, amount to a detailed Job Analysis of those cadres. This would have involved observation over a period of time of a range of individuals in their work situation, and much more detailed enquiry.

This is one example where the Study has identified a topic ripe for further investigation - by DPHE with assistance from other sources - in the future "implementation" stage of its Transition Strategy (see section 6).

1.6.5 Gender Aspects

No suitable Bangladeshi female counterpart could be identified for the original Dutch MATRIX candidate. Therefore MATRIX had to find an alternative Bangla-speaking candidate. The consultants were happy that a woman of Bangladesh origin could be contracted for a period of three weeks, at short notice. However, this vital subject merited more input. Her full report is at Appendix 15, as one of the papers recommended for discussion in the first phase of the Transformation Strategy of DPHE.

1.6.6 Local Government Policy and Institutional Development

The Study took place at a time when policy on Local Government Structure is about to be changed. Union Parishads are to become the focus of rural development efforts. If policies and programmes for the strengthening of local government in Bangladesh had been more firmly in place, it would have been easier to develop a strategy for DPHE interaction, particularly in rural areas. RWSS are essentially local services. We return to this issue in the next section.

1.6.7 Data on the future demand for WSS services and facilities

A GoB/UNDP/UNICEF-sponsored WSS Sector study is ongoing. It will eventually estimate quantitative demand for WSS services over the next decade. No data are yet available, and the capacities of the Organizational Study Team were not adequate to make any reliable estimates. The implications for staffing of DPHE are to an extent affected by these considerations, but the qualitative aspects of the scenario developed will be consistent with expanded demand.

SECTION 2 - OVERVIEW AND ANALYTICAL FRAMEWORK

2.1 CONSTRAINTS IN FRAMING A STRATEGY FOR THE DEVELOPMENT OF DPHE WITHIN THE WATER AND SANITATION SECTOR

2.1.1 Central Government Fund limitations

Central government funds are very limited. The team has been briefed that any increases in costs of DPHE due to expansion of its compliment of staff must be minimized, or preferably kept to nil. Possibilities for local resource mobilization for the support of essential local services should be kept in mind. The ongoing debate about the role of government versus the role of the private sector has also been carefully considered as the Team put options to DPHE management.

2.1.2 Local Government Structure - The Limited Capacities of the Union Parishad as the focal point of rural development

Government policy indicates that the Union Parishad will be the focal point of rural development, yet definitive programmes to strengthen urban and rural local authorities are still at an early stage. However, some progress in institutional strengthening in urban local authorities can be expected over the next few years, due to the implementation of several urban infrastructure projects under DPHE and LGED which feature institution-building components.

2.1.3 National Public Service Norms, Conditions and rules

The recent UNDP Public Administration Study depicts a bleak scenario in the Bangladesh public service. Reform is urgently required. Rationalization of staffing, human resource management, patterns of decision-making, and accountability are essential. Pay and conditions for professional staff are patently inadequate.

DPHE is a Department whose role is to execute MLGRDC policy. Its autonomy is thus formally and informally circumscribed.

2.2 BASIC PRINCIPLES

2.2.1 National Plan policies for the WSS Sector

The National Plan policies for the WSS sector, and the national interest, should be borne in mind when considering the future of DPHE. Unfortunately, the National Plan document is unclear as to strategy, and respective institutional objectives. In briefings with senior officials of MLGRDC, and through the study of official documents, the Team has been appraised that sector policy is to attempt to bring water and sanitation services to all in Bangladesh by the year 2000. This is to be achieved through community participation, with DPHE playing a lead role in the sector to support local authorities, NGOs, beneficiaries and community based organisations.
Therefore the OS Study team has considered the basic question - what exactly should DPHE - as WSS Sector leader - **do itself** and what can and should be left to other institutions, public and private?

2.2.2 Local involvement and Accountability in DPHE

There are at least two dimensions here: DPHE's obligations to its clients for the quality of services it provides, and its obligations to the exchequer of the GoB and the donors for the way in which public funds are expended.

DPHE is a central government department which provides services which are amongst the most crucial to any society, to most of the population of Bangladesh. In many countries these WSS services are provided by local authorities. In Bangladesh, Pourashavas are formally responsible for O+M in cities and district towns. International experience has shown that local involvement and accountability in the provision of these essentially local services is vital for efficient operation and cost-effective maintenance, and thus sustainability. Any organisation providing such services therefore has to have a "client oriented approach".

Regarding financial accountability, the Team has also given attention to the financial control function in DPHE, and has proposed measures to strengthen it.

2.2.3 Gender Aspects of the Sector

The ToRs, and the composition of the OS Team, did not permit it to research adequately these aspects. However, some progress has been made in this Study. More work should be done on the role and responsibilities of agencies working in the WSS field, and in research into the gender-related aspects of the sector. Appendix 15 is sobering. The provider institutions - central or local government, or NGO - are male dominated. This has implications for the execution of the Social Mobilization Programme.

2.3 THE ORIENTATION OF THE STUDY - CHANGE IN THE FUTURE

2.3.1 Time needed to introduce change

All parties to this Study should bear in mind that institutional reform -either between or within institutions - is notoriously slow and difficult. The outcomes are uncertain. Any changes in organizations - particularly old, established ones such as DPHE - take time to introduce and achieve. One step has to be taken at a time. The Organization Study is only one step in a change process.

2.3.2 The Orientation of the Study

The Study is an attempt to identify areas where change in DPHE is required, and where there is the most potential for change. In certain facets of the WSS sector functions, it is acknowledged that at least in the short-to-medium term, little change can be expected in DPHE's contribution. In other aspects, there appears to be not only a consensus that change is needed in DPHE's role, but there also exists in some quarters a will and determination to "make it happen". The study seeks to build upon and reinforce initiatives for change.

SECTION 3 - DPHE - PAST AND PRESENT

3.1 ROLE OF DPHE

3.1.1 DPHE in Historical Perspective

The Department of Public Health Engineering is the national agency for water supply and sanitation under the Local Government Division of the Ministry of Local Government Rural Development and Cooperatives. The responsibility of water supply and sanitation has been entrusted to the DPHE for both rural and urban areas of Bangladesh, except the cities of Dhaka and Chittagong, where water supply and sanitation services are provided by the WASA and Municipal Corporation of those two cities respectively.

During British rule in India, as also in the early years of Pakistan, the Department's activities were mainly concentrated in Urban areas[2]. Village water supply schemes commenced in British India before the Second World War for the preservation and promotion of health of the rural populace. However, responsibilities for the execution of the scheme were at that time vested in local bodies like District Boards & Union Boards.

In the wake of partition, the then province of East Pakistan (now Independent Bangladesh) had to face a series of crises and the scheme of Rural Water Supply suffered accordingly.

Immediately after independence, the Government of the Peoples Republic of Bangladesh considered the programme of Rural Water Supply and Sanitation as of topmost priority and decided in 1972 to entrust the DPHE with the task of implementing the programme. Community participation in all matters related to sinking and maintenance of tubewells and motivation of people for environmental sanitation were given due importance by the Government.

3.1.2 Developments during the last 10 years

The Martial Law Committee on Organizational Set-up submitted its report to the Government in October 1982. The purpose of this Committee was to rationalize the organizational set-up of different Government Departments by cutting unnecessary and superfluous expenditure and staff, logistics, etc. According to this report, the functions of the DPHE were to be divided into two broad categories:

(a) Rural Water Supply and Sanitation
(b) Urban Water Supply and Sanitation

As regards Rural Water Supply and Sanitation, DPHE was to continue to provide water supply facilities to the rural areas by hand pump, shallow tubewells and deep tubewells, national spring development, infiltration galleries, deep set pumps, ringwells etc. The maintenance of tubewells and other water supply facilities was also entrusted to the DPHE. Rural sanitation was to be ensured by DPHE through manufacture and supply of water seal latrines and through health education activities.

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[2] Annual Report of DPHE, 1957

Regarding urban water supply and sanitation, DPHE activities were to cover all the District and Sub-divisional Towns except Dhaka and Chittagong WASA limits, which were created in 1963. Major Thana headquarters and developed bazars are planned to be brought under the urban water supply and sanitation. Services are to be extended to all Thana headquarters in phases. Under the urban water supply scheme the DPHE was to execute piped water supply systems which includes treatment works, production wells, water distribution networks, storage reservoirs and pumping installations. The maintenance function has been allotted to the Municipalities.

DPHE had planned to achieve 77% coverage in drinking water in rural areas and 65% coverage in the urban areas before the year 1990. In the sanitation sector it was given the target to achieve 13% coverage in the rural areas and 25% in the urban areas by 1990[3].

Public Health activities such as provision for supply of pure 'drinking' water, disposal of sewerage, industrial waste, sullage, provision for drainage system and control environment pollution were commonly dealt with by different agencies, DPHE, WASA, Dhaka and Chittagong, Dhaka Municipal Corporation and other Municipalities.

It was, therefore, recommended by the Committee that the WASA, Dhaka and Chittagong and urban based agencies such as Municipalities should develop their organization and technical know-how to look after Water Supply, Sanitation and Public Health affairs in totality in their respective areas. This, according to the Committee, would ensure uniformity of approach and programmes to deal with the problems and minimize duplication of efforts.

In the Fourth Five Year Plan period (1990-95), 10 projects have been scheduled in the rural areas of Bangladesh. These include 7 UNICEF assisted, 1 Saudi assisted and 2 GOB assisted projects. Under these projects 163,297 new hand pump tubewells will be installed and 94,727 choked up tubewells will be rehabilitated/resunk. As a result during 90-95 plan period an additional 19.35 million rural people will have access to safe drinking water. During the 1990-92 period 70,826 new hand pump tubewells were installed and 34,727 choked-up tubewells were rehabilitated/resunk. As a result an additional 7.92 million people have been provided with clean water facilities. The average coverage as of June 1992 stands at approximately 109 persons per tubewell.[4]

Over the past years DPHE-UNICEF has set up 1000 Village Sanitation Centres (VSCs), one in each Thana and in 540 Unions to produce and sell latrines at subsidized rates. At present 100 VSCs are planned to be closed as their performance is found to be unsatisfactory. All the Centres together have a production capacity of 500,000 units a year. Besides there are 33 production centres in 33 municipal towns under urban slums and fringes project. A limited number of mobile production units are being tested now. About 33% of the rural people are now using latrines of which about 60% are home-made.

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[3] Enam Committee Report, para 17, page 4

[4] For more detailed information on targets versus achievements, see Table 5 below.

Of late, there has been an increase in demand for slab and ring latrines. But estimates show that it may take several decades for Government alone to achieve universal coverage. The logical course is, therefore, to encourage the private sector to produce and sell latrine components at competitive price and promote a home-made option. DPHE has already adapted its policy to sell only a slab with one ring at a subsidized price and additional rings at cost price.

Under the sanitation programme 1,518,940 sanitary latrine units are planned to be produced and sold to the beneficiaries during 1990-95 which will cover about 11.00 million additional rural people. During 1990-92 period 611,382 latrine units have been produced which covers 4.35 million people.

For further promotion of Sanitation in rural areas, the Social Mobilization Programme has just been approved. As an outcome of the project the sanitation coverage is likely to increase through motivation. The planned targets for water sealed sanitary latrines and home made pit-latrines are set to be reached through the social mobilization campaign.

3.1.3 Quantitative performance in the WSS Sector

The performance of DPHE in terms of number of TWS installed during the past 10 years is presented below.

Table 1

PERFORMANCE IN RURAL WATER SUPPLY 1982 - 1992

Year	Rural Water Supply					
	STW	Tara	DTW	Resinking	D.S P.	Total
1982-83	42330		810	9460	480	53080
1983-84	30340		810	9660	520	41330
1984-85	31230		495	12861	430	45016
1985-86	24830		250	8590	50	33720
1986-87	29424		1228	11645	1748	44045
1987-88	33582		491		476	34549
1988-89	22462	3233	1907			27602
1989-90	24232	11973	7004	15624		64833
1990-91	13913	13916	4476	14684		48989
1991-92	23620	17850	6070	20043		67583
1992-93	24029	8484	4819	14073		51367
Total in Past 10 Years	299992	55456	28360	116640	3704	
Annual Average	29999	11091	2836	11664	617	

Source: Annual Project Progress Report 1982-83 to 1992-93.

The following table indicates the number of latrines constructed and sold over the past 10 years.

Table 2

HISTORIC PERFORMANCE OF DPHE IN TERMS OF NUMBER OF LATRINE CONSTRUCTED

Year	Latrines Constructed		
	Target	Achievement	% of Achievement
1982-83	50000	52578	105.16%
1983-84	101550	83154	81.88%
1984-85	93000	89268	95.99%
1985-86	30000	20055	66.85%
1986-87	75000	64335	85.78%
1987-88	100000	66465	66.47%
1988-89	230000	10518	45.75
1989-90	300000	223639	74.55%
1990-91	265000	186312	70.31%
1991-92	500000	434583	86.92%
1992-93	200000	186284	93.14%

Source: Annual Project Progress Report from 1982-83 to 1992-93

To realise this performance the following amounts were invested in the sector over the period of the last 10 years.

Table 3

HISTORIC PATTERN OF DONOR AND GOB INVESTMENT IN THE RWSS SECTOR

Figure in Lakh

Year	Rural Development	Village Sanitation Programme	Urban Development	Total
1983-84	2030.00	400.00	506.00	2936.00
1984-85	1165.00	466.00	3850.00	5481.00
1985-86	529.00	122.00	3513.00	4164.00
1986-87	1249.00	449.50	4715.00	6413.50
1987-88	1161.00	481.00	7537.00	9179.00
1988-89	1497.00	485.05	2789.00	4771.05
1989-90	8054.23	1085.46	5792.00	15585.81
1990-91	7067.96	1269.84	2329.00	9386.40
1991-92	7103.25	1430.80	1443.33	9977.38
1992-93	6962.45	1288.85	2464.00	10715.30

Source: Annual Project Progress Report 1983-84 to 1992-93

A full description of the WSS investment programme channelled through DPHE is provided in Table 4.

Table 4

SUMMARY OF BUDGET
(REVENUE AND DEVELOPMENT) DPHE 1989-90/1992-93

Figure in TK 000

Particulars	92-93	%	91-92	%	90-91	%	89-90	%
Revenue budget	264696	18	237137	18	226552	18	201366	17
Development budget (incl Donors contribution)	1224664	82	1098700	82	1039800	82	959150	83
Total budget	1489360	100	1335837	100	1266352	100	1160516	100
Donors contribution	455250	31	648200	49	493100	39	447650	39
Government contribution	1034110	69	687637	51	773252	61	712866	61
Total budget	1489360	100	1335837	100	1266352	100	1160516	100
% of donors contribution in development budget	37%		59%		47%		46 67%	

3.1.4 Service Coverage and Actual State of Benefits

By the middle of 1993 about 96% of rural households and 94% of households in urban slums and fringes have access to handpumps (within less than 150 m.) and more than 90% people use only tubewell water for drinking. But in spite of comparatively easy access to tubewell water -it may be that the distances to a tubewell for many households are still considerable - only 16% use tubewell water for all domestic purposes. The level of hygiene awareness and distance of households from tubewells are known to affect use of tubewell water.

Although there has been a spectacular increase of sanitation coverage from 11% in 1990 to over 30% in mid 1993, most of the well-to-do rural people use the sanitation latrine primarily for convenience and privacy and not for health purposes. That would, perhaps, explain the low or limited use of such latrines by children, and unhygienic conditions of 60% of the latrines in use.

3.1.5 Qualitative description of the WSS Sector

The following table shows the tubewells coverage in 1993 along with target coverage of 1995 and 2000.

Table 5

TARGETS AND ACHIEVEMENTS

Region	Target		Existing Achievement
	Persons per tubewells		
	1995	2000	1993
High Water Table Areas	92	84	78
Low Water Table Areas	216	157	326
Coastal Saline Belt	270	200	216
Chittagong Hill Tracts	115	100	100

Source: DPHE

It has been noticed that the achievements of GOBs recent Annual Development Plans (ADP) is quite satisfactory (see Tables 1 and 2) so far as physical progress is concerned. That shows the technical capability of DPHE. But at the same time low use of clean water for all domestic purposes and low coverage of hygienic latrines and its proper use reveals weaknesses in social motivation and awareness building.

3.2 ORGANISATIONAL STRUCTURE OF DPHE

3.2.1 Organization before the Martial Law Committee

Before 1982 DPHE was headed by one Chief Engineer who was assisted by one Additional Chief Engineer. There were four territorial circles located at the four administrative Divisional head quarters. One additional circle was created for Barisal. At the headquarters there were two circles, viz, the Planning Circle and Store Circle. The circles were headed by Superintending Engineers. The country was divided in 34 divisions, each headed by an EE and 71 Subdivisions headed by SDE's. There were 436 Thana offices headed by SAEs.

The Department was manned (in 1982) by 156 officers and 4325 non-gazetted staff of which 145 officers and 3308 staff were in position. The strength of the organisation was based both on Revenue and Development Budgets as shown in the Table below:

Table 6

STAFFING OF DPHE IN 1982 DIVIDED ACCORDING REVENUE BUDGET AND DEVELOPMENT BUDGET

	Revenue Budget		Development Budget	
	Sanctioned	Actual	Sanctioned	Actual
a. Officers b. Non-Gazetted	113 2809	112 2809	43 1516	33 499
Total	2922	2921	1559	532

The reason to separate the organizational set up into revenue and development categories was mainly the restriction imposed by the government on the increase of recurrent expenditure under the revenue category. On the other hand additional staff and logistics were allowed for successful implementation of development projects which are for a very substantial part financed by the donors. In all such projects the staff component is, of course, financed by the government with the provision that the staff of the project shall be retrenched as soon as the project is completed. In practice, however, the staff of such development projects are not often retrenched as they can often be absorbed either in new projects or in vacant posts under the revenue budget.

The Enam Committee observed that the physical (quantitative) achievement of the projects in general was satisfactory but in spite of this, the state of affairs in the Public Health Sector did not present a 'bright picture'.

It therefore recommended,"as the Department of Public Health Engineering plays a vital role in the Health Sector and since the present state of affairs in this sector is anything but satisfactory, the DPHE needs a viable structure with adequate manpower". The Committee therefore recommended a revised set up as shown in following division of posts.

Gradually DPHE has increased its staff in different levels under revenue set-up with the increase in the volume of work. A part of this increase came from the adjustment of development staff and the rest was financed under an additional sanction for additional work.

3.2.2 Present Organisational Structure and Staffing

In principle the structure of the DPHE organization has remained the same as recommended by the Brig Enam Committee and approved by the Govt. in 1982. The only change is that the DPHE has increased the number of staff at various levels with the increase of volume of works. The department has now (June 1993) a total of 7085 staff of which 201 are Class I gazetted officers from CE down to AEs (including Chief Health Education officer), 6 Class II gazetted officers 4771 Class III officers and 2107 Class IV officials. Table 7 compares the sanctioned staffing of 1982 with the situation of June 1993.

Table 7

COMPARISON OF SANCTIONED POSTS IN DPHE 1982 - JUNE 1993

Name of post	Sanctioned 1982	Sanctioned 1992		
		Revenue	Development	Total
Class I				
Chief Engineer	1	1		1
Add Chief Engineer	1	1		1
Superintending Engineer	5	7	6	13
Executive Engineer	18	73	14	87
SDE/AE	86	39	42	81
Other class I officers	1	6	12	18
Total Class I	112	127	74	201
Class II				
Adm Officer	1	1		1
Accounts Officer	-	1		1
Junior Chemist	-	4		4
Total Class II	1	6		6
Class III	2439	3476	1295	4771 *1)
Class IV	370	1104	1003	2107 *2)
	2922	4713	2372	7085

*1) Lower administrative personnel + tubewell mechanics

*2) Most of the increase of class IV workers is attributed to the establishment of DPHE rural and urban latrine production centres.

3.3 THE RELATIONSHIP BETWEEN DPHE AND UNICEF

DPHE and the UNICEF have been working together since 7th December, 1973 on the basis of an Agreement concluded between the Government of Bangladesh and UNICEF. A new Agreement between the GOB and the UNICEF was signed on 11th July 1988 in Dhaka which contained a Master Plan of Operations for children and women.

The External Resources Division of the Ministry of Finance (formerly the Ministry Planning) is responsible for overall co-ordination of the implementation of the programme under the guidance of the Joint Government - UNICEF Advisory Group (JGUAG). The Ministry of LGRD&C is a member of JGUAG. DPHE being an Attached Department of the MLGRD in the field of Water Supply and Sanitation, is associated with UNICEF for this part of the programme.

The objective of UNICEF in Bangladesh is to promote the welfare of women and children. As over 200,000 children die of diarrhoeal diseases and parasitic infections every year in Bangladesh, and as these diseases mainly originate from the use of impure water for drinking and other domestic uses and from unhygienic disposal of human excreta, solid waste and sullage, UNICEF has come forward to provide financial and other assistance for the purpose of water supply and sanitation in rural Bangladesh.
Most programmes of RWSS supported by UNICEF are implemented through DPHE under Joint Supervision of the officers of UNICEF and DPHE.

The total investment by UNICEF in the Rural Water Supply and Sanitation Sector in Bangladesh from 1973 - 1993 is about US $ 80 million.

3.4 THE POSITION OF DPHE WITHIN THE MINISTRY OF LGRD&C

The Department of Public Health Engineering (DPHE) is an Executive Department under the Local Government Division of the Ministry of Local Government, Rural Development and Co-operatives (MLGRDC). The Ministry is responsible for formulating policy and plans for water supply and sanitation of both urban and rural areas of Bangladesh and the DPHE is the principal Agency for executing those policy and plans.

Apart from formulating the policy and plans of WSS, the MLGRDC (like other Ministries) is also responsible for carrying out supervision of the activities of DPHE, viz. to monitor whether Government policy and plans are properly implemented by DPHE. This supervision is exercised through the Secretary and Joint Secretaries of the Local Government Division of the Ministry of LGRD.

The L.G. Division has four Wings each headed by a Joint Secretary (J.S.). The J.S. Administration deals with the administrative matters of DPHE, J.S. Planning (MLGRD) deals with planning matters of DPHE (along with its implementation) and J.S. Pourashava, deals mainly with Pourashava affairs. Another Joint-Secretary is concerned with local institutions.

The Chief Engineer, DPHE acts as Administrative Head of DPHE and is responsible for the over-all administration and management of the Department. In that capacity, he also acts as an advisor to the Ministry on technical matters and on formulation of policies related to WSS.

The CE also acts as Principal Accounting officer of the Department within the limitations of budget allotment given by the Ministry. He has been given the authority of appointing Class II, Class III and Class IV employees of the Department under existing rules and procedure. The CE has the authority to issue clear standing orders laying down the maximum extent of delegation of authority to the officers serving under him, to grant earned leave etc. to all Class I officers under him.

The first appointment of Class I (cadre service) officers is made by the Head of State on the basis of recommendation of the Public Service Commission. The number of Class I officers required by the Department in a particular year is communicated by the CE, DPHE to the Establishment Division (under the Ministry of Establishment) through LGRD&C.

Administrative and Financial matters concerning the Department requiring approval or decision of the Ministry are processed through the Administration Wing of the Ministry under the J.S. Administration.

Similarly matters relating to Development projects and related fund allocation are processed through the JS/DG Planning of the MLGRDC for onward submission (with the approval of the Secretary/Minister) to the Planning Commission, Ministry of Finance and the External Resources Division (ERD) of the Ministry of Finance.

3.5 THE RELATIONSHIP BETWEEN DPHE AND THE DIRECTORATE OF HEALTH SERVICES

Although the DPHE and the Directorate of Health Services have a close affinity in name and are working towards the same goal (i.e. health for the people of the country - one for taking preventive measures and the other for curative measures in general), there is practically no institutional or organizational linkage between the two large departments. The two departments are working under two different Ministries - one under the Ministry of LGRD&C and the other under the Ministry of Health and Family Welfare. That does not, however, preclude cooperation between the two Departments.

Accordingly in the district level, the civil surgeon of the district has been made the chairman of the district WATSAN Committee in which the Executive Engineer, DPHE is the member secretary.

At Thana level, when the Upazila System was still functioning the Thana Health and Family Planning Officer of the Health Department and the Thana SAE were working together in the Thana Site Selection Committee under the Chairmanship of the Upazila Chairman.
The SAE acted as member-secretary and the Thana Health & Family Planning Officer as members. After abolition of the Upazila System, these committees regrettably are no longer functioning.

At the Union level, the Health Assistants and Family Welfare Workers of the Health Department cooperate with the SAE's and TWMs of the DPHE for the purpose of motivation and mobilization of the populace. The effectiveness of this cooperation depends mostly on the initiative of the Thana Health & Family Planning Officer of the Department of Health and the SAE of the DPHE.

SECTION 4 - ORGANISATIONAL ANALYSIS

4.1 OVERVIEW: CURRENT SECTORAL DEMANDS COMPARED TO DPHE'S HISTORICAL ROLE; CONSEQUENCES FOR THE ORGANIZATION

4.1.1 Historical strengths in implementation

The previous Section has depicted the historical evolution of DPHE's role as the lead implementing organization in the WSS sector in Bangladesh. In its implementation role, its quantitative performance has been generally impressive, particularly when the unfavourable conditions for execution of infrastructural works are taken into account.

This focus on implementation is both a strength and a weakness in the organization. It is a strength, because it depicts the existence of skills - both technical and organizational. DPHE gets things done. However, this focus on "doing" has, it appears, led to the relative neglect of some of the functions which are becoming of vital importance as government, public, and donor concerns turn towards the operation, maintenance, and sustainability of WSS investments, and the use to which they are put. WSS infrastructure is a means to an end - better health for particularly women and children - not an end in itself.

In order to meet these contemporary demands, both quantitative and qualitative, in terms of impact on the health of the rural population, the agency has to seek a role which more effectively contributes to the overall goal of improving health for all through the universal provision of water and sanitation by the year 2000.

4.1.2 The nature of Future Challenges: Four paradoxes

An orientation to DPHE's clients will be a prerequisite to respond to these challenges. The aim is to improve health, and to provide for sustainability - not just of the facilities, but of DPHE itself as a professional engineering institution.

In seeking such a role, the agency will have to reconcile four sometimes conflicting pressures and paradoxes.

(i) On the one hand, quantitative demand for WSS services is growing; DPHE itself does not have the capacity to meet it alone. Local authorities, particularly in urban areas, are emerging as sources of future potential capacity in the WSS sector; they need strengthening. DPHE needs to give more emphasis to providing the technical support they need. One sign of increased demand for WSS facilities is the growing problem of groundwater depletion and pollution. DPHE has the potential to analyze these problems in more detail.

(ii) If the qualitative aspects of service provision are not given appropriate attention, then facilities and supply systems are not sustainable. Users' participation in operation and maintenance of WSS systems is essential. The provision of information and extension services to stimulate this participation is also vital. The extent to which DPHE has internalized this concept is questionable.

(iii) DPHE is made up of professional engineers capable of advising on WSS policy development, yet up to now has concentrated on implementation of projects. Functions such as Planning, R+D, human resource development (of its own and other agencies' staff), financial resource management, and planning for emergencies have been given low priority.

(iv) DPHE is a government Department, yet operates in a context where the private sector is playing an increasingly important role. Already, No6 TW technology and spares are widely available through private channels. The number of private masons who manufacture latrine components is growing; there is already excess capacity in the private sector. There is a clear need for better quality control and training, however.

Some of the symptoms of the perpetuation of the historic "implementation" orientation in the agency have come to light during the Study. The following subsections provide details of the major symptoms of this tendency, and provide the analytical framework for identifying the changes which DPHE will have to consider in the future.

Subsection 4.2 focuses on the existing orientation of DPHE staff. These impressions have emerged from extensive discussions and contact made by the Study Team over the past four months. Given the importance of an orientation to its clients in future, this section depicts the nature of the need and the challenge.

Subsection 4.3 makes some observations on the existing organizational set-up, and how DPHE is staffed, both quantitatively and qualitatively. These features are in part a result of the organization's previous "implementation" orientation.

Subsection 4.4 notes some of the symptoms in terms of day-to-day operational management which result from this concentration on implementation.

Finally, subsection 4.5 provides basic information on what appears to be the most strategic functions for DPHE in the future, as a basis for consideration of the changes which are needed in how these functions are resourced in future.

4.2 ORIENTATION AND "CULTURE" IN DPHE

4.2.1 Accountability to Clients

Consistent with the Analytical Framework mentioned in Section 2, the OS Team has been concerned to assess the extent of accountability existing within the present delivery system for RWSS. Commitment and clear patterns of accountability in system management are an important influence on the performance of individuals who work in DPHE, and therefore on the performance of the entire organization.

There are major impediments to gaining the commitment of public officers to their work in the public service - in Bangladesh as well as in many other developing countries. The levels and structure of pay is a major factor. Civil servants are not paid a living wage. There are no pay incentives to job performance.

There are major practical impediments - especially in DPHE with its geographically widely dispersed distribution of staff and large spans of control - to holding officers accountable for their performance. In other words, there are often no adverse consequences for the officer concerned if necessary actions are not taken and standards of service are allowed to slip. Reports can be fabricated with little likelihood of being found out. ([5]) Improper conduct may never be detected.

While the Study has investigated and discussed with top management of DPHE, ways of improving accountability in DPHE through the management chain, the OS Team has also promoted discussion of ways of improving the relationship of fieldstaff to the people they serve.

In a parliamentary democracy such as Bangladesh, each Minister is publicly accountable in Parliament for the performance of his Ministry and its Departments. The staff of each Department are notionally publicly accountable through the management chain to the Head of Department, who in turn is accountable to the Minister through the Secretary of the respective Ministry/Division.

However, it has been often acknowledged that the system of accountability in Bangladesh works imperfectly. The recent study on the public administration sector in Bangladesh points out:

> "The shortcomings in the performance of government are seen to be related to the system of accountability". ([6])

The Report goes on

> "The evidence led the Team to conclude that government organizations are not being held properly accountable either financially or for programme performance. As to the performance of individual civil servants, there appears to be no system for position description, setting out the responsibilities and reporting lines for most posts in Ministries and other government organizations. Nor is the Annual Confidential Report system being used properly. The team concluded that individual performance is not being evaluated and that individuals are not, therefore, being held properly accountable."

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5 See Appendix 10 for a description of the frequency, duration and content of visits by EEs to SAEs as sampled in the SAE workshop. The data also indicates that the most remote TWs would rarely if ever be visited by the EE or anyone else from DPHE

6 ~~Report on Public Administration Sector Study in Bangladesh~~ - UNDP, July 1993 Page 98, paras 1 02 and 1 03

The international literature on institutional aspects of infrastructure provision in urban and rural areas indicates that primary education, preventative health, and water and sanitation services are usually decentralized and are under the control of some form of local authority whose elected members are publicly accountable for the performance of the authority in providing these services. ([7])

In Bangladesh, since the abolition of Upazilla Parishads in 1991, rural primary school, preventative health and water supply and sanitation services have been managed by the respective Departments ([8]). The Government has indicated that the elected Union Parishad is the focal point of coordination of local development services. These are however, extremely weak, with minimal sources of self-generated revenue, and no technical or administrative capacity of their own.

The Organizational Study Team has observed in this report that there are major constraints to maintaining close accountability of officers for their own performance within DPHE. These relate to budgetary, procedural, logistical, staffing and geographical factors.

However, the Team has also noted that some of the most encouraging and productive examples of interagency coordination in the field of RWSS have been the result of cooperative relationships developed between its SAEs, other departmental staff at Thana level and local government institutions. DPHE is one of the few departments which routinely involves UP Chairmen in planning of its infrastructural developments (in the Site Selection Committees for tubewells).

Therefore the Team has concluded that officers' commitment and performance could be stimulated by developing gradually procedures for improving coordination with local government institutions and for increasing the degree of accountability of fieldstaff to the Union Parishad in particular. These measures would need to be combined with simplification and improvements in the Management Information System (see Appendix 20).

Some practical suggestions already discussed with DPHE top management for improving accountability to clients in future, as part of DPHE's transition strategy, are presented in Appendix 16.

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7 See "Local Institutional Development" by N Uphoff Kumarian Press, USA, 1986

8 Primary Education and maths teaching was put under the control of the Prime Minister's Office in 1992

4.2.2 The Organizational "Culture" of DPHE ([9])

The organizational "culture" of DPHE is affected by the historical "implementation" role played by the agency as described above, and by the importance attached by MLGRDC to the achievement of quantitative physical targets for DPHE-related outputs in the sector.

In Team discussions with senior staff of DPHE, the impression they had of themselves was of an "open" organization, where staff of various levels regularly met to discuss progress and problems. The OS Team's impression was that such monthly meetings - between SAEs and EEs, between EEs and SEs, and amongst SEs and top management - are concerned primarily with quantitative progress in relation to ADP targets. Progress in achievement of higher-order health objectives - for example diarrhoeal incidence - appears to be reviewed much less frequently.

Openness, on the one hand towards other actors in the sector and on the other to communication between levels of management, is still developing. Union Parishad Chairmen are statutorily involved in all TW site selection processes, and interact with SAEs in this regard. DPHE within the last few years has developed collaborative programmes with NGOs (for example in the Integrated Approach). Caretaker Family Training takes place. Interaction with Pourashavas is increasing in the context of the urban WSS programmes which are being supported by various donors. The latest (ADB Second WSS Project) provides for much more Pourashava involvement in design and implementation than hitherto.

For decades DPHE has been seen as the expert Government agency in the field of water supply and sanitation. This notion still exists to varying degrees amongst all levels of staff the Team met during the study. While understandable, it can have some unfortunate side-effects. Some staff consulted during the Study were apprehensive of the impact on DPHE of technology transfer to other organisations. Some opined that Pourashavas are patently ill-prepared to take on the technical functions connected with WSS sector development.

One other feature of DPHE "culture" which has become apparent, is the weight its management puts on increasing the quantity of engineering staff (at all levels). Such demands are heard more frequently than the articulation of concerns for the quality of the performance of their staff, and the quality of service provided to the public by the organization.

The Study Team is in no position to judge the merits of the arguments. They are mentioned solely to depict the Team's perceptions of the "culture" in the organization. It is a culture which should be taken into account in planning organizational change.

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[9] See Organizational Development by W.W. Burke (page 10) for a definition of organizational culture He specifies "norms and values" amongst the members of the organization as making up this "culture".

4.2.3 Quality Control in the engineering function ([10])

Qualitative performance of the engineering function has a high priority for DPHE. In practice this means that quality control via supervision is exercised during construction works, since these works are generally realised by contractors.

For the sinking of tubewells and the related construction of platforms it is standard practice that a tender procedure is followed. DPHE normally makes a shortlist of 5 contractors who can subscribe for a contract of eg. the sinking of 200 tubewells and the construction of the related platforms in a certain Union.

It is the task of the Sub Assistant Engineer to supervise daily the contractor who is implementing the works. He should check whether these works are implemented according to the standards and specifications prescribed by DPHE together with UNICEF (in the case of rural UNICEF sponsored activities), such as size and thickness of the platforms, depths of the wells, etc. The payments to the contractor can only be finalised when the Sub Assistant Engineer has reported to his superiors that the work has been accomplished and the District Executive Engineer has made a final inspection visit.

UNICEF normally checks the implementation of projects by means of a sample shortly after their completion by means of its own regional staff. A technical report on the findings of those visits is sent to the Regional Executive Engineer, the Regional Superintending Engineer, or to the Additional Chief Engineer. Irregularities found are clearly specified in these reports with a request to DPHE to take action so that the contractor can correct those irregularities.

The OS Team has checked a substantial number of UNICEF files over a period of three years, containing a variety of observations on works that have not been completed according to the standards and specifications.

Complaints found in the reports range from

- **quantity problems**: wrong information given on quantities realised.
- **quality problems**: materials like Khoa and sand were found of inferior quality; defects noted in construction of tubewells, platforms, Pond sand filters, etc.

It is not always possible to find evidence on the basis of those reports as to the action taken by the responsible DPHE staff to rectify the situation or if corrective actions were taken at all.

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[10] Please also refer to Appendix 6 for an in-depth assessment based on fieldwork in Comilla of various aspects of the work of DPHE fieldstaff and their client groups. It also contains records of the outcome of discussions in the second Top Management Workshop on the jobs of EEs, and in relation to other issues raised in the Report. In addition, Appendix 5 (b) contains a record of the outcome of a Workshop for SAEs from all over the country held in Dhaka. It describes what they see as their objectives, priorities and tasks. Basic data regarding supervisory practices is contained in that Appendix and Appendix 10. DPHE Top Management comments on the SAEs Workshop report are at Appendix 5 (a)

For reasons which are still unclear, UNICEF files containing the correspondence concerning reports which mention a particular deficiency do not always contain a response from DPHE to that particular letter. Instead other correspondence was found reporting DPHE action to rectify other problems or shortcomings.

Clearer guidelines on how to deal with deficiencies in installations would be useful if laid down and applied. Regional Superintending Engineers could be held responsible for the application of those guidelines under supervision of the Additional Chief Engineer. Further it seems important from the perspective of quality control and the joint responsibility of DPHE and UNICEF in this respect that the field visits are jointly executed by an Officer of UNICEF and one of DPHE.

It would also be helpful to both UNICEF and DPHE if correspondence related to field reports were cross-referenced in their respective filing systems so that senior officers can readily check if follow up action to a particular case observed has in fact been taken.

The conclusion that the Team draws is that the random checking by UNICEF reveals some shortcomings in DPHE field supervision and quality control. The extent of the problem is difficult to judge since no national quality-checking survey has so far been held. However it does indicate that if DPHE Engineers could spend more time in the field (and less compiling reports for example) it is likely that more quality problems related to construction could be identified and solved by them. ([11])

4.3 ORGANIZATIONAL STRUCTURE AND STAFFING

4.3.1 The Current Organizational Structure

This dates from the Enam Committee in 1982. Since then, the number of public TWs has grown from just over 600,000 to over 900,000. The number of projects handled by DPHE has grown from 16 to 21 with a total value of estimated expenditure in 1992 of over Tk 1 billion. Sanitation practices, public awareness, and WSS system sustainability (including their financial sustainability in towns) have become crucial aspects of the sector, since the Water and Sanitation decade 1981 - 90.

Some of the symptoms of problems in the organizational set-up which are in part attributable to DPHE's "implementation" orientation in the past include:

- The very wide span of control of the CE and Additional CE, over seven zonal SEs, three functional SEs and three Project Directors.
- Absence of a strategic sectoral perspective in the two very different environments for WSS provision in Bangladesh - rural and urban.

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[11] The Study Team has made proposals for the simplification of the monitoring system which would reduce the amount of time EEs and AEs have to spend on reporting duties. Please refer to Appendix 20.

- The apparently random distribution of "development" posts in what are ostensibly core functions (for example Health Education, after nearly thirty years of existence, is still all financed from the development budget).
- The absence of "unity of command" at zonal level. Zonal SEs have no jurisdiction over the donor-financed urban projects in their area. This is one of the contributory factors ([12]) to the diversity of planning, design, and implementation arrangements which confuses not only DPHE staff, but also recipient Pourashavas and communities in peri-urban areas.
- The low profile of the finance administration, control, and budget function in the present structure. This is handled along with many other matters by the office of the Assistant Chief Engineer, who only has an accounts officer to assist him.
- A moribund Design Cell.
- Absence of in-house training function or Cell.
- Quantitative and qualitative deficiencies of staffing of Planning and R+D functions.
- Absence of sufficient AEs in the largest Districts (after the reorganization of District staffing of 1992).
- Low status (Class III) of SAEs which hinders their acceptability and effectiveness in Thana-level coordination with other Departmental officials.
- Standard distribution of TW mechanics (four per Thana), despite the number of Unions per Thana ranging from 2 to 28, and the number of TWs per Thana ranging from 500 to more than 3,000.
- Dispersion of all Health Education staff one to each District, including the projectionists and assistants, who are not qualified to work as health educators. This has impeded the execution of the HE function, and further lowered its profile.

The Transition Strategy proposes some (limited) provision for immediate changes in the organizational set-up of DPHE which would be necessary to accommodate the most pressing changes which DPHE needs to make (please refer to Appendix 22). These are directly related to increasing DPHE's capacities for strategic management.

4.3.2 Staffing - Quantitative and Qualitative Dimensions

Any discussion of the current DPHE staffing situation - or of staff required in the future - has to take account of GoB policies in this regard. For engineering agencies the PWD Codal Rules lay down certain norms for roles and relationships between grades of engineer. They also specify the academic qualifications required for direct entry, grading and promotion.

Of more immediate concern for the present study is the current policy of stringency in new hiring of public servants, and the freeze on conversion of Development Budget posts into Revenue Budget posts (i.e. from temporary to permanent status respectively).

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[12] Another is the different approach taken by the various urban WSS development donors

The OS team asked for and received clarification from the MLGRDC and the Ministries of Establishments and Finance regarding policy on staffing levels in DPHE. Their message was clear. No major expansion in the revenue budget for expanded establishment could be contemplated by Government at this time. Instead, these agencies stressed that the Study Team should scrutinize carefully possibilities for utilization of existing staff more efficiently. This consideration has been uppermost in the minds of the Team as they set about their task.

Quantitative Dimensions

The existing distribution of staff, by grade, is depicted in Section 3. The ratio of gazetted to non-gazetted staff is 1:33. At the time of the Enam Committee it was 1:27. The OS Team, in its analysis has attempted to investigate ways of "professionalising" the DPHE, without affecting its capacity to perform its core functions.

There appear to be shortages of DPHE staff as follows:

- the absence of very senior posts (Additional Chief Engineer level) to cover policy and strategy development for urban and rural sectors, and their effective synchronization in the field; development of the organization as a whole is not currently part of any officer's brief.
- the absence of a post for a professional senior accountant to handle budget, accounting and financial control functions;
- shortages of professionally qualified staff in Planning, Research and Staff Development functions;
- shortages of AEs/SDEs in the largest Districts.

On the other hand, DPHE employs very large numbers of staff in lower grades for example:

- A burden is imposed on DPHE's development budget by the employment of over 2,000 masons and labourers in VSCs, who perform latrine fabrication functions. International experience clearly indicates that these functions could be better performed by the same people but in the capacity of a private entrepreneur, rather than under DPHE auspices. ([13])
- Many junior administrative staff, particularly in HQ, are currently occupied with manual filing or progress report compilation. These functions could be computerized or otherwise reorganized. The precise magnitude of possibilities for staffing rationalization is beyond the scope of the Study to estimate.

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[13] In discussions with DPHE management during Organization Study Workshops and in their response to the Draft Study Report, DPHE management remained opposed to the running down of these Centres. They are concerned about the loss of production and demonstration capacity which would result. The Team has carefully considered these views but remains of the opinion that productivity would be higher, and promotion better served, if private entrepreneurs took over this function They would be motivated by profit growth which would come from the expansion of their market. The recent CSA study on the cost of WSS interventions indicates that private entrepreneurs diversify their production into other items, especially during the rainy season when demand for latrine components is slack SAEs can be more involved in demonstration of various latrine technologies Latrine production is not itself necessary to promote latrine technology and the use of sanitary latrines In Appendix 18, the Team puts forward a paper on the role of DPHE in sanitation, for discussion.

A series of joint DPHE/consultant Organization and Methods Studies are recommended, which could cast more light on this matter, and other quantitative and qualitative aspects of staffing in DPHE. The OS Team has not in the time available been able to come to firm precise quantitative estimates of numbers needed to do certain tasks. Organization + Method (O+M) studies and Job Analysis is required to arrive at such conclusions.

Qualitative Dimensions

Three aspects of staff "quality" are addressed here: educational qualifications and basic abilities; professional skills development, and gender.

Educational Qualifications

Some staff in DPHE have basic educational abilities which are not commensurate with their function now or in the future. SAEs estimate that approximately one third of the TW mechanics they supervise cannot read or write. The future role of TWMs will probably develop in the context of social mobilization. While acknowledging that such personnel can be very effective communicators, they may well not be able to respond to the new demands imposed as roles change from the mainly mechanical and technical functions they perform now, towards customer service, education and liaison functions in future.

At the other extreme, most gazetted DPHE engineers are Degree-holding engineers (usually with a Civil Engineering specialization). SAEs are non-gazetted Diploma Engineers. Only a proportion of their courses are devoted to water supply and sanitation engineering. In discussions with DPHE engineers, and with University authorities, it has become apparent that upgrading of WSS professional engineering skills is urgently needed. This applies to both University curricula for undergraduates, and "refresher" WSS engineering educational programmes for practising graduates.

The proposed International Training Network Centre at BUET will, it is hoped, address the need for professional development particularly in the field of low cost WSS.

In-House Professional Staff Development

In-house capacity for professional skill development has been absent in DPHE since its establishment. Most professional development opportunities have been provided in the context of aid programmes, in-country or overseas. Some DPHE engineers are sent for postgraduate degree courses in Public Health at BUET each year. However, in general, jobs are learned by experience and through informal, unstructured guidance from colleagues. ([14]) This is insufficient, and leads to the passing on of poor work habits and practices, and ultimately the erosion of professional standards, as more and more "corners are cut" to meet greater work pressure. Furthermore, frequent transfers of staff (every 2 1/2-3 years) are disruptive.

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[14] Apart from mandatory induction training provided to all Civil Servants.

The issue of staff development and training - given its fundamental importance in the organizational development of DPHE - is covered in a separate section below (4.5.4.) and as a key issue for discussion in the first Phase of the Transition Strategy; please see Appendix 19.

Gender
Of the 201 Gazetted Engineers in DPHE, three are women (One EE and two AEs). Of 761 SAE (non-gazetted Diploma engineers), five are women. Only one of the twenty Health Educators is a woman. Of 1,843 TW mechanics, six are women. Other women employees of DPHE perform clerical functions.

DPHE has started trying to recruit more women, but is having difficulties. The most frequently-stated problem in attracting and utilizing women at work, is their travel and accommodation. There is however, a broad consensus (including amongst DPHE top management), that more employment of women would benefit the organization.

Appendix 15 on gender issues notes that NGOs appear to have fewer difficulties than DPHE in attracting, training, supervising and productively employing women, even in jobs which require travel and overnight accommodation away from home base. The following factors are important: flexibility of working practices (in terms of definition of geographical work area for example), possibilities for women to work in small teams, special preparations regarding hostel and office accommodation, and sensitization of male colleagues especially in the supervision of women. Some of these aspects are tractable in DPHE, some are more difficult for a central government agency to address, particularly in the short-term.

One conclusion is clear. In the near future, DPHE will remain an overwhelmingly male-staffed institution. This has implications for the feasibility of its potential future roles, particularly as regards social mobilization.

4.4 REVIEW OF OPERATIONAL MANAGEMENT IN DPHE

4.4.1 Organizational Goals: DPHE as Lead WSS Sector Institution

The Enam Committee Report of 1982 did not define any goals or detailed objectives for DPHE. Instead it stated its role, in terms of the sectors it should cover, with a general objective of improvement of the health of the populace. (See Section 3 of this report). Similarly, the Fourth Five Year Plan gives a series of quantitative targets for the Sector, and depicts DPHE's role as one of achieving them. It is otherwise silent on the standards DPHE should try to work towards.

The UNICEF Project Document for the RWSS Programme 1992-95 is clearer in terms of what this programme is trying to achieve ([15]). Within it, the objectives of DPHE are related to:

- improved financial sustainability from GoB side;
- increasing DPHE involvement (together with "allies") in software aspects, in particular increased community participation;
- better support to private sector latrine production.

The Study Team has not been able to identify any document which spells out what is expected from DPHE, apart from the achievement of ADP physical targets in the year in question. The Ministry appears to be primarily concerned with quantitative achievement by DPHE of new development targets within the ADP, which it reviews in monthly meetings. Recently data has been compiled regarding numbers of working tubewells. These data are also presented to MLGRDC.

However, during the study, discussion has also been held with various levels of DPHE staff, to discuss how "Lead Institution" status would imply roles which up to now DPHE has either been unwilling or unable to perform, but which it is uniquely well-placed to execute. For example, Planning and Research and Development for the sector would appear to be logical roles for the agency. DPHE could be the source of training to a wide range of government, non-government and private organizations (including contractors) in WSS technology.

One conclusion which the Study Team reached was that a clear, written policy statement from Government on the role and objectives of DPHE would be of enormous benefit not only to the management and staff of the agency itself, but to donors who are presently assisting it.

4.4.2 Leadership and Motivation

During the Study, the Team provided the opportunity to the top management of DPHE to experience a practical management exercise in Leadership. They responded enthusiastically, and were quickly able to identify actions which managers - as leaders of their people - need to take in order to motivate and develop individual staff members, to build up their work teams, and ultimately to get the job done.

Unfortunately, the current working environment and norms of a public sector institution are not conducive to the personal development of employees. There does however appear to be considerable scope for the development of leadership skills amongst DPHE top and middle managers.

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[15] Improvement of the health of children through reduction in diarrhoea and parasitical diseases, and improvement of the national capacity to provide water supply and sanitation facilities in rural areas.

Job descriptions exist in general terms for main categories of posts. But these were laid down by the Enam Committee 11 years ago. No updated Job Descriptions or Standards of Performance could be identified for any of the field staff the Team met. The existing performance appraisal system, partly as a consequence, and partly because of its confidential, closed nature in government, does not contribute to individuals' personal and career development. Important advantages in terms of staff motivation and personal development could accrue if existing appraisal procedures were interpreted liberally and "people-management" skills developed amongst all managers in DPHE. During the Study, the Chief Engineer proved very supportive of special workshops held for categories of his personnel, for example for the Sub Assistant Engineers. The impact of his concern on their morale was clear to see.

4.4.3 Decision-taking

The most notable features of the pattern of decision-taking in DPHE appear to be the limited autonomy granted to the Chief Engineer, limited consultation with those affected by decisions, and limited delegation of decision-taking to field level. There are several dimensions to this issue: staff administration, project planning and project management.

Regarding *Staff Administration* according to present policies, the Chief Engineer may only appoint officers up to Class II Gazetted, can transfer officers up to AEs/SDEs and promote officers to Class II. SEs may appoint, transfer and promote officers of Classes III and IV. Some of these policies are part of Government's Codal Rules for Public Works agencies, and some are regulations of the Establishments Ministry; others are regulations of MLGRDC.

They amount to very considerable limitations on the freedom of action of the top- and senior-management of the Department. It could well be argued that they therefore render the Chief Engineer less accountable for his agency's performance, because he has no discretion or authority over key resources required to achieve results. The recently-published report of the UNDP Public Administration Study makes the same point.

Regarding *project planning*, TAPPs and other planning documents for processing through official government channels, which originate in DPHE, are the subject of varying degrees of consultation with concerned Departments, Ministries, Planning Commission, ERD and aid donors or other interested parties. For example, major UNICEF project documents are jointly prepared between UNICEF and DPHE's Planning Circle.

On the other hand, it appears that organizational initiatives originating in DPHE involving all circles of DPHE are sometimes taken with little consultation amongst all affected circle SEs. The DPHE Training Institute TAPP and that for the new MIS appeared to be cases in point. DPHE has pointed out that all planning officials were involved, but there would have been real advantages in consulting those officers who would have to operate within new systems, before the projects were finalized.

Another dimension of decision-making is related to *project management*. Project Directors exist for each of the main donor-financed urban programmes, and for each of the six UNICEF-supported programmes. Operational decisions are taken by PDs. These are often not subject to consultation or subsequent communication to respective Zonal SEs.

In the RWSS programme, decisions on award of contracts are subject to GoB PWD Codal Rules, EEs can decide upon the award of contracts up to Tk 4 lakhs; SEs up to 25 lakhs, Additional CE up to 40 lakhs. All variations in contract sums over 20% have to be referred to the Chief Engineer's Technical Committee which meets periodically when required.

The results of the above pattern of decision-making include:
- an overloaded central management structure;
- lack of commitment to (or sometimes even knowledge about) decisions taken "above";
- concern amongst top management about staffing decisions they cannot influence;
- delays in field contract execution caused by prolonged waiting for decisions from Dhaka.

4.4.4 Communication

DPHE has much to be proud about. It meets quantitative targets, there are some very interesting research projects ongoing, its fieldstaff have a wealth of experience. Its SAEs have taken important innovatory steps to promote rural sanitation in connection with the "Integrated Approach". A recent study reveals an increasing rate of latrine acceptance (up to 33%). However, there is no channel used or available for dissemination of the good news. Nor can news of problems which should be avoided in future be publicised in DPHE.

Face-to-face communication between top management of DPHE and their fieldstaff is rare and mainly confined to field trips. Only very occasionally are large numbers of fieldstaff brought together other than in monthly meetings with their immediate superior to review progress. Fieldstaff would appreciate more regular and substantive contact with top managers and colleagues from other regions. Channels for top management to learn systematically from the experience of SAEs at Thana level should be opened up.

DPHE communication with its clients and consumers, is limited. Complaints from the public are handled in SAEs' offices, (and centrally) by registration in books, or through the lobbying of MPs and UP Chairmen whenever the opportunity arises. Press comments are monitored, but there is no "Public Relations" function as such.

As a consequence, there is sometimes genuine confusion as to "who-is-supposed-to-do-what" in - for example - TW maintenance in some parts of the country. Rural dwellers are never systematically informed about the reason for official changes in price for example TW contributions, or VSC latrine components, and sometimes appear to doubt the integrity of the DPHE staff who have to be the bearers of bad news about official price increases.

UNICEF has attempted to redress these lacunae in information, and has included in its TW Application Form comprehensive information about the RWSS programme, and information on the conditions which have to be met. But the PR function is a vital one for an organization providing a public service, such as DPHE. Effective PR capacity would promote the public image of the Department.

4.4.5 Monitoring of Progress

Monitoring in DPHE is generally understood in DPHE to be the compilation of data. DPHE's monitoring and reporting system is driven by the demands of MLGRDC for monthly summaries of physical and financial progress. An unfortunate corollary is the deficiency of practice and apparent interest on the part of many DPHE middle-level professional staff in the improvement of qualitative aspects of RWSS service provision. For example, no data was routinely collected until recently on Caretaker training; none is yet collected by DPHE on women's participation in such programmes.

Quantitative monitoring of UNICEF and GoB RWSS programmes is done independently, using different forms, recording different data. The Study team counted 46 different forms in use, comprising 224 sheets to be completed monthly. There is enormous duplication of effort at District and then Zone level (and again at HQ level) as successive, repetitive, rounds of compilation occur every month. No summarized information is passed down the management chain, to the originators of the data. Only rudimentary analysis of data is done, (and then only by programme), at central level.

Large amounts of time of middle-management professional engineers are wasted as a result of the duplication of effort involved in the present reporting system. This detracts from their field supervisory functions. EEs consulted individually and in groups as part of the Study reported widely varying proportions of their time being spent on reporting. The average was however about 20%.

With WHO assistance a TAPP has been prepared which provides for consultants to redesign the system, to produce what in effect could and should be a Management Information System. The OS Team endorses this development, and presents its own suggestions at Appendix 20.

4.5 STRATEGIC FUNCTIONS OF DPHE

4.5.1 The planning function of DPHE

The planning function of DPHE is executed by the Planning Circle headed by the SE Planning. This Circle is at present composed of 4 Divisions viz. Survey, Investigation and Research, Programme and Coordination Division, Design Division and Planning Division. The functions of the four divisions date from the Enam Committee in 1982.

The Planning Circle is responsible for preparing an annual development plan (both physical and financial) based on the regular and the development allocation determined by the Planning Commission and made available by the Ministry of Finance.

Further the Circle should have an overview of the ongoing research in the sector (through its links with the Groundwater Circle and the participation of its S.E. in the Research and Development Committee). A 5- year programme is regularly developed which indicates the coverage of WSS and the needs for the coming years. For this purpose the GOB sets targets both for rural and for urban water supply and sanitation for the coming 5 years.

A second important task of the circle is the monitoring of the ongoing activities. Data should be compiled both on the physical as well as on the financial aspects of ongoing projects.

A third responsibility of the Planning Circle, according to the existing job descriptions is design of all the Water Supply, Sanitation and related activities.

In a further analysis of the Planning function of DPHE it should be borne in mind that a general constraint for all 4 divisions of the Planning Circle is that the number of qualified staff is very limited. Apart from the SE there are 4 Executive Engineers, 2 AE and 1 SAE.

Planning
The planning process in the WSS sector is strongly influenced by the lack of staff on one hand and the comparative abundance of staff provided through donor-organisations for donor-funded projects. Donors generally have the financial means to hire consultants who assist in the project-planning and design activities. As a consequence the Planning Circle is primarily involved in the GOB-projects (this year four projects, total value Tk 15 crore) for which it carries full responsibilities for planning, surveying and design. However there is no real design capacity available within the DPHE Headquarters.

One of the main functions of the planning division has become to guide allocation of funds from donors. If a donor intends to make an amount available for the WSS Sector it passes through the Economic Resource Division (ERD) of the Ministry of Finance to MLGRD&C which asks the Chief Engineer to formulate a project. The Planning Section has to harmonise the Policy of GOB with the wishes of the donor and to formulate a Project Proforma (PP) which has to be approved by the MLGRD&C. As soon as the PP has been approved the Planning Section has no further influence on the detailed design and implementation of the project. The project may send reports to the Planning Section but it has no power to intervene in issues related to design, implementation, etc. Only when the PP has to be adjusted due to eg. a supplementary budget etc., the Planning Section gets again formally involved and has a say in the adjustment of the PP.

UNICEF has been one of the main donors of the rural WSS section since the early seventies. The OS Team has the impression that generally DPHE and UNICEF work closely together in planning matters. As UNICEF has its own priorities (eg. Social Mobilisation) it cannot be denied that UNICEF sometimes puts its stamp on the planning of the WSS activities.

Monitoring
Monitoring of ongoing activities is an important activity for the Planning Circle. There are two Divisions of the Planning Circle involved in the Monitoring Process. The Programme and Coordination Division, which is in charge of the monitoring of the rural programmes and the Survey, Investigation and Research Division which monitors the Urban Programmes.

Although formal job descriptions indicate broad tasks for both divisions, monitoring activities are very time consuming. Both sections receive monthly standard quantitative and financial reports from 64 districts which have to be compiled into integrated reports which are sent to the Chief Engineer and MLGRD&C. P&C also compiles monthly reports of all activities financed through UNICEF. Reports contain data on site selection, platforms accomplished, new works started, training activities, etc. Data compiling is computerised, but as no computers are available in the districts all data have to be inserted in the central computer.

All the reporting activities take at least one third of the available time of the whole available staff every month. Further comments on these reports may be written by the EE if requested by the Ministry. Finally, contact should be made with the Rural Districts or the District towns to find out what are the causes of substantial discrepancies between planning and realisation. The latter task can be considered to be a substantive monitoring task. But the time available for these tasks is very limited.

Time available for field visits is equally limited. The EE SIR has recently accompanied a DANIDA Mission and a Mission related to the new ADB-project (9 towns) but that was the only time available for field visits in 1993.

One of the main reasons that relatively so much staff time is spent on data compiling is that staff has been reduced. In the past in the P&C division there were over 20 staff; now the number is 8. However the information to be collected on each activity and each project has not been reduced; the opposite is the case.

It is noteworthy that UNICEF, apart from the above mentioned general monitoring system, also has its own monitoring system, which however has a different character. UNICEF monitors by means of inspection field visits, mainly in areas likely to be deficient on the basis of information of which UNICEF disposes. Field visits are made by UNICEF staff, who reports in detail on these visits. It would be worthwhile to investigate how the DPHE system of monitoring and the UNICEF system of monitoring could be harmonised or integrated in order to develop one general monitoring system which has as a primary objective to improve the quality of WSS activities.

Design
What is true for the other divisions of the planning circle is the more true for the Design Division. Over the last 10 years its staff has been reduced from 24 to 6. This means that de facto no design capacity is available within DPHE. The main reason is that all donor financed projects have the design contracted to consultants. The apparent reasons for this shift were the generally good quality of designs made by consultants and their reliability as far as dates of delivery of contracted work.

Consequently the design capacity within DPHE has withered away. There is thus no design capacity available in DPHE's Headquarters for GOB's own projects. This may create problems when no resources are available to contract a consultant for this design. The Offices of Zonal SEs and District EEs, fill the gap by making designs themselves of simple systems and structures.

The Team's suggestions for the future of the Planning Function are described in Appendix 13, which is intended as one of a series of discussion documents in the first phase of the Transition process of DPHE.

4.5.2 The Research and Development Function of DPHE

General
The Research and Development Function of DPHE related to water resources is performed by a part of the Groundwater Circle. Research and Development in Sanitation is performed under the Village Sanitation Project.

The Groundwater Circle, headed by a Superintending Engineer is divided into three Divisions, the Research and Development Division, the Groundwater Division and the Division Hydro-geology/Zonal Laboratories.

Compared to the Planning Division the Groundwater Division is relatively well staffed. Apart from the Superintending Engineer the following staff are at moment employed by the Circle: 2 Executive Engineers, 1 Senior Hydrogeologist, 1 Sub-divisional Engineer and 2 Junior Hydro-Geologists. The 4 Zonal Laboratories are each staffed with a Senior Chemist, a Junior Chemist and some assisting Staff. The Groundwater Circle also gets technical assistance through the Dutch and the Danish Governments (Consultants services for Well Monitoring and Regeneration and the Coastal Belt problems); however the Dutch programme will terminate in December 1993.

The importance of the Research and Development function is related to the tremendous expansion of the number of tubewells and production wells during the past 20 years. The total number of tubewells in Bangladesh is estimated to be more than 2 million of which slightly less than 1 million have been sunk by DPHE. The groundwater situation in the country is becoming progressively less favourable. There are two main reasons:
- the salination in the coastal belt; this belt reaches about 60 km inland;
- the lowering of the groundwater table, especially during the peak dry season (end of April/early May) due to heavy water extraction for agricultural (irrigation) purposes.

The Groundwater Circle faces a major challenge in researching this potentially serious situation.

The Research and Development Division
The Research and Development Division presently concentrates on the problems mentioned above, the coastal belt, and the rural regions where the groundwater table is low in the peak dry season. Fifty test tubewells have been sunk in the coastal region to measure the degree of salination.

At present 1.3 million tubewells (more than 50% are private and public) are not working adequately in the peak dry season. The pumps are generally based on a groundwater table at 7 metres. However in many places now the groundwater level in the dry season goes as far down as 15 - 30 metres. An adapted design of the no.6 pump and further research on the tara-pump might form elements that could contribute to a solution of this problem.

So far 152 test pumps of the adapted design have been installed at a 30 meter level which are read regularly and the outcome of which is computerised. Another test programme including 100 mini-tara pumps is planned. A problem is the lack of a means of transport and budget which hampers the accomplishment of the different testing programmes.

For the past three years about 50% of the regular research budget for tubewells and groundwater exploration has been paid by DPHE. However most of the development research is either financed by UNICEF or by external donors.

A Workplan for the period 1993 - 1995 has been developed by the R & D Section of the Groundwater Circle, which is consistent with the 1992 - 1995 UNICEF-programme. The proposed activities are partly financed through the UNICEF-project budget but for other planned activities it is not clear whether finance will be found.

For the fiscal year 1993 the following research activities are being financed by UNICEF:
- Study of the declining water table: US $ 130.000
- Tubewell exploration (mini tara): US $ 100.000
- Survey private producers of latrines: US $ 15.000

There are also a number of ongoing activities which are already included in earlier allocations from UNICEF such as, the Coastal Mapping Updating and the Stony Layer Penetration in the Chittagong Hill Tracts. External technical research assistance and WHO-assistance will be obtained for an experiment to use solar energy in saline problem areas. Another proposal is Exploratory Drilling to locate the iron free aquifer.

Considering the global scene of the present R & D activities and planning the OS Team has the impression that the research priorities are to a large extent set by, or at least together with, UNICEF. It is unclear whether other research priorities of DPHE itself can be financed if they do not coincide with the priorities of UNICEF, WHO or any other donor.

Groundwater Exploration & Development Division
The Ground Water and Development Division is oriented towards the problems of Urban settlements. The technology applied in these settlements mainly consists of the application of production wells for piped water supply systems. Since an increasing quantity of groundwater is needed for the urban systems, care is needed in planning and calculating the maximum quantity of water which can be extracted sustainably during the dry season from given aquifers.

The capacity of existing production wells has decreased considerably through the years for a variety of reasons. That is why an intensive programme has been undertaken over the last 10 years i.e. the 'wells monitoring and regeneration programme'. The most important element of this programme is the storage of data concerning production wells in an extended computer programme.

Basic data of about 1000 urban production wells are inserted in the computer system which is able to provide a complete datasystem of any well within a few minutes. In this way it is possible to monitor all the production wells and to indicate when a well should be regenerated. The system appears to be very sophisticated.
Information on one small District Town with two production wells comprises a computer output of 18 pages of graphs, tables, etc. The junior hydro-geologists are the only persons who can extract this information from the computer system and interpret it.

It is not clear whether after the handing over of the water systems to the Pourashavas, DPHE will continue to monitor the production wells. However the cost for the regeneration will in principle have to be borne by the Pourashava itself. This could be a serious obstacle for the future of the regeneration programme.

This programme has received assistance from Dutch and Bangladeshi consultants nearly a decade (ending in December 1993). The management of the whole system has been handed over to DPHE-hydrogeologists. This raises the question whether enough funds can be obtained in the DPHE regular and development budget in future for ongoing financing of these activities.

The Zonal Laboratories
Water quality is another responsibility of the Groundwater Circle. For that purpose 4 Zonal Laboratories have been created in the eighties in Comilla, Khulna, Mymensingh and Rasjahi. Members of the OS team were able to visit the Laboratories in Comilla, Mymensingh and Rashahi. The main tasks of the Laboratories are to execute a number of physical, chemical and biological routine tests. Water is taken at random, quarterly, from a number of tubewells, production wells and distribution lines.

The Laboratories have also recently started to implement a biological test programme (coliform bacilli) which is sponsored by WHO. Under this programme each of the laboratories takes monthly 60 samples at fixed points in the distribution lines, 7 in production wells and 100 in tubewells. This test programme is part of a diarrhoea eradication programme of the WHO. Test reports are sent to the WHO, Chief Hydrogeologist, responsible Executive Engineers and the Pourashavas.

The laboratories were equipped in the mid eighties. At present the laboratories can handle about 60 samples a month. Compared to other Divisions of DPHE these Laboratories are quite well staffed with a Senior Chemist, a Junior Chemist, an Analyzer, a Sample Collector, a Driver, a Messenger and a Guard. However there is no administrative staff. The EEs sometimes lend a hand by making their administrative staff available to type the test reports.

The OS Team is not specialised in hydrogeology, bacteriology or similar subjects. However from organisational perspective the Team has the impression that the laboratories are not considered a mainstream activity in the Groundwater Circle and the DPHE as a whole. It is unclear who controls the quality of the work of the Laboratories. Also unclear is the fate of the reports produced by the laboratories, since Executive Engineers are not obliged to respond to them. Few reports from EEs in the form of feedback to Laboratories on action taken, are ever received.

What can Pourashava do in case of negative reports as DPHE has formally handed over its responsibility? Close the system or the pumps? It does not have the power to do so.

In one Laboratory some of the equipment has been out of action for more than 8 months. Spares have been requested from the 18 DTP project office. Chemical stocks sometimes run out for want of routine budget resources. WHO continues to provide some chemicals, but sometimes they are not the correct ones.

The Laboratories' staff has no opportunity for promotion. Some have spent over 10 year in the same post. This is a situation which seems not to motivate or stimulate the performance of the work in the Laboratories.

The team makes proposals at Appendix 14 for the future development of the R+D function, for discussion during Phase 1 of the Transition Strategy.

4.5.3 Health Education (HE)

Background
Health Education activities first began in DPHE in the context of a Pilot Village Sanitation Project in ten Thana in 1965, when the present Chief Health Educator was appointed. After inter-donor wrangling about the prospects for HE in DPHE, more posts were eventually created in DPHE in 1976 for this function: 20 each of Health Educators, Sanitation Assistants, and Projectionists. Each team of three were to be posted to each of the then 20 DPHE Districts.

However, only 8 HEs (with Masters Degrees in non-engineering, public health subjects), 4 projectionists, and 6 Assistants were actually posted between 1976 and 1989.

It was decided in 1989 to fill all vacant HE posts. However, some doubts remain about the suitability of the candidates appointed. Most were internally recruited, apparently attracted by the prospect of promotion from clerical grades, rather than the distinct challenges of the HE function. All were given 3-months Certificate training in the National Institute of Preventative and Social Medicine.

Current Situation
Since the introduction of 64 Districts each headed by an EE in 1992, all HE staff (i.e. HE professionals along with projectionists and assistants) have been redistributed - one to each District. They are required to work under the direction of the EE, and receive programmatic support from the Chief Health Educator.

From a variety of sources consulted during the study, it appears that there is little current activity performed by the HE staff. They receive almost no guidance, support or resources from EEs, who allegedly give HE low priority. For their part, EEs complain that HE staff do nothing to help them. Few of the SAEs consulted reported any visits by, or support from, HE staff.

HE staff are demoralized, especially since the GoB decision in 1990 to remove pension rights from Development Budget staff. The Chief Engineer has made a plea for HE staff to be accorded Revenue budget status, but this has not yet met with a response at LG Ministry level. HE staff feel that HE is given low priority in DPHE.

HE material resources are scarce in DPHE. All equipment has been donated by donors. Ten 16mm projectors were donated in 1977; two remain in working condition. Five others are repairable. After five years of (unsuccessful) attempts on the part of the Chief Health Educator to obtain GoB/DPHE budget for the repairs required, UNICEF has recently approved the sum of Tk 88,000 for these repairs. Fifteen year-old prints of 16mm films may be replaced under the Social Mobilization Programme. There are 18 slide projectors working out of a stock of 20. WHO supplies spare lamps; no DPHE budget has been made available for these. There are ten copies of each of three slide programmes. There are 20 megaphones available; and 20 "Worm Kits" for demonstrations in schools.

The HE function in DPHE has a very low profile.

Social Mobilization Programme
The challenge facing Bangladesh, in terms of effective communication on health matters - including and especially on water use and sanitation - to the poor majority of its population, is colossal. The OS Study team have made extensive enquiries in connection with the role played by the Ministry of Health, and by the many NGOs working in the health - and especially HE - fields.

Appendix 15, concerning Gender Issues and their implications for DPHE, raises questions of the applicability of institutionalized approaches to Health education and communication. Such approaches are presently pursued to different degrees by MHFW and DPHE.

In a 1988 Study of the activities of MHFW fieldstaff, BRAC reported that not only were actual hours worked well below theoretical levels, but that domiciliary visits (the most important in water and sanitation extension practice) were the least-performed activity amongst the fieldstaff sampled.

The Gender Issues Appendix also indicates that poverty and ignorance are not necessarily the major constraints women face in relation to their access to WSS services. The implications - not just for DPHE but for all principal actors in the sector - are considerable. Much more research is needed before an effective response to women's needs in the WSS sector can be designed.

Appendix 17 - one of the papers suggested for urgent discussion as part of the first phase of the Transition Strategy - offers team comments and a suggestion for reconsideration of DPHE's role within the implementation of the SMP.

4.5.4 Staff Development and Training

There is a TAPP prepared by DPHE in December 1992 related to a Training Institute. An ADB-supported sub-component of the Second WSS Project, for "Institutional Strengthening of DPHE" is planned. This will contain limited provision for strengthening the training function in DPHE. The recently-approved Social Mobilization Programme provides for a Communication Training Division to be set up under the Village Sanitation Project.

The OS Team has been able to study the TAPP, discuss WHO initiatives and support, review some of the evaluations of training of Caretaker families undertaken by DPHE with UNICEF and WHO help, discuss this aspect of training in the field with some of the participants, and discuss the training received by and needed by some DPHE cadres.

In order to gain some insights into the practical problems and prospects of setting up a training function in government institutions, the Team has also investigated the current training arrangements in both LGED and REB. In particular, the Team has studied how the functions were established, and the problems they faced.

Details of the training received by DPHE officers has been obtained from the MIS Section of the Planning Circle from its Personnel Database. Summaries are available at Appendix 8 of the training inputs provided by the major donors to DPHE in the past.

Based on the foregoing, the Team makes the following observations:

- Most professional training activities conducted to date by DPHE have been financed by donors.
- Up to now, DPHE has lacked permanent training capacity and has had no focus for management and coordination of the function, nor any capacity to conduct follow-up of any evaluations of training.

- Partly based on a donor-funded analysis of requirements conducted in 1989 ([17]), a TAPP was drawn up in 1992 for external funding, but no resources have been forthcoming to finance the TAPP as yet.
- Low priority has been given by the organization to the development of the training function until recently. This in turn may be partly explained by the generic problems of personnel development in the public service, all of which are reflected in DPHE.

These problems include:

- Promotion is primarily based on seniority, not attendance at or performance in training courses, thus there is little encouragement for any individual to become better-trained.
- There are no schemes of service for key cadres in DPHE which oblige personnel to undertake particular professional development courses before being eligible for promotion.
- Jobs are defined in general terms, and there are no clearly defined performance standards. Therefore it is difficult to measure performance objectively. Partly as a result, the standard Confidential Performance Assessment exercise does not contribute to development of individuals' performance, nor improved definition of their training needs.
- Attendance at training courses in-country may involve indirect financial penalties for the trainees, partly because pay can be more reliably supplemented while in service, rather than on training courses; partly because extra living expenses may be involved.

There are no prospects of GoB funding being made available in anything like the required volume for support of training in DPHE in the foreseeable future. Therefore donor funding will be essential. The most immediate prospect is the ADB Project mentioned above. However, this will be oriented to the needs of the DPHE role in support of urban water supply, drainage and sanitation.

The existing TAPP for the DPHE Training Institute attempts to address both urban and rural sector needs. However, it requires further elaboration before it will be attractive for donor funding. It appears somewhat premature for example, to propose a full Training Institute when nothing - not even a Training cell - exists at present. DPHE needs urgent help in framing future proposals in this regard. WHO has some, but limited, resources available.

In Appendix 19, the OS Team make some constructive suggestions regarding factors which should be borne in mind when developing the training function in DPHE in future.

4.5.5 Finance, Budget, Stores and Audit

The OS Team have made a brief study of this function, although not obliged to do so in their ToRs. In the context of changes to permit improvement of DPHE performance, accountability and management, the Team regards this function as essential.

Please refer to Appendix 21 for an assessment of these aspects.

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[17] "Human Resource Development in the RWSS Sector" DANIDA 1989

4.5.6 Emergency Procedures

DPHE has no standard procedures for tackling emergencies. It has however, distinguished itself in the past with the speed of its response to emergencies. The last and most serious disaster was the cyclone of 1991. A senior official who coordinated the GoB response to the disaster was fulsome in his praise for the Department's efforts in speedily responding to the call for restoration of water supplies to the population of the coastal belt. Public tubewells were rapidly cleaned and restored to service by DPHE, using staff specially drafted in from other regions.

More typical in terms of magnitude and type of disaster which Bangladesh faces on a depressingly regular basis, were the floods of mid-1993 in some regions of the country, which necessitated temporary population movement to higher ground.

The GoB response to this latest emergency was to direct DPHE to install 9,600 tubewells in 33 Districts, with concessionary contribution rates reduced to Tk 250 (from Tk 700) for Shallow (No6) wells, Tk 350 (reduced from Tk 1,000) for a Tara pump, and Tk 700 for a Deepset TW (from Tk 1,800).

DPHE holds no emergency stocks of tubewell materials (pumps, pipes etc.) Therefore, to respond to the GoB directive, a full emergency planning and tender procedure had to be started. This involves considerable delays, which are unavoidable if standard GoB procurement procedures are to be followed.

From the time of GoB declaration of emergency, and issuance of a GoB directive to DPHE to install tubewells, the following procedure with corresponding time required, was followed:

Situation Analysis (coordinated by Planning Circle)	3 weeks
Tender preparation (Coordinated by Stores)	2 weeks
Publication of Tender Notices	2 weeks
Tender Review Process (Committee)	4 weeks
Decision confirmation	1 week
Work Orders issued	
Site Mobilization (Contractors)	4 weeks
Contracts implemented	2 weeks

This meant that 18 weeks would elapse between the GoB directive to launch an emergency TW programme, and TWs being available for use.

On the basis of the brief analysis conducted during the Organizational Study, it would appear that GoB's response mechanism to disasters - at least involving water supply infrastructure - might usefully be reviewed. There are several aspects which might be looked at:

(i) Whether tubewell installation is a cost-effective response to emergency situations, where temporarily displaced rural populations need immediate help and relief, with water supply and other measures.

(ii) If it was determined that TW installation is a required response, then the following question arises: should DPHE be provided with the resources to procure emergency stocks of TW materials for provision to contractors as soon as an emergency is declared? The cost of materials (alone) for the TWs to be installed under the 1993 programme was Tk 5.5 Crore. It would be up to GoB to decide whether the keeping in store this value of stock (which would have saved 9 weeks in the above procedure, and thus halved the response time) is a worthwhile investment, in the light of other GoB priorities.

(iii) Whether the installation of temporary TWs (where galvanized iron pipes are installed, and then removed after the passing of the emergency), would be a more expedient and cost-effective approach. The political unpopularity of this strategy was demonstrated however in the Comilla region in 1988, where there were popular protests when DPHE tried to remove the "temporary" TWs installed after the disastrous flooding in the region.

The OS Team are aware that GoB is currently reviewing its disaster preparedness. The Team has obtained a copy of a "Disaster Management Handbook for Bangladesh" (Md Saidur Rahman, Bangladesh Disaster Preparedness Centre), sponsored by PACT-Bangladesh. It is suggested that DPHE staff -particularly those in the Planning Circle and Stores Circle - could usefully study some parts of this manual (especially Part 1 - the pre-disaster stage) with the author and BDPC. Key questions are posed in the Manual which could guide DPHE in planning for future disasters. One of the Workshops in Phase 1 of the Transition Strategy (see Section 6 below) could well be an appropriate forum for raising and resolving some of these questions.

4.6 CONCLUDING REMARKS

This Section has attempted to summarize the OS Team's main conclusions on the basis of its organizational analysis of DPHE. Many of the features of the organization are symptoms of DPHE's long-played role in implementation of WSS infrastructure projects.

Some of the problems the organization faces are generic - they exist to some extent in all public sector Departments and many parastatals in Bangladesh. Some problems are not of the Department's own making: its senior managers are prevented from exercising their judgement - on staffing issues particularly - by other agencies of government.

Many of the problems described above are, however, tractable. With determination and a will to succeed on the part of DPHE officers, much can be achieved.

SECTION 5 - FUTURE PERSPECTIVES

5.1 DEVELOPING A CONSENSUS ON DPHE'S FUTURE

5.1.1 The Development of Scenarios for the future development of DPHE as Options for Joint Consideration

The "lessons of experience" of Organizational Studies in Bangladesh and elsewhere are not encouraging. There have been many cases where consultants' analyses and recommendations have been consigned to the shelf, and never acted upon. The OS Team, in its general approach, and in particular in the development of recommendations for future action in the case of DPHE, has borne in mind this past record.

A review of the "state of play" of the Study was made in mid September by the Consultants. The following points were agreed, as a suggestion to be put to the parties of the Study in Bangladesh:

- Rather than the Consultants coming up with a single set of conclusions and recommendations about what DPHE should do in future, a range of possible future change scenarios should be developed. Each should clearly state the conditions which would have to be met in each case, and the probable time-frame for their realization. These conditions would not only involve actions by DPHE, but might include actions from the MLGRDC or the donors.

- By asking the parties to look at all the options, the aim was to ensure that all major issues which should be considered in planning DPHE's future were in fact taken into account. This was considered potentially more productive than the OS Study team identifying a single recommended future strategy for DPHE. If that were the case, the number and breadth of issues to be considered would inevitably be constrained.

- The parties to the Study should be briefed on these scenarios. The onus on DPHE would not necessarily be to choose a single "preferred" option from those presented. Instead, DPHE could formulate a composite scenario.

- The feasibility of some points could be further assessed by evaluating the experience of pilot projects or by conducting further investigations. The subjects of such enquiries might be defined during the Study.

5.1.2 Five Optional Scenarios

This approach was accepted by the principal parties to the Study in Bangladesh after briefings by the Consultants. Accordingly, five Scenarios were developed, depicting options for the future development of DPHE. They were summarized as follows:

Scenario 1 - "Business as Usual"

In such a case, no major changes would be made in the present role and situation of DPHE; it would continue concentrating on implementation.

Scenario 2 - "DPHE Expands to meet growing demands"
Extra finance and staffing would be provided within the present set-up to cater for increased demand for WSS infrastructure.

Scenario 3 - "Business Better than Usual"
This would provide for improvements in the efficiency and effectiveness of DPHE as the lead WSS sector engineering institution, including the ability to respond to its clients.

Scenario 4 - "Helping others help themselves in WSS"
DPHE would develop an "enabling" role and capacities in the engineering field to support local authorities, NGOs, the private sector, and communities in the WSS sector.

Scenario 5 - "Comprehensive WSS Sector Support and popular mobilization"
DPHE would itself take on major non-engineering tasks related to WSS (e.g. social mobilization, and support to local authority finance functions connected with WSS).

In each case, the Scenario was described as follows:
- Characteristics of the Scenario;
- The Goals of DPHE, which would apply in each case.
- The advantages of the Scenario - for DPHE and/or the sector.
- The conditions which would have to be met, or assumptions which would have to be valid, if that scenario were to be pursued.
- Preliminary comments from the OS Team on the scenario, based on its consultations and discussions to date.

The complete Scenarios are reproduced in Appendix 9. They became the main item on the agenda for the fourth Top Management Workshop held on 4 October 1993. Debate amongst DPHE Top Management at the workshop was structured as follows:

- Consensus about the optimal Scenario was to precede consideration of the organizational structure which would best support the role defined in that scenario. It was also stressed that the scenarios were not necessarily mutually exclusive. In other words, aspects of one could be combined with aspects of another. In such a case, the internal consistency of such a "composite" scenario would have to be carefully checked. Furthermore, some might be seen as successive stages in a long process of reform.

- Then some discussion actions and questions were put to the participants: these included the following:
  1. Bearing in mind the analytical framework mentioned above in Section 2, which scenario for DPHE in the future would best serve national WSS sector interests: over the next FYP period, and after the year 2000? They were asked to give reasons for their choice.
  2. What risks could affect the chosen scenario?
  3. What steps would have to take place first in such a scenario? Thereafter what would be the major stages or phases?
  4. How long would the whole process of arriving at the scenario take?

5. What forms of assistance would DPHE require in order to achieve the scenario?
6. During the transformation process of DPHE, what mechanism should be established:
   - To manage the process?
   - To monitor the process to make sure that it is on track, and still appropriate?

The record of Proceedings of the Workshop where they were discussed is at Appendix 5(d).

5.2 MAIN FEATURES OF THE SCENARIO WHICH WAS ADOPTED BY DPHE MANAGEMENT

There emerged a consensus that the third Scenario mentioned above provided the best basis to proceed, with additions and amendments described in Appendix 5(d). The precise features of the composite Scenario developed at the Workshop are described in Sections 2 - 5 of that Appendix.

It involves measures to improve the effectiveness of DPHE as an engineering institution in the first instance, as part of changes in its role which would permit it to play more of an "enabling" function to other actors - particularly local authorities - in the sector.

The Organization Study Team wishes to confirm its full support for the Scenario developed together with DPHE. It appears to the Team to be the most feasible and desirable in the immediate future and it builds on the strengths of the institution. It will also provide an excellent basis for further development and extension of DPHE's future role when policy and programmes of support to local government in Bangladesh will be on a firmer footing. It explicitly provides for increasing DPHE's ability to work with other actors in the sector which provide complementary inputs to the engineering role played by DPHE.

SECTION 6 - TOWARDS A TRANSITION STRATEGY FOR DPHE

6.1 THE PROPOSED STRUCTURE OF THE TRANSITION PROCESS

6.1.1 Phasing and Timing

The Study Team suggest that a three-phase process should be followed in order to work towards the realization of the Scenario sketched in the previous Section. It is envisaged that the entire process will take at least five years.

Phase 1 **Strategic Planning** (1 year)
Would result in the production of Strategic Plan for DPHE; a "bankable" proposal for the resourcing of a period of change and pilot studies in DPHE, which was acceptable to DPHE, MLGRDC, the GoB, and the donors, and which would be the basis of donor funding and GoB counterpart support.

Phase 2 **Transition** (2 years)
Would result in the production of a detailed programme to implement the transformation of the organization - a Transformation Plan.
This Phase would involve five categories of action:

- the development of Strategic Management capacities;
- the improvement of Operational Management;
- the development of new roles and orientations;
- the investigation of new services;
- the development of a new organizational and staffing structure.

Phase 3 **Implementation** (at least 2 years)
Would involve the execution of the transformation of DPHE on the basis of the capacities developed, and the experiences gained in Phase 2. Restructuring and final staffing arrangements could be formalized then. Jobs could be finally defined. Large scale training programmes to meet those better defined roles could be mounted with training capacity built up in Phase 2, and through external agencies.

6.1.2 Degrees of Detail suggested in this Section

This Section provides detailed suggestions for the steps which need to be taken, and who should take them, for Phase 1. A lesser degree of detail is provided for Phase 2, since the number of "unknowns" is correspondingly greater for this Phase; much depends on the outcome of Phase 1, and in particular the detailed consideration of various aspects of this Study which will take place during this Phase. Phase 3 is not described, since it is impossible to predict what it will entail in detail at this stage.

Management arrangements for the change process are described in subsection 6.4.

6.2 PHASE 1 - STRATEGIC PLANNING

6.2.1 Principal Steps

The following is a series of suggested steps which could be taken to realize Phase 1. They are graphically described in Table 8, along with indications of the parties which would be involved, and reference documents from this and other Studies.

A. Consideration of the Study Report, and proposed approach (between DPHE, MLGRDC, UNICEF and ultimately the Donors). It will be necessary to develop a consensus amongst the parties as to whether a change in orientation in DPHE is required, and if so, to agree a process - such as the one suggested here - for making a Strategic Plan to realize this change.

These considerations should also include harmonization amongst the donors of approaches to support the sector (and for supporting DPHE within it). It would be very helpful if UNICEF could arrange a meeting in order to clarify options for institutional support to the sector - and to DPHE - before final commitments are made on the donor side.

A Working Group in DPHE on Transformation should be formed if it is decided to proceed along the lines suggested in this Study. Its members should have an interest in change in the organization. It would be advantageous if they represented a range of experience and functions within DPHE and were not limited to the most senior staff members, but instead included representatives of EEs and SAEs.

Some senior officer in DPHE should be nominated as (Interim) Change Manager (before posts suggested in Appendix 22 are officially considered) to take this process further.

B. Recruitment of Strategic Planning Consultants

Given the delays which occur in the recruitment of consultants, it is suggested that steps are taken urgently to recruit one expatriate and one Bangladeshi consultant - each experienced in Strategic Planning and organizational development - who would be able to support the implementation of Phase 1, and help run the Workshops described below.

C. Reconsideration of Social Mobilization Programme Implementation Arrangements

The first Phase of the Transition Process should also address the implementation of the Social Mobilization Programme (SMP). It is unclear to the Study Team whether the arrangements for implementation of the recently-approved SMP in DPHE will be feasible.

Given the urgency of this matter this review should take place early during the first phase of the change process. Please refer to Appendix 17.

D. Conduct a Supplementary Organizational Study on DPHE's Urban Development Role

A (limited) organisational study of DPHE's capacities to respond to the demands it faces from the urban WSS sector should be conducted with donor support, if DPHE and MLGRDC agree that it should take place. The Team had no opportunity to discuss DPHE interest in such a Study, but it appears to be an essential complement to the present one. Once again, because its results must influence later events, it should take place as soon as possible in Phase 1.

E. Hold Workshops on Strategic Planning and Key Issues

These workshops for DPHE Top Management (perhaps three one day..three two-day) should be prepared by the Working Group, and should include provision for the invitation of resource persons from for example NGO Forum and MHFW. The Workshops might cover the following themes:

1. *What is Strategic Management?* What instruments apply in the Bangladesh context? Briefing re WSS Sector study and its outcome. Implications for Planning and R+D functions in DPHE (see Appendices 13 and 14).

2. *Client orientation.* Who are DPHE's clients? Definition of pilot studies (for Phase 2) to explore client orientation via some existing projects (e.g. 18DTP..SMP). See Appendices 15 and 16 for discussion material re women users and accountability in general.

3. *A critical appraisal of DPHE's existing programmes* This should follow the proposed brief urban organizational Study. Appendices 17 and 18 could be used as discussion material in assessing the future of HE and Sanitation in DPHE. The development of emergency procedures in DPHE could also be tackled in such a workshop (see para 4.5.6 above).

4. *Strengthening the pattern of DPHE's relationships with the stakeholders in the sector*...the private sector, NGOs, CBOs, local authority groups, users, other Departments. What is the relevance and practicality of a spirit of competition or of coalitions between agencies?

5. *Operational management*: Analysis of DPHE's strengths, weaknesses, opportunities and threats (SWOT) based on some of the materials in the "Operational management" category of Appendices. See for example Appendices 19 on HRD, 20 on MIS, and 21 on Finance and Budget functions.

6. *Development of a Strategic Plan* What has to be done, to effect the agreed changes?

F. Formulate a Strategic Plan.

This will involve the clear specification of the objectives of DPHE, on the basis of the chosen scenario, and the discussions in the workshops. The document will need to indicate how these objectives can be achieved, in the Transition Phase and beyond. This should include ToRs for the TA consultants and Twinning agency (ies) which will be required by DPHE in Phases 2 and 3 of the Transition process (see below).

The Strategic Plan would have to be agreed by DPHE, MLGRDC, MoF, MoE, and the Donors. It will pave the way for the Transition process to start.

Table 8

PHASE 1 (1 Year)
FORMULATION OF A STRATEGIC PLAN - PRINCIPAL STEPS

PRINCIPAL STEPS	ACTORS INVOLVED	MONTHS												REFERENCE DOCUMENTS
		1	2	3	4	5	6	7	8	9	10	11	12	
A. Consideration of OS Report														
A.1 Decision on aspects of report to pursue	DPHE, MLGRDC, MoF, MoE, (UNICEF)	X	X											OS Study Report
A.2 Approach to donors re aspects to be proceeded with	MLGRDC, ERD, UNICEF, Donors		X											OS Study Report
A.3 Donor response, harmonisation of approach to sector	Donors			X	X									
A 4 Appointment of a Change Manager and a Working Group for Transformation	DPHE, MLGRDC			X										
B. Appointment of Strategic Planning Consultants														
B 1 Draft ToR/TAPP/Submission to donors	DPHE, UNICEF (Donors)			X	X									
B 2 Recruitment + mobilization	UNICEF (DPHE)					X	X							
C. Review of SMP Implementation Arrangements	UNICEF, DPHE		X	X										Appendix 17
D. Supplementary DPHE Urban Organizational Study														
D.1 Draft ToR/TAPP/Submission	UNICEF, DPHE			X	X									
D.2 Recruitment + mobilization of consultants	UNICEF, DPHE					X	X							
D.3 Implementation of Study	Consultants							X	X					
D.4 Consideration of Report/Recommendations	DPHE, MLGRDC, MoF, MoE									X				

PRINCIPAL STEPS	ACTORS INVOLVED	MONTHS												REFERENCE DOCUMENTS
E. Workshops on Key Issues	DPHE, SP Consultants (+ resource persons from GoB and NGO agencies as required)													
E 1 What is Strategic Management?								X						Appendix 13, 14
E 2 Client Orientation									X					Appendix 15, 16
E 3 Appraisal of existing programmes											X			Urban Org Study Report + OS Report Appendici 17, 18 and para 4 5.6
E 4 DPHE relationships with stakeholders										X				
E.5 Operational Management											X			Appendix 19, 20, 21
E.6 Developing a Strategic Plan												X		
F. Formulation of Strategic Plan														
F.1 Prepare ToR for TA/Twinning during Transition Phases 2/3	DPHE, SP Consultants											X		
F.2 Formulation of Strategic Plan document	DPHE, SP Consultants											X		
F.3 Approval and submission of Strategic Plan Document (GoB)	MLGRDC MoF, MoE											X		
F.4 Consideration of Donors	Donors												X	
F.5 Agreement to resourcing of Strategic Plan	MLGRDC, MoF, MoE, donors												X	

6.3 PHASE 2 - TRANSITION

The following are the main components suggested for Phase 2:

6.3.1 Recruitment of TA Consultants and Twinning Partners

This should be an early step in Phase 2, since their work will support the entire transition and transformation process. Please refer to subsection 6.5 for details. This and subsequent steps are illustrated in Table 9 below.

6.3.2 Capacity Development for Strategic Management

Simultaneously with the TA recruitment, provision will be needed for some additional senior staff positions if DPHE is to be able to develop Strategic Management capacities in the Transition Phase. The Team's suggestions are outlined in Appendix 22, along with an estimate of the extra costs which would be involved. It is suggested that these posts are created in the first instance under the Development Budget. The execution of the Transition Strategy could be deemed to be a development project, and resourced by the Donors and GoB accordingly. As indicated below, final decisions on the structure and staffing of DPHE under the Revenue budget, should await the outcome of the Transition Phase.

Once new development posts have been established, immediate priority should be given to moulding attitudes amongst DPHE management towards a long term orientation to their role in service provision, and the benefits of collaboration with non-engineering professionals in other agencies.

In view of their relevance to the emergence of a long term Strategic Management orientation in DPHE, it would be essential that the future of the Planning, and Research and Development functions are discussed and decided early during this Phase.

Action to develop top management capacities for strategic planning might include "retreats" led by the consultants and/or twinning partners. These would be aimed at developing a "client-oriented" and future-oriented vision amongst DPHE's top management and at building the teamwork which will be essential if DPHE is to function as an integrated professional organization in future.

6.3.3 Improvements in Operational Management

This encompasses planning to improve the day to day management of the organisation including training, job definition and performance appraisal, MIS development, and improving the cost-effectiveness of its operations.

The report has pointed out the dangers of regarding "training" as a panacea. Matters which should be carefully considered in proceeding with establishment of the training function in DPHE are presented in Appendix 19.

This category of action should include detailed job analysis and definition of realistic standards of performance of key cadres, investigation of possibilities for more delegation of authority (involving the Ministry/CE relationship, as well as within DPHE as far as Codal Rules permit), and improvements of the working of the performance appraisal system, and internal communication and public relations functions.

The development and introduction of a Management Information System (presently planned to be undertaken with the help of WHO consultants) is likely to produce major advantages in terms of time saving, data accuracy and relevance, and motivation through performance feedback and the stimulation of "competition" between zones to achieve better performance - qualitatively not just quantitatively. Appendix 20 contains the Team's proposals in this regard.

Much remains to be done to improve the cost-effectiveness of DPHE operations. Appendix 11 provides estimates of the full economic costs of DPHE outputs for the last financial year, based on research commissioned before the Study took place, and the Study's own estimates. There is a broad measure of agreement between the two sets of estimates. There would appear to be much scope for narrowing the gap between what the public pays for WSS infrastructure provided through DPHE, and what it actually costs when provided through this government agency. The estimates serve to emphasise the importance of encouraging the private sector in WSS infrastructure and service provision.

6.3.4 Development of New Roles and Orientations

On the basis of the analysis in the O.S. Report, a start should be made towards the development of a "client orientation" through local accountability in the organization. Action under this heading should be feasible since the management of DPHE have already discussed and broadly agreed a series of measures for improving local accountability (see Appendix 16). These could be tried by mounting a series of experimental projects in different areas of the country, and evaluating the experience.

An important part of the development of new orientations in DPHE will be to provide orientation training to all staff of DPHE towards the role of women in the WSS sector. Appendix 15 provides material, many suggestions as to what could be covered, and ideas for resource agencies and persons who could be invited to participate.

Appendix 15 also raises more questions than the Study could answer regarding the role and position of women in the WSS sector as a whole in Bangladesh. Any review exercise in Phase 2 should include research into the gender aspects of the sector. There is of course a vital role to be played by DPHE in commissioning such gender-related research as part of its R+D function.

6.3.5 Investigation of New Services

It is suggested that DPHE could investigate the possibilities for providing other Departments or the private sector with technical assistance related to groundwater extraction. These could lead to new "markets" for DPHE's services (e.g. for groundwater extraction technology transfer in other sectors).

6.3.6 Definition of a new structure and staffing pattern for DPHE

A major concern of DPHE is its organizational structure and staffing. Various possibilities have been discussed, but the definition of a comprehensive proposal for DPHE's Organizational Structure and Staffing can only be done at the end of Phase 2 of the transformation programme when the implications of DPHE's new role and orientation are clearer.

6.3.7 Formulation of a Transformation Plan

Phase 2 should culminate in the preparation of a Plan for the transformation of DPHE, based on the experience and capacities built up during Phase 2.

The Plan is needed to guide DPHE through the implementation Phase of the Transformation process, which will take at least a further two years.

Table 9

PHASE 2 - TRANSITION (2 years)

PRINCIPAL TASKS	Year 1				Year 2				Reference Docs
	1/4	2/4	3/4	4/4	1/4	2/4	3/4	4/4	
G **Technical Assistance and Twinning**									
G.1 Recruitment and Selection of TA Consultants and Twinning Institutions	X								
G.2. Mobilization		X							
H. **DPHE Capacity Building for Strategic Management**									Appendix 22
H 1. Decision on staffing increases in DPHE to build capacity for Strategic Management	X								
H 2. "Retreats" for Top Management		X	X	X					
H.3 Action on restructuring and reinforcement of Planning/R+D function			X	X					Appendices 13+14
I. **Operational Management**									
I.1 Establishment of Training Function			X	X	X	X			Appendix 19
I 2. Job Analysis/Performance Appraisal				X	X	X	X	X	
I 3. MIS system design/introduction (WHO consultants?)	X	X							Appendix 20
I.4. Improve internal communication				X	X	X	X	X	
I.5. Strengthen P.R function						X	X	X	
J. **Experiments in New Roles and Orientations**									
J.1. Regional pilots in improving local accountability and customers relations			X	X	X	X	X	X	Appendix 16
J.2. Research and reorientation of DPHE staff re women in WSS				X	X	X	X	X	Appendix 15
K **Investigation of New Services to be provided by DPHE**									
K 1. "Market research" in the light of DPHE's attempts to restructure and reorient its capacities + staff							X	X	
L **New DPHE Structure and Staffing**									
L 1. Preparation and ratification of new DPHE goals, organizational structure, job descriptions, scheme of service								X	
M **Transformation Plan**									
M.1.Preparation of Transformation Plan, to guide future application of capacities developed during Phase 2								X	

6.4 MANAGEMENT OF THE TRANSFORMATION OF DPHE

6.4.1 Introduction

There are several dimensions to management arrangements for the transformation process:

- Coordination.
- Day-to-day action, initiatives and control.
- Communication about progress, obstacles and problems.
- Monitoring progress, and the identification of corrective actions should they be required.

6.4.2 Coordination of the Transformation Process

This should be vested in a Reference Group for DPHE's Transformation. Its composition is for GoB to decide, but representatives of the MLGRDC, DPHE, UNICEF and the TA consultants and twinning agency(ies) would appear to be appropriate.

It would establish the "calendar" for the process and periodically respond to progress reports from the consultants and DPHE.

Its task would be to identify, and rectify obstacles to the agreed transformation process. The Top Management Team of DPHE, and the Donors would be appraised of its deliberations.

It would be important that the MLGRDC, while taking a close interest in the change process of DPHE, does not become involved in the minutiae of day-to-day matters.

6.4.3 Day-to-Day Management

These should be handled by the proposed redesignated Additional Chief Engineer Post in DPHE. He should have a small staff to interact with the office of the TA consultants and/or twinning institution, as well as ensuring that all initiatives requiring internal DPHE action or change are taken by appropriate authorities.

6.4.4 Communication

In any process of change, some will feel uneasy. Rumours and misinformation could easily get out of control. It is important that whatever is agreed as a result of this Study, and its follow-up, is communicated in writing briefly to all members of staff of DPHE.

Thereafter, a regular printed newssheet - perhaps with a logo designed specially for the purpose - should be produced (say, quarterly) noting new developments, progress, and conspicuous actions on the part of its staff supportive of the directions of change DPHE is attempting to follow.

It would be part of the duties of the Addl.CE (Planning and Development) to ensure this communication took place.

6.4.5 Monitoring

Stepping-back periodically to assess "where are we, and where are we going?" is a useful exercise which can be made more productive for all concerned if independent external agencies are periodically invited to work with the parties involved. The purpose of such monitoring is to identify problems which may not be immediately apparent, and to provide a catalyst for the broader review of strategy which routine progress-checking may overlook. Any missing "pieces of the jig-saw" could perhaps be more apparent to independent outsiders than insiders.

It is highly unlikely that all contingencies could have been anticipated at the start of the Transition Strategy. Some flexibility in resource allocation on both sides (GoB and Donors) will be important, so that annual or medium-term replanning could take place during these monitoring missions.

These monitoring exercises should be conducted jointly by GoB- and donor-sponsored individuals or groups. The entire Top Management Team of DPHE should be involved in such exercises.

6.5 TYPES OF EXTERNAL ASSISTANCE REQUIRED TO ASSIST DPHE IN EXECUTION OF THE TRANSFORMATION STRATEGY

External support will be required to realize the strategy above, as follows:

6.5.1 Technical Assistance

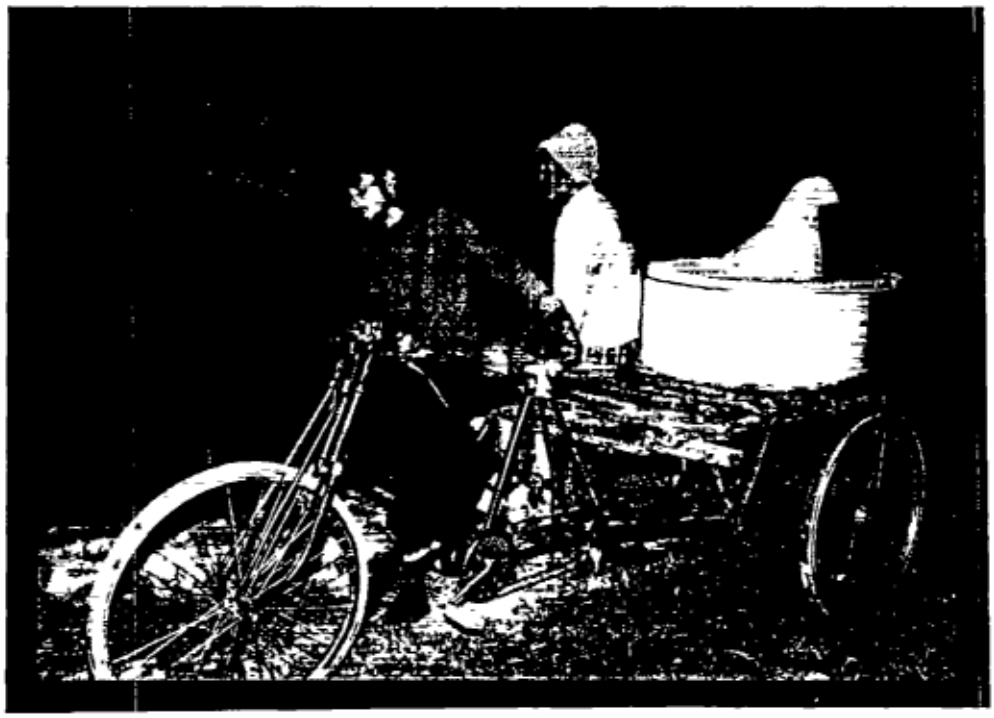
Technical Assistance consultants should be recruited for periods of time commensurate with the probable period of the Transition and Transformation programme in Phases 2 and 3 (i.e. at least four years). Financial commitments should be made accordingly.

This may or may not mean that the same contractor would be involved. Continuation of contracts should clearly be subject to assessment of performance. However the Team has noted the apparent benefits and impact of the long-term arrangements with a single contractor supporting LGED in its institutional development.

6.5.2 Twinning

The Team has some reservations about relying solely on the standard consulting contract packages, with agreed "outputs" in terms of "deliverables", when what is contemplated is the gradual transformation of the role and capacities of an institution.

Therefore, as part of the TA "package" it is suggested that the feasibility of a type of institutional "Twinning" arrangement is considered. "Twinning" refers to the development of a relationship between DPHE and one or more institutions overseas (in developed and/or developing countries) which are also working in the WSS sector. Any such candidate institutions should have the ability and preparedness to develop a long-term relationship with DPHE as an institution. Such institutions might be research, planning, operation or management oriented, and in the public or private sector. The "twin" organization(s) might be selected in part for their reputation in the field of customer-relations, and for their high standards of service.



APPENDICES

LIST OF APPENDICES

Terms of Reference for organizational study of DPHE

Background

The Department of Public Health Engineering (DPHE) is the National agency under the Local Govt. Division of the Ministry of Local Govt Rural Development and Cooperatives. The responsibility of the department covers sectoral planning and implementation in the field of rural water supply and sanitation both in urban and rural areas. Maintenance of rural water supply is vested with the department while the maintenance of the urban water supply system is shared with the pourashava providing technical and management support wherever necessary.

Since 1972 Unicef has supported the rural water supply and sanitation programme in Bangladesh with financial assistance from SDC and DANIDA.

While reviewing the GOB-Unicef country programme of rural water supply and sanitation programme covering a period of July 92 to June 95 the joint SDC/Danida appraisal mission (21st Oct. 91-8th Nov. 91) observed that the rural water supply and sanitation programme is in general well implemented where as the training component and the maintenance of the IRPs need to be improved. The community participation in the maintenance of rural hand tubewells and involvement of women in the programme are yet to be explored.

Rural sanitation programme has been limited to production and sale of water seal latrine with inadequate programme development for sanitation promotion and health education activities.

DPHE has recognized the fact that sustainable rural water supply and sanitation can not alone be the result of inputs such as tubewells and sanitary latrines. There also has to be community involvement, Health education, training in all engineering activities. To strengthen DPHEs institutional capability it is suggested that, DPHE structure needs to be studied and adapted in order to effectively accommodate the essential software of water and sanitation.

Objective

The objective of the study will be to produce a report that analyzes DPHE's structure, staffing and internal procedures particularly with regard to the rural water supply and sanitation programme and makes recommendation regarding modified organization and procedures that are sustainable in the long term and that can deal effectively with both the hardware and software aspects of water supply, sanitation, hygiene promotion and social mobilization.

Scope of Work

The work of the study team will include but not necessarily be restricted to, an assessment of and recommendations concerning the following aspects:

A. Description of present situation

1. Tasks performed by DPHE.

2. DPHE's organizational structure, staffing and tasks for the different administrative units.

3. Linkage and relationship to related organization such as Unicef, Department of Health Services, NGOs ,private sectors, pourashavas and other local bodies.

4. Linkage between DPHE and local Govt Division of MLGRD&Co., with special emphasis on administrative procedures, programming, monitoring aspects, and the Annual Development Programme aspects.

B. Assessments

5. DPHE's organizational and staffing pattern at headquarters in relation to decision making, communication, monitoring and reporting of the field level activities. Particularly the following should be assessed:

- Long term sustainability of the structure and staffing pattern in relation to GOB's potential resources and programme delivery.
- Organizational structure of the circles and divisions, scope of works for each circle and divisions and staffing including required educational qualifications for key personnel.
- Short and long term implication of the planned Social Mobilization project with regard to organizational setup, staffing needs and qualification. Particularly, the need for non-engineering staff should be assessed.
- Role of present health education staff
- Role of DPHE in Research and Development and staffing needs and staff qualifications
- Assess the need for hydrogeological investigation and identify the manpower requirement at various level of the Ground Water Circle.
- Coordination and streamlining of planning and monitoring activities particularly the implication of current introduction of computerized MIS in DPHE and the increasing need for qualitative monitoring.

6. DPHE's organizational structure and staffing pattern at field level in relation to decision making, communication, monitoring and reporting of the field level activities. Particularly the following aspects should be assessed:

- Relevance of uniform staffing at thana level with irrespective of the volume and the type of work;
- Planned social mobilization project and village sanitation project;
- Maintenance system of rural hand pump systems;
- Work load on the tubewell mechanics in the light of their envisaged tasks as public health promotors and their planned involvement in the social mobilization project.

7. Present management planning, monitoring, reporting and administrative procedures with special emphasis on:

- Present monitoring and reporting procedures in relation to ADP targets. Particularly, the scope for simplification of the reporting procedures from thana level via subdivisional, divisional and circle levels to the Headquarters should be considered;
- Procedures for monitoring of qualitative aspects as well as for utilization and impact of project output;
- procedures for monitoring of activities carried out by the programme's allied partners;
- utilization of the monitoring as a management tool, including feed back of monitoring results from headquarters to the field level.

8. Present training activities in relational to DPHE staff and the beneficiaries of the programme. Particularly the following aspects should be assessed:

- Internal organizational set up for the training activities.
- Need for introductory courses for new field staff as sub-assistant engineers and tubewell mechanics.
- Need for and organization of regular refresher training courses.

9. Supervision and work control procedures with special emphasis on:

- Supervision of contractors;
- Supervision for lower ranking staff by their supervisors.

10. Organizational aspects of DPHE's ad-hoc emergency projects including establishment of quality assurance procedures.

Recommendations:

11. Based on the above assessments, the study team will prepare recommendation with regard to:

- Organizational setup of DPHE at headquarters and field level;
- Management, planning, monitoring, reporting, and administrative procedures to the extent relevant;
- Human resource development activities;
- Supervision and work control procedures;
- organizational aspects of emergency programmes.

The recommendation should take into account a gradual transfer of the technical and financial programme responsibilities from UNICEF to GOB.

12. Need for technical and/or financial donor support to the initial implementation of the proposed activities.

APPENDIX 2

MAIN ACTIVITIES AND EVENTS DURING THE STUDY

The four ACE team members of the Organization Study (OS) started functioning from 1st July 93 formally and continued until October 28th 1993. MATRIX staffing was as follows:

Mr. Jeroen van Luijk and Mr. David Watson (Premobilization visit)	14 - 20 June 1993
Mr. Jeroen van Luijk	4 - 30 July 1993
Mr. David Watson	4 August - 9 September 1993 21 September - 28 October 1993
Dr. Sultana Alam	4 - 23 August 1993
Dr. Kees van der Poort	4 - 28 October 1993
Mr. Ad Hordijk	21 - 26 October 1993

The main activities and events occurred during this period of the study are noted below.

DPHE provided the OS team with office accommodation at its Head Office at 12 Dilkusha Commercial Area, Dhaka. The formal office hours for the team was 9.00 am. to 4.00 pm. But the workload demanded more than normal working hours, including work during weekends and holidays.

The OS members would met at 9.00 in the morning for coordinating their respective works. Also some discussion meetings were held at British Aid Guest House (BAGH) at Gulshan.

The study was phased out into four phases. The first phase was led by Mr. Jeroen Van Luijk and others by Mr. David Watson, both of MATRIX Consultants.

Field visits

The consultants made several field visits to different parts of the country though all parts could not be covered due to time and other constraints. The list of the persons interviewed during the visits and study is at Appendix 3.

Field visits to Barisal and Rajshahi

Mr. Jeroen Van Luijk, Mr. Nur Muhammad Akon and Mr. Dewan Nazrul Islam made a visit to Barisal region from 13-16 July for 4 days.

Mr. Feroze Ahmed and Dr. Nurul Islam visited Rajshahi region from 13-16 July for 4 days.

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Field visit to Comilla

All the team members except the ACE Coordinator visited Comilla from 14-18 August.

At Comilla a Workshop for the regional Executive Engineers was held on 14th August at BARD, Comilla.

The team was thereafter divided into three groups. They visited offices and fields at Hajiganj, Chowdhagram, Kasba, Barura, Laksham, Deviduar thanas and Comilla S/E, EE and SDE offices.

Field visit to Rangpur

Mr. David Watson and Mr. Feroze Ahmed made a two day field trip to Rangpur S/E office on 31st August and 1st September 1993.

Field visits to Manikgonj & Mymensingh

Ms. Sultana Alam visited Gono Trust and Social Advancement Centre at Saturia, Manikgonj on 12th August. Dr. Kees van der Poort and Mr. Feroze Ahmed made a one day field visit to 18 DTP(Urban) WSS activities in Manikgonj on 9th October 93. They also visited Mymensingh as a part of ADB financed Urban Projects. In both towns discussions were held with Pourashava Chairman and commissioners. In both towns activities of NGOs were visited.

Interviews and meetings

The team of consultants interviewed a large number of concerned officials at the Ministry of LGRD including the Secretary, Joint Secretaries, the DPHE personnel including Chief Engineers, and Assistant Engineers, Warehouses, Laboratories, the Municipal and Corporation officials, Local elected representatives, User groups, Caretakers, Masons, Tubewell mechanics at all levels both central and local. (Details in Appendix 3).

Workshops

The study team organized 7 workshops at Dhaka and one workshop at Comilla as mentioned earlier.

Workshop for DPHE Field Staff (mainly EEs)

Date: 27th July 1993
Venue - Scout Bhaban, Dhaka
Number of participants: 23

Workshop for Top Management of DPHE (SEs)

Date: 28th July 1993
Venue - Scout Bhaban, Dhaka
Number of participants: 18

APPENDIX 2

Workshop for Top Management of DPHE (SEs)

Date: 21st August 1993
Venue - ICMA Bhaban, Dhaka
Number of participants: 26

Workshop for Sub Assistant Engineers (SEs, all regions) of DPHE

Date: 2nd September 1993
Venue - B.M.D.C. Dhaka
Number of participants: 23

Workshop for Top Management of DPHE (SEs)

Date: 8th September 1993
Venue - B.M.D.C. Dhaka
Number of participants: 15

Workshop for Union Parishad Chairman (all regions)

Date: 30th September 1993
Venue - B.M.D.C. Dhaka
Number of participants: 28

Workshop for Top Management of DPHE (SEs)

Date: 4th October 1993
Venue - B.M.D.C. Dhaka
Number of participants: 15

APPENDIX 3

LIST OF PEOPLE INTERVIEWED

Ministry of L.G.R.D. & Co-operatives (L.G. Division)

01. Mr. M. Mushfiqur Rahman	Secretary L.G.Division, Ministry of LGRD&Co-operatives.
02. Mr. Saiyid Musharraf Husain	Joint Secretary (Dev.)/Director General
03. Mr. M. Nurul Abedin	Joint Secretary, Administration (DPHE).
04. Mr. Nazul Alam Siddique	Joint Secretary, Pourashava.
05. Mr. Mozibur Rahman	Joint Secretary.

Ministry of Finance

01. Mr. Shahidul Alam,	Addl. Secretary External Finance.

Planning Commission

01. Mr. Mokammal Haque	Member
02. Mr. Rahim Bhuiyan	Joint Chief (Physical Infrastructure

Asian Development Bank

01. Mr. Nurul Huda	Programme Officer/ADB, BRO, Dhaka

Department of Public Health Engineering (DPHE)

01. Engr. Aminuddin Ahmed	Chief Engineer
02. Engr. A.B.M.Siddique	Addl. Chief Engineer
03. Engr. Abdur Rahman Mridah	SE/PD Village Sanitation
04. Dr. Engr. Shamsul Haque	SE, DPHE/P.D./WSS/USF
05. Engr. S.A.K.M. Shafiq	P D Dutch Projects, Dhaka
06. Engr. Quadiruzzaman	S E, Rangpur Circle, Rangpur
07. Engr. Fariduddin Ahmed Miah	SE, (Planning)

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08. Engr. Kazi Nasiruddin Ahmed	SE, Barisal Circle.
09. Engr. Zahurul Haque	SE, (Stores)
10. Engr. Abul Kalam	SE, Chittagong Circle, Comilla
11. Engr. Isaque Ali	SE, Khulna Circle, Khulna
12. Engr. Kutubuddin Ahmed	SE, Rajshahi Circle.
13. Engr. K. N. Das	SE, CHT Circle
14. Engr. Md. Khorshed Alam	SE, Dhaka Circle
15. Engr. Fariduddin Ahmed	SE, Ground Water & Exploration Circle
16. Engr. Khuda Bux	Assistant Chief Engineer
17. Engr. Obaidur Rahim	EE, V.S. Division-2.
18. Engr. Ahmed Mofazzal Haque	EE, V.S. Division-1.
19. Engr. Kazi Abdul Hakim	EE, Design Division.
20. Engr. Khaleda Ahsan	EE, System Manager, Computer Division
21. Engr. Md. Zainal Abedin	EE, SIR Division.
22. Engr. Md. Mustafizur Rahman	EE, P & C Division.
23. Engr. Qazi Khwaza Baksh	EE, Planning Division.
24. Engr. Md. Bazlur Rahman	EE, Barisal Division
25. Engr. Abul Bashar	EE, Natore Store Division & Natore Division.
26. Engr. Md. Rezaul Karim	EE, Store Division, Dhaka.
27. Engr. Abdur Rahman	EE, Rajshahi Division.
28. Engr. A.T.M. Isa	EE, Nowabgonj Division.
29. Engr. Golam Sharfuddin	EE, Pabna Division.
30. Syed A.N.Md. Kabirushan	Chief Health Education Officer, V.S. Project

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31.	Md. Mahe Alam	PRO, (Rtd.)
32.	Munshi Enamul Huq	PRO
33.	Engr. S.G. Mahmud	AE, Planning Circle.
34.	Engr. A.K.M. Ibrahim	AE, Planning Circle.
35.	Engr. Salahuddin	SDE, Barisal.
36.	Engr. Shahid Iqbal	AE, Pabna Division.
37.	Engr. Tushar Mohan Shadhu Khan	AE, (P & C)
38.	Mr.Md. Nuruzzaman	SAE, Banaripara Thana, Barisal.
39.	Mr. A.K.M. Nuzrul Islam	SAE, Babuganj Thana, Barisal.
40.	Mr. A.K.M. Sarwar Jahan	SDE, Rajshahi Division.
41.	Mr. Abdur Razzaque	SDE, Nawabganj Division.
42.	Mr. Prasanta Kumar Chowdhury	SAE, Rajshahi Division.
43.	Mr. Asit Kumar Karmakar	SAE, Godagori Nowabganj Division.
44.	Mr. Abdus Sobhan Bhuiyan	SAE (Store), Dhaka
45.	Mr. Abul Kashem	Assistant Accountant
46.	Mr. Paresh Chandra Saha	Accounts Clerk
47.	Mr. Zahirul Islam	Cashier
48.	Mr. Motiur Rahman	SDE, Dhaka Store Division
49.	Mr. Anowar Hossain	Estimator SE (Store)
50.	Mr. Rezaul Karim	Central Store
51.	Mr. Abdul Kasham	Tube-well Mechanic, Godagori Thana.
52.	Mr. Abdul Latif	Tube-well Mechanic, Godagori Thana.
53.	Mr. Karimuddin	Labourer, Village Sanitation Centre, Godagori Thana, Rajshahi.
54.	Mr. Abul Bashar	Office Assistant, Godagori Thana Office

55. Mr. Nurul Haque Mollah	Contractor, Rajshahi Circle.

DPHE, Zonal Laboratory

01. Mr. Mizanur Rahman	Senior Chemist, DPHE, Zonal Laboratory, Rajshahi.
02. Mr. Fakhar Uddin	Senior Chemist, DPHE, Zonal Laboratory, Mymensingh
03. Mr. Panna Lal Chowdhury	Head of DPHE Zonal Laboratory, Comilla

Directorate, Health Services

01. Dr. Matiur Rahman Chowdhury	Director, Primary Health Care, Bangladesh.
02. Dr. Fazlur Rahman	Assistant Director, Primary Health Care, Bangladesh.

Bangladesh University of Engineering & Technology (BUET) Dhaka.

01. Prof. Majibur Rahman Ph.D	Dept. of Civil Engg. BUET.
02. Prof. Farooque Ahmed Ph.D	Dept. of Civil Engg. BUET.
03. Prof. Nazrul Islam Ph.D	Institute of Appropriate Technology, BUET.

Rajshahi City Corporation (RCC)

01. Mr. Ansar Ali	Chief Executive Officer, Rajshahi City Corporation
02. Sk. Mukhles Ahmed	Secretary
03. Md. Ashraful Haque	Astt. Engineer

Bangladesh Management Development Centre (BMDC)

01. Mr.A.K.M.Nurunnabi Chowdhury	Director (Admin/Finance)

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Rural Electrification Board (REB)

01. Mr. M. Wadud	Member (Training)
02. Mr. Halim Mollah	Head of Training
03. Dr. I. Andrews	Institutional Training Adviser

National Institute of Local Government (NILG)

01. Mr. Aftabuddin Khan	Director General
02. Mr. Afsar Hossain Saki	Director, Training

Grameen Bank

01. Professor Muhammed Yunus	Managing Director
02. Mr. Khaled Shams	Deputy Managing Director
03. Mr. Muzammel Hoque	General Manager
04. Engr. Ashruful Hoque	Executive Engineer

UNICEF, Bangladesh, Dhaka

01. Dr. Sharod Sapra	Senior Programme Officer
02. Mr. Delawar Khan	Senior Programme Officer
03. Mr. Philip Wan	Chief WES Section
04. Engr. Abu S. Azad	Officer-in-Charge, WES Section
05. Mr. Neill McKee	Chief of PCIS
06. Ms. Najhat Shahjadi	PCIS
07. Ms. G. Chopra	Supply Officer
08. Ms. Mahera Khatun	Chief Divisional Officer
09. Mr. A.T.Siddique	Dy Chief Divisional Officer
10. Mr. I.K.Baral	Project Officer
11. Mr. Jahangir Kabir	Project Officer

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W.H.O./DPHE Dhaka

01. Engr. A. Redekopp	WHO, Sanitary Engineer, WHO/DPHE
02. Engr. Md. Mofazzel Hoque	National Field Program Officer, WHO, Dhaka.

Danida

01. Mr. Wagn Winkel	Minister Counsellor, Royal Danish Embassy, Dhaka
02. Mr. Michael Vinding	Counsellor, Royal Danish Embassy, Dhaka.

Royal Netherlands Embassy

01. Mr. T. Schutte	Head of Development Cooperation
02. Mr. Roelof Buffinga	Commercial Secretary

UNDP/RWSG-S.A

01. Ms. R. Davies	UNDP
02. Mr. Haroon Ur Rashid	Country Program Coordinator, RWSG, Dhaka.
03. S. S. Anisur Rahman	Programme Officer/Sanitary Engineer, RWSG.

S.D.C

01. Dr. Peter Arnold	Head, Development Co-operation, SDC
02. Mr. Peter Tschumi	First Secretary, Development, SDC

British High Commission

01. Mr. Eamonn Taylor	First Secretary, Aid Management Office
02. Dr. Mehtabusina Currey	Health Sector Specialist, Aid Management Office

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N.G. O. Forum

01. Mr. S.M.A. Rashid	Director N.G.O. Forum, Dhaka.
02. Mr. Albiruni	Field Office Director, Comilla
03. Mr. Maksud	Field Worker/Trainer, Dhaka Office

Caritas, Dhaka

01. Mr. Thomas Costa	Director, Development
02. Mr. Daniel Bhuiyan	Education Section
03. Mr. Felex Bablu Rozario	Programme Officer, Sanitation Sector

Caritas, Rajshahi

01. Mr. Paul Rozario	Regional Director, Caritas Rajshahi.
02. Mr. S. Rozario	Store-Keeper, Caritas Rajshahi.
03. Mr.Evarist Hembrom	Welfare Officer, Caritas Rajshahi.
04. Mr. Ignatius Padrigues	Manager Water Supply, Caritas Rajshahi.

Caritas, Barisal

01. Mr. Punurdan Guda	Regional Director, Caritas Barisal.
02. Mr. James Malaker	Welfare Officer, Caritas Barisal.
03. Ms. Afroza Begum	Women Welfare Officer

Proshika, Dhaka

01. Mr. James Biswas	Assistant Programme Office
02. Mr. Pranjuram Biswas	Sanitation Section

BRAC, Dhaka

01. Ms.Sadia A.Chowdhury	Director, Women's Health & Development Program, BRAC, Dhaka.

02. Dr. Golam Samdani	Head of Management
03. Mr.Md. Alamgir Hussian	Regional Manager, Women's Health & Development Program, BRAC, Dhaka.
04. Mr. Jalal Ahmed	Regional Manager, Sanitation Sector

Bangladesh Water Development Board (BWDB)

01. Engr. M.A.Rashid	Superintending Engineer, System Rehabilitation Projects, BWDB, Dhaka.
02. Engr. K.T.Hussain	Deputy Director, Early Implementation Projects (EIP), BWDB.

Bangladesh Institute of Development Study (BIDS)

01. Dr. Abdul Ghafur	Research Director, General Economics Division
02. Mr. Pradip Kumar Kundu	Research Officer. G.E.D.

Local Government Engineering Department (LGED)

01. Engr. Quamrul Islam Siddique	Chief Engineer
02. Engr. Mohammod Monowar Hussain Chowdhury	Addl. Chief Engineer
03. Engr. M. A. Karim	P.D. RD-7
04. Engr. J. R. Chowdhury	P.D. Slum Improvement Project
05. Mr. Md. Ataullah Bhuiya	Head of Training
06. Mr. Abdul	Finance Manager, RD-7
07. Engr. Abul Kalam Azad	EE, Monitoring, RD-7

Local Consultants

01. Engr. M. N. Hoque	Director, Aqua Consultants
02. Mr. Masudur Rahman	MIS, Aqua Consultants

03. Mr. S. Mansur Ahmed	Financial Management Specialist, Institutional Strengthening of Pourashavas Project.

Foreign Consultants

01. Mr. Paul A. Zijderveld	Team Leader, Early Implementation projects (EIP), BWDB.
02. Murray G. Osgood	Team Leader, Institutional Strengthening of Pourashavas Project (LGED).
03. Caspar Lambrechtsen	Project Director, Second Water Supply & Sanitation Project (ADB)
04. John Abbott	Team Leader, Second Water Supply & Sanitation Project (ADB)

PRIP/PACT

01. Richard Holloway	Director PRIP, Representative PACT, Bangladesh

Local Leaders/Private individuals at Barisal

01. Mr. Sultan Ahmed	Chairman, Madhabpasha Union Parishad, Babuganj Thana, Barisal.
02. Sri Sudharshan Chandra Karmakar	Asstt. Teacher Kashimpur No-2, Govt. Primary School, Thana-Godagori, Rajshahi.
03. Sri Ramesh Chandra Karmakar	Village Kashimpur, Thana-Godagori, Rajshahi. Owner of Ring-well (Private).
04. Md. Majibur Rahman	S/o Hazi Md. Gafaruddin Mandal, Village Balighata, Thana- Godagori, Nowabganj. Caretaker of Tara Deepset Pump sunk in 1989.
05. Mr. Altaf Hossain	Shopkeeper
06. Mr. Triqul Islam	Milon Stationary Store

Manikganj Pourashava

01. Mr. Mhd. Ramjan Ali	Chairman Manikganj Pourashava

02.	Mr. A.K.M. Noor Nabi	Commissioner Pourashava Manikganj, Chairman W.S.S.C. Manikganj
03.	Mr. Hashem Ali	Commissioner Ward I, Manikganj
04.	Mr. Md. Iqbal Khan	Commissioner Ward II, Manikganj
05.	Engr. Kamaluddin Ahmed	Executive Engineer 18 DTP, DPHE, Dhaka Zone, Manikganj
06.	Engr. Naqvib Ahsan	Executive Engineer, Rural Water Supply, Manikganj District
07.	Mrs. Anjumanara Begum-Shafali	Promoter Voluntary Organisation for the Needy (VON), Manikganj
08.	Mrs. Roushon Ara	Educater, VON, Manikganj
09.	Mr.Md.Manjur Alam Khan	Project Officer, VON, Manikganj
10.	Mr. Md Shahjahan Ali	Coordinator VON, Manikganj

Mymensingh Pourashava

01.	Engr. Shanjahan Mallick	Executive Engineer, DPHE, Myemensingh
02.	Engr. Rafiqun Nabi	Sub Divisional Engineer, Mymensingh
03.	Mr. Azizul Haque	Superintendent Waterworks, Mymensingh Pourashava
04.	Engr. Abdul Halim Miah	Assistant Engineer, Mymensingh Pourashava
05.	Mr. Kailas Chandra Das	Chairman Bastee Committee, Mymensingh
06.	Mr. Delwar Hossain Khan	Chairman Mymensingh Pourashava
07.	Mr.S.M.Nazmul Haque Tara	Commissioner Mynmensingh Pourashava
08.	Mr. Md. Khairul Amin	Junior Hydrogeologist, Well Monitoring and Regeneration Project, Groundwater Circle DPHE
09.	Mr.S.M.Ihtishamul Huq	Executive Engineer, Research and Development Division, Groundwater Circle, DPHE

10. Mr. Abdul Hamid Miah	Sub-Divisional Engineer, Groundwater Exploration & Development Division, Groundwater Circle, DPHE
11. Mr. Muzaffar Ahmed	Sub Divisional Engineer, Research & Development, Groundwater Circle, DPHE

18 District Towns Project (DPHE/Dutch Aid)

01. Mr. Taco De Vries	Project Co-ordinator, Dutch Consultants Team
02. Mr. Aart Merkelijn	Operation and Maintenance Advisor, Dutch Team
03. Dr. Md. Anowar Hossain	Institutional Expert
04. Quazi Sufia	Social Mobilization Expert

Gono Trust and Social Advancement Centre (SAC)

01. Mr. Muhammed Shafiuddin	Co-ordinator
02. Mr. Dhireadra kumur Roy	Project Manager
03. Ms. Mumtaz Begum	Trainer
04. Mr. Sirajul Islam	Programme Officer
05. Mr. Muhammed Shaidulla	President SAC
06. Mr. Skomnath Lahiri	Programme Co-ordinator
07. Mr. Anil Sarker	Founder Secretary

Bangladesh Women Health Coalition, Dhaka

01. Ms. Syeda Nahid Mukith Chowdhury	Acting Executive Director

Rangpur

01. Mr. Delwar Hossain	U.P.Chairman, Ekarchali Union Parishad, Rangpur
02. Mr. Ekramul Hoque	U.P.Chairman, Parshuram Sadar, Rangpur

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Visit to Comilla
14-18 August 1993

A. List of participants in the workshop of Executive Engineers held on 14.8.93 at BARD, Comilla.

01. Mr. Md. Quddusur Rahman	Executive Engineer, DPHE, Noakhali Division
02. Mr. Md. Rafiqul Islam	Executive Engineer, DPHE, B.Baria Division
03. Mr. Md. Asadul Hoque	Executive Engineer, DPHE, Laxmipur Division
04. Mr. Ali Ashraf	S.D.E. DPHE, Comilla Sadar(N)
05. Mr. Md. Akru Mia	Executive Engineer, DPHE, Moulvi Bazar Division
06. Mr. Md. Nizamuddin Howlader	Executive Engineer, DPHE, Sunamgonj Division
07. Mr. Md. Kamal Pasha	S.D.E. DPHE, Comilla Sadar(S)
08. Mr. Md. Siddiqur Rahman	Executive Engineer, DPHE, Chandpur Division
09. Mr. Md. Akram Khan	Executive Engineer, DPHE, Comilla Division
10. Mr. Syed G. Sarwar	Executive Engineer, DPHE, Sylhet Division

B. List of persons interviewed by Mr. David Watson, N. M. Akon, Dr. N. Islam , Dr. Sultana Alam and Dewan Nazrul Islam between 14-18 August, 1993.

01. Mr. M. A. Kalam	Superintending Engineer, DPHE Chittagong Circle, Comilla
02. Mr. Abul Hashem Bhuiyan	S.A.E. Chowddagram
03. Mr. Nilotpal Ispura	T.N.O. Chowddagram
04. Mr. Md. Rafiqul Islam	The Assistant, LGED, Chowddagram

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05. Mr. Abul Kashem	S.A.E. Hajigonj
06. Mr. Abdul Mannan Khandaker	Clerk/Typist. SAE Office Hajigonj
07. Mr. Amin Mia	Private Producer, Hajigonj
08. Mr. Akram Khan	Executive Engineer, PHE Comilla Division
09. Mr. Panna Lal Chowdhury	Head of DPHE Zonal Lab. Comilla
10. Mr. Kamal Pasha	SDE, DPHE, Comilla(S)
11. Mr. Abu Rayhan Al Baronee	Associate Programme Officer, NGO Forum, Comilla
12. Mr. Masudur Rahman	NGO Forum facilitator (Dhaka Office, working with Team at Comilla)
13. Dr. Sarah Archer	Consultant GTZ, Training Specialist, National Institute of Population Research and Training (NIPORT)
14.	Civil Surgeon Comilla
15. Mr. Abdul Hye	Thana Health Administrator, Hajigonj
16. Mr. Md. Ismail	T. N. O. Hajigonj
17.	Education Officer Hajigonj
18. Mr. Kazi Bazlul Hoque	Headmaster, Pilot High School, Hajigonj
19. Mr. Abdul Baten Khan	Mechanics, DPHE, Chowddagram (Under matric
20. Mr. Abdul Kadir	Mason, DPHE, Chowddagram
21. Mr. Mohd. Abdul Baten Khan	SAE, DPHE, Kasba
22. Mr. Rafiqul Islam	Executive Engineer, DPHE B.Baria Division
23. Mr. Mohd. Abdur Raquib,MBBS	Thana Health & Family Planning Officer, Kasba
24. Dr. Bhabani Prasad Roy,MBBS	Medical officer, Kasba Hospital
25. Dr. Habibullah Sohel,MBBS	Medical Officer, Kasba Hospital

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26. Dr. Monirul Hoque Siddique	Medical Officer, Kasba Hospital
27. Mr. Mohd. Jashimuddin Ahmed	ARDO, BRDB Officer Kasba
28. Me. Mohd. Fazlul Rahman	(Senior) SAE, DPHE, Barura Thana
29. Mr. Mohd. Ansar Ali	Chowkider, DPHE, Barura
30. Mr. Shamsul Haque	Machanich, DPHE, Barura
31. Mr. Mohd. Sulemen Majumder	Mechanic DPHE, Jamal (Barura)
32. Mr. Mohd. Saidur Rahman	T.N.O. Barura
33. Mr. Sirajuddin Chowdhury	O.C. (Police) Barura
34. Mr. Mohd. Fariduddin Ahmed	Thana Education Officer, Barura
35. Mr. Kanu Lal Debnath	Thana Samabay Officer, Barura
36. Mr. Mohd. Nurul Islam	Thana Food Officer, Barura
37. Mr. Mohd. Moslehuddin	Thana Social Service Officer, Barura
38. Mr. Dinesh Chandra Sarker	Thana Krishi Officer, Barura
39. Mr. Mohd. Ahsan Habib	Thana Statistical Officer, Barura
40. Mr. Mohd. Nazrul Alam	Thana BRDB Officer, Barura
41. Mr. Mohd. Tajul Islam	Thana Food Controller, Barura
42. Mr. Arshad Hossain	Asstt. Engineer, LGED, Barura
43. Mr. Mohd. Abul Basher	Thana PLO Relief & Rehabilitation
44. Mr. Akram Khan	Executive Engineer, DPHE Comilla Division
45. Mr. Kamal Pasha	SDE Comilla South Sadar, Comilla
46. Mr. Amin Uddin Ahmed	Proprietor of M/S. Amin Traders Mogoltuly, Comilla
47. Mr. Salam Khan	Proprietor of M/S Comilla Traders, Mogultuly, Comilla
48. Mr. Kalam	Private Mechanics of shop at Mogoltuly, Comilla

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49. Mr. Khaza Ahmed	SAE Debidwar, Comilla
50. Mr. Abdul Matin Sarker	Mechanic, Debidwar, Comilla
51. Mr. Ayub Ali Munshi	Mechanic, Debidwar, Comilla
52. Mr. Abdul Alim	Mechanic, Debidwar, Comilla
53. Mr. Safatulla	Mechanic, Debidwar, Comilla
54. Mr. Ali Hossain	Caretaker, Chandpur, Zafargonj Union
55. Mr. Siraj Miah	Caretaker, Mohammadpur, Alahabad Union
56. Mr. Maju Miah	Caretaker, Mohammadpur, Mohanpur Union
57. Mr. Akbar Ali	User, Chandpur, Zafargonj Union
58. Mr. Jalal Miah	User, Mohammadpur, Alahabad Union
59. Miss. Sabina Akther	User, Mohammadpur, Alahabad Union
60. Miss. Salaha Khatun	User, Mohammadpur, Alahabad Union
61. Mr. Abul Hossain	SAE, Muradnagar Thana. He was not available in his office as on 16.8.91. He went to other places with a contractor.
62. Mr. Md. Harunur Rashid	SAE, Laksham Thana, Laksham
63. Mr. Abdul Kaium Khandaker	Mechanic, Laksham Thana, Laksham
64. Md. Billal Hossain	Mechanic, Laksham Thana, Laksham
65. Mr. Md. Solaiman	Mechanic, Laksham Thana, Laksham
66. Miss. Zamela Khatun	Caretaker, Laksham
67. Mr. Sanaullah	Paschimgaon, Laksham
68. Mrs. Kamala Banu	Caretaker, Paschimgaon, Laksham
69. Mr. Jamal Khan	User, Paschimgaon, Laksham
70. Mr. Jasim Uddin	User, Paschimgaon, Laksham
71. Mr. Hasem Ali	User, Paschimgaon, Laksham

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72. Mr. Hakim Ali	Caretaker, Paschimgaon, Laksham
73. Mr. Zafar	Caretaker, Purbagaon, Laksham
74. Mr. Kashem Ali	U.P. Member
75. Mr. Kalam Uddin Ahmed	U.P. Member
76. Mr. Lal Miah	Family Planning Assistant, Laksham
77. All Teachers of Arjuntala	Primary School, Barura, Comilla
78. All Teachers of Arjuntala	High School, Barura, Comilla
79. Mr. Krishna Mohan Sarker	Deora, Barura, Comilla
80. Ms. Maya Rani Sarker	Barura, Comilla
81. Mr. Dulu Mia	Arjuntala, Barura, Comilla
82. Mr. Abdus Shahid	Barura Bazar, Barura Comilla, Private Producer
83. Mr. Rafiqul Islam	Member Union Council, Barura, Comilla
84. Mr. Mohammed Jainul Alam	Gono Kalyan Kendra, B.Baria, Comilla
85. Mr. Muhammed Salauddin Ahmed	Director, Seba Manabik Unnayan Kendra, Comilla
86. Mr. Habibar Rahman	Palli Unnayan Kendra, Nimshar, Comilla
87. Mr. S. M. Shafiqul Islam	Palli Unnayan Kendra, B.Baria, Comilla
88. Mr. Abdul Khaleque	Field Coordinator, Uddipan, Daudkandi, Comilla
89. Mr. Feroze Ahmed	TWM Comilla
90. Mr. Mahammed Azizur Rahman	TWM Comilla

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Field visit to Rajshahi
13th to 17th July

01. Engr. Kutubuddin Ahmed	SE, DPHE Rajshahi Circle.
02. Engr. Abul Bashar	EE, DPHE, Natore Store Division & Natore Division.
03. Engr. Abdur Rahman	EE, DPHE, Rajshahi Division.
04. Engr. A.T.M. Isa	EE, DPHE, Nowabgonj Division.
05. Engr. Golam Sharfuddin	EE, DPHE, Pabna Division.
06. Engr. Shahid Iqbal	AE, DPHE, Pabna Division.
07. Mr. A.K.M. Sarwar Jahan	SDE, DPHE, Rajshahi Division.
08. Mr. Abdur Razzaque	SDE, DPHE, Nawabganj Division.
09. Mr. Prasanta Kumar Chowdhury	SAE, DPHE, Rajshahi Division.
10. Mr. Asit Kumar Karmakar	SAE, DPHE, Godagori, Nowabganj Division.
11. Mr. Mizanur Rahman	Senior Chemist, DPHE, Zonal Laboratory, Rajshahi.
12. Mr. Abdul Kasham	Tube-well Mechanic, Godagori Thana, Rajshahi.
13. Mr. Abdul Latif	Tube-well Mechanic, Godagori Thana, Rajshahi.
14. Mr. Karimuddin	Labour, Latrine Production Centre, Godagori Thana, Rajshahi.
15. Mr. Abul Bashar	Office Assistant, Godagori Thana Office, DPHE, Rajshahi.
16. Mr. Nurul Haque Mollah	Contractor, DPHE Rajshahi Circle.
17. Mr. Ansar Ali	Chief Executive Officer, Rajshahi City Corporation (RCC).
18. Sk. Mukhles Ahmed	Secretary, R.C.C.
19. Md. Ashraful Haque	Asstt. Engineer, R.C.C.

20. Mr. Paul Rozario	Regional Director, Caritas, Rajshahi Region.
21. Mr. S. Rozario	Store-Keeper, Caritas Rajshahi.
22. Mr.Evarist Hembrom	Welfare Officer, Caritas Rajshahi.
23. Mr. Ignatius Padrigues	Manager Water Supply Caritas Rajshahi.
24. Mr. Sudharshan Chandra Karmakar	Asstt. Teacher Kashimpur No-2, Govt Primary School, Thana-Godagori, Rajshahi.
25. Mr. Ramesh Chandra Karmakar	Vill- Kashimpur, Thana-Godagori, Rajshahi. Owner of Ring-well (Private).
26. Md. Mujibur Rahman	Vill- Balighata, Thana- Godagori, Nowabganj. Caretaker of Tara Deepset Pump.

13th to 17th July
Field visit to Barisal

01. Engr. Kazi Nasir Uddin Ahmed	S/E, DPHE, Barisal Circle
02. Engr. Md. Bazlur Rahman	E/E, DPHE
03. Engr. Salauddin	SDE, DPHE
04. Mr. Md. Nuruzzaman	SAE, Banaripara Thana, DPHE
05. Mr. A.K.M. Nuzrul Islam	SAE, Babuganj Thana
06. Mr. Sultan Ahmed	Chairman, Madhupasha Union Parishad
07. Mr. Pusundan Guda	R/D, CARITAS
08. Mr. James Malaker	Welfare Officer, CARITAS
09. Ms. Afroza Begum	Women Welfare Officer, CARITAS
10. Mr. Tariqul Islam	Milon Stationeries, Barisal
11. Mr. Altaf Hossain	Shop Keeper

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Workshop of UP Chairman
Date 30 September 1993
List of Participants

01. Mr. Ikramul Haque	Chairman, Rangpur Union Parishad
02. Md. Jakar Ali	Chairman, Kathal Bari Union Parishad, Kurigram Sadar Thana, Kurigram District
03. Md. Jaidur Rahman	Chairman, Hujurapara Union Parishad, Thana Paba, District Rajshahi
04. Md. Yasin Ali	Chairman, 1 No. Dardan Para Union Parishad, Thana - Paba, District - Rajshahi.
05. S. M. Habibur Rahman	Chairman, 5 No. Chawgachha Union Parishad, Chawgachha, Jessore
06. Abul Sattar	Chairman, Pathalia Union Parishad, Shavar, Dhaka
07. Chitra Shen Chakma	Chairman, 5 No. Banduk Vangha Union Parishad, Rangamati Sadar Thana, Rangamati
08. Shaktipada Royaja	Chairman, Vhaiboonchara Union Parishad, Khagrachari Sadar Thana, Khagrachari
09. Md. Abu Bhakar	Chairman, Konda Union Parishad, Kariniganj, Dhaka
10. Abdur Razzak Raja	Chairman, 4 No. Fultala Union Parishad, Fultala, Khulna
11. Md. Lutfor Rahman	Chairman, 4 No. Shadki Union, Kumarkhali, Kushtia
12. Badiul Alam Talukder	Chairman, 7 No. Batagi Union Parishad, Rangonia, Chittagong
13. Md. Nurul Amin	Chairman, 3 No. Bandarban (Sadar) Union Parishad
14. Md. Mobarak Ali	Chairman 3 No. Fajalpur Union Parishad, Dinajpur Sadar

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15. Hasan Mahamud Dulal	Chairman, Labukhali Union Parishad, Thana - Dumki, District- Patuakhali
16. Haji Md. Eajan Ali	Chairman, Nishindera Union Parishad
17. Md. Shah Alam	Chairman, 9 No. Doayshi Union Parishad, Thana - Begumganj, District - Noakhali
18. Praga Joti Chakma	Chairman, 1 No. Gilachari Union Parishad, Rajasthali Thana, Rangamati
19. Khan Mujibur Rahman	Chairman, 13 No. Gutodiya Union Parishad, Barisal
20. Khondaker Nurul Hossain	Chairman, Kaijury Union Parishad, Faridpur
21. Md. Nurul Islam	Chairman, 4 No. Haripur Union Parishad, Pabna
22. Md. Hafijuddin	Chairman, Galibpur Union Parishad, Thana - Nawabganj, District - Dhaka
23. Aklaluddin Ahmed	Chairman, 3 No. Raipara Union Parishad--, Thana - Dohar, District - Dhaka.
24. Syed Tofique Ahmed	Chairman, 17 No. Jahapur Union Parishad, Thana - Muradnagar, District - Comilla
25. Sultan Ahmed	Chairman, Madhupasha, Babugaong, Barisal
26. Haji Md. Eajan Ali	Chairman, Nishinara Union Parishad, Bogra Sadar, Bogra
27. Md. Salim Shaikder	Chairman, Bara Begai Union Parishad, Patuakhali Sadar, Patuakhali
28. M. A. Musabbir	11 No. Sharifganj Union Parishad, Gopalganj Thana, Sylhet District

APPENDIX 3

Workshop of SAE(s), DPHE
Date 2 September 1993
List of Participants

01. Md. Joynul Abedin	SAE Shariatpur Sadar
02. Nityananda Halder	SAE Patuakhali Sadar SAE
03. Md. Monzur Murshed	SAE Mohalchori, Khagrachori
04. Md. Abul Kashem	SAE Hajigonj, Chandpur
05. Md. Abdul Baten Khan	SAE Kasba, B- Baria
06. Md. Wasiur Rahman	SAE Rangmati Sadar
07. Pranab Kumar Bhowmick	SAE Nangolkot, Comilla
08. Md. Abdus Sattar	SAE Charghat, Rajshahi Circle
09. Md. Moinuddin Ahmed	SAE Surupkati, Barisal
10. Md. Mofazzal Hoque	SAE Estimator, Rajshahi Sub. Division
11. Md. Monir Ahmed	SAE Senbag, Noakhali Sadar
12. Sarker Subbir Ahmed	SAE Bochagonj, Dinajpur
13. Md. Moniruzzaman	SDE/ Savar
14. Md. Nasimul Islam	SAE Dhunat, Bogra
15. Md. Abdur Rouf	SAE Kumarkhali, Kushtia
16. Md. Shafiur Rahman	SAE Jhikargacha, Jessore
17. Md. Abdul Aziz	SAE, Lalmanirhat Sadar
18. M.A. Goffer Mollah	SAE, PHE Fakirhat
19. Pronab Kumar Barua	SAE, PHE Lama, Bandarban
20. Golam Rahman Majumder	SAE, PHE Noakhali Sadar thana
21. Md. Manowarul Islam Khan	Estimator Netrokona, Division.22.
22. Md. Rafiqul Islam	Estimator, PHE Rajshahi Circle.
23. Md. Sultan Mohammed	Draftsman & SAE Dhaka.

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APPENDIX 5(a)

REPORT ON THE PROCEEDINGS OF THIRD DPHE TOP MANAGEMENT WORKSHOP HELD ON 8TH SEPTEMBER 1993 IN THE BMDC.

The following subjects were dealt with at the workshop:

1. Local Participation and Officers' Accountability
2. Report of SAE Workshop
3. Training in DPHE
4. Organizational Structure & Staffing

Inauguration

Mr. A. B. Siddique, Addl. Chief Engineer, DPHE inaugurated the workshop. In his inaugural speech, he mentioned among other things, the importance of local participation and accountability in the Water Supply and Sanitation works conducted by the DPHE, and also the training aspect which has hitherto been lagging behind in the Department. He urged upon the Top Managers of the Department to give serious thought and consideration over all the topics of the workshop and express their considered views and opinions on all the subjects so as to enable the Study Team to formulate a well-thought out report on the structure, transformation and strategy of the Public Health Engineering Department, with a view to rendering water and environmental sanitation services to all the people of the country within the shortest possible time and at the minimum possible cost on the govt. exchequer.

After the inaugural speech of the Addl. Chief Engineer, Mr. D. Watson Team Leader of the Organizational Study, in his introductory speech thanked the Addl. Chief Engineer for taking the trouble of inauguration the workshop of as also for participating in it. He also welcomed the participants, the SE's, DPHE and invited their active participation in the workshop. He briefly explained the theme of the topics and requested participants to give their considered views freely and frankly which would undoubted be very helpful for the Study Team to formulate its recommendations for a logical and appropriate change of structure, if any, and transformation of strategy of the DPHE to achieve its objectives.

Local Participation and Officers Accountability

The discussion papers on DPHE Officers' Commitment, local participation and Staff Accountability in Rural Water Supply and Sanitation was distributed among the participants with the request to assess the desirability and feasibility of the suggestions made in it.

In view of the problems inherent in tightening accountability within the bureaucratic structure of Bangladesh, the Team has concluded that the DPHE officers' commitment and performance could be stimulated by developing mechanisms for improving co-ordination with local government institutions and thus increasing the degree of accountability of field staff to the Union Parishad in particular. These measures would need to be combined with simplification and improvements in the MIS System (to be discussed with the Top Management in future).

Some practical suggestions for developing commitment, local participation, staff performance and accountability were given in the paper.

The participants were divided into three groups viz, Group A, Group B & Group C which were led by Mr. A. B. Siddique, Addl. Chief Engineer, Dr. Engineer A. M. S. Hoque P.D. (Urban Slums & Fringes) and Mr. Farid Uddin Ahmed S.E. (Ground Water Circle) respectively.

Groups' Response to Suggestions contained in the Paper:

Suggestion(i)

Reactivate the District, Thana and Union Parishad Water and Sanitation Committees. The suggestion was accepted in principle by all the three groups. There were, however some differences on the question of formation of such committees. Group 'A' led by the Addl. CE Mr. A. B. Siddique suggested that the District W.S.C. be chaired by the Chairman of the Dist. Council, Thana Committee by the elected M.P. (Till any other Thana local institution is built up) and Union Committee by the elected Union Chairman. Member Secretary in the Dist Committee will be the XEN, DPHE of the Dist., in thana SDE/SAE and in the Union the SAE.

Group B led by Dr. Engineer A. M. S. Hoque suggested District Committee to be chaired by the XEN, DPHE. Dy. CS will be the Vice-Chairman and SDE, DPHE to be the Member Secretary; Thana Committee Chairmen are to be Members. They also suggested the Thana Committee to be chaired by the Head of the Thana Administration (It was not clear whether he would be the TNO or an elected public leader) and Union Committee by the Chairman Union Parishad.

Group C led by Mr. Farid Uddin Ahmed SE, (Ground Water) suggested District Committee to be chaired by the D.C., Thana Committee by the TNO and the Union Committee by the UP Chairman.

In the plenary session, however, almost all the participants agreed that an elected public representative of appropriate level should be the chairman of the District, Thana and Union Committees. Member Secretary in the District Committee would be the XEN, DPHE, in the Thana Committee the SAE, and in the Union Committee the Mechanic (S.S.C.). Members of the Committee will be elected public leaders and officials of the related govt. deptts and other agencies (NGOs).

There was a general agreement on the *suggestion No.(ii) preparation of brief, clear statements of the main tasks, and their expected standard of performance, of SAE's and TNO's and provide these to UP Chairman and members* in order to enable them to know "Who is supposed to do what" and more importantly "When, how often, how many, how soon, to what quality, standard or frequency ?

There was a general agreement that the Union Parishad would be the focal point of accountability of the RWSS activities. The local M.P. should also be kept informed as per govt. orders.

Regarding Suggestion No. (iii): To *try to ensure that XEN's DPHE plan their SAE visit itineraries around the dates of the TDC meeting*, (which would not only be a positive gesture in itself, but also would add to the prestige of the SAE) was also agreed to by almost all participants. It was, however, said that it would be possible only when two AE's are posted in each dist.

There was also a general agreement to the *Suggestion No. (iv) to provide DPHE MIS data to UP Chairman in a form readily intelligible to them* and oblige SAE's to discuss their Thana's relative performance with the UP Chairman. If it is done, not only would DPHE management "know how it is doing" but the representatives of the people it serves would be able to play an active role as well.

Suggestion No. (v): Oblige XENs to visit a certain minimum number of remote tube well sites per year and to meet the UP Chairman in each case was supported by the participants. But it was pointed out by a number of participants (not contradicted by any) that this could be done by the XENs properly, if two AE's posts are sanctioned in each district. It was admitted by all that the visits of XENs as suggested above would ensure that there is no temptation to fabricate records or to take advantage of the situation of overloaded XENs on the part of SAE's.

On suggestion No. (vi), regarding *training for SAEs and TWMs in "Customer Service"*, was commented that at present SAE's and TWM's are being trained at Thana and District head quarters occasionally (Quarterly). Regular Training arrangement will be made after setting up DPHE Training Cell and Training Institutions.

As regards the *suggestion No. (vii) to mount DPHE consultations with large and important NGO's like Grameen Bank, Proshika, Caritas*, contact has already been made and that the DPHE is working in good co-operation with almost all such NGO's. The suggestion (vii) could be taken up.

As regards the *suggestion No (viii) to Reward good performance and to investigate poor performance*, it has been commented that real good performance should be rewarded by awarding prizes, giving promotion, sending abroad for higher/specialized training, but after proper verification of the activities of any fabricated report. It has further been added that poor or bad performance must be penalized after proper investigation.

APPENDIX 5(a)

Report on Workshop for SAEs on 2 September 1993

From the discussion on the Report On Workshop for SAE's held on 2 September, 1993. The following major points came out:

- There was a general consensus on the objectives and 'tasks' of the SAEs as (finally) agreed upon in the workshop of the SAE on 02.09.93.

- The SAE's have also been taken as front line soldiers of DPHE whose motto should be "How best to serve the people with water and sanitation provision?".

- A number of SE's (participants) agreed to the idea that the posts of SAEs in DPHE be upgraded to the rank of class II (gazetted) and their designation be changed to 'Thana Public Health Engineer' while some other suggested that their designation should be changed without upgrading their rank (which can not perhaps be done in the present govt. service system). They, however, added that if two posts of AE's are created in each district, that would create a good avenue of promotion for the SAE's (33% of the posts of SDE's/AE's are filled up by promotion from the SAE's)

- SAE's demand (in the workshop on 02.09.93 for receiving both management and Technical Training at home and abroad was supported unanimously by the SE Participants.

- It was agreed that C.C.T. (Clerk cum Typist) of the office of the SAE be given the charge of store, their designation changed as Asstt-cum-Store Keeper.

- It was also agreed that the Geographical Jurisdiction of the TWM's must be re-distributed so that one Mechanic may not have more than 2.5 unions in his jurisdiction so as to enable him to make regular and effective supervision over the condition of public TWs. The work of motivation and mobilization for environmental sanitation could be done more effectively, if this was the case.

- It was emphatically supported that the Mechanics must be duly qualified (not less than SSC) and illiterate mechanics having more than 25 yrs. services be given golden hand shake. The CE, however, Commented in his concluding speech that such golden shake hand can be given only on the basis of the report of the field managers. Regarding Site Selection Committee and the M.P. should be kept informed of the action taken (that is the govt. order).

- The suggestion of SAE's to the effect that the price of TWs and Sanitation fittings be reduced, has not been accepted by the Top Management (SE's & the CE). But they agreed to the suggestion that price offered by the different agencies (NGO's) should be equal and uniform.

- As regards the question of delayed budget allotment, the CE informed the SAEs that this year's ADP (and budget allotment) has already been sent to the field managers and delay is not expected in future.

- Regarding Sinking of TWs by other govt departments, it has been suggested by the CE and the participants that they can do it within their premises.

Training in DPHE

A paper under the title "Developing the Training Function In DPHE", containing a summary of the activities undertaken by the OS Team so far relating to training, was given to the participants to provide a basis for discussion on the subject.

The OS Study is required according to its TOR to assess present training activities in DPHE (for its staff & beneficiaries) with special reference to the internal organizational set-up for training, and the need of introductory and refresher courses. It was also taken into account that there is a TAPP prepared by DPHE in Dec. 1992, related to a Training Institute.

There was a general consensus of the participants on the substance of the paper. CE, being the top most manager of the department, is responsible for training of the DPHE staff as a whole and thereafter every manager is responsible for training of his staff. Motivation for training is considered essential.

In course of discussion the participants and the OS Team Considered some key elements in the development of DPHE's Training Function. It was added, at this stage, by one of the participants that finance for Training is also essential.

The UNICEF representative Mr. Azad mentioned that training for Mechanics and Caretakers is being arranged as a regular measure by the UNICEF, and the EE's and SAE's of DPHE take part in this programme as Trainers.

It transpired from discussions of the participants that training culture has not developed within DPHE due to historical reasons. Some training is arranged (occasionally) by donors or the govt mostly in connection with certain projects, which does not meet the full training needs of the staff of the department. There is no well-organized system of training in the department. There is practically no motivation for training nor is there any follow up of training.

After a brief discussion in the workshop the following conclusions were made:

1. There should be a training cell and training Institution in the department (with appropriate training curricula and modules for training of different categories of staff and beneficiaries).

2. Trainers should be competent and well-trained for imparting training.

3. Training should be made attractive for both trainers and trainees.

4. Follow up of the Training should be made carefully.

5. Results of Training should count for promotion.

Organizational Issues

The discussion paper 'Organizational Issues in DPHE' was circulated among the participants with the background explanation that the TOR for the organization study oblige the study team to assess the current organizational set up in DPHE at both center and field levels and that accordingly the Team has undertaken consultation and research into the matters.

The purpose of the paper was to present in order to generate feed back from the principal parties who would obviously be involved in implementing agreed final recommendation of the study.

A tabulation, which assisted the computation of costs (savings or additional expenditure) was distributed to help keep debate rooted to the most pressing constraint - finance available. It also showed the total amount which the staff changes suggested in the first Management Workshop would cost in a full year.

Some basic principles, which the team feels, should be adopted in organizational analysis were laid down as follows:

(i) The organizational structure should be as simple as possible, commensurate with the need to meet the organizations objective's at minimum cost.

(ii) It should reflect actual or proposed changes in priority function of the organization.

(iii) It should have a minimum number of layers of management.

(iv) It should reflect the priority of the delivery of services in the field, and the need for the center to provide the field staff with the support they require

(v) As far as possible, the structure should reflect the principle of unity of command over given geographical areas

(vi) It should cater for gradual adjustment over a transition period, rather thana depicting a single future blue print.

A caution was made that the team is conscious of the fact that their terms of Reference are written from the perspective of rural WSS. The team does not have the resources to engage in a full study of the organizational implications of the future DPHE role in urban development.

All the groups participated in the discussion, and the UNICEF representative Mr. Azad also took part in the discussion and made substantial contributions.

Comments and views of the participants were as follows:

On Masons and Labourers - There were practically no contradictory comments; they should be assisted in the retrenchment process upon closure of VSCs.

Regarding Mechanics - Golden handshakes i.e. retirement of illiterates after completion of 25 years service was agreed upon by all.

It was suggested that qualified (S.S.C.) Mechanics should also work as health promoter.

Regarding SAEs:

There was no unanimity about rank and status of the SAE's. Some supported the idea of making them class II gazetted and changing their designation as Thana Public Health Engineer.

Some suggested to make them class II without changing their designation. Some others suggested only change up designation as Thana Public Health Engineer keeping the present status unchanged. There was, however, no conclusion on this item. The O.S. Team should examine it further with reference to the positions in other Engineering Departments.

C C T (Clerk-cum-Typist) to hold charge of stores was supported by all with suggestion by some that their designation be changed to "Asstt Cum Store Keeper".

Regarding Top & Middle Grade Managers, The preliminary proposal of an organogram for 1993 to 1995 - was not accepted by the participants. They concentrated discussion on that of 1995 and beyond.

Regarding District set up the unanimous view was that, each district (territorial) E. E. should have two AE's - one for rural and the other for urban matters - to relieve the EE for devoting more time for his priority items of tasks like technical supervision co-ordination and software matters. Territorial SE was demanded at the ratio of 1 SE: 5 EE's. as per Enam Committee Report. However, the ultimate suggestion was to have 8 (eight) territorial SE's all under revenue head (i.e. one additional zone)

Regarding Central office of the CE, The SE's demanded 4 Addl. Chief Engineers (as explained by Mr. Farid Uddin Ahmed) against the 3 Addl. CE's shown in organogram for 1995. There should be one Addl. CE for Finance, Budget, Stores and Personnel. It was said if the Budget, Finance and Administration officer is of lower rank than Addl. CE, that would give rise to a lot administrative complications (SE Store will be under him).

He added that, there should at least one Mechanical division in each of the five revenue Divisions - Dhaka, Chittagong, Rajshahi, Khulna and Barisal, as there are lots of mechanical works in DPHE. Maintenance of Motor Vehicles, and the mechanical side of pipelines, TWs etc. will be looked after by them. At the center there should be one SE (mechanical) to co-ordinate activities. It may be added that urban water supply is going to be extended up to thana level which would also call for mechanical service.

He further added that although govt is giving top priority to sanitation matters, there is practically no top manager at the center to co-ordinate the sanitation works. So he thought it proper to have an SE, Sanitation under Addl. CE Planning & Organization Division.

As regards officers under SE Planning, he said there should be one EE for Survey and Investigation and another for Programme and Co-ordination. He further added that there should one EE urban planning & one EE for Rural Planning.

Based on the estimate of Mr. Kaderuzzam, the financial implications could come to about Tk. 2.57 Core or 9% increase on the existing (revenue) budget.

There was some discussion on some lower posts like Driver etc. but no emphasis was given on it.

Mr. Farid Uddin Ahmed, mentioned that proposed re-organization in the line of the organogram for 1995 onwards can be made without increasing financial expenditure by cutting down some superfluous clerical staff which exist at present.

APPENDIX 5(b)

REPORT ON THE WORKSHOP FOR SAEs HELD IN DHAKA ON 2 SEPTEMBER 1993

Objectives of the SAE Workshop

The objectives of the workshop were as follows:

(i) to investigate the objectives and the principal aspects of SAEs' jobs, their personal priorities at work and how they actually spend their time;

(ii) to consult SAEs about the measures which, if taken, would give them more time to spend on their priority functions;

(iii) to identify the major problems SAEs face in getting their jobs done, and explore their suggested solutions;

(iv) to discuss the problems and prospects of the involvement of local communities, political bodies and local administrative institutions in RWSS programme execution and information dissemination;

(v) to discuss the sources and degree of satisfaction - and dissatisfaction - in their jobs, and those aspects of the job for which the SAEs would appreciate training, i.e. more knowledge, improved skills or reorientation;

(vi) to define the types of professional support from higher management which is most needed in order for SAEs to achieve the objectives of their job.

(vii) to provide the first opportunity for SAEs from all over the country to exchange experiences, and identify themes which could be the subject of future workshops as part of a DPHE training programme.

Record of Proceedings

The Chief Engineer, speaking to an audience of 23 of the 24 SAEs invited from all zones in the country, opened the Workshop by emphasizing that the SAEs were the "front-line soldiers" of DPHE whose motto should be "How best to serve the people with water and sanitation provision". He said that the purpose of the workshop was to provide a means of comparing their experiences at the grass roots, of getting to know the problems of implementation, and of sampling their ideas for improving services. He stressed the importance of being frank and open and having a free mind throughout the workshop.

The Team Leader of the Organization Study in his opening remarks thanked the Chief Engineer and the participants for their attendance at the workshop, and pointed out that the Japanese, in their struggle to improve the performance of their manufacturing organizations, designed their innovations on the suggestions of their production-line workers, not on the suggestions of their corporate planning departments. This is what we were trying to do in the Organizational Study - to pool the experience and ideas of those directly involved in service provision.

The participants were then grouped into five teams, according to experience: one group with less than five years experience, two with between five and ten years; two with over ten years experience. They then discussed the following main topics; each time feeding back to plenary session their observations, for supplementary comments to be made.

A list of Workshop Suggestions was progressively built up throughout the day, and was commented upon by the Chief Engineer when he returned to close the workshop in the evening. These comments are recorded below.

The main topics discussed were:
- the objectives of an SAE's job
- the main tasks involved, allocation of time between them, and SAE's priorities;
- suggestions for saving the time of SAEs to permit more attention to high priority tasks;
- approaches to improving local-level working relationships and coordination between the SAE and government, NGO, and community organizations, and elected representatives;

The participants were also asked to answer anonymously in writing the following questions:
- number of public tubewells in Thana;
- number out of order;
- frequency of visits by mechanics to public tubewells;
- number and average duration of visits by ExEn last year;
- what did he do during visits;
- time taken to reach most remote tubewell;
- approximate annual sales of slabs and rings, and ADP targets for both in the last two years.

APPENDIX 5(b)

POINT MADE IN WORKSHOP	COMMENTARY- by OS Study Team, (to be later supplemented by participants of Third Top Management Workshop)
Objectives of the SAE's Job - To supply pure water to village people; - to motivate people to use hygienic latrines and thereby improve their health; - to implement government directives; - to carry out administrative responsibilities at thana level; - to carry out duties as a Government servant, by providing services to which people are entitled; - to improve relationships with other Departments, NGOs or public representatives at Thana level, in the service of the people.	The OS Team noticed that there was a large measure of consistency of perception between the various groups about their basic objectives. The SAEs were quicker to identify their objectives than the EEs in the Comilla Workshop.
Main Tasks of SAEs Main tasks and priorities included: - *Motivation of the people*; this was given the most time by the youngest group, (but they saw *supervision of staff* as their main priority, as did one of the more experienced groups);	Interpretation is made difficult because of different definitions of terms. Interestingly, two other groups did not mention motivation as a task; two others mentioned they only allocated between 5% and 10% of their time to it. How can this inconsistency between objectives and tasks be explained?
- *Site Supervision* was the task that three groups spent most time on, (averaging between 30% and 60% of time), if "*field visits*" are included in this category; one group agreed it was their top priority.	"Supervision" encompassed both supervision of installation, and supervision of maintenance; in any attempt to define the job of the SAE in more detail, this distinction should be made clearly.

- *Site selection and money collection* took up to 30% of the time of another group, but was seen as a priority by no-one.

- *Office Work, stores, and reporting* as a broad category took up to 15% of the time.

- *Coordination with other Departments and peoples' representatives* took up to 15% of the time of some SAEs. The members of one group saw it as a top priority.

- *Training* was mentioned by two groups, taking up to 10% of their time.

Suggestions made by SAEs

The following suggestions were made by SAEs throughout the day:

(i) *The CCT (CLerk cum Typist) should be put in charge of Stores at Thana level* (as they are at District level), to give the SAE more time, and to ensure a more continuous service to the public on spares sales for example.

In his commentary at the end of the Workshop the Chief Engineer noted that "this could be acted upon".

(ii) *Revise the allocation of mechanics* (to relate their number to the number of tubewells or Unions (e.g. one mechanic to two Unions?);

Ditto

(iii) *Raise the quality of mechanics* by:

- giving a Golden Handshake to long-serving illiterates;
- recruiting replacements with at least SSC;
- training them when recruited in mechanical and social mobilization skills;

"The recruitment of new mechanics now is not below SSC level. Golden handshakes would be up to Government decision; after 25 years service, an individual's retirement can be requested by DPHE".

(iv) *Upgrade SAEs to Class II Gazetted,* and retitle their post to "Thana Public Health Engineer".	"This was requested of the Ministry in 1990".
(v) *Place two AEs in each District*, to improve supervision, and to provide promotion possibilities to SAEs who are presently trapped without any such possibilities.	"This is being taken up now".
(vi) *Train SAEs* in both management and technical aspects of their work.	"WHO and UNICEF programmes are periodically provided."
(vii) *Clarify the process for Site Selection* by limiting the participation of public representatives to that of the UP Chairman, and by putting a limit on the time allowed for final decisions to be reached, beyond which the SAE could decide.	The CE said that it was "up to SAEs to handle MPs diplomatically; MPs were to be "informed" according to the latest circular.
(viii) *Reduce prices for TWs and sanitation fittings* prices should be harmonized between NGOs and DPHE.	The CE disputed the merits of reducing prices and impeding competition
(ix) *Attract female mechanics* by employing female Health promoters in each Thana.	"This would be addressed in the forthcoming Social Mobilization Programme".
(x) *Provide ADP allocation much earlier* in the year, along with materials.	"The ADP has been already sent this year"
(xi) *Other Government Departments should not be allowed to install TWs*..if they break down due to shoddy workmanship, DPHE is blamed.	This could not and should not be stopped, according to the CE.

APPENDIX 5(b)

Concluding Observation by The OS Team on the SAE Workshop

The Team was impressed by the ability and motivation of the SAEs in the workshop - in particular, their eagerness to contribute to discussion, their self-discipline, depth of experience, and sincerity.

They seemed to be a group which could be developed successfully - with consequent benefits for the services DPHE provides - if given relevant training opportunities.

Such training could mitigate the risks of falsification of records. Such risks are apparent now due to the minimal supervision they receive.

Another approach to maintaining SAE performance and commitment is to develop their relationship to the representatives of the communities they serve. Particular efforts need to be made - both in regard to local relationships, and supervision by EEs - to the situation prevailing "off the main road" in the more remote parts of each Thana.

OS Team Analysis of the Results of the Factual Survey amongst SAEs

For a complete account of the figures and analysis please refer to Appendix 10. Basic conclusions are presented here for convenience.

(i) There is a huge variation in numbers of TWs in each Thana, and a corresponding variation in the frequency of visits by mechanics (and presumably by SAEs).

(ii) Supervision by EEs varies enormously in frequency (depending on ease of access to Thana, for example near main road?), but not in duration (their visits last usually a few hours). Ledgers may be checked, and some nearby TWs visited on such occasions.

(iii) Given the time needed to reach the most remote TWs, these sites are virtually never visited by EEs.

(iv) Therefore, the data provided by SAEs in monthly reports cannot be validated by DPHE rigorously. There is no "spot-check" system.

(v) There is no relationship between VSC sales, and ADP targets.

APPENDIX 5 (c)

DPHE/UNICEF ORGANIZATIONAL STUDY

WORKSHOP FOR UNION PARISHAD CHAIRMEN

BMDC, DHAKA

SEPTEMBER 30TH, 1993

BRIEF REPORT

PREPARED BY

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APPENDIX 5 (c)

INTRODUCTION

A one day workshop was held at the Bangladesh Management Development Centre, Dhaka on September 30, 1993 for 28 selected Union Parishad Chairmen (UPCs) from the seven regions of the Department of Public Health Engineer(DPHE). The purpose of this workshop was to consult the UPCs regarding their perceptions on the existing water and sanitation services and to obtain their suggestions about how the services could be improved.

The objectives of the workshop were to:

1. Discuss the qualities and characteristics of a good water and sanitation programme.

2. Discuss how, where, when and who are involved at various stages of the programme.

3. Discuss what indicators should be used to measure the performance level of such a program.

PROCESS

The workshop was conducted using the VIPP (Visualization in Participatory Programme) method. Throughout the process the participants were encouraged to be actively involved in identifying key issues of the water a sanitation programme. They were engaged in a detailed task analysis exercise and the formulation of realistic recommendations.

Issues, identified roles, and suggestions were visualized and the concerns of the participants were obtained. The following four steps were taken.

a. Identifying qualities and characteristics of a good water and sanitation programme, categorizing them and selecting five key point for detailed analysis.
b. Identification of the roles, responsibilities and parameters for measuring the quality of services and formulation of recommendation for improvement.
c. Open discussion on the issues concerning the current programme and listing of the existing drawbacks.
d. Drawing conclusion for further discussion with DPHE senior officials, consultants, UNICEF counterparts, programme planners and implementors.

APPENDIX 5 (c)

REPORTS OF MAIN SESSIONS

a. Ice-Breaking

The workshop was started with an ice breaking exercise of "drawing pictures in pairs". Participants were asked to draw pictures of a tubewell, a sanitary latrine and a healthy child without talking and holding one marker together. Instructions were made to observe individuals (self and partners) behaviour and their feelings during the process.

The aim of the exercise was to establish an easy, friendly working environment and to draw out the issues arising out of joint tasks.

The undermentioned features were identified during the ice breaking session

Conditions for Successful completion of a joint task:

- Knowledge about the subject.
- Cumulative experience.
- Proper Plan.
- Agreement on the process.
- Belief in the cause.
- Understanding the background of the other players.
- Willingness.
- Commitment.
- Concentration.
- Equality.
- Convenient placement of all players.
- Giving opportunity to others.
- Coordination.
- Cooperation.
- Consideration for the feelings of others.
- Equal responsibility.
- Understanding.

b. Qualities and characteristics of a good water and sanitation programme
Through a brain storming session the participants picked out key qualities and characteristics of a good WES programme. The points were visually displayed, discussed and categorized in clusters of similarities.

The Clusters are presented below:

1. Awareness building

- Make the public aware of the benefits of sanitation.
- Motivate the public to use tubewell water for all purposes.
- Undertake social mobilization to emphasize the benefits of using tubewell Water.
- Organizing workshops on the use of sanitation.
- Employ health workers to demonstrate the utility of water sealed latrines in each and every village.
- Educate boys and girls on the use of tubewells and latrines.
- Educate people to flash latrines with adequate water every time after use.
- Train caretakers on repairing the tubewells.
- General health awareness.
- Attention paid to address larger number of the public.
- DPHE workers inspect tubewell sites and community latrines.

2. Repair and Maintenance

- Adequate number of tubewell mechanics.
- Tubewell mechanic on site.
- Inspection in person.
- Regular visits by mechanics to tubewell sites to ensure that tubewells are functioning.
- Appointed mechanics for each union.
- Timely measures for repairing.
- Supply of spare parts free of cost.
- Platforms for tubewells with good drainage system.
- Installation and maintenance of tubewells by experienced mechanics.

3. Allocation and Site Selection

- Installation of tubewells for public use.
- Selection of appropriate site.
- Tubewell installation after site inspection.
- Tubewells for every fourth house.
- Tubewell for every 25 people.
- Active role of UPC in the tubewell site selection and installation process.
- Repairing of non-functioning tubewells at free of cost.
- Appropriate site selection.
- Site selection considering all aspects.
- Increased allocation of tubewells in every union.

4. Platform for the Tubewell

- Keeping the tubewell bases clean.
- Construction of cemented platform.
- Clean latrines.
- No standing water at the base of the tubewell.

5. Quality of the Water

- Iron free water.
- Bacteria and dirt free water.
- Salt free water.

6. Union based latrine supply centre

- Production and distribution of latrines from Union based centres.
- Sub-centres for latrine production in each Union.

7. Supply of latrines at Low Cost

- Low cost sanitary latrines.

8. Financial Aspects

- 5% of national annual budget should be allocated for WES programme.
- Easy access of tubewells and latrines.
- Ringwell/tubewell distribution free of cost in the Chittagong Hill tracts.
- Re installation of tubewells at free of cost.
- Latrines with at least 5 rings.
- Allocation of fund for "infiltration gallery" for the Chittagong Hill Tracts area - Installation and re sinking of tubewells on institutions eg. mosques,schools etc. premises at free of cost.
- Reduced cost of latrines.
- Reduced labour cost for sinking of tubewells.

Due to time constraints the following five main clusters were prioritized for analysis in the second stage:

1. Social mobilization.
2. Supply and Site Selection.
3. Repair and Maintenance.
4. Union based latrine supply centre.
5. Financial Aspects.

c. Task Analysis

A structured matrix was presented as an example and discussed for the task analysis: identification of the roles, responsibilities (who, what, how, where & when) and parameters for measuring the quality of services. Participants were grouped according to their interest on issues. Group work was presented in the plenary adopting the method of visualizing. It was then discussed to obtain general consensus.

Task analysis matrixes are presented below:

d. Open discussion

After the presentation of the group work and discussion on the task analysis matrixes an open discussion session was held on the issues concerning the current WES programme. Participants discussed the existing drawbacks, their experiences with the programme and made the following comments.

Comments made by UPCs during open discussion

i. "Water and Sanitation" as a Priority Programme

- Increased emphasis by Govt. on water and sanitation programme to promote health for all.
- Govt. investments on water and sanitation, in the long run, will reduce expenses for medical care, epidemic prevention and preservation of environment.
- Separate ministry/division for water and Sanitation programme.
- More DPHE field staff and a higher grade officer at thana level.
- More GOB budgetary allocation for water and sanitation programme.
- Increased subsidies for tubewells and latrines.

ii. Availability

- Supply of tubewell and latrine on the basis of demand as opposed to arbitrary allotment.
- Adequate number of tubewells and latrines to meet demands.
- At least 1 tubewell for 25 persons and at least one latrine for each household.
- Minimum of 1000 latrine set per union per year.
- Allocation of appropriate type of wells (sallow, deep, Tara and ring wells) depending on the topography of the area.
- Village sanitation centres for every union.
- Reduce installation cost for tubewells.
- Pro rata fixing of caretakers contributions, based on the depth of the water table.
- Reduce cost of latrines.
- Allocation of 5 rings for each latrine.

iii. Tubewell Repairing and Maintenance

- Appointment of one DPHE tubewell mechanic for each union.
- Training on tubewell maintenance for the caretakers.
- Provision for free spare parts.
- Free re-sinking for tubewells on institution premises (school, mosques etc).
- Reduced re-sinking cost.

iv. Involvement of UPCs

- More active involvement of UPCs in water and sanitation programme.
- Three member site selection committee as opposed to present eleven member committee to facilitate quick selection of sites. Probable members: DPHE sub assistant engineer, UPC and a local ward member.
- Site selection by UP is to be considered final. Local MP could be informed about the selection process but should not have authority for modification of selections.
- UP's supervision of contractors work and payment of bills only on their certification.
- Creation of revolving fund by each union parishad to contribute towards the production of sanitary latrines.

v. Quality of Water

- Arrangements for iron and salt free water.
- Provision for proper tubewell platform for ensuring contamination free water.

vi. Monitoring and Supervision

- More rigorous monitoring, supervision and inspection by the DPHE officials and mechanics.
- Tubewell mechanics should be made accountable to UPCs for the maintenance and prompt repairing of tubewells. Provision for monthly reports.

APPENDIX 5 (d)

PROCEEDINGS OF FOURTH WORKSHOP FOR TOP MANAGEMENT OF DPHE 4th October 1993

Scenarios for DPHE Future Development

The discussion paper on 5 alternative scenarios was presented by David Watson. The original scenarios are attached. The participants were split into three groups. The groups were asked to express their views, comments and suggestions on the scenarios. They had the option either to accept, modify or even formulate alternative scenarios to address the present state of affairs in DPHE. The criteria to identify scenarios were :

- Characteristics of scenario
- Role/Goal of DPHE under the scenario
- Advantage to DPHE and the Sector
- Comments/Risks
- Stage of Implementation &
- The relevant authority to perform the works.

Deliberations of the groups were recorded through VIPP (Visualization in Participatory Programmes) cards. (Annexed)

1. CONCLUSION OF DISCUSSION ON THE OPTIMAL SCENARIO FOR DPHE

1.1

In summing up the workshop perceptions of the Scenarios, SE (Planning) noted that the perceptions of the participants had been basically very similar. All had acknowledged that DPHE needed a changed in approach and it its programmes to increase its effectiveness.

1.2

As regards the optional scenarios, the participants took scenario No.3 as the basis of discussion. Scenario No.3 is - "Business Better than Usual" - improvements in the efficiency and effectiveness of DPHE as the lead WSS sector engineering institution. They expressed their views that scenario N0.3 may be accepted with the modifications which evolved out of their VIPP exercise at the workshop.

1.3

The Chief Engineer also, at his concluding remarks, supported the views of the participants.

1.4

At the request of the OS Team Leader, the CE nominated a Working Group which would respond to the first Draft of the Consultants Report.

1.5
The working group is composed as follows :

Additional Chief Engineer	-	Chairman
SE (Planning) and ExEns as required	-	Members
PD (Slums and Fringes)	-	Member
PD (Dutch)	-	Member
SE (Ground Water)	-	Member

1.6
The optimal scenario for DPHE defined at the workshop is described below.

2. CHARACTERISTICS OF OPTIMAL SCENARIO FOR DPHE DEVELOPMENT

2.1
Improvement of DPHE Efficiency as an Engineering Organization.

2.2
Improvement of productivity of DPHE personnel at Head Quarters (HQ) as well as regional level and strengthening of Top Management.

2.3
Establishment of Training Institute at HQ and Zonal level.

2.4
Increased delegation of authority on administration, improvements and in financial administration.

2.5
DPHE has and should have the sole Authority on Water and Sanitation Sector

2.6
Intensification of R and D activities for the improvement of both quantitative and qualitative services to the public.

2.7
Rationalization of zones with some expansion, and rationalization of the geographical distribution of TWM, Masons, VSC etc.

2.8
Provision of technical support to local authorities

2.9
Improvement of community relations.

2.10
Promotion of health and sanitation aspects.

2.11
Exclusive and intensive role in construction of infrastructure and O&M in rural and urban WSS.

2.12
More expansion in revenue budget and staff (revenue) such as TWM, SAE, XEN, SIE, Additional Chief Engineer including software staff.

2.13
Introduction of Management Information System (MIS) for faster decision.

3. GOALS/ROLES OF DPHE, IN THE OPTIMAL SCENARIO

3.1
To develop National Water and Sanitation Plan

3.2
To promote health of the population by planning designing and implementation of WSS Projects in rural and urban areas.

3.3
To provide engineering-related technical support to local authorities, communities, NGOs in executing WSS.

3.4
To develop human resources for WSS sector of all agencies like WASA, Municipalities etc.

3.5
To monitor water quality and hydrological aspects of water services and act as a standard-setter.

3.6
To provide training support for operation and maintenance of staff of local government institutions.

3.7
To perform engineering research to assist municipal bodies and rural communities in sustainable O&M of WSS systems.

4. ADVANTAGES OF THE SCENARIO SELECTED

4.1
DPHE being a century-old organization will help government in formulation of national policy on WSS and will help in maintaining uniformity in policy matters in WSS sector.

4.2
Qualitative improvement in services thereby improved health status for the community.

4.3
Better strategy to cope with groundwater depletion.

4.4
Better reputation and credibility of the department.

4.5
Better working experience with the community.

4.6
It will provide the possibility of better supervision, and strengthening of monitoring.

4.7
It will lead to more job satisfaction and higher staff productivity.

4.8
Better training, and a Management Information System could result.

4.9
It will lead to a more visible DPHE presence at local level

4.10
No disruption of DPHE functions built over long years.

5. COMMENTS AND RISKS INVOLVED

5.1
No overlap of sectoral work by any other agencies.

5.2
Ministry of Finance and Ministry of Establishment may make objections to expansion of staff.

5.3
Local bodies may wish to implement WSS project even though their manpower is not competent.

6. ASSISTANCE TO DPHE REQUIRED

6.1
Government should allocate 10% budget on WSS.

6.2
Donors should make firm commitment.

6.3
Community Participation will be essential.

6.4
NGO must be involved in Social Mobilization and Hygiene Education. Human Resource Development (HRD), and Research and Development must be strengthened.

6.5
Resources from GOB and from Technical assistance.

6.6
Support needed from the Organizational Study Team itself by giving suggestions, and lobbying well on behalf of DPHE.

7. WHO MANAGES THE CHANGE PROCESS ?

7.1
Government of Bangladesh and DPHE

7.2
Ministry of LGRDC
Ministry of Establishment
Ministry of Finance

8. OTHER DISCUSSION IN PLENARY SESSION

After the group exercise there was plenary session in the workshop

8.1
On the minutes of the Third Workshop "Proceedings of 8th Sept. workshop of SEs" some amendments were suggested by the participants and Mr. Akon (the author) noted these.

8.2
On the "Proceedings of the 30th Sept. of the Union Parishad Chairmen" the participants were requested to put their views and comments in writing.

8.3
On the paper concerning the proposed new MIS system, there was a positive reaction from the participants. The majority opined that the system would be better than the prevailing one. Some reservations were voiced. Some participants mentioned that everything would depend on the quality of the data fed in by SAEs at local level. Some had reservations regarding the capacity of the computer centre at HQ to handle the workload. Some participants suggested having computers at regional level.

APPENDIX 5 (d)

Annexure - 1 to Appendix 5(d)

COMPLETE RECORD OF THE THREE GROUPS' DELIBERATIONS ON OPTIMAL SCENARIOS

CHARACTERISTICS

Group A

1. Improvement of DPHE efficiency as Engg. Organization.
2. Improvement of Productivities of DPHE Personnel at HQ as well as at regional level.
3. Establishment of Training Institute at the HQ and zonal level.
4. Increased delegation of authority on administration and financial.
5. DPHE has should have the 4Xsdauthority on water and sanitation sector.
6. To intensify R&D utilities for quality improvement/coverage.

Group B

1. Rationalization of zones with expansion.
2. Strengthening of Top Management.
3. Strengthening of Training and Research Capabilities.
4. Delegation of authority.
5. Improved budgetary and Financial Control.
6. Improvement of Community relations.
7. Provide technical support to local authorities.

Group C

1. To promote health and sanitation aspects.
2. Function of DPHE and mode of operation remain with special reference to Training, R&D and O&M.

3. Exclusive and intensive role in construction Infrastructure and O&M in rural and urban WSS.

4. More expansion in revenue budget and staff (revenue) such as TWM, SAE, SDE, XEN, S/E, Additional Chief Engineer including software staff.

5. To Improve efficiency of DPHE and productivity of staff.

6. Rationalization of zones and geographical distribution of TWM, SAE, SDE, XEN, SE, & Additional Chief Engineer.

7. Establishment of Training Institution.

8. More delegation of authority.

9. MIS for Faster Decision.

10. Unitary control and structure under zonal SE.

11. Better Resource Planning and R&D functions.

APPENDIX 5 (d)

GOAL/ROLE

Group A

1. Better service delivery in Engg. Works and Project Management.
2. To perform research activities to assist municipal authority in building up their technical capability (Operation O&M/substainabilities).
3. To execute physical component of development works both rural and urban.
4. To monitor water quality and hydrological aspects of water services.
5. To develop human resources involved in water and sanitation services (WSS).
6. To act as standard setter.

Group B

1. To develop national Watsan Plan.
2. Implementation of national Programme on Watson.
3. To provide training support for operation and maintenance staff of LGI.
4. To undertake surveillance and monitoring Watson system.
5. To develop human Resources.
6. To undertake Sectoral Research.

Group C

1. To promote health of the population by planning designing, implementation in WSS Project in rural urban areas.
2. Operation and maintenance of infrastructure.
3. To perform Engg. research to assist municipal and rural communities in O&M (long term).
4. Monitor quality of WSS Projects/System in rural and urban areas.
5. To develop national W/SS policy, service standards.

6. To provide engineering related technical support to local authorities, communities, NGO in executing of WSS (for their own small projects).

7. To develop human resources for the sector of all agencies like WASA, Municipals.

APPENDIX 5 (d)

ADVANTAGE

Group A

1. DPHE being a century old organization will help government formulating national policy & will help maintaining uniformity in policy matters on WSS.
2. Qualitative improvement in services there by improved health status of the community.
3. Fix better strategy to cope with ground water depletion.
4. Better reputation and credibility of Government.

Group B

1. Emergence of DPHE as sector leader.
2. Performance and efficiency.
3. Skilled and qualified manpower.
4. Working Experience with community.

Group C

1. Consistence with the views of DPHE.
2. No disruption of DPHE functions built over the past years.
3. More visible DPHE present at local level.
4. Possibility of better supervision.
5. Due expansion of revenue staff, more attention and concentration can be given to work.
6. Improved reputation and efficiency for DPHE staff.
7. More job satisfaction and higher productivities.
8. Improve images as WSS sector leader.
9. Create maximum employment and income generations in the sector.
10. Maximum spread of sector technical work.

APPENDIX 5 (d)

11. Qualitative improvement of services by increase supervision, strengthening of monitoring training units and MIS.

APPENDIX 5 (d)

COMMENTS/RISK

Group A

1. Commitment of Govt. and Donors to WSS.

2. No overlap of sectoral work by other agencies.

Group B

No reply.

Group C

1. Local bodies may insist to implement WSS Project even if their manpower is not competent.

2. Ministry of Establishment and Ministry of Finance may put objections to expansion.

3. To serve the sector as main Engineering Training resource center.

4. To act as a standard setter also.

APPENDIX 5 (d)

STAGES

Group A

1st Stage 1993-94	Strengthening DPHE by adequate expansion of organizational setup.
2nd Stage 1994-95	Setting up a Training Institute
3rd Stage 1995-96	Reinforce R&D activities.
Assistance to DPHE	a) Govt. 10% budget on WSS b) Donors Firm Commitment
Who manages:	By the Government.

Group B

Steps: Reorganizing and strengthening top management and field staffing pattern

Stages:	Top Management I	District level II	Zonal level II
Time:	93	93	93

Assistance to DPHE
- Community Participation
- NGO (Social mobilization and Hygiene Education)
- Consultants (Human Resource Development (HRD) &
  Research and Development (R&D)

Resources (T/A/GOB)

WHO
Management of Change
- MLGRDC Ministry
  Establishment Ministry (O&M)
  Finance Ministry

APPENDIX 5 (d)

Group C

Steps

1st Step:
- Prepare reorganization chart
- Consultant to submit a well convincing
- Report to the Government

Well lobby required at DPHE corners

Stages	Top Management & Zonal Management I	District level & Thana level II
Time	1993-94	1994-95
Assistance to DPHE	Study of DPHE Organization and justification of Expansion	
Who manages Change:	Ministry & DPHE	

APPENDIX 5(e)

PROCEEDINGS OF ROUND-UP MEETING ON UNICEF/DPHE ORGANIZATIONAL STUDY MLGRDC CONFERENCE ROOM, OCTOBER 26th 1993

The Secretary of the Local Government Division MLGRDC Mr M Rahman opened the meeting by welcoming the participants, and invited the Chief of the Water and Sanitation Section of UNICEF to provide the background to the meeting.

Mr P Wan reported that the origins of the study lay in the concerns of GoB and UNICEF that despite twenty years of concerted joint action in the RWSS field, diahrroeal diseases - especially amongst children - remained a major problem. The Organizational Study was an attempt to assess the role of DPHE in implementation of the RWSS programme and its role in the WSS sector in Bangladesh.

The Secretary then invited the Team Leader of the MATRIX/ACE Organizational Study Consultant Team, David Watson, to present the Team's findings and recommendations, based upon the Draft Executive Summary of the Report, which had been distributed earlier.

The presentation described what the Team saw as the principal objective of the Study - to provide a new impetus for change in DPHE - and mentioned the participative methodology which had been adopted, and the limitations of the Study (principally its rural sector focus).

The Team's analysis had focused on the consequences of the historical role of DPHE - as implementation agency for this and other WSS programmes - and the paradoxes which faced the agency in the 1990s. These included the explosion of demand for WSS services, which DPHE alone could not satisfy; the emergence of groundwater quality and quantity problems; the growth of private sector capacities in the sector; the vital issue of sustainability in the sector through effective arrangements for community-based O+M of facilities once installed, and the major challenges which were being tackled now in the education and mobilization of the populace in water use and hygiene practices. As a consequence, it appeared that more emphasis in DPHE was needed on the professional engineering aspects of DPHE's function for example, Planning and R+D, as well as improving the effectiveness of DPHE as lead organization in the WSS sector (for example in improvement of quality control and monitoring, capacity development for engineering support to local authorities, and better coordination with "software" specialists).

There was a consensus both within and outside DPHE that organizational change was needed, to take account of these changes in the sector environment served by DPHE. The Team's view was that the changes - which had been agreed by DPHE in general - could be accommodated during a period of transition for the organization.

The five year Transition Strategy which was proposed by the Team could best be realized in three Phases. First, a Strategic Planning Phase of would be needed. This could include discussion and action planning on the basis of the main foci and recommendations of the Study. Thereafter a Transition Phase of about two years would involve development of Strategic Planning and Operational management capacities, and adjustments in organizational structure to permit this. Finally implementation, lasting at least two years, would entail better job definition based on a revised role of DPHE in the sector, and feature large-scale training programmes executed in part with capacity built up during the second phase of the transition period.

The Secretary in his response to the presentation indicated that he welcomed the participative, field-oriented approach taken in the study. While all parties awaited the distribution of the full Report, he stressed that Government policy was to seek economies in routine expenditure, and rationalization of staffing levels which would permit such a development. The Deputy Secretary of the Ministry of Finance echoed these comments.

Similarly, it was clear to the Secretary that a change of attitude in DPHE was urgently needed. This should take DPHE away from implementation of "bricks and mortar" towards an approach which recognized that water and sanitation were not themselves ends, but instead means of improving the quality of life of the population. This meant that users must be aware of appropriate patterns of water use and sanitation behaviour. He looked forward to hearing about how and where there is duplication of effort in the current progress-monitoring system, and how improvements could be made. He wanted change sooner rather than later; the Study Team's estimate of five years for the implementation of the Transition process was too long.

The First Secretary, SDC Mr P Tschumi commented that the overall goals of the sector should be kept in view: it seemed clear that more a hardware-oriented Departmentally-focused "business as usual" approach was neither effective or sustainable. SDC sought a GoB commitment to change in the sector, to one giving more prominence to the roles of local government, the private sector and NGOs. To this end, a statement of GoB policy along these lines could well become a condition of future financial support for the sector.

In his concluding remarks, the Secretary pointed to the ADP allocation as an indication of GoB support to the sector, but that GoB alone could not be expected to bear the whole burden; peoples' participation would be essential, as would an institutional set-up in government - especially in DPHE in relation to other actors in the sector - which encouraged this participation.

The Secretary looked forward to the submission of the Final Report on the Study in November, and confirmed that it would be given careful scrutiny and follow-up in Government.

APPENDIX 6

PRINCIPAL FINDINGS OF THE VISIT OF THE STUDY TEAM TO COMILLA 14 - 18 AUGUST 1993 (Including outcome of EE Workshop, and Comments from DPHE Top Management)

Objectives

The objectives of the Team's visit to Comilla were:

(i) To undertake detailed analysis of the existing tasks/jobs of the cadres mentioned below in the field of rural water supply and sanitation, in order to

- define what is done now,
- to identify the gaps or hindrances experienced in the execution of these tasks now,
- to discuss possible tasks which should be performed in the future in order to improve the sustainability of rural water and sanitation services;
- to clarify the implications of these additional tasks for the future training and other assistance needed by the various cadres involved.

The cadres in question include:

DPHE EE; SDE; SAE; Tubewell mechanic; VSC mason; labourer.
Health: Primary Health Care workers
Community User groups and Caretakers.
NGOs staff and project beneficiaries
Private Sector Spares stockists, latrine producers, mechanics, and tubewell owners.

(ii) To assess the existing reporting system used by DPHE for monitoring progress between the field and Headquarters.

(iii) To assess the costs involved in the existing system of financial charges and flows involved in the delivery of rural WSS services.

APPENDIX 6

Schedule of Trip

Prior to visit: Sultana Alam and Dr Nurul Islam visited Comilla to discuss and explain programme with SE and to discuss NGO Forum activities and possible co-option of facilitators for workshops, and visits to user groups.

Saturday August 14: Team Departed Dhaka for Comilla
Workshop for ten EEs in BARD, Comilla.

Sunday August 15: Hartal in morning: Team discuss EE Workshop conclusions, and prepare checklists of questions for field.
p.m. Nazrul Islam discussions in Comilla (Objectives (ii) and (iii), including private retailer of spares.
Watson and Akon travel to Thana Chauddagram
- discussions with SAE, mechanics, TNO
Alam, Dr Islam and NGO Forum Representative (Mr Albiruni): Interview managements of local NGOs regarding their roles in the WSS sector.

Monday August 16: Team splits into three:
- Watson, Dr N Islam and Maksud (NGO Forum facilitator) visit Thana Hajiganj. Interview SAE, TNO, Health Administrator, Education Officer, Community groups.Visit several tubewell sites and VSC. Interview private producer of latrines.
- Alam, Akon, and Albiruni to Thana Kasba:
Workshop for Mechanics, masons, labourers. met SAE, Exen, Health and Family Planning Officer, BRDB officer, and female caretaker trainees.
- N Islam to Thanas Muradnagar, and Debidwar. met SAEs, mechanics, retailers, users, visited installations.

Tuesday August 17: Alam and Albiruni: with community beneficiary women (leaders of womens groups) in Comilla area; focus-group interviews. (p.m.) Visit to NGO Village Sanitation Centre - talked to beneficiary men; also talked to NGO women extension workers re work methods.
Watson to Comilla SDE and Zonal Lab; met Deputy Commissioner, Civil Surgeon, interviewed EE.
Dr Islam and Akon to Thana Barura: met all Thana level officers (12), plus DPHE SAE, mechanics, mason, private producers, beneficiaries, schoolteachers.
N Islam to Thana Laksham and Langolkot.

Wednesday August 18: Team meeting on Findings; Feedback to EE Comilla
Observe NGO Trainer-training demonstration in latrine construction (male/female). Return to Dhaka.

APPENDIX 6

SUMMARY OF FINDINGS

These were presented in columnar format, to facilitate annotation by workshop participants during groupwork in the edition of the Report presented to the Second Top Management Workshop. Participants were requested to note during discussion on the right-hand side of the page, their observations and their suggestions:

- (a) for DPHE action
- (b) for further investigation in the Organizational Study

of the point in question.

The Report is in two Sections. Part 1 relates to the outcome of the EE Workshop Part 2 relates to the Team's findings based on their fieldwork, described above.

1. OUTCOME OF THE EE WORKSHOP

The following were the answers given by EEs to the questions printed in **bold** print.

Objectives of an EE's Job

1. To ensure better implementation of projects and financial control.
2. To ensure fieldstaff are working properly.
3. To attain quality standards of work. (What are these quality standards?)
4. To ensure timely exeution of work.
5. To promote frequent communication with local administration, local political leaders, superiors in DPHE.

Tasks, time and priorities:

See Flipcharts of Principal Tasks, Time Allocation and Priorities: some observations were made as follows:

- EE work priorities are not usually reflected in actual time allocation.

- Supervision took up much time. It was both direct (records, works and stores) and also included the work of staff. Discussion was held on the possibilities for delegation of (works) supervisory functions to better-trained staff.

- The many pressures on the time of an EE, combined with the fact that there is no up-to-date Job Description for the post, meant that in practice "public motivation" could not be given due priority. Logistical support for this purpose (incl. transport and materials from HQ) were in short supply.

- Training was mentioned by only one participant. He emphasized the importance of regular briefings of his staff, in order to be able to delegate more, and to stress the importance of sample checking of works, including those in remote areas.

How could more time be made available for priorities? What needs to happen?

- By training subordinates.
- By increasing technical staff (incl. adding two AEs); adding female health promoter in Unions, more TW mechanics).
- By providing logistical support (vehicle and office equipment).
- By cutting down on the amount of form-filling involved, and the pressure of getting people to conform to unrealistic conditions (re TW applications);
- By reducing delays in UP Chairman/Members' release of contribution funds.
- By standardizing the procedure in such matters.
- By improving DPHE Public relations abilities.
- By making ADP funds available promptly, and by not cutting approved amounts mid-year.
- By upgrading the status of the SAE at Thana level from Class 3 to Class 1. (see below for more on this point).
- By being able to brief HQ staff regularly on field conditions and issues.
- By speeding up contract document approvals.

The Work of SAEs (long discussion)

- They are our key cadre;
- their post needs upgrading urgently;
- they need better qualifications, training (in e.g. dissemination) and better opportunities for promotion (NB the current restriction that 1/3 diploma from SAE and 2/3 degree for SDE cadre entry);
- abolition of SDE post in former subdivisions has closed off opportunities for SAE promotion.

Note Regarding new posts:

- No new recruitment is possible unless Minister of Establishments approves; this is affecting recruitment at lowest levels; vacancies in revenue budget not shown as vacant if staff are used in development projects.

Typical problems encountered:

- Irregular supply of material;
- poor quality of material (cement from UNICEF);
- too many parties involved in site selection;
- unrealistic conditions (poor can't pay);
- rigid target-setting and ADP fund allocation from HQ make it impossible to reallocate development funds between Thana, to match better the actual needs:
    (a) in case of funds remaining unused because of failure of T/W sinking failure due to local conditions;
    (b) in case of latrine production not matching demand.
- posting of T/W mechanics between Thana is fixed, and is unrelated to the amount of population/TWs served;
- people are confused about policies on contributions required for TWs, where for example DPHE is called in to install TWs free (cyclones); where policies change year to year without proper publicity or change of standard proformas; where other organizations install TWs on different terms.

- there is often no operational coordination mechanism..the District Sanitation Committees are defunct.
- No formal mechanism exists at Thana level (re sanitation coordination).

What Satisfaction and Dissatisfaction do you get from your work?
Satisfaction comes from service to the people;

Dissatisfaction when other agencies do our work (LGED);

Implications of Social Mobilization Programme for DPHE
- We will have to do much better at motivation and awareness creation.
- We will have to switch emphasis from new construction to motivation.
- If our customers understand the reasons for WSS importance, it will make our job easier, because if SMP is successful, it will increase WSS utilization statistics and increase demand for sanitation.
- It will involve a change in role for DPHE and perhaps structural changes;
- The present staff of DPHE will have to demonstrate their effectiveness.
- SAE's will become even more important.
- We will have to collaborate with and use other agencies (health, education, Ansar VDP), and motivate these agencies in a seminar, and then follow-up what they do.

APPENDIX 6

2. OUTCOME OF FIELDWORK BY STUDY TEAM

DPHE Cadres' "Profiles"

EEs There was a pronounced technocratic/administrative impression given of the job of an EE as described in the workshop. It appeared to have little to do with users and communities. They lack an up-to-date job description; the Enam Committee description should be modified and elaborated. They lack routines for deputizing in their absence; they attend many meetings; they interpret pressures from local peoples' elected representatives as "interference". This indicates that the nature and significance of "local accountability" should be clarified.

SAEs are the "front-line troops" of DPHE, often working very much on their own initiative and displaying creativity in vital fields for DPHE. They also lack job descriptions. They are service - and human interaction - oriented. But their grading impedes their abilities and confidence to interact with other Thana officials and TNOs. Especially the Diploma engineers feel neglected and trapped - without opportunities for self-improvement nor promotion. Despite this, major efforts have been recorded in the fieldwork..one SAE arranged a 500-woman seminar on WSS with the help of the TNO and other departments; teachers, schools and health personnel latrine construction has been pursued vigorously in the same Thana, but not at all in a nearby one.

General Comments (Both EE and SAE)
There is frustration with "management" tasks. No opportunities exist for interaction with colleagues other than in same area. There are delays in decisions from above. No professional development through briefings on experiences or successes elsewhere. The only chance for communication upwards is with immediate superior. Poor supply of information on policies, prices and the reasons for changes in them, to staff and public.

The general assumption is that DPHE "can and should" do maintenance; the public are incapable and unwilling.

Mechanics seem a sorry group! Their morale is low; their limited transport facilities and travel allowances do not encourage productivity or regular visits to remote areas. Their system of work does not make sensitive, sustained, interaction with target groups feasible; it is difficult to imagine them playing a mobilizing role. Their visit frequency appeared to vary hugely even in similarly-sized Thanas (between 1x per quarter to 8x per quarter). They do not have any pre-printed forms to facilitate reporting..they spend up to one-third of their time reporting in the office.

APPENDIX 6

Profile of the Health Fieldstaff

There are many (3 per ward) female Family Welfare Assistants fieldworkers who have WSS extension education work written into their (already overloaded) job description. More Health Assistants are being recruited (women) but they lack a Job description or a proper training programme at present. There is great potential for DPHE initiative with donor backing to raise the profile of WSS in the training and supervision of Health fieldstaff, and a role for DPHE staff in such teaching.

Profiles of Consumers

Caretakers

There is no list or clear diagram of TW parts and prices available at TW sites with caretakers, and no visual aid to prevent CTFs forgetting the training they received. It may often be up to one year before the first breakdown of the pump.

Users

Face complex application forms; females lag behind; there is no mechanism for encouraging their participation; major problems of affordability; no measures yet introduced by DPHE to make payment easier (e.g. installments); common suspicion that DPHE TWs go to the better off due to bribery or richest paying all TW contribution and monopolizing usage - thus gaining benefit of subsidy; Latrine subsidies go to rich as well as poor.

Profile of (the larger) NGOs

They report that communities see low priority for WSS because of the urgency of finding opportunities for improved livelihoods; WSS can only be approached via a "comprehensive" approach including income generation possibilities (involving economic empowerment), and strategies for making WSS more affordable (soft loans or installments).

They emphasise that "motivation and mobilization" are very complex phenomena and stress the importance of locally-available support, permanent presence, continuous relationships, familiarity, trust, mobility (of latrine production) based on group demand; this also permits quality control by client group. The stress is on local accountability. They take interest in follow-up to latrine installation and monitor usage.

Larger NGOs tend to manage their staff as follows:

- they have a high staff:population ratio;
- their staff often live in target communities;
- training opportunities for staff are common and intensive; they focus on social attitudes (towards poverty); technical skills (including pedagogy and communication; organizational skills; organization of people.
- there are regular regional and national gatherings involving field staff and the centre staff; these discuss budgets, revisions and plans.
- senior staff visit the field, but not just for inspection - for their own familiarization too; they do the work in the field too occasionally, to remind themselves what it is like.

Profile: Local government scene in general

This is in a state of flux at present; two commissions are reviewing arrangements at District and Thana levels. A controversy has recently arisen over the authority of an unelected official (Deputy Commissioner) to coordinate the work of specialist cadres (including Engineers). From the Team's observations, there is enormous potential for better coordination at local level (especially the Thana), and this is where initiatives by DPHE fieldstaff (even before any revisions to local government structure are decreed) could really pay off. The biggest successes the Team detected in rural WSS were all Thana initiatives, with cooperation of elected representatives (MPs and UP Chairmen).

Profile of the Private Sector Scene

The picture is very variable. Clearly there is a lack of quality control for latrine slabs and rings, widely varying prices and varieties, and no regulation. However, the private sector produces according to demand, is able to serve all areas, including with mobile production, and quality improvement could well come about through the workings of the market (there are usually several producers in any one place). The technology is simple.

Prices of pump parts and latrine fittings can be cheaper than DPHE in the shops, but evidence is inconclusive on respective qualities, between DPHE, NGOs and private sector.

Official Prices

The evidence of divergences between official and actual prices charged is mixed. Some substantial differences were recorded for Tara pumps.

Official prices for latrines imply a larger subsidy than that calculated so far.

Note: Re DPHE Role in Latrine Production

The Team, on the basis of its work so far, cannot see any economic, social, or technical argument for DPHE production of latrine slabs and rings. All indications are that with better guidance, QC, and monitoring from DPHE, the private sector can and should take over all production.

Profile of Community Leaders

Those met expressed their readiness to cooperate in motivational work in the WSS field.

APPENDIX 6

Budget Administration in DPHE

Procedures for communication and release of approved budget allocations are not strictly followed. This appears to impede effective management of financial resources and budgetary control. It also weakens possibilities for making individual officers more accountable for their work.

Reporting Functions in DPHE

Twelve types of report are made upwards by SAEs (some monthly, quarterly, yearly).

There are no examples of feedback to SAEs or EEs of analysis done on data provided, or comparisons with other regions.

The following aspects are not recorded in reports at present:

- motivation activities and their effectiveness;
- user group training;
- use of water and latrines;
- time spent following up contributions with UP Chairmen.

Up to 50% samples may be checked by superiors.

Particulars of reports required are prescribed by HQ, but standard proformas (except those required by UNICEF) are not available at local level. As a result, staff time is wasted repeatedly making out proformas by hand.

APPENDIX 6

COMMENTS ON THE ABOVE REPORT, MADE BY TOP DPHE MANAGEMENT AT WORKSHOP ON 21st AUGUST 1993

After discussion in groups of the paper on the Comilla Fieldwork and EE Workshop, the SEs participating in the Top Management Workshop on 21 August 1993 made the following points:

(i) The objectives of the EEs job are to be responsible to the communities of the District for the implementation of DPHE WSS programmes punctually within budgetary limits; to facilitate WSS development for the community; to produce quality work.

(ii) The Priority tasks for EEs should be:

- technical supervision and quality control	(30% of time)
- community motivation on WSS	(20%)
- organization of training programmes	(20%)
- monitoring and reporting	(10%)
- public relations with local agencies	(10%)
- contract administration and disbursement	(5%)
- office administration	(5%)
	100%

NB Adequate (Enam Report) Job Descriptions do exist for EEs and SAEs.

(iii) Management training should be a regular phenomenon for all DPHE engineers.

(iv) Circles needed computers and better transport.

(v) Reorganization of the technical manpower of DPHE is within the scope of the OS Study; for example, TW mechanic distribution could be changed; 2 AEs are needed in each District (one for urban work, the other for rural).

(vi) Standardization of contribution charges for TWs is needed to maintain credibility of fieldstaff; frequent changes are not understood by the public, nor are different charges under different Projects (18DTP/RWSS programmes).

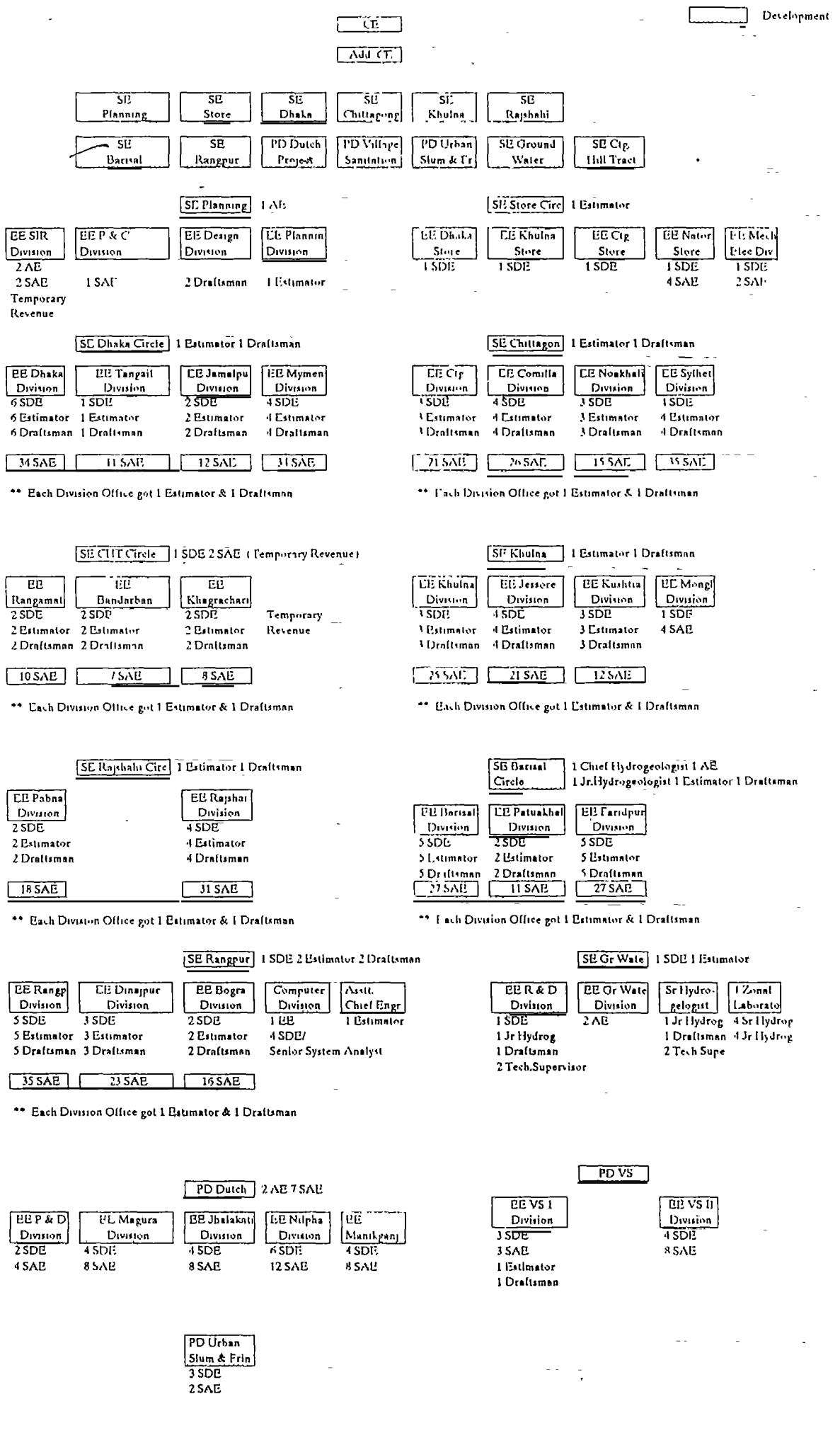
(vii) VSCs are still required; their progressive removal (as is policy) will give negative and confusing impression to the public, as the Government is trying to promote village sanitation. Private capacity is insufficient and unequally distributed.

(viii) Collaboration with NGOs, CBOs, UPs is going on; NGOs contributions are welcome; collaboration with Ansar VDP has not been productive.

(ix) Coordination with the fieldstaff of MHFW had been attempted by formal agreement between the DPHE and Health Directorate, but much depended on local initiatives.

(x) Observations on budget administration and reporting in DPHE were true.

ORGANOGRAM OF DEPT. OF PUBLIC HEALTH ENGINEERING (REVENUE & DEVELOPMENT)



APPENDIX 8

TRAINING INPUT INVENTORY OF DPHE

Training of DPHE officers

DPHE does not have a Training Cell, or Institute of its own. There are no regular in-service training arrangements for its staff of any grade or rank. No training syllabus or module has so far been prescribed. However, since 1978-79 training for all civil officers including the Engineering officers (gazetted class-I) as well as higher training for top managerial, administrative and policy making officers, is being imparted in the Civil Officers Training Academy (COTA) at Shahbag and in the Public Administration Training College (PATC) in Savar. Middle grade (SDEs & EEs) and top managerial officers of DPHE (SE's/Addl. CE and CE) are occasionally sent for induction training or refresher's courses in those two institutions.

Seventy-two DPHE officers have so far been trained in different courses financed by donors. Training includes long courses of 6 months to 2 years duration and short courses like study tours, seminars, and workshops of 3/5 days to 3/4 weeks duration. Long course training (post graduation/diploma) on different Technical/Engineering subjects are mostly given in the UK and the Netherlands. Training of short courses are given mostly in different Asian Countries like Japan, Thailand, India, Malaysia, Indonesia and others. With a few exceptions such training courses were financed by donors.

As regards the effectiveness of these long and short training courses it can be observed that trained officers are not always posted in accordance with their training qualification in the opinion of DPHE Top Management officers who participated in such training. But, wherever they are posted their knowledge of training helps them to perform their job in a more effective way. But a training qualification is seldom given any weight in considering eligibility for promotion. There is no well-laid down procedure of follow-up of training.

At completion of short courses of training, in some cases certificates of successful completion of training are obtained and reports on the result of study tour, seminar & workshop are also submitted by the officers concerned. In cases where certificates are not given, reports from the officers concerned are made.

UNICEF sponsored training

UNICEF is mainly involved in the training for field staff, caretakers and beneficiaries. A total of 280 SAE's out of 460 and 1062 TWM's out of 1760 participated in the 'annual refreshers course'. Further a workshop on deep tubewell rehabilitation was attended by one Superintending Engineer, 8 Executive Engineers (EE), 11 Subdivisional Engineers and 19 Sub-Assistant Engineers (SAE). In addition, 2 SDE and 10 SAE's were trained on Pond Sand Filter (PSF) technology, and 1 EE, 2 SDEs, 9 SAEs, 16 TWMs, 6 Masons and 3 Contractors were trained on Iron Removal Plants (IRP). All these training and workshop were completed by mid-September 1992.

APPENDIX 8

UNICEF has also developed a training plan to upgrade the know-how of technicians of contractors hired by DPHE for Tara Tube Well drilling installation. Evaluation and follow up of such training are made, both by UNICEF and DPHE at the time of practical implementation works. Further the tara and tubewell caretakers families training programme,including thousands of caretakers is in full swing. At the end of 192 about 45.000 tara caretaker's families and some 2500 other caretaker's families had received a short training.

Caretakers are generally given a one day's site training. Caretakers include woman caretakers. Each of them is given a tool kit free of cost, but spare parts are not given free of cost.

Health Education Training in the 18 DTP for DPHE and other staff

The objective of Health Education is to create awareness and motivation for practising 'hygiene and sanitation' It is popularly known as field workers training for Health Education "Shaystha Shiksha - Math Karmi Proshikshan". In 18 DTP areas, SDE's will be given a course of orientation training.

Field Training will be given to SAE's and TWM's of DPHE, and also Superintendents and all personnel of Health Sections of the Pourashavas. Thana Family Planning Assistants and Family Welfare Assistants (TWAs) and NGO Field Workers and EPI members are also taken in for training. All these people are being trained as the responsibility of local supervision lies on them. Their main purpose is to communicate the idea of preventive approach for reducing incidence of diarrhoeal diseases and parasitic infections thorough:

(a) Provision of clean water integrated with improved sanitation, drainage and solid waste disposal as also promotion of personal hygiene

(b) Strengthened capability of the users and the concerned local administrations to effectively operate and maintain the facilities provided by the project and to promote personal hygiene.

Thus the objective of the training is to communicate a preventive approach with special emphasis on:

- Impact of Water
- Needs of Sanitation
- Cases of diarrhoeal diseases and parasitic infections
- How diseases spread.

For making such training simple and easy the 18 DTP Consultant has prepared a series of brief but comprehensive booklets, some of which are will illustrated.

For rapid expansion of the training programme trainers are trained in batches. This is known as Training Of Trainers (TOT). Different groups of people including women, are selected for this training. Teachers from both high schools and primary schools (10 teachers from high schools + 10 teachers from the primary schools) are taken in one batch for such TOT. EPI volunteers and workers of local NGOs (like Human Development Society) are also taken for such training.

Imams are first given orientation training and then they are again called for a subsequent course.

Training in the urban setting

A number of short courses are also being arranged under 18 DTP and 12 DTP projects with the support of DGIS Training/HRD Assistance to DPHE and Pourashavas. A WSC committee is formed in each ward of a Pourashava with the ward member/commissioner of the Pourashava as chairman. At least one female member is taken in each ward WSC.

The follow up of this training is systematic. At the time of completion of training of a batch of trainees a date is fixed for their first assembly in the health section of the pourashava. In that assembly the next date of monthly meeting is fixed. Thus all the members of a particular training course meet at a fixed place on a fixed date at regular intervals without issuing any invitation letter. Thus the process of follow up and co-ordination has become automatic.

DPHE/UNICEF ORGANIZATIONAL STUDY

POSSIBLE SCENARIOS FOR THE FUTURE DEVELOPMENT OF DPHE

SCENARIO 1 - "BUSINESS AS USUAL"

CHARACTERISTICS OF SCENARIO	DPHE GOALS UNDER THIS SCENARIO	ADVANTAGES: - FOR DPHE - FOR THE SECTOR	CONDITIONS WHICH WOULD HAVE TO BE MET, OR ASSUMPTIONS FULFILLED IF THE SCENARIO WAS TO BE REALIZED	OS STUDY TEAM COMMENTS ON THIS SCENARIO
No significant changes in present functions or mode of operation of DPHE. Current orientation to direct role in construction of infrastructure and O+M continues.	To promote the health of the population by planning, designing and providing WSS infrastructure in rural and urban areas (except Dhaka and Chittagong, Khulna and Rajshaji) 2.To operate and maintain that infrastructure. 3. To monitor the qualty of urban water supplies.	This is potentially the most easily accommodated of the scenarios in DPHE. It is consistent with the views of most DPHE management and fieldstaff. There would be no disruption of working routines built up over the last 70 years.	Client groups (e.g Pourashavas) do not dispute DPHE dominance. Donors continue to channel funds through DPHE despite there being no changes in DPHE. DPHE can keep pace with expanding demands. No change in government policy on the roles of central and local government agencies. No "competition" from LGED or other agencies with capabilities in WSS fields (e.g. NGOs) for GoB or donor investment resources in the sector.	In practice it has been impossible to identify the current objectives of DPHE in available documents. Its role was last defined in 1982. O+M responsibilities for urban WSS infrastructure already officially passed to Pourashavas. Recent survey points to majority of public TWs being routinely maintained by communities. Considerable pressures, at all levels of DPHE, exist for the status quo to be maintained, with an expanded staff.

APPENDIX 9

DPHE/UNICEF ORGANIZATIONAL STUDY

POSSIBLE SCENARIOS FOR THE FUTURE DEVELOPMENT OF DPHE

SCENARIO 2 - "DPHE EXPANDS"

CHARACTERISTICS OF THIS SCENARIO	DPHE GOALS UNDER THIS SCENARIO	ADVANTAGES: - FOR DPHE - FOR THE SECTOR	CONDITIONS WHICH WOULD HAVE TO BE MET, OR ASSUMPTIONS FULFILLED IF THE SCENARIO WAS TO BE REALIZED	OS STUDY TEAM COMMENTS ON THIS SCENARIO
Role stays the same, but more resources (Revenue budget, staff) are provided to DPHE to permit it to carry out the role. This would mean more posts and perhaps expansion of number of VSCs	Same as under Scenario 1.	In the short term, the burden on existing staff would be reduced; More promotion possibilities for existing staff. More status of organization in government because of size. More visible DPHE presence at local level. Possibilities for better supervision.	Government reverses policy on adding to civil service numbers, and is willing, at a time of national stringency, to devote more resources to WSS services, without guarantee of more revenue. Productivity of DPHE staff remains the same or does not decline. No account taken of capacities of NGOs, communities and private sector to take up WSS functions, at less cost and with more employment generation prospects .	WSS services in most countries are provided through accountable local authorities or private utility companies. Expansion of DPHE would result in correspondingly less resources being available to strengthen local authorities. Staff increases do not automatically lead to better performance or supervision. Indeed, control of larger numbers can become more difficult.

APPENDIX 9

DPHE/UNICEF ORGANIZATIONAL STUDY

POSSIBLE SCENARIOS FOR THE FUTURE DEVELOPMENT OF DPHE

SCENARIO 3 - "BUSINESS BETTER THAN USUAL"

CHARACTERISTICS OF THIS SCENARIO	DPHE GOALS UNDER THIS SCENARIO	ADVANTAGES: - FOR DPHE - FOR THE SECTOR	CONDITIONS WHICH WOULD HAVE TO BE MET, OR ASSUMPTIONS FULFILLED IF THE SCENARIO WAS TO BE REALIZED	OS STUDY TEAM COMMENTS ON THIS SCENARIO
Improvement of the efficiency of DPHE as an engineering institution, and improvement of the productivity of the staff. Possibilities include: - rationalization of zones, and of geographical distribution of TWMs - clearer job descriptions with performance standards; - establishment of training cell; - training in engineering, management (including for top management) and "software function" of engineers; - more delegation of authority; - faster decision taking based on MIS; - time-saving due to MIS; - unitary command structure under zonal SEs; - better resourced planning and R+D functions; - tighter budgetary and financial control; - qualitative improvement of staff, via retrenchment of those who: * do jobs better done by private sector or communities (e.g. masons and labourers) * are not suitable for retraining (eg some Health education staff, illiterate TWMs)	To perform engineering research, planning, advisory, and implementation functions connected with WSS in bangladesh, supportive of the sector as a whole. To maintain such rural infrastructure as cannot yet be maintained by communities. To monitor urban water quality standards.	Improved reputation for efficiency. More job satisfaction for staff, and consequent higher productivity. Improved image as WSS sector leader.	Firm leadership from top management to deal with disputes, complaints arising from retrenchments or tighter financial controls and higher standards in general. Close supervision from MLGRDC, to maintain high engineering standards. Establishment of mechanisms of DPHE accountability at local level. Efforts to amend Codal Rules to permit more delegation of authority. Technical assistance provided to DPHE over a considerable period.	This option is consistent with the mandate and professional pride and the "culture" of the organization as perceived by the OS Team, and many others. It builds on the strengthes of DPHE, and removes those functions which: - it performs poorly, - which are at present ascribed low priority - which can be more economically performed by other agencies or the private sector. It acknowledges that other agencies have more interest in non-engineering functions connected with WSS (e.g. education and mobilization).

APPENDIX 9

DPHE/UNICEF ORGANIZATIONAL STUDY

POSSIBLE SCENARIOS FOR THE FUTURE DEVELOPMENT OF DPHE

SCENARIO 4 - "HELPING OTHERS HELP THEMSELVES IN WATER SUPPLY AND SANITATION"

CHARACTERISTICS OF THIS SCENARIO	DPHE GOALS UNDER THIS SCENARIO	ADVANTAGES: - FOR DPHE - FOR THE SECTOR	CONDITIONS WHICH WOULD HAVE TO BE MET, OR ASSUMPTIONS FULFILLED IF THE SCENARIO WAS TO BE REALIZED	OS STUDY TEAM COMMENTS ON THIS SCENARIO
Move towards "enabling" function for local authorities and communities. This could imply for DPHE: - refresher training and reorientation of staff towards advisory roles; - Training Cell serves sector not just DPHE; - more emphasis on researching and evaluating "transfer of technology" in WSS and its adaptation - staff retrenchment as in option 3 above.	To provide engineering related technical support to local authorities, communities and NGOs in their execution of WSS development and service functions. To develop national WSS policy and service standards based R+D findings and planning activities. To serve the sector as main engineering training resource centre To support Pourashavas to enable them to monitor water quality and quantity standards.	Transformation of DPHE image, therefore increasing its attractiveness as a channel for WSS sector development. Maximizes "spread" of sector technical capacity Creates maximum employment and income generation in sector. Minimizes costs Promotes local accountability	Working conditions in local government (Pourshavas especially) are improved (making it more attractive to work there for the professionals to whom DPHE efforts are directed. Internalization of role-change in DPHE (leadership, job definition, performance assessment criteria to reflect importance of abilities in training others Technical assistance provided to DPHE	This option involves a major shift of professional and institutional orientation within DPHE. To some staff, this "enabling" approach appears to conflict with DPHE interests, because of feared impact on employment. There is little evidence of "internalization" of these type of "enabling" initiatives to date.

APPENDIX 9

DPHE/UNICEF ORGANIZATIONAL STUDY

POSSIBLE SCENARIOS FOR THE FUTURE DEVELOPMENT OF DPHE

SCENARIO 5 - "COMPREHENSIVE WSS SECTOR SUPPORT AND POPULAR MOBILIZATION"

CHARACTERISTICS OF THIS SCENARIO	DPHE GOALS UNDER THIS SCENARIO	ADVANTAGES: - FOR DPHE - FOR THE SECTOR	CONDITIONS WHICH WOULD HAVE TO BE MET, OR ASSUMPTIONS FULFILLED IF THE SCENARIO WAS TO BE REALIZED	OS STUDY TEAM COMMENTS ON THIS SCENARIO
This is an extension of Option 4 - encompassing functions additional to the engineering functions, i.e.: - community mobilization and education in the WSS field; - financial administration support for local authorities	To support all aspects of urban and rural WSS development. To develop national WSS policy and service standards based on research and planning activities. To develop the human resources of all agencies involved in the WSS sector. To monitor water quality and quantity conditions nationwide.	Emergence of DPHE as sector leader in all fields of WS in Bangladesh. DPHE becomes focal point of all WSS-related initiatives - technical, social, and institutional in Bangladesh.	DPHE has the interest, and staff aptitude to take on new professional functions. Female professionals in engineering, training, and social development fields can be successfully recruited, utilized, and retained in DPHE. Existing Health Education staff are all trainable into Social Mobilization functions. GoB will endorse extra recruitment of non-engineers for DPHE. There are no alternative agencies available which can be used in non-technical fields. All other changes implied in options 2 - 4 can be accommodated as well as these.	DPHE has no mandate in the field of local government WSS financial administration, nor a vested interest in promoting growth of WSS revenues of Pourashavas. DPHE has not accorded any priority to promoting its capacities in the health education field over the last 30 years. As a consequence the function has not been well performed. No mass Social Mobilization Programme has ever been managed or implemented by a central government department in Bangladesh.

APPENDIX 9

APPENDIX 10

DATA REGARDING THANA-LEVEL FIELD ACTIVITIES

Twenty three Sub Assistant Engineers (SAE) coming from different thanas of seven territorial circles of the DPHE participated in the workshop of the SAE's held on September 2, 1993 at BMDC. During the concluding session they were given the following nine questions to answer anonymously:-

1. How many public Tubewells are there in your thana?
2. Number of tubewells not working?
3. Frequency of visits by tubewells mechanics to each public tubewell?
4. How many times did the EE visit you last year?
5. How long did the EE take in each visit?
6. What does the EE do during his visit?
7. How long does it take you to travel to the most distant tubewell?
8. How many slabs and rings were produced in your thana last year?
9. What is the ADP target for production of slabs and rings for 91-92 & 92-93, and how many were sold?

The purpose of questions was to obtain a general view of the actual state of affairs in the field of RWSS at Thana level. The answers given by the SAEs have been compiled in the form of tabulations below:

No.of Tubewells in a Thana

No.of TWs	50 - 1000	1001-1500	1501-2000	2001-2500	2501-3000	3000-above
No. of Thana	3	4	2	6	6	1

The table shows that the number of public TWs in different thanas vary from 500 to more than 3000.

Proportion of per 100 tubewell not functioning in dry season

Proportion %	1	2	3	4	6	9	10	12	16	20	25	30	40 (Dry Season
No.of Thanas	1	3	4	3	2	1	1	1	1	3	1	1	1

It shows that the percentage of TWs out of order, choked up etc. vary from 1% to 40% in different thanas.

APPENDIX 10

No. of Visits to a Thana by EE in a year

No.of visits	1	2	3	4	5	7	8	12	15	20
No.of SAEs	2	3	4	3	1	3	1	2	2	1

This shows that the number of visits of the EEs to the office/areas of the SAEs(thana) in a year, varies from only one visit to twenty visits in a year.

Visits of Mechanics to each Tubewell annually.

No. of Visits	1	2	3	4	5	6	7	8
No.SAEs Reporting	2	2	2	5	4	3	2	1

This shows that the visits of mechanics to each TW vary from one visit to eight visits to a TW in a year.

Duration of each visits of an EE.

Hours :	1	2	3	4	5	6	8	9
EEs :	0	5	6	5	1	1	3	1

That shows that duration of visit of an EE to an office/area of SAE (thana) varies from 2 hours to 9 hours.

Time taken by SAE to visit the most distant TW.

Hours :	1	2	3	4	5	6	7	8	9	48
S.A.E. :	2	3	2	3	2	3	2	4	1	1

Time taken by the SAE to visit the most distant TW in his jurisdiction varies from 1 hour to 9 hours. In one one thana it takes 48 hours due, perhaps, to difficult terrain and topographical conditions in the area.

APPENDIX 10

What do EE's do during their visit to SAE's Office/area?
(22 SAEs responded)

Inspect Records, file Stores, Production (V.S.C).	8
Supervise Sinking & Re-sinking of tubewells, VSS & Vs Centers	4
Meeting with other Thana Officers	1
Examine financial records.	1
Supervision of works.	3
C.T.F. Training.	1
Site Selection.	1
Work Planning	1
Implementation of Development works.	1
Checks T/Ws V.S. centers.	4

Summary of impressions from the Data

It transpires from the data that the number of visits to the office/area of the SAE's by the supervising (Territorial) EE's, and the time taken on each visit varies widely. Tasks undertaken during these visits are similar. Field works like sinking and re- sinking of T/Ws, production of slabs and rings in the Union, VSC's are only occasionally checked by the EE's. No mention was made of any work of communication with the community, motivation and mobilisation done by the EE's at the time of their visits to the office/area of an SAE. Nor was any mention made of EE's contact with the officers of other Govt. departments or representatives of other concerned agencies (like NGOs) during EE's visits.

The data indicate that DPHE field staff from EE to TWM's do not in practice follow a uniform and well-defined charter of duties.

APPENDIX 10

Information regarding production and sale of Sanitary Latrines

SAE	Approximate Annual Sale of last year (with Budget Provision)		Targets			
			1991-92		1992-93	
	Slabs	Rings	Slabs	Rings	Slabs	Rings
A.	750	750	700	700	700	700
B.	350	500	1550	1560	618	618
C.	400	400	1000	1000	-	-
D.	488	1090	400	400	418	418
E.	200	200	-	-	418	1254
F.	800	1200	Not mentioned		620	620
G.	400	500	Not mentioned		418	418
H.	300	1050	1050	1000	500	500
I.	540	540	1000	1000	618	618
K.	500	2500	500	500	417	417
L.	180	270	200	360	160	300
M.	110	250	1000	1000	418	418
N.	600	1000/1200	105	265	218	218
O.	850/900	1200/1350	1050	1050	418	418
P.	700	1100	1050	1050	418	418
Q.	500	750	1050	1050	418	418
R.	500	750	250	250	300	300
S.	300	300	350	350	270	270
T.	500	500	500	500	200	218
U.	300	300	200	200	200	200
V.	200	200	250	250	300	300

The figures of production and sale of slabs and rings of water seal latrines from DPHE production centres vary considerably from thana to thana. There appears to be correlation between production and sales.

APPENDIX 11

ESTIMATED ECONOMIC COSTING OF PRINCIPAL DPHE OUTPUTS

The following tables give an overview of the cost structure of the most important items of WSS infrastructure produced by or under the responsibility of DPHE. The analysis makes clear that overhead costs forms a substantial part of the total cost. If further demonstrates that the total economic cost per unit is much higher than the contribution per unit by the user(s), thus the net subsidies per unit are substantial.

Overhead costs of DPHE are itemized below. Overhead costs are costs which cannot be directly attributed to any project, activity or product. For the Development Budget the overhead costs are available in some detail. Overhead costs have also been extracted from the Revenue Budget for 1992/93. Dividing Total Overhead Costs by total Direct Expenditure gives the Overhead Coefficient per Taka, which is 1.082. This means that in the case of Tara-pumps, Ring Wells, Latrines, etc. Direct expenditures in Takas have to be multiplied by 1.082 to calculate the overhead costs. These then are added to direct costs to produce a full economic cost for the item concerned.

STATEMENT OF OVERHEAD OF DEVELOPMENT PROJECTS

	Figure in Lakh Taka
01. Survey and Investigation	51.41
02. Manpower	754.50
03. Transport	722.28
04. Repairs & Maintenance	322.54
05. Project evaluation	2.50
06. Electricity	26.33
07. Labour	670.04
08. Other Contingencies	405.87
09. Research and Development	61.00
10. Office Rent	4.20
11. Import Duty	91.00
Total Overhead of Development Projects	3111.67
Total Overhead from Revenue Budget	2696.81
	5808.48

$$\text{Overhead Coefficient per Taka} = \frac{\text{Total Overhead}}{\text{Direct Expenditure}} = \frac{5808.48}{5347.35} = 1.0862$$

Source: (1) Annual Project Progress Report 1992-93
(2) Annual Statement of Revenue Expenses (1992/93)

APPENDIX 11

STATEMENT OF APPORTIONMENT OF OVERHEAD (1992/93)

Description	Figure in Lakh				Figure in Taka		
	Direct Expenditure	Overhead cost	Total economic cost	Physical achievement units	Total economic cost per Unit	Contribution by users	Net Subsidy per unit
1 Ring Well	154.32	167.63	327.85	200	163925		
2 STW	1028.48	1117 17	2145.65	24029	8929	700	8229
3 Tara	892.93	969.93	1862.86	8448	22050	1000	21050
4 SST	12.04	13.08	25.12	150	16750	700	16050
5 Vsst	29.54	32.09	61.63	350	17601	700	16901
6 Water Refiner	36.62	39.78	76.40	-	-	-	-
7 PSF	55.00	59.74	114.74	150	76490	2000	74290
8 DSF	33 00	35 84	68.84	100	68840		
9 Platform erection	77.00	83.64	160.64	1250	12850		
10 Platform extension	55.00	59 74	114.74	2507	4576		
11 Rehabilitation of obsolete Hand Pump	40.00	43 45	83 45	1700	4908		
12 IRP	76.25	82.82	159 07				
13 Resinking	9.69	10.53	20 12	183	10994	700	10294
14 Latrine Product	465.00	505.08	970 08	186284	521		
15 Jeep	20.00	21.72	41.72				
16 Office Equipment	1.13	1.23	2.36				
17 Truck Purchased	39.40	42.80	82.20				
18 Office Building	142.54	154 83	297.37				
19 Godown Erection	134.61	146.22	280 83				
20 Land Acquisition	11.67	12.68	24 35				
21 Production Well	110 48	120.00	230.48	11	2095270		
22 Pump House	1 00	1.07	2.07				
23 Pipe Line Installation	222.56	241.75	464.31	45.99 KM	1009589		
24 Hand Tubewell	115 07	124.99	240.06	118	202411		
25 House line	12 03	13.07	25.10	1674	14994		
26 Drain	294 52	319.67	613.96	15.15 KM	4052540		
27 Tools	114.52	124 40	238 91				
28 Public Toilet	18.12	19.68	37 80	9	420000		
29 Dustbin	1.81	1 97	3.77	30	12567		
30 Hidrolic Machine	5.89	6.40	12.29				
31 SMP	9.75	10.59	18.54				
32 DTW	1537.10	1669.65	3206.75	4819	66538	2000	64538
	5347 35	5808.49	11159.85				

For a number of items, contribution by users is mentioned in the table. These figures make clear that even in cases where the user contributes, the net subsidies per unit are substantial.

Note: DPHE does not maintain a fixed assets register and hence the total amount of fixed assets is not available in the Accounts Department. Therefore the total depreciation on fixed assets has not been taken into account in calculation of the total overhead of the DPHE in the Year 1992-93.

The above figures for the production of Latrine Components (item 14 of the table) do not differ significantly from the outcome of a quantitative study made by Consulting Services and Associates (CSA), Dhaka in October 1993. This study has compared the cost of production of Latrine Components by Private Producers to DPHE Village Sanitation Centres. The relevant results of that study for the purpose of the present analysis are the following:

APPENDIX 11

COMPARISON OF PRODUCTION COST OF LATRINES

Type of producer	Cost per ring	Cost per slab plus pan	Cost per unit (i.e. 5 rings+slab)
Private producer	Tk. 47.55	Tk. 108.17	Tk. 345.92
DPHE Village Sanitation Centre	Tk. 88.88	Tk. 162.49	Tk. 606.89
of which:			
UNICEF-cost (mainly material)	Tk 26.9	Tk. 47.85	Tk.182.7 (30.1%)
Labour-cost	Tk. 15.00	Tk. 51.00	Tk. 126.00 (20.7%)
GOB (mainly overhead)	Tk. 46.90	Tk 63.64	Tk. 298.14 (49.12%)

Source: Consulting Services and Associates, 1993

The economic cost per latrine unit based on the Statement of Apportionment of Overhead in the present study is Tk. 521. The estimated economic cost of a latrine unit in DPHE Village Sanitation Centres in the CSA Study is Tk. 607.

There is a broad measure of consistency between the estimates in the present study and those of the CSA study, in that overhead costs are approximately 50% of total costs in both cases.

APPENDIX 12

"Ready Reckoner" of Cost per extra Post (by type) in any re-organization of DPHE

Sl No	Name of the Post	National Pay Scale	Basic Salary Per Yr	House Rent Per Yr	Medical Allowance Per Yr	Conveyance Allowance Per Yr	Washing Allowance Per Yr	Bonus	Provid Fund Contribution (10%)	Total Empl-oyee Cost Per Year
1.	Chief Engineer	8600-225-9500	103200	41280	1800			17200	10320	173800
2	Addl Chief Engineer	7800-200-9000	93600	37440	1800			15200	9360	157400
3.	Superintending Engineer	7200-200-8700	85200	34080	1800			14200	8520	135280
4.	Executive Engineer	4800-175-7250	57600	25920	1800			9600	5760	100680
5.	Chief Hydrogeologist	4800-175-7250	57600	25920	1800			9600	5760	100680
6.	Chief Health Education Officer	4800-175-7250	57600	25920	1800			9600	5760	100680
7.	Sr Management Officer	3200-140-7250	38400	17280	1800			6400	3840	[illegible]0
8.	Sr. Communication Officer	3200-140-7250	38400	17280	1800			6400	3840	[illegible]0
9	System Manager	4800-175-7250	57600	25920	1800			9600	5760	1[illegible]0
10.	Sr. Hydrogeologist	4100-150-6500	49200	22140	1800			8200	4920	[illegible]0
11.	Sr System Analyst	3200-140-5440	38400	17280	1800			6400	3840	[illegible]0
12	Programmer	3200-140-5400	38400	17280	1800			6400	3840	[illegible]0
13.	SDE/AE	2850-125-5155	34200	15390	1800			5700	3420	[illegible]0
14.	Sr. Chemist	2850-125-5155	34200	15390	1800			5700	3420	[illegible]0
15.	Jr Hydrogeologist	2850-125-5155	34200	15390	1800			5700	3420	[illegible]0
16.	Management Officer	2850-125-5155	34200	15390	1800			5700	3420	[illegible]0
17.	Jr Management Officer	2850-125-5155	34200	15390	1800			5700	3420	[illegible]0
18.	Jr Communication Officer	2850-125-5155	34200	15390	1800			5700	3420	[illegible]0
19	P.R.O.	2850-125-5155	34200	15390	1800			5700	3420	[illegible]0
20	Instt. Dev. Officer	2850-125-5155	34200	15390	1800			5700	3420	[illegible]0
21.	Chief Training Officer	2850-125-5155	34200	15390	1800			5700	3420	[illegible]0
22	Jr Chemist	2300-125-4480	27600	13800	1800			4600	2760	[illegible]0
23.	Administrative Officer	2300-125-4480	27600	13800	1800			4600	2760	[illegible]0
24.	Accounts Officer	2300-125-4480	27600	13800	1800			4600	2760	[illegible]0
25.	SAE/Estimator/Draftsman	1725-105-3725	20700	10350	1800	720		3450	2070	[illegible]0
26.	Asstt P R O	1475-090-3150	17700	8850	1800	720		2950	1770	[illegible]0
27.	Divisional Accountant	1725-105-3725	20700	10350	1800	720		3450	2070	[illegible]0
28.	Head Assistant/UDA	1475-090-3150	17700	8850	1800	720		2950	1770	[illegible]0
29.	UDA/Acctt /Store Keeper	1200-060-2335	14400	7200	1800	720		2400	1440	[illegible]0
30.	Stenographer	1475-090-3150	17700	8850	1800	720		2950	1770	[illegible]0
31.	Stone Typist	1375-080-2870	16500	8250	1800	720		2750	1650	[illegible]0
32	Health Educator	1725-105-3725	20700	10350	1800	720		3450	2070	[illegible]0
33	Computer Operator	1725-105-3725	20700	10350	1800	720		3450	2070	[illegible]0
34.	Statistical Asstt	1375-080-2870	16500	8250	1800	720		2750	1650	[illegible]0
35.	Sample Analyser	1375-080-2870	16500	8250	1800	720		2750	2650	[illegible]0
36.	Project Inist	1375-080-2870	16500	8250	1800	720		2750	1650	[illegible]0
37	Research Asstt.	1375-080-2870	16500	8250	1800	720		2750	1650	1[illegible]0
38	Technician	1300-070-2600	15600	7800	1800	720		2600	1560	[illegible]0
39	Surveyor	1200-060-2335	15600	7800	1800	720		2400	1560	[illegible]0
40.	A/Co Asstt/Cashier/LDA	1200-060-2335	15600	7800	1800	720		2400	1560	[illegible]0
41	LDAT/CCT/Typist	1200-060-2335	15600	7800	1800	720		2400	1560	[illegible]0
42	Training Asstt	1200-060-2335	15600	7800	1800	720		2400	1560	[illegible]0

APPENDIX 12

Sl No	Name of the Post	National Pay Scale	Basic Salary Per Yr	House Rent Per Yr.	Medical Allowance Per Yr	Conveyance Allowance Per Yr	Washing Allowance Per Yr.	Bonus	P F Contribution (10%)	Total Employee Cost Per Year
43.	Sanitary Inspector	1200-060-2335	15600	7800	1800	720		2400	1560	30080
44.	Word Processor	1200-060-2335	15600	7800	1800	720		2400	1560	30080
45.	Data Entry Operator	1200-060-2335	15600	7800	1800	720		2400	1560	30080
46	Tracer	1200-060-2335	15600	7800	1800	720		2400	1560	30080
47.	Sample Collector	1200-060-2335	15600	7800	1800	720		2400	1560	30080
48.	Driver | L S	1200-060-2335	15600	7800	1800	720		2400	1560	30080
	| H S	1370-070-2615(Hv)	16440	8220	1800	720		2740	1644	31564
49	Foreman	1725-105-3725	20700	10350	1800	720		3450	2070	39090
50.	Mechanic (Diesel)	900-035-1530	10800	5400	1800	720		1800	1080	21600
51	Mechanic (Tubewell)	1050-045-1915	12600	6300	1800	720		2100	1260	24780
52.	Mason	1050-045-1915	12600	6300	1800	720		2100	1260	24780
53.	Cash Sarker	975-040-1750	11700	5800	1800	720		1950	1170	23190
54.	Photo Duplicating Operato	1125-055-2170	13500	6700	1800	720		2250	1350	26370
55.	Electrician	975-040-1750	11700	5800	1800	720		1950	1170	23190
56.	Pump Driver	975-040-1750	11700	5800	1800	720		1950	1170	23190
57.	Record Keeper	975-040-1750	11700	5800	1800	720		1950	1170	23190
58.	Despatch-rider	975-040-1750	11700	5800	1800	720		1950	1170	23190
59.	Treatment Plant Operator	1200-060-2325	15600	7800	1800	720		2400	1560	30090
60.	Asstt. Pump Driver	1125-055-2170	13500	6700	1800	720		2250	1350	26370
61.	Asstt Treatment Plant Operator	1125-055-2170	13500	6700	1800	720		2250	1350	26370
62.	Lineman	900-035-1530	10800	5400	1800	720		1800	1080	21600
63	Plumber	1125-055-2170	13500	6700	1800	720		2250	1350	26370
64	MLSS/Peon/Chowkider/Guard	900-035-1530	10800	5400	1800	720	240	1800	1080	21840
65.	Labour	900-035-1530	10800	5400	1800	720	240	1800	1080	21840

Note:

(i) Employees who serve in rural areas get 5% less House Rent.

(ii) Employees who are in official houses do not get House Rent Allowance. Instead, a specified amount is deducted for the repairs and maintenance of the allotted houses, according to rates prescribed in the National Pay Scale Rule.

(iii) DPHE staff get a pension after retirement. Pensions for employees have not been included in the total of annual and average monthly salary and allowances, nor has allowance for costs of official vehicles and drivers allocated to senior staff.

APPENDIX 13

THE FUTURE OF THE PLANNING FUNCTION IN DPHE

Basic Considerations

The planning function within DPHE should be strengthened.The objectives of the Planning Circle in relation to the National Planning Commission should be spelled out more clearly.

All planning should go hand in hand with research and development. But also the limitations of the planning function should be recognised. For example the question why data collection and processing related to monitoring has become such a central issue within the Planning Unit is important.

The monitoring function should also be reconsidered. Does the cost involved in data gathering and processing really lead to a substantial improvement of quality of implementation and control? Or has it become a purpose in itself? Of course data on the realisation and performance of activities should be collected, but which data are relevant and which not? And should data collection and processing be done by the Planning Circle or by a Central Information Unit that could process both data for the monitoring system and for the MIS? It seems clear that the use of EE's and AE's for data processing is not the optimal allocation of scarce qualified staff resources.

It also seems important that the objectives and outreach of the new MIS system are clearly defined, in order to prevent that just another new data processing system is created of which the usefulness for the performance of DPHE is not sufficiently clear. Further the question may be raised whether the Planning Circle should be responsible for the new MIS-system.

A rethinking of the planning function will have consequences for the organisational structuring of the Planning Circle. Knowing that funds for extension of staff are probably limited, a reshuffling of the existing Division could be considered. Should the Design Division in its present form be maintained? Or should a form more adapted to the present needs be a better alternative?.

There will of course be a need for the development of design criteria and to supervise the design process.

Proposed new structure

It could be considered to divide the Planning Circle into three divisions:

Planning General, Planning Urban and Planning Rural.

Planning General, with fields of attention: the linking between Planning and Research & Development, Development of Design Criteria,and General Quality Control.

Planning Urban, all specific planning problems related to the present and future urban setting. In this section small teams could develop and -if requested- design piped water and sewage systems for the district towns; supervise the design work which is contracted to consultants; carry the responsibility to monitor the urban works

Planning rural, all specific planning issues related to present and future rural planning. Small teams could -if requested - make designs for rural works. Supervise the design work which is contracted to consultants. Carry the responsibility to monitor rural works.

The S.E. should mould the different sections of the Planning Circle together to one strong but flexible unit.

The OS Team would like to stress that the suggested model for the Planning Circle is only one possibility; other alternatives are possible. However the OS Team is of the opinion that this suggested structure could be effective. A further possibility is that a major part of the information compiling task could be taken out of the Planning Circle and regrouped in a Central Information Unit.

APPENDIX 14

THE FUTURE OF THE RESEARCH AND DEVELOPMENT FUNCTION IN DPHE

Background

The S.E. of the Groundwater Circle has prioritised the 5 fields of research in order of importance:

- monitor the groundwater level;
- identify different technologies of water supply;
- improvement/modification or conversion of different types of tubewells;
- regeneration and rejuvenation of tubewells;
- water system surveillance.

These priorities make clear that the Groundwater Circle will increasingly be involved in new fields such as surface water filtration, collection of rainwater, etc. It seems therefore logical to speak no longer of a Groundwater Circle but instead to talk of the Research and Development Circle.

A proposed New Structure for R + D

This Circle could be divided in eg. three Sections, viz the

- Water Resources Development Section,
- Water quality Section and the
- Sanitation Section.

The intention of this new division of tasks is not simply to change the names. The Research and Development Circle carries together with the Planning Circle the main responsibility for ensuring the future supply of drinking water and sanitation for the growing population of Bangladesh. That is why a direct link between the two Circles, and the unification of the R+D function for water and sanitation, is of great importance.

In the proposed structure the Water Resources Development Section would develop a research plan for all water resources, including those that are not groundwater. Sand filtration of surface water, collection of rainwater, etc. should form new fields of attention. As groundwater is getting increasingly scarce and surface water is available in abundance it seems now the time to invest in this research. This implies that adequate staff and research funds should be made available. Cooperation with foreign research institutes (as happens already but only incidentally) should be stimulated. However research priorities should not be dictated by foreign donors.

The Section could in principle further carry the responsibility of the two existing sections. There is no real reason in the research field to make such a rigorous distinction between rural and urban, even when the applied technologies are different. Close links should be developed with the Ministry of Agriculture, irrigation section, in order to develop joint norms and approaches to limit the extraction of groundwater for irrigation in dry peak time. Research should be promoted to use surface water for irrigation.

The Water Quality Section should boost the existing activities of the test Laboratories. However its field of activity should be broader. Issues such as agricultural and industrial pollution of surface water will become more important as soon as the option to use surface water as a basis for drinking water becomes more realistic. Household pollution of the drinking water should get more attention. Close cooperation with the Sanitation Section of the Circle would be very important.

The Sanitation Section should be involved in research related to low cost sanitation. Some research experience has already been built up in different Circles and Sections of DPHE, eg. in the Testing Laboratory for Sanitation Technology in Mohakhali, Dhaka.

One of the first task of the new Sanitation Section would be to collect relevant data on sanitation (its extension, its cost, training related to sanitation) from within DPHE's own network. Research should primarily be oriented to find new, better, and if possible cheaper alternatives for some of the basic problems related to sanitation. New forms of sanitation training should also be on the agenda. Close collaboration with the WHO and with the International Training Network (ITN) for Water and Waste Management based at BUET (Bangladesh University of Engineering and Technology) will pose advantages to DPHE and the sector as a whole.

It is clear that whatever structure for R+D is finally chosen, some staff expansion will be needed. This is all the more important as assistance from Consultants, which has been considerable in the past years, is gradually decreasing. Staff working in the Research and Development Section, and in the other sections is becoming more and more specialised. There are risks that routine transfers of specialised R & D staff to other Circles would result in a major loss of human capital. Consequently possibilities for career development of staff and promotion within the Research & Development Circle deserve attention.

APPENDIX 15

WOMEN'S ROLE IN WATER AND SANITATION
Implications for DPHE

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APPENDIX 15

THE ROLE OF WOMEN IN WATER AND SANITATION IMPLICATIONS FOR DPHE

INTRODUCTION

The transformation of the Rural Water Supply and Sanitation Program in Bangladesh (RWSS) from a purely technocratic initiative prioritizing the supply of "hardware" only, to one that also takes into account the human factors in WSS use that modify, or even undermine, technological innovations, makes it imperative for DPHE to acquire a new range of skills. High on the list of skills is "people skills" or the ability to respect, empathize and work with ordinary people.

THE ROLE OF WOMEN

In Bangladesh, as elsewhere, one category of people is particularly important for the success of water and sanitation programs: women. It is women who bear primary responsibility for selecting, collecting, and supplying water to their families. It is women, again, who are thrust with the responsibility for disposing the faeces of the very young, the old and the sick. Finally, it is mainly from women that future generations acquire notions of personal cleanliness and hygiene. In short, women are the main managers of the domestic water supply and sanitation sector. How they respond to sectoral innovations, their acceptance or rejection of new sectoral technology, stand to make or break programs like RWSS.

TORS OF THE GENDER ADVISOR

It is somewhat disconcerting to note that despite the critical importance of women for rural water supply and sanitation programs, the original ToRs for the present organizational study of DPHE did not envisage a gender focus. Such a focus was added in the Consultants' proposal when provisions were made to seek inputs from a Gender Advisor.

The final ToRs for the Gender Advisor require the Advisor to:
(1) Analyze the implications of the respective roles that women and men customarily play in water supply and sanitation activities for the approach, work methods, and staffing of implementing agencies like DPHE. (2) Assess the involvement of women in the official RWSS program , and (3) analyze the implications of the new Social Mobilization Program, which entails active collaboration between DPHE and NGOs, for DPHE's operating style, concepts about its role, and the types of information that need to be incorporated into the organization's MIS system.

APPENDIX 15

SCOPE AND METHODOLOGY OF PRESENT REPORT

Data for the report is based on progress reports, evaluation reports, journal articles, field observation and interviews. Interviews were held with staff belonging to DPHE, a number of NGOs operating programs in water and sanitation, as well as the NGO Forum. In addition, interviews were held with beneficiary women and men organized by NGOs.

Section A of the present report begins with a brief profile of the rural water supply and sanitation sector in Bangladesh in terms of hydrology, technology, and problems. Sections B through E form part of a series and are aimed at exploring the major needs and constraints experienced by women in responding to RWSS innovations.

Section B explores parallels between traditional wells and tubewells for clues to women's workloads and availability for participation in activities required by RWSS. Section C briefly assesses the adequacy of DPHE's approaches to identifying and meeting women's needs, especially in relation to health. Section D, looks at the effects of DPHE's approaches to involving women. Section E returns to the theme of women's needs and explores NGO attempts at definitions and the formulation of strategies for responding to them.

Finally, Section F describes the new Social Mobilization Program and attempts to assess the DPHE response to the program.

APPENDIX 15

A. THE PROFILE OF THE RURAL WATER AND SANITATION SECTOR

The basic issue in the rural water supply and sanitation sector of Bangladesh is not so much to promote access to water per se but to facilitate the use of **safe water**. For the problem in the country is not one of too little, but an abundance of, water.

Hydrology

A deltaic country traversed by three major river systems, and characterized by heavy monsoon downpours that bring an average of 2183 mm or 86 inches of rain annually, Bangladesh is endowed with a vast reservoir of surface water available in the form of flood waters, ditches, rivers, artificial ponds and open wells (usually lined). These constitute the country's traditional water sources and, except for the dry months of December through April, lie within easy reach of every doorstep. By custom, because of its clarity, water from wells is preferred for drinking. For tasks requiring large quantities of water such as bathing, washing pots and pans, and laundering it is customary to use flood waters, ponds, ditches and rivers. Planks of wood and slabs of stone provide clean surfaces that serve as wash boards and squatting areas.

Although abundant, surface water is also highly contaminated. Heavy population densities, extreme poverty combined with the cultural preference for using the outdoors for defecation[1] result in an estimated 100,000 tons of human faecal waste being daily discharged into the environment (ADAB). Most waste ultimately leaches into traditional water sources, and accounts for the scourge of some 50 water-borne diseases and water-related diseases such as cholera, amoebic dysentery, and bacillary dysentery which alone cause some 200,000 deaths annually among children (29 per cent of all deaths in children under five).

Technology

The principal technologies for countering the situation above is the handpump tubewell, the pit latrine, and health education. The tubewell provides access to high quality groundwater; the latrine succeeds in confining human excreta underground, and health education has increasingly become important as a method of persuading people to adopt tubewells and latrines, and use them wisely.

The Problem

The challenge confronting DPHE is that despite decades of experience of establishing tubewells (the last 20 with UNICEF support) and 15 years of experimentation with the production and sale of more affordable pit latrines, the use of these facilities remains disappointingly low. Although 96 per or rural households have access to tubewells, only 16 per cent use tubewell water for the full range of their water needs including cooking, bathing, washing pots, pans, kitchen utensils, and laundry. The proportion is much lower if low-income households, who are dependent on public tubewells, are considered. Here, only 12 per cent of households report using tubewell water for the whole range of their needs (Mitra). As for sanitary latrines, even after intensive motivation only

25.6 per cent of households own a sanitary latrine (Mitra). [2] If the original definition of a sanitary latrine (water-sealed latrine) were to be retained, the proportion would be much lower. For example, in 1988 that proportion was estimated at only 2-4 per cent of the rural population (ADAB News).

In seeking reasons for the resistance to tubewells and latrines, DPHE invokes mostly cultural constraints, mainly inadequate health awareness. But evidence from the pattern for using traditional wells suggests a broader set of constraints.

B. WOMEN'S WORK AND IMPLICATIONS FOR CHOICE OF WATER SOURCES

Strong parallels exist between the patterns for using the open wells traditional to Bangladesh and the new handpump tubewells[3]. Both are perceived to yield higher quality water (clearer) but both are used for the limited purpose of drinking, and occasionally cooking. Given the fact that women bear the primary responsibility for collecting, transporting, and carrying out most water-related activities, it is no surprise that wells, whether of the older or the newer variety, should have high value but limited use in practice.

The Importance of Proximity, Privacy, Efficiency of Facilities

A plethora of micro and macro studies confirm two realities about women in Bangladesh which place a premium on water sources that are close to the home, afford privacy, and are time- and labour-saving. Firstly, women exist as subordinate members of powerful gender hierarchies which force them to carry a heavier workload, and work longer days than men. In addition to the usual round of domestic chores (cooking, cleaning, washing, child-care, fuel and water collection), women in Bangladesh are responsible for a major share of productive activities[4] which have lacked visibility because they are home-based. Secondly, a majority of women (Muslim and Hindu) have traditionally been placed under purdah or seclusion. Purdah imposes high standards of modesty, accounts for the allocation of women to productive activities that can be done within the four walls of the home, and deepens the normal tendency of women's domestic chores to restrict their movements to or near the immediate vicinity of the home.

Given the operation of gender hierarchies and systems for dividing labour, it is not difficult to see why tubewells should meet with apparent resistance. Wells -- both old or new -- tend to be costly. In the case of a majority of women, who belong to households that fall under the poverty line, using a well or tubewell:

- Means walking a distance of 50 to 150 meters to reach either a private facility located within the compound of a neighbour's house or, in the case of a tubewell, a public facility located near a road or village pathway. By comparison, using flood waters, ditches and ponds frequently means a distance of less than 10 meters -- or less[5].

- Involves a more complicated and energy-consuming protocol. Users are required to either lift water or pump water, and since well sites do not

encourage prolonged use (see below), transport water in pitchers or kolshis to the user's home. In contrast, using a pond or ditch involves fewer steps and does not require the user to transport water from source to home. Washing pots and pans or clothes, means simply dipping the soiled items into the pond or ditch for an initial rinse, scrubbing them on the shore, and again plunging them into the water for a final rinse.

- Well sites and tubewell sites are associated with considerable anxiety and tension, and discourage lengthy periods of use. Awareness that others might be waiting in the wings to use the well site, or in the case of private wells and tubewells, embarrassment over using what does not belong to oneself, both produce a sense of discomfort and hurry. Hence, wells and tubewells can be considered only for brief activities such as collecting small quantities of water for drinking and, perhaps, cooking. Except for direct members of the owner household, washing pots and pans, or doing the laundry at the well site, is likely to be considered excessive and insensitive.

- Finally, well sites and tubewell sites fail to provide adequate privacy and are, hence, inappropriate for bathing and washing personal items --- especially where women are concerned[6].

The foregoing illustrates the importance of understanding the implications of gender hierarchies, and gender-based division of labour for women's time availabilities for sectoral activities. While inadequate health information plays a role in perpetuating sectoral problems, additional health education is unlikely to accomplish very much. At the most, it is likely to persuade rural well-to-do women, who can afford to employ servants, to change to all-purpose use of tubewell water. In contrast, stepped-up health education is unlikely to make much of a dent in the consumption patterns of women from smallholder or resource-poor households.

A collective interview with 21 leaders from landless and resource-poor women's groups organized by NGOs in Comilla, shows that water collection and carrying are considered hard, and demanding work -- something better left to daughters-in-law! Consequently, older women in the group report that they abstain from the task. Those women who are involved, report collecting and transporting 1 to 3 kolshis of water a day, making as many trips to the tubewell, and consider 3 kolshis to be the limit of what their stamina will bear.
Based on the estimates of the women, on average 5.7 kolshis are collected daily per household. With the average household size being 6.9 among the women interviewed, this works out at .8 kolshis for every member of the household[7]. In contrast, UNICEF estimates that all-purpose use of tubewell water (for drinking, cooking, washing, laundering, and bathing) would entail pumping 50 litres or 5 kolshis of water per person to cover needs. This translates into 275 litres or 27 kolshis for an average household of 5.5 persons. It is easily appreciated that, given the workloads of women from average households and given their dependency on public tubewells or those belonging to others, such women neither have the time to pump and transport such large quantities of

water. Nor, as will be seen in the next section, do they have the physical capabilities for doing so.

C. THE ADEQUACY OF DPHE's APPROACHES TO WOMEN'S NEEDS AND CONSTRAINTS

DPHE's apparent unawareness of contradictions between the demands of RWSS on the one hand, and the heavy workloads women carry on the other, is not exceptional. DPHE is a traditional engineering institution that finds it difficult to develop the social perspectives necessary to operate a women-oriented program. But the rural water supply and sanitation sector internationally fails to really see women as "workers" and "producers".

As a result, instead of equating a progressive social orientation towards women with using development programs to **ease** or **lighten** women's burdens for socially devalued domestic chores, it is mistakenly equated with merely "involving" women in sectoral activities. Women are thereby required to wash more things and more body parts more frequently, and more thoroughly while, at the same time, exerting greater vigilance over infants and toddlers who lack toilet training, and making more frequent trips to latrines in order to dispose of excreta that is more conveniently ignored or tossed into bushes or on to garbage piles. In addition, poverty and the mounting pressures of a cash economy are forcing more and more women out of the "inside" world of the home, and into the "outside" world of employment and self-employment.

Defining Women's Health Needs

Despite the fact that DPHE's programs in rural areas are driven by health objectives, the organization does not yet demonstrate an awareness of the sector-related health problems unique to women.

Because of the social neglect of women, little is known about their health needs. However, evidence from the region and from the experience of a small but vocal group of medical practitioners suggest a list of potential health hazards facing women that deserve systematic investigation. The sector-based health problems unique to women can be viewed as related to two contexts: women's involvement as (a) managers of the sector, and as (b) consumers. The former constrains women's enthusiasm for WSS infrastructure. The latter represent needs that DPHE must acknowledge, and address, if it is to win over the goodwill of women.

Health Hazards as Managers. (a) Daily responsibility for transporting heavy loads of water over distances of 50-150 meters, several times a day, erodes the energy resources of women. Because women already suffer from lower calorific and protein intake as a result of gender biases, the hard work required to transport water has negative, long-term consequences for women's health. (b) Health professionals working in Bangladesh confirm that carrying pitchers of water on the hip leads to structural deformities. In particular, mention is made of scoliosis or curvature of the spine. The condition leads to stunted growth among teenage women and to allied complications (cephalo pelvic

disproportions) that cause acute problems during childbirth (Archer). (c) Evidence from the city of Madras in (India), where the method for carrying water is similar, suggests that carrying heavy loads of water is associated abdominal hernias among women. Although folk wisdom in the West assumes that women do not suffer from hernias, experience in India shows that women in South Asia are prone to the condition. Contributory factors are malnutrition, frequent births which weaken abdominal muscle tone and lead to the development of hernias in the abdominal region (Sen Gupta). (d) According to a study in Madras city, doctors attribute the development of a prolapsed uterus to the continuous carrying of heavy pitchers on the hip (Manushi, p.3). Physicians and NGO staff in Bangladesh report that a prolapsed uterus is common among rural women, and usually leads to women being divorced or abandoned by their husbands. While the condition is attributed to poor nutrition, frequent births, prolonged labour, and poor delivery procedures, it is suggested that the role of carrying water be investigated (Nahid Chowdhury, Sadia Chowdhury).

(e) Another kind of health problem associated with carrying heavy loads of water in the state of Tamil Nadu (India) is the early onset of osteoarthritis which stems from wear and tear of the joints (Sen Gupta). Little is known about the prevalence or patterns of osteoarthritis in Bangladesh but medical professionals confirm that rheumatoid arthritis is the most common form of arthritis in Bangladesh (Susan Chowdhury). While rheumatoid arthritis results from auto-immune processes, in which genetic factors are more important, the acute joint pains associated with the condition are aggravated by excessive activity. (f) Finally, an obvious danger women face is accidental falls, especially during the rainy season. One physician is moved to wonder how many still-births can be attributed to such misadventures (Sadia Chowdhury).

Health Hazards as Consumers. Women in Bangladesh bathe and wash their clothes in contaminated ponds, ditches and rivers. Of particular concern is the habit of washing menstrual rags, which are worn both externally (as napkins) and internally (as tampons), in dirty surface water. Very little attention has been given to the impact of such practices on the reproductive health problems of women, which include (a) reproductive tract infections (RTIs). RTIs are associated with infertility, ectopic pregnancy, cervical cancer, fetal wastage, low birth weight, infant blindness, neonatal pneumonia, and mental retardation (Germain). A 1989 survey based on 2,929 women in Matlab and Comilla, reports high RTI prevalence rates[8], and attributes the condition to the use of menstrual rags (Wasserheit). A current survey, being undertaken by the Women's Health Coalition headquartered in Dhaka, suggests that RTI prevalence rates may be higher[9] and concurs in attributing RTIs to inadequately treated menstrual rags. (b) A second potential impact of bathing and washing practices is on vesico vaginal fistula --tears between the anus and vagina that are common because of poor delivery procedures. Such tears present problems of constant dribbling with urine and stools, and require frequent flushing of the affected area with sterile water. Like the prolapsed uterus syndrome, this condition is associated with the divorce and abandonment of women (Sadia Chowdhury).

Finally, as consumers women suffer more acutely than men from the lack of latrines. Women are subject to higher norms for modesty, which is mainly manifested in the dissociation of women from ordinary bodily functions. Medical professionals confirm that, due to their avoidance of urination and defecation during daylight, unusually high proportions of women in Bangladesh suffer from retrograde urinary tract infections and constipation. However, it should be noted that the issue is not the availability of latrines per se. Even when latrines are available women are constrained from entering them because their function is obvious (Sadia Chowdhury).

D. THE DPHE RECORD IN RESPONDING TO WOMEN

Inadequate formulations of women's needs and constraints inevitably produce disappointing results from DPHE's attempts to reach them. A (1989) review of the performance of DPHE's Integrated Approach (IA), based on a survey of 3 upazilas, provides striking insights into the nature and extent of DPHE's unpreparedness for the flexibility that is needed to interact effectively with rural women.

First launched in 1986, IA is significant for establishing a direct linkage between tubewell installation on the one hand, and latrines and health education, on the other. IA was distinguished by two features: (a) It required 10 (later reduced to 5) households among a new user group applying for a tubewell, to possess or construct sanitary latrines as a condition for approval. (b) It also required new applicants to actually show evidence of improved hygiene. IA thus ascribed a central role to health education which inevitably meant targeting women and stimulating their participation in the application for tubewells, site selection, and maintenance.

The review of IA's performance exposed glaring shortfalls. For example, despite the emphasis on intensive health education, only 60 per cent of applicant households surveyed reported receiving any health education. This was largely due to DPHE's refusal to abide by the original plan to use women Public Health Promoters and Health Assistants from the Ministry of Health. Rather than pursuing inter-ministerial collaboration, which would have created a sufficiently large team of health educators, DPHE chose to employ male TWMs for the purpose. As might have been expected, TWMs wasted much of their time in repeat visits to the same household because: "Male heads of households often were not present when the TWM visited...(and)..direct communication with Muslim women who observed purdah was difficult" (Abdullah and Boot).

The failure to provide for appropriate channels to women had other predictable consequences: As against intentions to increase women's participation in the process of tubewell applications, only 5 per cent of women belonging to user households were found to have signed the application forms. A full 29 per cent of women reported that they had not been consulted about tubewell site selection. The training and deployment of women as caretakers was also found to lag behind. IA requires that a male and a female caretaker be trained for every tubewell site. Evidence also shows that social acceptance of women as caretakers is high because of their constant availability in villages. However, while 333 of 356 applicant group households could name the male caretaker, only 23 could name the female caretaker (Abdullah and Boot).

E. LESSONS FROM THE NGO SECTOR

NGO strategies in the water and sanitation sector appear to stand a better chance of success because of their response to the complexity of underlying concepts regarding women and how to reach them.

There are strong contrasts between the style of DPHE and NGOs. NGOs display a greater flair for being people-oriented and choose to present themselves through field visits where observers can meet and talk directly with beneficiaries in villages. They particularly focus on women beneficiaries. But there are also significant differences in other respects:

1. NGOs consider economic constraints before cultural constraints, and acknowledge that when 60 per cent of households struggle under the poverty line, tubewell and latrines are considered luxuries. Accordingly, NGO sectoral interventions occur as a component of a much broader development strategy aimed at overcoming poverty. The central thrust of NGOs is on development programs aimed at increasing the **economic power** of the land-poor and resource-poor through the inputs of loans, technical training (in agriculture, poultry, livestock, social forestry, silk breeding etc.), assistance with marketing, and human resource development. Human resource development figures prominently in the NGO agenda and centers around the organization of beneficiaries into groups for mutual support, and training in overcoming fatalism, self-blame, the lack of unity among beneficiary households, including oppressive gender relations that divide men and women.

   Promotion of tubewell water and latrines comes at later stages when beneficiaries have acquired sufficient experience with income-earning opportunities, gained enough confidence in their abilities to bring in regular incomes, and are able to contemplate acquiring facilities that were once dismissed as "luxuries". Even then, NGOs recognize that even subsidized tubewells and low-cost latrines are beyond the means of average households. Soft loans are provided for purchasing such facilities, and are payable in 6 to 8 instalments. Many NGOs turn latrine production into an opportunity for creating income generation schemes for beneficiary women and men. For example, Proshika has organized some 100 all-women and

80 all-male production teams for manufacturing latrine rings and slabs. Each team consists of 3 members. Also, at the time of the visit to Comilla, we found the NGO Forum conducting a training program in latrine production for several women brought in from Gandhi Gram, a NGO in Noakhali.

It should be noted that contrary to the impression in some quarters of DPHE, NGOs in fact are concerned about the financial sustainability of the sector, and oppose free distributions. Rates charged for No. 6 tubewells vary but are usually at par or above official government subsidies. One NGO in Comilla reports it charges Taka 1,200. (compared to Taka 700 contribution required for a DPHE-provided No. 6 pump).

2. Although NGOs prioritize economic constraints, they acknowledge the influence of gender and cultural constraints. NGOs recognize the importance of using women staff to reach and organize women beneficiaries. In contrast to government departments which complain about difficulties in recruiting women, NGOs have been remarkably successful in attracting women as employees. Growing economic pressures on middle and lower-middle income groups make a sizeable number of women available for recruitment. NGOs are flexible and attempt to meet women's problems in travelling and living in strange places. In response to women's needs to remain close to their families, women staff are assigned to work in villages close to their homes. Depending on how experienced a staff member is, the work cycle and how accepted a NGO is in an area, the number of villages to which a woman is assigned can vary from 1 to 6. Inevitably, there are villages where a woman worker is unknown. In such cases, NGOs seek to protect women from verbal and other forms of harassment on public roads or in villages, by encouraging women to travel and work in teams. Not until sufficient goodwill with villagers has been built up, is a woman required to work alone. In situations where it is not possible to use local women, or where a project is complicated and requires more specialized skills, NGOs respond to the problems of women in finding housing (or living on their own), by establishing office-cum-hostels for their staff. Teams of women and men live in separate wings in such establishments.

   It is relatively easy for women to confront gender-related problems in NGOs. With so much attention to improving gender relations among beneficiaries, male staff are relatively sensitized to how to work in a collegial manner with women. Issues of gender inequality, discrimination or unintended slights are relatively easy to air and share without fear of being considered "too sensitive". Women share information among themselves about how to counteract taunts and slights from men inside and outside their employer organization.

   Interviews with NGO field staff show that although overt analysis of the contradictions between beneficiary women's workloads and the demands of the sector has not taken place, there is an instinctive recognition of the long hours of work women are required to put in. None of the NGOs

interviewed mention promoting or wanting to promote all-purpose use of tubewell water. As yet, NGOs do not appear to recognize the need to motivate men to share in sectoral tasks (e.g., water collection) but women field workers have begun to glimpse the dimensions of the problem and report playfully urging the husbands of beneficiary women to help out with water collection as a sign of their own development. Women staff evince a concern about women's reproductive health problems but feel helpless. Some, on their own, initiate discussion about the need to wash menstrual rags with tubewell water but no formal policies or concerns in this respect are obvious.

3. NGOs recognize that effective health education is a difficult, time consuming, and labour-intensive process. Poverty reduces attention to preventive health. Even clinics offering free medical care find it necessary to hire motivators to convince communities to visit clinics for innoculations and check-ups. In the case of water supply and sanitation programs, the underlying preventive health concepts are even more difficult to sell, because they increase work on a more regular basis than periodic visits to clinics. Consequently, this kind of health education requires a high degree of credibility on the part of the health educator, patience, teaching through direct example, continuous reinforcement, and the continuous discovery of **unanticipated contradictions** by health educators themselves. Where concepts of germs and pathogens do not exist, it is not possible for health education curricula to anticipate all the ramifications of existing habits. Such curricula might anticipate that people will need to be told that safe water for drinking needs to be stored in pots that have also been washed with tubewell water. Curricula might also mention that properly stored safe water should be consumed only from cups that have similarly been washed in tubewell water. But it may not occur to curriculum designers that people also need to be warned against rinsing their mouths with pond or ditch water when bathing.

   NGOs enjoy considerable credibility because they are more concerned with issues of poverty. Also, NGO staff live in villages as members of the community and are perceived to take an active interest in the lives of beneficiaries. A typical phrase NGO staff use to describe their relationship to beneficiaries is: "We are there in their sorrows and joys". It is easy for NGOs to arrange for the kind of on-site, low-keyed teaching required by water and sanitation programs. Their staff provide living examples of prescribed habits and/or are able to visit beneficiary households where they can monitor and guide the water and sanitation patterns of people. A side benefit of the living arrangements of NGO staff is that caretaker training can be continuously strengthened. With intervals between tubewell breakdowns averaging 6 to 12 months, they find the DPHE expectation of caretakers retaining their one-shot training, unrealistic.

   Health education in the NGO sector also benefits from a more organized communication and training system. Typically, NGOs are able to organize message flows over at least three tiers: field staff living in villages who can serve as health educators; leaders of beneficiary groups who can function

as local advocates, and grassroots members of beneficiary groups who are predisposed to making themselves available as ultimate target groups. NGOs appear to take training more seriously. The training of field staff is longer and more intensive. For example, Proshika reports providing 10 days of training in health education to its field staff (vs. 4 days for DPHE's Integrated Approach). The training of beneficiary group leaders (advocates) is planned as a separate activity. Leaders are regularly brought together at regional or district training centers for a variety of training activities and refresher courses, including those in water supply and sanitation. Equipped as such facilities are with latrines and tubewells (if not tap water), large NGO training centers are a means of indirect exposure and learning for women leaders.

F. THE SOCIAL MOBILIZATION PROGRAM: IMPLICATIONS FOR DPHE

The disappointing results of IA have led to the launching of another experiment at enriching the software component of RWSS: the Social Mobilization Program (SMP). Initiated on an experimental basis in early 1993, SMP tacitly recognizes that it is beyond the physical and technical capabilities of DPHE to manage single-handedly all functions in RWSS. Under SMP, NGOs have been contracted to undertake intensive motivation campaigns for the adoption of latrines in 20 pilot thanas. The goal is to persuade every household in a thana to acquire a latrine. Appropriate communication materials are to be developed by DPHE through the acquisition of a new unit which is to be staffed by social scientists[10]. If successful, the model of using NGOs for social mobilization will be extended nationwide.

Two proposals have been advanced by DPHE in connection with SMP. The first involves the use of TWMs as health educators. The second, proposes to boost the "software capability" of DPHE by increasing the representation of women in DPHE's staff, and by hiring social scientists. The merits of these two proposals need to be briefly considered.

Use of TWMs as Health Educators.

It is difficult to see how DPHE's proposal to use TWMs as health educators could lead to a major share of health education and social mobilization functions being conducted by DPHE itself. The idea that it will be possible to conduct a nationwide program in health education and social mobilization through TWMs is clearly unrealistic. It is not only that TWMs are the wrong gender (only 6 out of 1,840 TWMs are women), or that they are too old or too old-fashioned. Even if half of the present TWMs were to be replaced with women (unlikely in the foreseeable future), and care were taken to select women of the right age and the right social orientation, numbers are against TWMs. Four mechanics per thana, where a thana's size ranges from less than 5 to over 20 unions, are simply not enough to provide the kind of intensive, continuous health education based on reinforcement discussed above.

Interviews with TWMs in Comilla district show that intervals between visits to the same village can average up to 2 months. Given the TWM's other

responsibilities for distributing tubewell application forms, inspecting proposed sites, inspecting installations, providing caretaker training, in addition to making frequent visits to Union Chairmen to coax them to process application forms and deposit user fees in banks, the most that can be contemplated for TWMs is to use them for limited, and very preliminary kinds of health education during their rounds.

Hiring More Women

There are definite benefits to be gained from recruiting more women into DPHE but the benefits do not extend to enabling DPHE to implement directly a national health education or a social mobilization campaign.

One obvious gain would be to bring DPHE in line with Government quotas for hiring women and increase DPHE's credibility as an institution committed to stimulating the participation of rural women. At present, the agency is seriously below Government quotas (15 per cent of posts for women). All the top 15 positions at DPHE are occupied by men. Only 3 out of 201 gazetted posts at DPHE are filled by women, and women account for only 93 out of 4,590 non-gazetted posts.

Since there is a freeze on hiring, and DPHE must rely on normal processes of turnover, it is interesting to speculate on how long it will take to replace existing male staff with female recruits. Even if the process were to be completed by 1996 (when SMP ends), the acquisition of women to fill 15 per cent of DPHE posts will not enable the department to run directly health education and social mobilization activities for two reasons. Firstly, the replacements will mostly come from backgrounds in engineering and administration and will be destined for slotting into routine, mainstream DPHE engineering functions. Secondly, DPHE will still face the problem of inadequate numbers of field staff at the village level.

All the same, depending on the social orientations of the women hired, and how open DPHE is to accommodating women's needs, the organization stands to gain in the flexibility and social imagination needed to **manage** and **coordinate** a national health education and social mobilization drive with the assistance of other specialized agencies.

The test of DPHE's sensitivity to women staff will be how effectively it responds to the needs of women in their professional work, namely, women whose career advancement depends on their willingness to travel, and to work their way up the ranks through postings at thana and district levels (as SAEs, AEs and EEs).

In discussing these constraints, women engineers at DPHE point to the usual list of problems: problems in travelling, especially overnight trips to inspect works due to the lack of transportation in DPHE, social disapproval of women travelling alone, lack of properly maintained guest houses etc.

Long-term postings in rural areas are even more problematic for women because of the lack of housing, the social disapproval of younger women (even if married) living on their own, difficulties in moving around in villages on motorcycles and, last but not least, uneven workflows -- delays in releasing ADPs which result in the cramming of tubewell installations into the last three months of the fiscal year. This means sometimes round-the-clock work, and trips to villages to inspect installations late into the night.

Creative solutions on the part of DPHE require more careful planning of field trips so as to make transportation available to women travelling alone, greater coordination of tours so as to enable two or more women to travel together, advance work to identify guest-houses, maintaining close links with the community at thana and district centers so as to identify local families with whom young women can live during their assignments as AEs or SAEs etc. Above all, if women engineers are to be encouraged to serve time in rural areas, work flows should be rationalized.

Last, but not least, more women staff will give rise to the need for intensive gender training at all levels of DPHE, -- aimed at both men and women. Men will have to be sensitized to women's contributions and needs, and be introduced to communication techniques for encouraging the participation of women at meetings, during field work, duty travel etc. Of particular importance will be the need to teach men to distinguish between respect and condescension, and to introduce them to techniques for supervising women without feeling defensive[11].

For their part, women staff at DPHE will need training in self-assertion, communication techniques for countering unintended or intended slights without feeling anger. Of special importance for women will be models and methods for overcoming their inhibitions over travel and living in new communities. Observation of the example of women staff at NGOs shows that women working for Government are unduly timid and/or lacking in initiative. For example, as with living conditions in the field, NGO women find no problems using buses and rickshaws to reach distant villages. Accordingly, DPHE women staff need to be exposed to alternative orientations, and encouraged to develop ways for overcoming problems with transportation, housing and finding social support.

Hiring Social Scientists

Under SMP, social scientists are to be hired to produce communication materials for distribution to NGOs engaged in social mobilization. It is projected that the SMP unit, to which social scientists will be assigned, will make a significant contribution to strengthening DPHE's software capabilities.

In the abstract the proposal is an excellent idea. However, its practical utility will depend on two factors: (a) the calibre and strategy of the social scientists, and (b) the cooperation DPHE extends to the SMP unit.

(a) Simply hiring social scientists will not work. The team must be able to combine creativity and a thorough understanding of the problems of the rural poor with technical expertise in a number of areas: women's studies, women's health, health education, popular education, in addition to communication planning and the management of communication campaigns directed at non-literate audiences. At present, a number of NGOs and commercial firms in Bangladesh, have above-average capabilities in some or all these respects. For example, in addition to a wide range of economic development programs, Proshika (Manobik) operates a sophisticated studio for the production of videos, as well as a highly successful popular culture program that trains beneficiaries --both men and women-- in street theater, the production of folk songs, humorous skits etc.
To make a viable contribution, the social scientists must be able to offer a superior product by way of a systematic communication campaign that prioritizes: (i) the identification of a comprehensive but simple list of messages that are needed to fill current gaps in information, (ii) stringent pre-testing standards and (iii) the production of high quality communication materials that are truly effective in reaching non-literate audiences. Discovering gaps in information entails teaming up with the best resources in health and public health to observe and identify such elements as, for example, the need to discourage NGOs and beneficiaries from making latrines too deep (higher than a stack of 5 rings) because of the dangers of contaminating groundwater.[12] Reaching non-literate audiences means diversifying from the production of posters and pamphlets (more appropriate for literate field staff) to face-to-face media[13], supported by videos, street theater, trailers at cinema halls, jatras (folk operas), songs and jingles that are entertaining while being informative. It also means producing materials with the participation of non-literate local and folk artists. Much can be accomplished in a very short time if the SMP unit actively seeks suggestions and inputs from NGOs, local artists, and commercial producers.

(b) The effectiveness of social scientists for enhancing DPHE's understanding of the software aspects of change will depend on the level of cooperation, interest and engagement maintained by DPHE. If the SMP unit is encouraged to form working relations with outside agencies instead of being confined, and if DPHE cooperates by supplying extra hands when they are needed by the unit (to assist with surveys, conduct focus groups interviews, help out with communication materials pretesting, data analysis etc.) social scientists can make a significant contribution. It is through active participation in such new work experiences that social horizons and skills change.

APPENDIX 15

CONCLUDING REMARKS

Concern to serve women necessarily calls for more effective collaboration with other agencies, particularly NGOs, partly because it is physically impossible for DPHE to cover Bangladesh with the army of health educators and social mobilizers that will be needed. An equally compelling reason is that, in addition to gender constraints and constraints by way of lack of health information, women are prevented from desiring tubewells and latrines because of poverty. Where 60 per cent of households struggle to achieve their minimum daily caloric requirements, uni-dimensional efforts to supply tubewells and latrines appear superfluous. Therefore, it makes sense to team up with other organization which seek to counter problems of basic survival.

Collaboration with NGOs challenges DPHE to move forward into a more complex role where proportionately more tasks fall into the categories of planning, research and development, coordinating, liaisoning, lobbying, and participating in public fora, where development policies are shaped and debated. For "doers" like engineers who gain their rewards from performing a concrete technical service or rolling up their sleeves to deliver a tangible product, such activities are inherently distasteful because they appear ephemeral -- a waste of time. But, if DPHE is to retain the initiative in the rural water and sanitation sector, and further develop its role as a contributor, it will have to view the challenge as an invitation to grow.

Turning over tubewell installations, health education, and social mobilization for latrines to NGOs does not mean the loss of 'territory'. Rather it means gaining an opportunity to capitalize on one's strength and deepen one's impact. DPHE's specialization is its technical command over the engineering aspects of water and sanitation facilities. Instead of being preoccupied with tubewell installations and repair, DPHE's time would be better spent in R&D to solve critical technical problems that threaten to undermine RWSS. The 1992 appraisal report by DANIDA and SDC recommends more attention to testing the Mini-TARA pump, and the development of low-cost latrines (e.g., Sanplat).
Other technical problems that need research and experimentation are: (a) problems associated with insufficient land for two latrine pits, and the consequent recourse by people to the manual emptying of pits and the dumping of untreated excreta into the environment-- a measure that quite defeats the whole purpose of RWSS; (b) ascertaining the ideal size and layout of tubewell platforms to provide separate and adequate areas for water collection, the washing of pots and pans, laundry, and bathing – and potential conflicts with insufficient land availabilities, and possible solutions. Finally, (c) DPHE is ideally placed to stimulate a comprehensive investigation of women's sector-related health problems, and thereby set a worldwide trend. It needs to be stressed that the investigations themselves will have to be sub-contracted to health professionals but the initiative in inspiring interests in the topic and sponsoring a series of investigations can belong to DPHE.

APPENDIX 15

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APPENDIX 15

FOOTNOTES

1. The preference for defecating outdoors stems from an intense aversion to odors that accumulate in "fixed" places of defecation. Hence, the bias against low-cost pit latrines. The bias does not hold against water-seal latrines that succeed in keeping out odors from the pit, but these are expensive. It should be noted that the system of keeping the opening of low-cost pit latrines covered is aimed at discouraging flies and mosquitos from settling within the pit interior. Although successful in stifling odors when the latrine is not being used, this practice probably intensifies the problem when the cover is lifted at the time of use.

2. A recent survey indicated that this figure has risen to 33%.

3. Much of the ideas for the formulation of women's needs and problems come from an earlier report by the author which was submitted to the World Bank in 1989.

4. Bangladeshi women's participation in productive activities include work in livestock and poultry raising, vegetable and fruit production, post-harvest processing of crops, food processing and storage, artisan industry -- especially textiles, fish-net making, pottery. Rural women have also been active in constructing the walls and floors of homes, leaving roof-building to men.

5. During the rainy season, an added advantage of using flood waters in the immediate vicinity of the home is that women run fewer risks of accidental falls on unpaved, slippery paths.

6. Several factors combine to rule out the installation of screens at well sites: cost, high likelihood of wear-and-tear because of communal traffic, a feeling of cramping and claustrophobia because of the small size of platforms at well sites.

7. A liberal estimate because water is also collected for feeding cows.

8. Wasserheit reports that 22 per cent of women complain about RTI symptoms, of which 68 per cent show clinical and laboratory evidence of infection. She suggests that actual prevalence rates are much higher because many symptomatic women are inhibited from discussing RTIs. Also, a sizeable number of women suffer from asymptomatic RTIs (trichomoniasis, gonococcal cervicitis and chlamydia cervicitis or bacterial vaginosis).

9. The Women's Health Coalition estimates that the proportion of women suffering RTIs is close to 50 per cent.

10. SMP covers a 3 year period and is designed to phase in thanas on a on-off basis in sets of 7,7, and 6. In Year 1, the first 7 of the 20 thanas are to be switched into the latrine promotion program and switched off after 12 months of exposure. In Year 2, the second set of 7 villages are to be similarly switched in and out. The remaining 6 villages enter and exit the program in Year 3. If successful, the system of relying on NGOs will be expanded nationally.

    The pilot phase of the program is a tri-partite agreement between DPHE, UNICEF and NGO Forum, the umbrella agency in the NGO sector responsible for providing technical support for water and sanitation activities, and for approving NGOs participating in SMP. Reporting procedures require individual NGOs to submit monthly progress reports to the DPHE (SAEs) at the Union level and to NGO Forum's regional offices. The field reports are consolidated by NGO Forum Headquarters and forwarded to DPHE and UNICEF.

11. At present, senior DPHE staff are at a loss as to how to guide or discipline a woman staff member who has not reported for work for almost a year. She has and continues to be on salary for the entire time.

12. Another gap calls for a slogan like "Real cleanliness is caring more for the understructure of latrines than the superstructure". This or something similar is urgently needed to counteract the current trend of the rural elite to invest in expensive-looking shells and high quality toilet slabs while refusing to build underlying pits. As a result, human excreta is discharged directly from luxurious looking "latrines" into village waterways. To date, neither official or NGO programs have taken any steps to remedy this situation.

13. Guidelines for talks by community leaders, group leaders. Discussion guides for field workers with question and answers.

APPENDIX 16

THE DEVELOPMENT OF DPHE'S ACCOUNTABILITY AND ORIENTATION TO THE PEOPLE IT SERVES

The ideas mentioned below have already been discussed with DPHE management. The results of their preliminary discussion are recorded in Appendix 5(a). The suggestions are made in a constructive vein. They are not by any means all within the authority of DPHE to effect directly, but taken together they could promote DPHE performance even without the addition of new staff, and would represent a concrete strategy and a demonstration of a will for self-improvement. Government is currently reviewing the nature and status of local government institutions and development coordination. Clearly, the proposals made below would need to be modified in accordance with future Government decisions in this regard.

Reactivate the District, Thana and UP Water and Sanitation Committees The Social Mobilization Programme offers the prospect of an important boost to these Committees, which appear to be moribund after the abolition of Upazilla Parishads. The programme would give them something practical to do, and to aim at. They could become even more active if they were to be given powers to decide on the use of discrete amounts of funding for special local events to promote RWSS mobilization activities, and fieldworker training. The Minutes of the Third Workshop for DPHE Top Management should be read in this regard (Appendix 5(a)). Suggestions are made there for the composition and chairmanship of such Committees.

Prepare brief, clear statements of the main tasks, and their expected standards of performance, of SAEs, and Tubewell Mechanics, and provide these to UP Chairmen and Members
These would enable UP Chairmen and Members to know "who is supposed to do what" and, more importantly "when, how often, how many, how soon, to what quality or frequency? This would provide them with some form of yardstick to judge whether they are receiving the prescribed water supply and sanitation service. The UNICEF Tubewell application form contains important information related to this field, but the proposition is that it could be extended, and summarized in an attractive colour brochure, proclaiming "DPHE is here to serve you...and here is how...". One of the messages coming clearly from the UP Chairmen in the workshop held in September was that they wanted more say in what TW mechanics do, and, to give them some leverage over TWMs perform, some role in vetting their salary payments. (Please refer to Appendix 5 (c)).

Try to ensure that EEs plan their SAE visit itineraries around the dates of the meetings of Thana Development Committees The OS Team has heard that this takes place in some cases. It should be mandatory for EEs (and written into their Job description as a Standard of Performance). Demonstration of the concern of the Department by a senior officer being available to attend at least part of a Thana DDC meeting, would not only be a very positive gesture in itself, it would add to the prestige of the SAE.

Provide relevant DPHE MIS data to UP Chairmen in a form readily intelligible to them, and oblige SAEs to discuss their Thana's relative performance with the UP Chairmen. This could be done if modifications in DPHE's MIS (along the lines proposed by the OS Team in Appendix 15) are made. This would provide District and Thana level comparisons of key indicators of RWSS performance. Then, not only would DPHE management "know how it is doing" but representatives of the people it serves would be able to play an active role as well in monitoring the quality of services their constituents receive, compared to other areas.

Oblige EEs to visit a certain minimum number of remote Tubewell sites per year, and to meet the UP Chairman in each case. The SAE workshop[1] provided graphic illustration of the present problems of supervision and checking from District level. One way of ensuring that at least a few remote places are visited is to write the provision into the Job Description of EEs, and to hold them accountable to their SE for demonstration of proof of such visits. This would ensure that there is no temptation to fabricate records or otherwise take advantage of the situation of overloaded EEs on the part of SAEs.

Train SAEs and TW Mechanics in "Customer Service" and "Handling Conflicts" These cadres should be given training in dealing with the public in their daily work, as well as being given training in mobilization techniques. They should also be given advice in handling conflicts between local political interests (e.g. between MPs and UP Chairmen of different parties). Role play and case study techniques are effective in this regard.

Invite NGO Forum, BRAC, Grameen Bank, Proshika and Caritas to discuss how DPHE can improve its relationships with and services to the rural poor. DPHE could dramatically improve not only its accountability at the local level, but also its public image, if it held a consultative conference with some of the largest NGOs, who have supported the rural poorest for years. DPHE staff could discuss with the managers of these NGOs how DPHE - as a large central government department - is perceived at local level. It could also solicit their suggestions as to how it can improve its services, and its collaboration with local government institutions.

Reward good performance and investigate poor performance
At the national level, prizes could be offered to the SAE and staff of the best-performing Thanas - measured not just in terms of TWs installed, but in qualitative variables and measures of "contact" between DPHE and the public. For example, events such as gatherings held, competitions, diarrhoeal disease incidence reduction could be recorded and publicised. Poorest results would be the subject of an independent assessment (by an outside authority). The purpose would not be to apportion blame, but to identify the causal factors and suggest constructive remedies.

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1 See Appendix 5 (b); Appendix 16 summarizes data collected at the workshop regarding the supervision function.

APPENDIX 17

HEALTH EDUCATION - IMPLICATIONS FOR THE SOCIAL MOBILIZATION FUNCTION IN DPHE

The Social Mobilization Programme recently approved as part of the UNICEF/DPHE programme by GoB and the principal RWSS donors acknowledges that a wide variety of actors will need to be mobilized if significant impact on awareness and hygiene practices at household level throughout Bangladesh.

The SMP Project forsees a major role for DPHE in implementing the Programme. Two new Divisions are to be established and staffed within the Village Sanitation Project Circle, reporting to the PD Sanitation:

- one for Training of DPHE fieldstaff, and development of core communication and curriculum packages;
- one for Social Mobilization, to implement the programme; it will be headed by an EE, and two Social Mobilization Officers will be recruited.

Fieldstaff (every person from SDEs down) are to be trained and mobilized to work with Union Parishads in setting up WATSAN Committees.

Consultants are to be hired (the recruitment process has already started). Their role will be to undertake formative and operational research, and develop the communications packages. One Senior training specialist will be counterpart to the DPHE Senior Communications and Training Officer in the Communication and Training Division and five other consultants will work to CTOs in each of five zonal centres.

The task of the OS Study Team (as per ToR) is to assess the SMP, both its short and long-term implications, regarding organizational set-up, staffing, and particularly the need for non-engineering staff.

Commentary

(i) There seems little point in the OS Study Team making comments about the short-term SMP set-up, as it has already been approved and mobilization of resources has started. Regrettably, the OS study and SMP have got out of synchronization due to a variety of factors. Ideally, the OS Study should have been one of the inputs into the process of determining the role of DPHE in SMP, and its corresponding organizational set-up.

(ii) Regarding the long-term picture, the Team also finds itself in something of a dilemma. The DPHE development Scenario discussed and agreed in this Study focusses effort in the first instance on increasing the effectiveness of DPHE as an engineering organization. This alone is a huge agenda. The Transition Strategy outlined in Section 6 of this Report stretches over at least five years. There is much to be done, even without the magnitude of the task suggested for DPHE in implementing the SMP.

(iii) DPHE's record in spontaneously supporting its own HE capacities and activities has been mixed. That Caretaker training took place at all for GoB TW installations is only due to continuous external pressure on the organization.

(iv) This organizational culture is therefore not yet an attractive or conducive environment for the successful recruitment, utilization and motivation of non-engineering professionals, especially women.

(v) No central government Department has ever implemented a mass Social Mobilization Campaign. Bangladesh's world-renown EPI programme - amongst others - was the result of national political pressure and commitment, and the harnessing of a very wide range of actors. However, UNICEF played a major role in day-to-day coordination, under the supervision of the Ministry of Health, using non-government organizations and local authorities extensively.

Suggestion

The OS Team is aware that Baseline Studies have taken place for SMP, and suggestions on modalities of implementation of SMP may well be too late and therefore academic at this stage.

However, it is suggested that a group of local authorities, community based organizations and NGOs and other actors under the National Committee for Social Mobilization for Sanitation, and under the coordination of DPHE, are invited to reassess the implementation modalities of this Programme. Arrangements for the allocation of staff to be provided under the existing SMP proposal, and day-to-day implementation of SMP should be the focus of this discussion. No doubt some extra staff should be placed in DPHE to allow it to exercise its coordinating role, but the proposed arrangements in the view of the Team are probably not feasible.

What is sought is a more feasible and effective way of mobilizing the resources required, and of capitalizing on the strengths of the agencies involved, while avoiding the potential pitfalls of using a basically engineering-oriented institution in an implementing role in the social mobilization field, before the proposed Organizational Development programme has been started, and before its impact on DPHE has been felt.

APPENDIX 18

DPHE'S ROLE IN SANITATION

The main contribution made by DPHE in the sanitation field is direct, through the establishment and operation of 1,000 Village Sanitation Centres. In each one, a mason and his labourer fabricate water-sealed latrine slabs and rings for stabilizing latrine pits under the slabs. They work under the immediate supervision of the SAE at Thana level. There is one VSC at every Thana office, and one in a Union in the same Thana, throughout the country.

Their function, as well as fabrication and sale of components at subsidized rates, is to promote, through exhibition and demonstration, a range of latrine types and applications.

A decision has been made by MLRDC to begin a process of closure of these VSCs. One hundred are due for closure in 1993/4. Half are scheduled for closure by 1995. A WHO evaluation conducted in 1991 indicated that the quality of the performance of masons, and of the production of components was variable (26% of masons had not undergone any training, most were not conversant with correct mixes, and 22% of VSCs produced inferior quality products).

The OS Team could not rigorously survey the VSCs, but it endorses the MLGRDC decision, and suggests a gradual running-down of the VSCs. There are no economic, social or technological reasons to continue the work of VSCs under DPHE auspices in future. Despite subsidization of prices, (these subsidies are considerable and not directed to the poorest, but to any purchaser), VSCs have over one year's production currently in stock. This is in part a consequence of ADP targets being set centrally without apparent regard to local demand, past sales, capacity, or performance in promotion or other activities. These high stock levels represent a considerable waste of resources.

Latrine production technology is simple, and mobile. NGOs consulted during this study indicate that fabrication of latrines is part of their integrated income-generating and health programmes. The closer production can be brought to the consumer or purchaser, the more likelihood there is of better quality (through supervision by purchasers), less breakage (less distance to transport the finished products), and greater spread of income generation opportunities.

Although some argue that the quality of DPHE production is higher than that of the private sector, the evidence is scarce and inconclusive. Significant numbers of breakages in DPHE-produced items have been reported during Study field trips, which may be attributable to deficient cement mixes.

Current MLGRDC policy indicates (correctly in the view of the O.S. Team) that their staff, equipment and role should be progressively transferred to the private sector. Masons and labourers could remain working in the existing premises, but as entrepreneurs. This would give rise to economic benefits to the nation, savings of development expenditure to DPHE, improved efficiency in resource use, improved promotion, and progressive spread of production capacity in the absence of public sector subsidy distortion of the market.

UNICEF are planning several research studies into the role of the private sector in sanitation component manufacture in 1993. These will probably indicate enormous need for DPHE support in quality control, promotion and advice on siting and construction. In other words, the role of DPHE could shift from production towards facilitation of the development of market supply and demand. ([1])

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1 As indicated earlier, this conclusion is a point of basic disagreement between the Team and DPHE, which insists that the VSCs should stay under DPHE auspices.

APPENDIX 19

MOULDING ATTITUDES AND BUILDING SKILLS VIA STAFF DEVELOPMENT AND TRAINING

This is at the heart of the DPHE change strategy proposed in the Scenario selected by DPHE. Little can be achieved if progress is not made urgently to develop in-house training capacities, and/or to embark on a systematic programme of staff development at all levels. DPHE needs urgent assistance - from a donor or donors - to develop this programme.

At least one organizational-structure change is implied. A Training Cell should be established. This, along with other such changes is listed in Section 5.2.6 below.

While endorsing the proposal made by DPHE as part of the Scenario to be adopted for DPHE's institutional development, the consultants wish to point out some of the key issues and requirements which in practice will affect how the training function can develop in DPHE. Setting up a training function in the context of the public service is fraught with difficulties. The Consultants have visited several Bangladesh government agencies (REB and LGED) which have gone through this process. ([1]) Of particular interest in these consultations was the experience of these agencies in setting-up their functions. The points below are a synthesis of the lessons which flow from this experience.

Statement of training Policy: Some form of a policy statement regarding training would provide a firm basis for the development of the training function in DPHE. Even if it was merely a statement of intent, rather than an already-applied policy, it would be persuasive to prospective donors, and indicate determination on the part of DPHE to reinforce professional standards in the organization. The role which DPHE intends to play, when equipped with trained staff, should be made explicit as part of the policy, and the rationale for expansion of training provision in DPHE. The Scenario contained in this report should suffice for this purpose.

Schemes of Service These would be required as part of any such policy. They should be developed for key cadres and grades in parallel to the establishment of the training initiative. Successful completion of prescribed courses or professional examinations should be made mandatory before promotion would be considered for any individual.

Career Development A Career Development Plan might be complementary to Schemes of service. It could sketch the types of courses an officer in a cadre might undergo. It could depict the mix of subjects which a particular officer should undertake year-to-year, to build up his skills over time. Any such Career

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[1] The consultants also visited the National Institute of Local Government to be appraised on the courses it runs for local government personnel. It is clear that the Institute could, if reinforced and rejuvenated, and its role reassessed, become a highly strategic agency for strengthening the urban and rural local governments in Bangladesh.

Development Plan should be related specifically to a particular cadre, since their needs are different.

Relationship of Training Plans to earlier analysis of training requirements The relationship of any future development to any previous needs analyses or studies should be made explicit. ([2]) A reasoned strategy detailing the priorities for cadres to be trained should be made clear. It will be important to relate these plans to the ongoing GoB/UNDP/UNICEF WSS Sector Study.

Decentralization Decentralization of training capacity should be provided for in any DPHE strategy for development of the training function. In a situation where the vast majority of the staff of DPHE are regionally based, this is essential. Explicit provision for the development of training staff in the regions, and establishment of regional centres should be made.

Needs Analysis A detailed needs analysis of key cadres should precede any training design, particularly in view of the policy and technical changes which have taken place since the last study was conducted in 1989. This would help ensure that the training to be imparted was directly related and relevant to the target groups concerned.

Links to the R+D Function The Research and Development function in DPHE should inform development in the training of its staff - particularly in terms of advances and discoveries in application or acceptability of various forms of Low Cost Sanitation solutions, or in technological aspects of tubewell drilling or equipping in different conditions in the various regions of Bangladesh. This Study makes some proposals for developments in R+D in DPHE consistent with the Scenario adopted (please refer to Appendix 14).

Target Groups One of the target groups of any DPHE training function could well be **NGOs, local authorities and community based organizations**, since DPHE is the best-qualified source in the country for information and technology related to tubewells and sanitation. NGOs are vital and important sources of additional capacity in the RWSS sector. They need DPHE help, and access to its training programmes, as do community groups. Similarly, **private producers** of sanitary latrine fittings, and **tubewell drilling and installation contractors** could also ultimately be target groups for DPHE training.

Links to Social Mobilization Programme The Social Mobilization Programme for rural sanitation has just been approved by all parties. It has a major training component (for DPHE and other agencies staff). The SMP should be explicitly related to any future training proposals. This could involve clear differentiation between cadres and functions which would be catered for by the training project proposal and those to be handled under the SMP. Given that the SMP initiatives will precede the development of the overall DPHE training function, the lessons learned from developments under the SMP should be incorporated in the policies and designs of DPHE training in future.

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2 "Human Resource Development in the RWSS Sector" DANIDA 1989

Monitoring and Evaluation Arrangements for the monitoring and evaluation of any training to be implemented are very important to the progressive development of the training function. The establishment, design and adjudication of objective tests (both theoretical and applied) would be an essential task if the training function was to be put on a firm footing. Without such means of assessment of training performance, trainee motivation for attendance at training, and for making efforts while on training, would be reduced.

Trainer training Off-the-job Trainer-Training for full- and part-time trainers will be needed, in addition to any training provided on-the-job by the staff of any technical assistance team brought in to assist DPHE in developing its training function.

Motivation for training Given the motivational problems surrounding the establishment of a training function noted in Section 4.4.3 above, consideration should be given to the supplementation of basic pay - via allowances to trainers for sessions conducted, and for trainees on a per day basis. After some years, when the function is better established, these could be gradually removed.

Staffing of the initial Training initiative A large number of expatriate training staff will probably not be required in the technical assistance team suggested here to be assigned to support DPHE to build up its training function. There are sources of Bangladeshi expertise - both in technical and training function-development fields - which would be more effective and cost less. An appropriate mix - with initial training management and design support perhaps coming from expatriates - would probably be the optimal solution. Any expatriate personnel to be recruited should have proven training and management expertise and aptitude, rather than be selected purely on the basis of their academic qualifications. Provisions for extra DPHE posts should be modest. The training function will not be sustainable when ultimately it is transferred to the revenue budget, if the number of staff assigned is very large. Use could and should be made of line staff of DPHE as part-time trainers (after being given Trainer-Training) on a course-by-course basis.

Learning from the experience of others It is suggested that the staff of the REB Training Centre are invited to discuss how their training Function was set up, as well as the essential points which should be borne in mind in any such an exercise. REB is a much newer institution than DPHE, and one where accountability of the institution to its "clients" (PBSs), and of PBSs to their members (consumers in electricity cooperatives) is strongly developed. The discussion in the following Section regarding the stimulation of DPHE staff performance and accountability in rural water supply and sanitation through closer accountability, could also be usefully informed by the important insights obtained by REB in this regard.

APPENDIX 20

PROPOSAL FOR A MANAGEMENT INFORMATION SYSTEM FOR DPHE

1. INTRODUCTION

The Organizational Study is concerned with improving DPHE performance in reporting, to enable it to provide information about operational achievement efficiently, effectively and promptly. The goals of DPHE are to plan, design and provide WSS infrastructure in rural and urban areas (except Dhaka and Chittagong city) and to operate and maintain the infrastructure. DPHE is also required to perform engineering research, planning, advisory and implementation functions connected with WSS in Bangladesh and also support sector as a whole. It also provides engineering-related technical support to local authorities, communities and NGOs in the execution of WSS development and service functions. It makes and develops national WSS policy and service standards based on Research and Development findings, and the planning activities of DPHE. It monitors drinking water quality, and quantity standards nationwide.

Operational staff of DPHE work at field level to achieve its goals. DPHE staff work down to Thana level. DPHE Management is interested to know the operational performance of the SAE at Thana level and EE at District level. Data from SAE level is proposed to be collected for MIS reporting purposes.

2. CHARACTERISTICS OF THE EXISTING MONITORING SYSTEM (OS TEAM OBSERVATIONS)[1]

(1) The bulk of information concerning project activities in implementation is generated by the Sub Assistant Engineer at the Thana level. This is generally known as the basic information. This information is recorded permanently in the register maintained at the Thana level office.

(2) This basic information is transmitted through the hierarchical tiers of DPHE involving the offices of EE, SE, PD & CE. The ultimate recipient of the information is Ministry of LGRD&C, Ministry of Finance, IMED, ERD, the Planning Commission and the external support agencies working with DPHE.

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[1] A study was undertaken by the UNDP/IBRD/Regional Water Supply group in 1992, of the existing monitoring system of DPHE. Their observations have been taken into account in the preparation of this Appendix.

(3) The information produced and transmitted from the office at Thana level is processed at SDE, EE and SE level. The CE receives final processed information from SE (Planning & control circle) and he then forwards the copies of information to other users of the information like Ministry of LGRD&C. Ministry of Finance, IMED, ERD & also Donors.

(4) There are about four hundred pages of different data reporting form used in DPHE. Reports are produced on the basis of requirements of particular development programmes. Some forms are DPHE's own. Some are designed and required by UNICEF, and some are required for Government purposes.

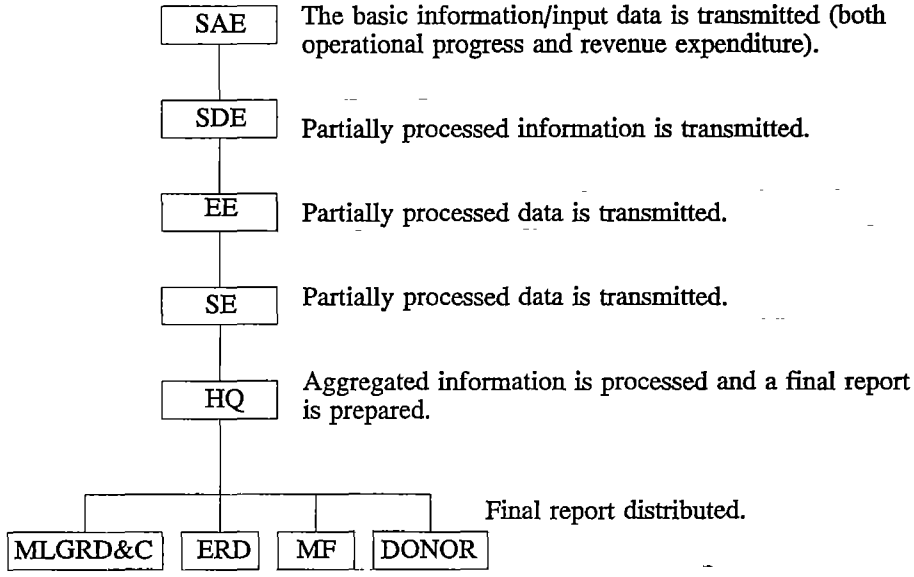
(5) Similar types of information are duplicated in different reporting formats.

(6) The processing of information is made in different stages along the transmittal chain. This causes duplication of processing effort, duplication of the reported information, redundancy of information, and a long transmittal chain. This has caused the information system in DPHE to become unmanageable and ineffective.

(7) The Monthly Progress Report (MPR) of DPHE as a whole is prepared, but is not circulated amongst EEs and SEs.

3. EXISTING SYSTEM OF INFORMATION FLOW

The existing system of information flow in reporting is presented below:



4. WEAKNESSES OF THE EXISTING SYSTEM

(1) Separate Monthly Progress Reports for development and revenue activities are prepared for each programme at three levels, i.e. SAE office, EE office and SE office.

(2) The Monthly Progress Report for development contains progress status but does not show any Key Performance Indicators (KIPs) of the SAE, SDE & EE performance.

(3) The Monthly Progress Report of DPHE is prepared but it is not circulated amongst EEs and SE level.

(4) The Region-wise comparisons are not made to compare regional performance.

APPENDIX 20

5. EXISTING STAFF COMPLEMENT AND OTHER RESOURCES AVAILABLE IN THE MIS SECTION

5.1 DEVELOPMENT OF COMPUTER CAPACITY IN MIS SECTION

In the MIS Division under the Planning Circle, there is a one female EE. She has been trying to develop computer programmes for the storage of the information produced and generated from the operational, technical, and performance data, relevant to the activities of the DPHE. The following is an inventory of the programmes used for reporting purpose.

(a) A software programme has been designed to draw-up the Monthly Progress Report. This report is prepared and circulated to the CE, and Addl. CE. It is treated as a internal document to depict operational achievement. It gives a clear picture on physical progress and expenditure incurred up to the reporting date.

(b) Another software programme has been developed to draw up the Annual Development Plan. This programme is able to produce a Union, Thana, Division and Circle-wise plan for DPHE as a whole, on an annual basis.

(c) Another software programme has been developed for preparation of a "Year Book" on Rural Water Supply. It includes a graphic software programme for presentation of graphics. This programme is able to produce the following information:
   (i) Name of Thana and Union;
   (ii) Total population in each Union and Thana;
   (iii)Total number of TWs in each Union and Thana; and
   (iv) Total Coverage, Minimum Water Table and average depth. of Tubewell in each Union and Thana.

(d) Another software programme has been developed to produce personnel information of DPHE.

(e) A Data base on urban water supply and sanitation status.

(f) 'Prism' a software on project management (CPM analysis)

(g) A programme on Store Inventory is under development.

5.2 EXISTING HARDWARE FACILITIES:

Machine:
IBM Compatible P.C.
Processor Model 286 - 4
Processor Model 386 - 1

Printer:
Laser jet Printer - 1
Dot Matrix Printer - 3

5.3 EXISTING MANPOWER STRENGTH

System Manager	-	1
System Analyst	-	1
Programmer	-	1
Data Entry Operator	-	1
Total	-	4

6. AIMS OF THE PROPOSED MIS SYSTEM

The basic aims of the proposed system are to collect relevant authentic, adequate and factual information from Thana and District-level offices, and to make information available for decision making and action planning. The users of the MIS will get information from MIS which will assist in monitoring and evaluating their own performance, and the performance of their subordinates.

7. CHARACTERISTICS OF A POSSIBLE MIS (OS TEAM SUGGESTION)

The OS Team has seen the TAPP from DPHE on MIS and the following comments are intended as an input into future system development, by consultants who, the Team understands, are to be hired under WHO auspices.

(1) The SAE and EE will be focal points regarding the provision of basic information to the MIS. Information generated in their office will be contained in the MIS report. The input information produced from the SAE, SDE, and EE offices should be sent directly to MIS section of HQ without further calculation and compilation.

(2) All basic information generated and produced from SAE, SDE and EE offices should be processed in the MIS section at HQ office by computer. A Improved Computer Relational Database Programme for processing of the information should be developed, designed and maintained by the staff of DPHE or external MIS Experts.

(3) The MIS Section at Head office will compile the MIS report for circulation amongst DPHE Managers, MLGRD&C, ERD and Donors.

(4) Region-wise breakdowns will immediately be made available to respective SEs and EEs.

(5) The processing of information in SDE, EE and SE level of chain of management will be eliminated. Instead, they will receive already-analysed information for purposes of decision-taking and action follow-up.

(6) It will provide comparative performance of SAE's, SDE's, XEN, and SEs that will encourage them for better performance and motivation.

(7) It will provide regional comparison to help in the analysis of variations in regional performance.

(8) It will help in decision making and corrective action planning.

(9) It will reduce or remove duplication effect, the current long transmittal chain and will thus be more efficient and effective.

8. BASIC INFORMATION TO BE CONTAINED IN THE PROPOSED MIS

The following basic information might be contained in the MIS report. Final choices would need to be made, which serve the different needs of various users, with new emphasis on information provision on the quality (not just quantity) of services provided.

(1) Application Form distribution and site selection of tubewell.
(2) Sinking of the Tubewell (different types).
(3) Repairs of the TW (desanding & others).
(4) Rehabilitation of the TW.
(5) Replacement of TW.
(6) Reconstruction of platform.
(7) Replacement of platform.
(8) Training, C T F Training, Health Training, Technical Training showing numbers of male and female participants separately.
(9) Complaints received regarding non-operational TWs.
(10) Sales of Slabs and Rings, Production of the Slabs and Rings.
(11) Contribution money received against different type TW sanctioned.
(12) Visit frequency of the SAE and Mechanics to see the condition of TW.
(13) Receiving and selling of Spare parts.
(14) Income and Expenses incurred during the month; and
(15) Number of people motivated about the use of TW water and sanitary latrine in reporting period.

Key Performance Indicators (norms, ratios, averages) would need to be developed to guide interpretation of the data.

APPENDIX 20

9. PROPOSED SYSTEM OF INFORMATION FLOW

a) Before data processed in MIS Section, DPHE HQ

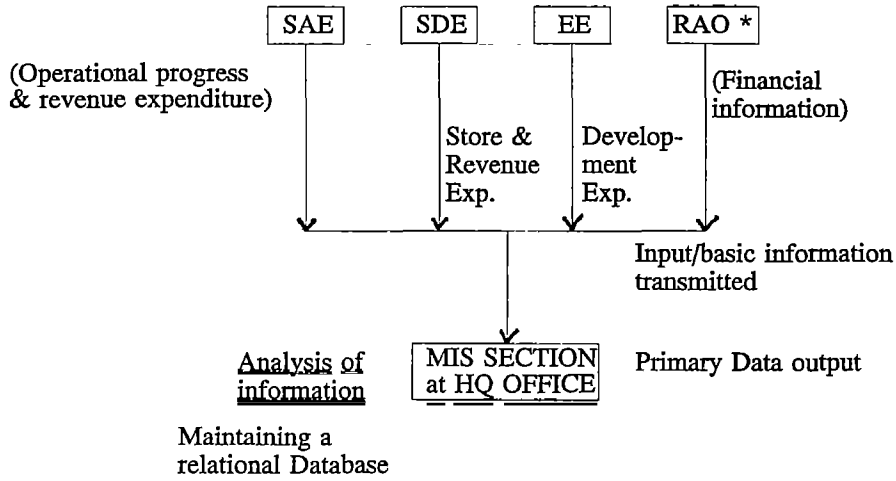


Fig.1 Diagram of MIS Data Inflows

b) After data processed in MIS Section at Head office

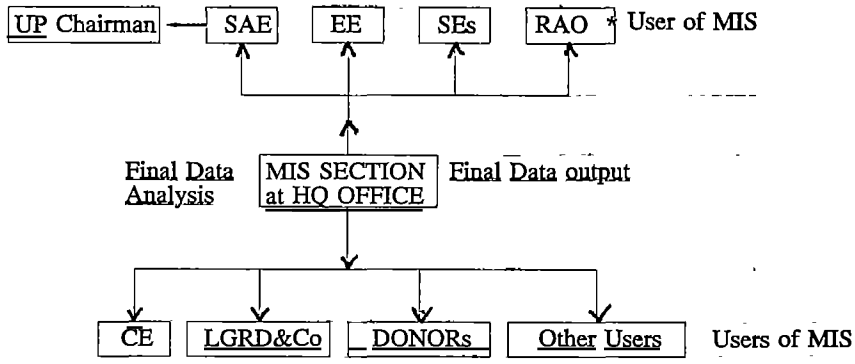


Fig.2 Diagram of MIS Data output & Distribution

* Proposed new post/function (see appendix 22).

APPENDIX 20

10. POTENTIAL BENEFITS FROM THE NEW SYSTEM

(a) The top management of DPHE will get benefit from a MIS report which contains actual operational achievements and Key Performance Indicators.

(b) It will provide information on the comparitive performance of SAEs, SDEs and EEs that will encourage them and their staff for better performance and motivation.

(c) It will provide a comprehensive operational picture of DPHE, Monthly and for the year to date.

(d) It is easily understandable; regional comparisons would be easy.

(f) It will help operational managers in planning, monitoring, supervising, and controlling and it will also help in decision making and corrective action planning, by providing relevant and realistic information.

(g) Brief regular reports could be produced for UP Chairman to enable them to see how their Union/Thana compares to others, in terms of Key Performance Indicators.

(h) It would remove the current duplication of effort at District/Zone levels.

APPENDIX 21

THE EXISTING BUDGET, FINANCE, ACCOUNTS, AUDIT AND STORE SYSTEMS OF DPHE

Description, commentary, and some recommendations

1. INTRODUCTION

The Department of Public Health and Engineering (DPHE) is a policy executing agency of the Peoples Republic of Bangladesh for the Drinking Water Supply and Sanitation. In implementing of GOB policy in this sector, DPHE spends more than two hundred crores Taka through its revenue and Development Budget each year. In 1993-94, the DPHE Revenue Budget is Tk. 27.2046 crores and Tk. 189.21 crores for implementation of Development programme.

As per the rules and regulations of the Government, the money should be spent carefully and cost effectively for the implementation of the Annual Development Programme (ADP) and in making routine expenditure. Revenue and Development Budgets should be prepared on the basis of established criteria. Proper accounting systems or methods are to be followed to record the transactions taking place day by day in permanent books of accounts and registers. Operational performance is to be compared with targets agreed. Keeping the above principles in mind, the application of the Budgeting System, Fund Control and Placement procedures, the Financial Accounting System and recording procedures, and the status of internal auditing and store administration are described in the following sections.

2. BUDGET

A Budget is a financial expression of a plan of future action. An annual Budget for a GOB Department such as DPHE is classified into Revenue and Development Budgets. The former covers expenditure on established staff, and operating expenditure. The latter covers expenditure related to development projects, including staff recruited specifically for this purpose

2.1 PREPARATION PROCEDURE OF REVENUE BUDGET

DPHE prepares its Annual Revenue Budget (ARB) and Development Budget (DB) each year. The Revenue Budget Contains all routine expenditure, such as salary and allowances of officers and staff, office rent, telephone, fax and utility expenses, post and telegram, repair and maintenance of the office vehicles and buildings. The Development Budget covers programme-wise development expenditure. The mode of finance is also shown, bifurcating the GOB and Donors' contribution.

The preparation procedure of the Annual Revenue Budget starts at field level. Revenue Budget estimates are forwarded upwards to Head Office through the management chain. The SAE (Bottom Level of Management) at Thana level submits an Annual Revenue Budget to the EE which contains revenue expenses

to be incurred during the forthcoming year in his/her office. In the EE's office, a Divisional Revenue Budget is compiled from the SAEs' budgets and the EE's own office budget. After compilation of the Revenue Budget in the EE's office, then that budget is forwarded to the SE's office where again some compilation is made to prepare a Circle Annual Revenue Budget. This is then forwarded to Headquarters for the preparation of DPHE's Annual Revenue Budget as a whole. It may be mentioned here that HQ of DPHE receives an Annual Revenue Budget, which may later be subject to revision during the current year.

2.2 OBSERVATIONS

No discussion of Revenue Budgets at Thana or Divisional level is made at the time of final compilation of the Circle Revenue budget in the Superintending Engineer's (SE) office. The entire DPHE Revenue Budget is discussed in the office of the Chief Engineer (CE) before submission of the Revenue Budget to the Ministry of Local Government Rural Development and Cooperatives (LGRD&C). The Ministry does not usually discuss the Revenue Budget with DPHE. It is forwarded to the Ministry of Finance, where it is discussed in the Budget Discussion Committee (BDC) of the Ministry of Finance (MF). This Committee goes through the details of the budget. Only the key points of the budget are discussed before final allocations are decided. Some Senior Officials of the DPHE go to the Ministry of Finance to explain and interpret the key points raised by the Committee.

Disaggregations of approved DPHE Revenue budgets for Circle, Divisional and Thana level offices are not made. The approved Revenue Budget of the DPHE as a whole is not circulated outside HQ. Therefore SEs, EEs and SAEs are not able to compare the revenue budget they forwarded, with approved levels of revenue budget available for their use. Indeed, they do not know their approved revenue budget for the year.

2.3 DEVELOPMENT BUDGET

The Development Budget (DB) is prepared by the office of the Planning Circle at Head Office. The SE, EE and SAE Office or Circle, Division and Thana level office receive the Development Budget from Head Office along with the ADP allotment for water supply and sanitation, and for related programmes (e.g. the Social Mobilization Programme).

2.4 PAYMENT

The District (EE) office is treated as a paying and operational office on the basis of the Central Public Works Code. The control of the payments of bills and claims is tight. All payments are made subject to the budget provision of expenses. In certain cases, payments in excess of budget might be made, but only those included in a Revised Revenue Budget.

3. FINANCE

3.1 FUNDS FOR MEETING EXPENDITURE

The GOB provides budget funds for meeting the revenue expenses through the Govt. Treasury.
The GOB provides budgeted funds to the DPHE for meeting development expenses in four equal installments. The fund are distributed amongst district offices for implementation and execution of the ADP. The Donors provide agreed funds to the DPHE on Reimbursable Project Advance (RPA) basis. This means that the funds are disbursed on the basis of actual expenditure incurred and submission of documentation.

3.2 OBSERVATION - CASHFLOW CONTROL

Government-approved Cash Flow Management procedures for control of cash balances are not followed. All cash received from the GOB is distributed amongst District offices on the basis of ADP schedules, rather than on the basis of cash fund requirements for actual work performed. As a result, idle cash remains in bank accounts at District level which therefore does not earn interest for the GOB.

The major cash demand for ADP expenditure is during at the 3rd and 4th quarter of the financial year. The cash fund should be distributed at that time, or at least more closely in accordance with cash requirements.

4. ACCOUNTING SYSTEM

4.1 METHOD OF ACCOUNTING

There are two methods of accounting for recording transactions taking place in books of accounts. One method is "The Double Entry Accounting System" which is generally accepted throughout the world. The accounts are kept and maintained on a Mercantile basis (under historical cost concept). Each transaction is recorded twice in the books of accounts.

Another system is "The Single Entry Accounting System". This is an outdated system, and can only be maintained on a cash basis. This accounting system does not give a complete operational picture of all transactions. DPHE follows

the Single Entry Accounting System to record financial transactions in the books of accounts and registers.

4.2 DOCUMENTATION PROCEDURE

The documentation against cash transaction is made properly as per the financial rules of the DPHE.

4.3 MONITORING OF MONTHLY EXPENDITURE

A Monthly Progress Report (MPR) is prepared and forwarded by the SAE to the SDE (where applicable) and then from the SDE to the EE, who makes some calculations and computations and then sends details on to the SE. He in turn makes some calculations and computations and sends accounts to HQ. Generally the information contained in the Monthly Progress Report is confirmed by the EE of the Division.

4.4 RECORDING OF TRANSACTIONS

Cash transactions taking place day by day are supported by documentation and approved by the EE or SE, and are recorded in the Cash Book. A Cash Analysis Statement is prepared to summarize expenses incurred during the month, to prepare a Monthly Progress Report. A General Ledger for the permanent recording of transactions taking place day by day, is not maintained in the EE office, nor in Head Office.

4.5 RECOGNITION OF ACCRUED EXPENSES

DPHE follows the Single Entry Accounting System to record its daily transactions. Expenses paid in cash are recorded in the Cash Book daily. However, expenses already accrued are not taken into account in preparing the Monthly Progress Report (MPR). As a result, the MPR does not represent a full picture of actual expenses incurred by the unit up to and including the reporting month.

4.6 RECORDING OF FIXED ASSETS

The Fixed Assets Register for recording of particulars of Fixed Assets is not maintained and kept in the Head Office, Circle, District, or SAE Offices. Thus DPHE procures various fixed assets for its own use each year, but no Fixed Assets Register is maintained and kept, in accordance with GOB regulations. As a result, DPHE is unable to produce necessary information regarding its fixed assets, and also unable to calculate the depreciation of the fixed assets to draw up a Financial Statement at the end of the financial year.

4.7 PHYSICAL INVENTORY OF THE PROPERTY

DPHE purchases a large volume of items which are classifiable as Fixed Assets each year. DPHE owns huge volumes of moveable and immoveable assets in Bangladesh. No Physical Inventory of the fixed assets has yet taken place in DPHE, to check the physical existence of the assets.

4.8 FINANCIAL STATEMENT

A Financial Statement gives a statement of assets and liabilities of an entity at a specific date. DPHE does not prepare Financial Statements at the year-end. A Financial Statement generally contains the Balance Sheet, Income and Expenditure Account, Cash Flow Statement, Fund Flow Statement and necessary notes and schedules. The preparation of Financial Statement is obligatory under current GOB regulations.

It is suggested that DPHE prepares quarterly and yearly Financial Statements, to show the actual financial picture of DPHE at the financial year end.

4.9 FINANCIAL ANALYSIS AND COMPARISON

No comparison between Budgeted (cost) Performance and actual cost performance is made. Nor does DPHE calculate total costs per TW or for any other unit of output.

It is suggested that DPHE calculates the total costs incurred for each category of infrastructural development to help minimize costs, and provide a basis for giving more service for a given volume of expenditure.

An illustration of computations of total costs made during the study for the year 1992/93, for main categories of DPHE output, is at Appendix 11.

5. AUDIT

5.1 AGB AUDIT

Audit of the books of accounts of DPHE is conducted from the Department of Audit of Works, of Auditor General Bangladesh (AGB) periodically. Queries made by them are settled by mutual discussion and presentation of papers and documentation.

5.2 INTERNAL AUDIT

DPHE has no internal audit department or section to examine and test documentation against daily financial transactions, budgetary control, cash

utilization, errors of omission and commission, recording procedure, and to check incidences of misreporting.

DPHE should have an internal audit section to conduct routine checking and testing of day-to-day documentation, recording and reporting practices, under a Director, Finance, Accounts and Budget. This department should conduct continuous audit and should report to the Engineer of DPHE.

The OS Team observes that no external audit has ever been conducted to examine and test the propriety of transactions, permanent recording procedures, and presentation of financial statements or any other statement.

6. STORES

6.1 STORE PROCUREMENT PROCEDURES

A Monthly Progress Report (MPR) for receiving and issuing of materials is prepared by the Sub-Assistant Engineer and then it is handed over to the SDE, and on to the EE for taking action to purchase materials.

Estimates of the costs involved in procurement of stores are made by the Estimator, and papers and documents forwarded to higher authority for approval.

A Tender Schedule (TS) for material procurement is prepared and sold to enlisted contractors within the specified date, after advertisements posted in the press.

A Comparative Statement (CS) is prepared and presented before the Purchase Committee for approval and a minute regarding this matter is drawn up and signed by the Chairman of the Purchase Committee.

A Property Work Order (PWO) is issued to the contractors to supply the materials within the specified date and time.

On the specified day of delivery of goods or materials by the contractors the material is received. The SDE signs on the duplicate challan issued by the contractor, for inspection and testing where necessary. After inspection made by the Purchase Committee, completion of testing, and after getting the approval of Purchase Committee, all material is officially received. This involves 100% counting. Thereafter a Hand Material slip is issued and a Purchase Account is prepared.

6.2 ISSUING PROCEDURE

The Indent comes from EE and SDE office on the basis of ADP allotment.

This indent is approved by the SDE (Store) and EE (Store) and then a Issue Slip is prepared and approved by SDE.

After despatch/delivery the materials mentioned in the issue slip, this issued materials is recorded at first in Daily Token Register (DTR) and it is transmitted to respective Stores Ledgers.

In case of issuing of the materials, a challan in triplicate is prepared, challan copy No-1 is retained and filed; challan copies No- 2 & 3 are handed over to the Driver. Copy No-3 is retained by the receiver of materials. The receiver acknowledges the materials by signing on challan copy No-2. Which is returned to the store keeper.

A Gate pass in quadruplicate is prepared.

6.3 RECEIVING PROCEDURE

The material is generally received by SAE Stores, temporarily signing on the challan of the party for inspection, and testing where necessary.

Information regarding the receipt of materials on a temporary basis, is sent to SE(Store). He takes necessary action regarding the inspection and testing of the materials.

After completion of the inspection and testing and if satisfactory, the Purchase Committee gives an official order to receive the materials and then the materials are received officially after 100% counting and testing.

After receiving the materials, these are recorded at first in Daily Token Register and then transmitted to the respective ledger.

6.4 STORE PRESERVATION

Stores appear to have not been preserved systematically, by attaching Bincards with body of the item or rack.

Most Stores are kept in godowns.

6.5 PHYSICAL INVENTORY TAKING

There is a general rule that the inventory should be checked physically at least once a year. However, the complete DPHE stores inventory has not been counted physically since 1985. No official order for physical counting of inventory has been issued since then.

However, from time to time, some item is checked to count the physical stock, and compared with the balance of the store ledger.

6.6 VALUATION

DPHE does not prepare Annual Financial Statements at financial year-end to show its financial position. Inventory is a component of the Annual Financial Statement.

The inventory is not valued at the year ending date by applying any method of valuation (for example LIFO, FIFO & Weighted Average Method).

7. OS TEAM PROPOSAL

The OS Team provides in the following paragraphs an outline of an improved financial budgeting, stores and internal audit structure. It is suggested that DPHE considers this, and takes this up with AGB.

7.1 REGIONAL ACCOUNTING OFFICE

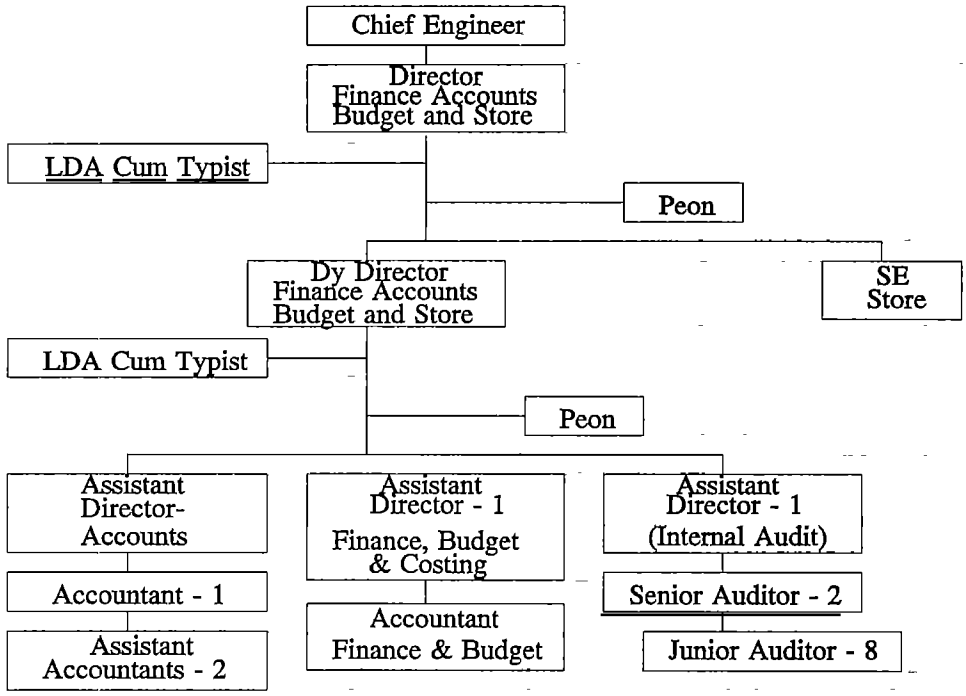
The OS Team has reviewed all aspects of existing budgeting practices, financial management techniques and methods, the financial accounting system, its effectiveness in control and monitoring, and probability of mis-use and mis-management of funds. DPHE should in future consider establishing a Regional Accounting Office (RAO) in each circle or Region to perform all activities relating to budgeting, fund management and control, payment and disbursement of all type of expenses, recording of the financial transactions incurred day by day, and financial reporting. The Head of RAO should be responsible to the Superintending Engineer and also to the Director of the proposed Finance, Accounting Budgeting Unit of DPHE.

If this change were to be made at field level, and the responsibility for financial accounting, budgeting and financial reporting rested with the Head of RAO, then the existing EE at Division level (currently overloaded by financial and operational technical activities) would have more time for operational and technical matters and for physical inspection to see real progress in the field.

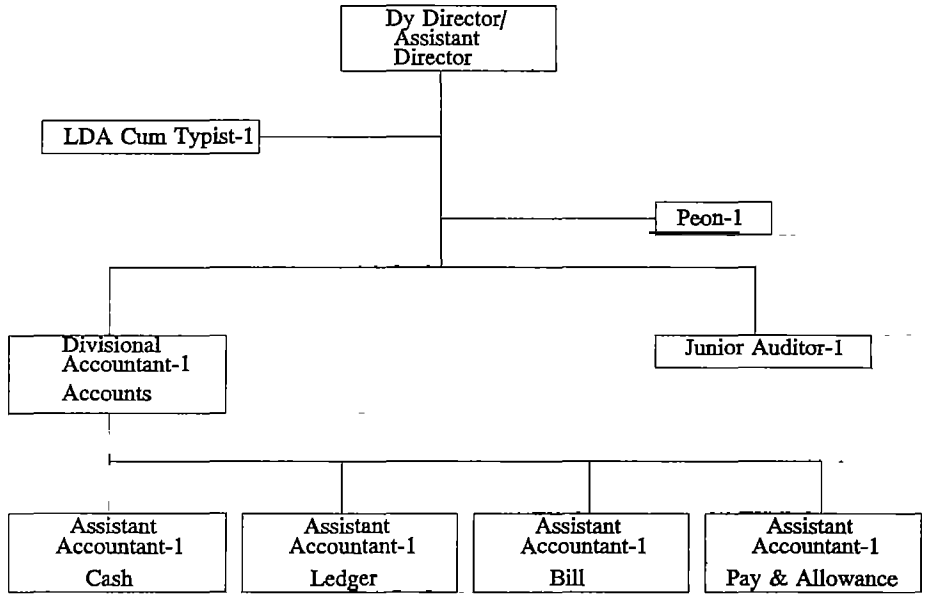
APPENDIX 21

7.2 POSSIBLE SET UP OF ACCOUNTING OFFICE AT HEAD OFFICE AND RAO

(a) **Set up of Accounting Unit at Head Office**



(b) **Set up of Regional Accounting Office**



7.3 IMPROVED FINANCIAL ACCOUNTING SYSTEM

DPHE now follows the Single Entry Accounting System for the recording of its financial transactions in books and registers. This system does not give actual operational financial performance in a month or year because it does not recognize accrued expenses MADE in the reporting month. As a result mis-reporting of expenses is made in MPR. To overcome this situation the team feels that an Improved Financial Accounting System should be introduced for the purpose of fund control, budgeting, financial recording and reporting, by the DPHE's staff or by external consultants.

7.4 BENEFITS OF THE APPLICATION OF DOUBLE ENTRY ACCOUNTING SYSTEM

The benefits of the introduction of such a system are listed below:

(a) Each transaction has two aspects; one is debit and another is credit. As a result, these two aspects are recorded in the Daily Cash Book in a systematic fashion, on an historical cost basis.

(b) Identification and documentation in support of each transaction is clearer under this system. Each transaction is documented by appropriate and sufficient documents. As a result, the incidence of audit queries could be reduced. In the case of a query, the accountant would be able to explain and interpret in detail any query raised by the internal or external auditor.

(c) This system facilitates transmission of information from cash book to the ledger where the classification of transactions can be made to produce a summary of the income and expenses of a month or a year.

(d) This system reflects accrued expenses incurred in performing planned activities. As a result, the total actual income and expenditure can be shown in the Monthly Progress Report and MIS Report.

(e) Annual and Monthly Financial Statements can be prepared or drawn up easily, showing current assets, cash in hand and at bank, investment, stock and stores, accounts receivable, prepayments and advances etc. Details of Fixed Assets of all types, and current liabilities, Accounts Payable, accrued expenses and GOB's equity or fund invested in WSS sector, would also be produced.

(g) Analysis and interpretation of financial statements could be made easily, so that any non-financial managers or other employees will be able to understand the meaning in financial terms of what has been achieved in a certain period.

APPENDIX 22

ORGANIZATIONAL STRUCTURE AND STAFFING

Background

In framing its views in this area, the Team is conscious that to DPHE, this is the most crucial subject of the whole Study. Discussions have been held on several occasions between the team and DPHE staff on the subject, and strong representations have been made by them, both in Workshop discussions and during assessment of the First Draft of this Report.

It appears that discussion will need to be taken forward over a considerable period of time after the Study is completed during Phase 2 of the Transition Strategy to produce a consensus within DPHE, and between DPHE and the resourcing Ministries (Establishments and Finance particularly).

Some points should be clarified:

1. *It is not appropriate or feasible for a definitive comprehensive Revised Organization and Staffing Structure for DPHE to be drawn up during the Study itself.*
   There are several reasons for this.
   (i) Section 6 describes a Transition Strategy for DPHE. This involves the production of a Transformation Plan for DPHE, based on reflection and experiment with the development of strategic management capacities, operational management abilities, new roles, orientations and services, It is essential that a process such as this is pursued before decisions are made on the organizational structure and staffing pattern which best fits DPHE's revised role. The Scenario for change developed during this Study will be the basis for this new role.

   (ii) The Study focussed on the RWSS sector and DPHE's role in it. But the biggest organizational, structural and managerial implications for DPHE could well come from the changes and development of its role in relation to Pourashavas in the future. The Team has acknowledged earlier that it is not in a position to prescribe structures on the basis of the limited research and discussion which it could perform with urban-related agencies and DPHE staff during this Study.

2. *Some functions are chronically short of qualified staff, yet are indicated as strategic functions in the Scenario selected for future DPHE development.* The OS Study Team has identified these below.

3. *Some functions are inappropriate to be carried on by DPHE in the Scenario developed during this Study.* In these cases, it would appear to be possible to make economies in staff. The savings from such reductions could be considered as offsetting the increases in cost arising from additional staffing in areas where more resources are clearly needed. The village Sanitation Centres are a case in point.

4. *Some proposed changes are major, complex, time-consuming and would have to be carefully planned.* They would also involve discussions with aid donors. For example, changes in project management arrangements could take several years to achieve. It is suggested that Additional Chief Engineers would be in an overall Project Direction position, with zonal SEs in charge of day-to-day project management. Current urban projects have Dhaka-based urban Project Directors; zonal SEs play almost no role in these projects. Because these arrangements have been agreed with donors, it may well be the case that changes must await the end of existing agreements in 1995.

5. On the other hand *some revisions in staff allocation can be made immediately*. From a variety of sources, and from the Team's own observations, there appears to be a strong case for reallocating TWMs to Thanas on the basis of a formula of one TWM for approximately 2.5 Unions. Precise allocation should reflect geographical conditions and travel logistics.

Main Characteristics of an interim Staffing Set-Up for DPHE which would permit the transition process to be effected.

The Team suggests the following as being the minimum changes in staffing which would permit the Transition strategy outlined in Section 6 to be effected:

- *Two new Additional Chief Engineer posts*, one to cover Urban, and one Rural strategy formulation, overall project direction and related administrative functions. These new Additional Chief Engineer functions would ultimately encompass the donor- and GoB-liaison functions performed by the PDs now, as well as having the broader responsibilities outlined above. The existence of these Additional Chief Engineers would permit the day-to-day project management role to be played ultimately by zonal SEs for <u>all</u> projects in their area of jurisdiction.

- *The existing AddCE post would be redefined as AddCE Planning and Organization Development*, and handle Planning, Training, Research and Development (ex Groundwater) Circles, as well as taking charge of all issues connected with the future development of DPHE as an organization. That of course would include the management of the Transition Strategy proposed in Section 6 of this report.

- *One new post of Finance and Budget Director*, to lead a new unit reporting directly to the Chief Engineer; a qualified public accountant should fill this post; his staff levels would have to be determined; the SE Stores would report to him. This proposal is seen as vital to raise the profile of the finance/budget and audit function in DPHE. Further details of more comprehensive organizational changes in the finance and accounting functions are provided in Appendix 21.

- *New SE post for Training and Staff Development*, with corresponding posts for Training Officers, to be finally determined during a separate Project formulation exercise as part of Phase 2 of the transition strategy. A Public Relations and Communication function would logically reside here, with staffing to be determined after further discussion in DPHE, and on the basis of the future of HRD and accountability as suggested in this Study.

- *Extra posts in Planning Circle*, (please refer to Appendix 13).

- *Renamed SE post (from Groundwater to R+D)*, and corresponding rationalization of the Groundwater Circle (please refer to Appendix 14).

Cost Implications of the Organizational changes suggested to permit realization of the Transition Strategy

Using the "Ready Reckoner" at Appendix 12 as a guide, the cost implications of the changes proposed above would be in the region of Tk. 1.5 million annually, calculated as in the following tabulation:

APPENDIX 22

Budget Item (annual)	Additional Cost
1. Two Additional Chief Engineers: Annual Salary cost Tk 157,400 x 2	Tk. 314,800
2. One Finance Director (Level Add. Chief Eng.)	Tk. 157,400
Two additional control/auditstaff at the level of E.E. 2 x Tk 100,680	Tk. 201,360
3. One Superintending Engineer Training and Staff Development	Tk. 135,280
One staff for Training Cell, level Executive Engineer	Tk. 100,680
One assistant Staff for training, level SDE/AE	Tk. 60,520
4. Estimated 3 new posts in the Planning Circle and/or Central Calculation Unit - one Executive Engineer (or Statistician to be on the same level)	Tk. 100,680
- two persons at the level of Assistant Engineers 2 x 60,520	Tk. 121,040
One extra Researcher for the Research and Development Circle (former Groundwater Circle) level Executive Engineer	Tk. 100,680
Total	Tk.1,292,440
overhead estimated at 20% (covering transport etc.)	Tk. 258,488
Grand total	**Tk.1,550,928**