

The Coastal Belt Project's objectives:

1. Increase coverage of safe water supply services for the poor
2. Promote community-led total sanitation in the project area
3. Improve hygiene behavior and practices



Learning from Experience

Lessons from Implementing Water Supply, Sanitation and Hygiene Promotion Activities in the Coastal Belt of Bangladesh

**Government of Bangladesh–Department of Public Health Engineering (DPHE)
Danish International Development Assistance (DANIDA)**

Summary

The Government of Denmark, through the Danish International Development Assistance (Danida), has supported work in water supply, sanitation and hygiene promotion in Bangladesh since 1971 and directly in the coastal belt of Bangladesh since 1987. This long relationship has yielded many important lessons in planning and implementing future water, sanitation and hygiene interventions in Bangladesh and elsewhere.

As the Coastal Belt WSS Project comes to an end, it is time to share its lessons with a wider audience in Bangladesh and elsewhere. Views and experiences of project sponsors and staff, sector professionals, central and local government officials, partner NGOs and users themselves, as well as a review of the many project documents and personal observations in the project area have been used to produce this publication.

This effort yielded many important lessons for project planning and management, design, roles of key stakeholders, efficiency and sustainability of the project's achievements, efforts to align with government systems and procedures, cross-cutting issues of

gender, environment, good governance, among others.

The Project was largely successful in achieving its physical targets of more than 30,000 arsenic-free deep hand tube wells (DHTWs) and promoting construction of over 300,000 household latrines, construction of piped water supply in core areas of nine pourashavas, albeit with delays and additional costs.

The Project was implemented as a *bilaterally-executed* project. This gives rise to inherent differences resulting from parallel management structures, multiple sets of roles and rules and differing personal and institutional loyalties.

Following the devastating cyclone Sidr ("The Eye") in November 2007, the Project responded to a request from the Government of Bangladesh (GOB) and the Embassy of Denmark. The Project mobilized its staff and sited and constructed 1,050 additional tube wells, 1,000 household latrines and other infrastructure in storm-ravaged areas of the Barguna, Pirojpur and Jhalakati districts.

The sustainability of DHTWs and household latrines in rural areas is seen as high. Additional management and technical support is required to ensure

the long-term sustainability of piped water supplies in pourashavas and mini-piped systems in rural areas, as well as public toilets and school latrines.

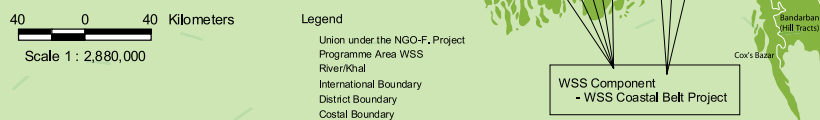
The Project's efforts to assist pourashavas to improve solid waste management and drainage was less than successful. The situation in pourashavas in these areas remains unsatisfactory. There are serious difficulties locating sanitary dumping sites, which pose a potentially serious environmental hazard.

Following the Paris Declaration on Aid Effectiveness in 2005, the Project's planning process and management has been more closely aligned with GOB and DPHE's systems and procedures.

During its long life, the Project produced a wealth of documentation; manuals, guidelines, training and IEC/BCC materials. This material constitutes an important part of the Project's contribution to the sector. Some of the most important and useful of these materials are listed at the end of this publication.

In spite of its long life, the Project leaves behind unmet demand and a number of unresolved issues which will to a large extent determine the long-term impact of the Project's many achievements.

Figure 1: The Coastal Belt, showing Noakhali on the right and Barisal-Patuakhali to the left



Introduction

From 1991 to 2009, the governments of Denmark, represented by Danida, and Bangladesh, through the Local Government Division (LGD) of the Ministry of Local Government, Rural Development and Cooperatives (MLGRD&C) and DPHE, have implemented water supply and sanitation activities in the Barisal and Comilla regions in the coastal belt of Bangladesh. (See map above.) The Project was implemented in three Phases; a Pilot Phase in Choumouhani and Laxmipur pourshavas from 1991-1997, a Phase I: 1999 to 2005, and Phase II: 2006 to June 2009 in nine pourashavas and growth centers and 303 unions in eight coastal districts. Collectively, these activities are known as the Coastal Belt Water Supply and Sanitation Project (CBWSSP).

CBWSSP is one of the largest and longest continuous bilaterally-executed water supply and sanitation projects in Bangladesh. The Project has directly supported construction of more than 30,000 DHTWs and promoted construction of over 300,000 household latrines, including 1,050 tube wells in the Barisal Division in response to cyclone Sidr which devastated large parts of the coastal belt in November 2007.

Response to the Sidr Disaster

During the night of 15 November 2007 the powerful cyclone Sidr struck Bangladesh, causing extensive damage to coastal areas. In the Barisal region Barguna, Patuakhali, Jalahati and Pirojpur districts were declared disaster areas. The Project responded to requests from GOB and the Danish Embassy by siting new and repairing existing rural and urban water supply facilities, including installation of 1,050 DHTWs, repair to piped water supplies in pourashavas and reconstruction of 1,000 household latrines and other facilities with the assistance of project staff, advisers and additionally-employed field staff, many of whom had worked as the Project's field staff during Phase I. These activities were completed by the Regional Support Organization (RSO) deployed in February 2008.

The Project's quick, effective and large-scale response to the Sidr disaster is an example of the large scale effort a large, centrally-managed project backed by a national organization and the central government with adequate financial and human resources can mobilize within a short time.

Guiding Questions

This publication will attempt to address the following questions:

- 1 What were the roles and functions of central and local government institutions during the Project's lifetime? How were these institutions involved in planning, implementation, management and monitoring? Were these roles and functions optimal, or could they have been different?
- 2 How did management arrangements between DPHE, Danida and other partners work?
- 3 What were the focus, priorities and capabilities of central and local government institutions and other partners to ensure poverty focus, involve communities in decision-making, promote cross-cutting issues, etc.
- 4 What were the strategies for improving long-term sustainability of Danish assistance and project interventions?

Danish Support to the Water Supply and Sanitation Sector in Bangladesh

The present Danida-assisted Water Supply and Sanitation (WSS) Programme is called the Water Supply and Sanitation Programme Support-Phase II (WSSPS-II), 2006-2010. WSSPS-II follows up on the first water sector program (1999-2005) with a stronger emphasis on local ownership and partnership in programme implementation, and decentralization to the lowest tier in the GOB structure, the union parishad, and mainstreaming cross-cutting issues.

THE WSSPS II CONSISTS OF 8 COMPONENTS/PROJECTS:

1. **Support to the National Programme Director's Office (NPDO), for overall programme management and coordination**
2. **Three projects delivering WSS services:**
 - a. The Coastal Belt WSS Project
 - b. Hygiene, Sanitation and Water (HYSAWA) Project
 - c. Chittagong Hygiene, Sanitation and Water (HYSAWA) Project
3. **Three projects supporting capacity building:**
 - a. NGO Forum
 - b. International Training Network - ITN BUET
 - c. National Institute for Local Government (NILG)
4. **Policy Support Unit (PSU) to assist GOB/LGD in further sector policy development and sector-wise indicators and monitoring systems.**



Extensive damage caused by Sidr in November 2007

The Project's design included extensive communication, social mobilization, hygiene promotion, training and institutional and technical support to DPHE, pourashavas and groups of rural and urban beneficiaries to improve the ownership, sustainability and impact of improved water supply and sanitation facilities.

Purpose

The purpose of this publication is to share important lessons from the experience of implementing water supply, sanitation and hygiene promotion activities in the coastal belt of Bangladesh to better inform the planning, design and implementation of future water supply and sanitation programmes and projects in Bangladesh and elsewhere.

Methodology

A variety of methods were used in preparing this publication, including review of documents, interviews with key stakeholders (project management and staff, local government representatives, user groups, school management committees, key development partners and others) as well as direct observations in the field.

Guiding Questions

- 5 What impacts have there been on institutional development and change within the implementing agency, DPHE, after many years of cooperation?
- 6 Has DPHE as the central public agency for rural water supply and sanitation in the country changed from being an implementing, to a facilitating and monitoring institution?
- 7 Has central government delegated authority to pourashavas for staffing, retaining income from sale of water, setting water tariffs, etc. necessary for managing and maintaining their water supply schemes effectively?
- 8 Was the Project implemented in an efficient and effective manner, in terms of staffing (DPHE, Regional Support Organizations (RSOs), partner NGOs, expatriate and national staff, and other partners) and implementation and funding arrangements and modalities?

Danida in the Coastal Belt

- 1986 -** Request from GOB for Danish assistance for water supply and sanitation in thana centers
- 1989 -** Project Proforma (PP) approved by GOB for Chaumohani and Laxmipur pourashavas
- 1994 -** Final Plan of Operations approved by GOB
- 1995 -** Plan of Action approved by Danish and Bangladesh governments
- 1995-97 -** Pilot Phase - Piped system for core area - some 2,600 connections, 1,300 HTWs in fringe areas, 6,000 household latrines, 6 community latrines and 11 public toilets, drains and support to solid waste management. Socio-economic activities undertaken by a Communication and Action Research Unit.
- 1997 -** Impact Study of Pilot Project concluded that piped water supply systems and DHTWs were feasible options and could be sustainable. Solid Waste Management (SWM) and drainage activities were not successful and a new approach was needed, largest threat to sustainability is weak management by pourashavas. Community ownership of tube wells and leasing of public toilets and taps recommended and a strategy for targeting women and the poor, iron removal unit for HTWs developed and piloted. Recommended that next phase involve NGOs, School Management Committees (SMCs), and ward committees.

1999-2005 – Phase I

- ▶ 22,000 DHTWs in 303 unions in eight coastal districts of Noakhali, Feni, Laxmipur, Barisal, Patuakhali, Barguna, Pirojpur and Jhalokati, alternative technologies piloted and scaled up, assistance to zonal laboratory in Noakhali and DPHE R&D Division
- ▶ Piped water supply, sanitation, SWM in nine pourashavas: Noakhali, Raipur, Ramganj, Feni, Patuakhali, Patharghata, Amtali, Kalapara and Galachipa

January 2006-June 2009 - Phase II

- ▶ Up to 8,700 DHTWs wells in same 303 unions, completion of civil works and social mobilization in four pourashavas, four Mini Piped Water Supply Systems (MPWSSs), latrines in 94 schools, 19 Pond Sand Filters (PSFs) and 18 Rain Water Harvesting Units (RWHUs)
- ▶ Sidr relief work (1,050 DHTWs, repairs to pipe systems, construction of 1,000 household latrines)
- ▶ Software interventions, technical supervision and monitoring through two Regional Support Organizations (RSOs)
- ▶ Increased alignment with GOB-DPHE project preparation, procurement and management procedures

Guiding Questions

9 What were implications of greater alignment with GOB/DPHE systems and procedures?

10 What was the role of technical assistance with international and national advisers engaged by Danida? How did it work, and what are the lessons?

11 Did approaches for operation and maintenance of pourashava water supply schemes and rural water supply and sanitation work? What were the key lessons?

12 Were appropriate user contribution policies and cost recovery mechanisms applied by the Project and its partners?

13 What are the key lessons from the long-term involvement in a significant water supply and sanitation project of relevance and importance to the water supply and sanitation sector in general?

Sector Policies and Strategies

The Project was implemented in accordance with the National Policy for Safe Water Supply and Sanitation 1998, National Policy for Arsenic Mitigation 2004, National Sanitation Strategy 2005, Pro-Poor Strategy for Water and Sanitation Sector 2005, among others.

The National Policy for Safe Water Supply and Sanitation emphasizes the role of local government bodies at upazila and union levels in planning, implementing and maintaining rural water supply activities and coordinating activities of public and private sector agencies.

The Project benefited from and supported GOB's commitment to achieve MDG targets for water supply and sanitation as well as the work of the Sanitation Task Force and National Sanitation Campaign. In the project area many union parishads (UP) have been motivated by the Government's promotion of achieving 100% sanitation coverage in their unions, and several UPs in the project area have received national recognition for their efforts in promoting 100% sanitation coverage.

The Project's Contribution

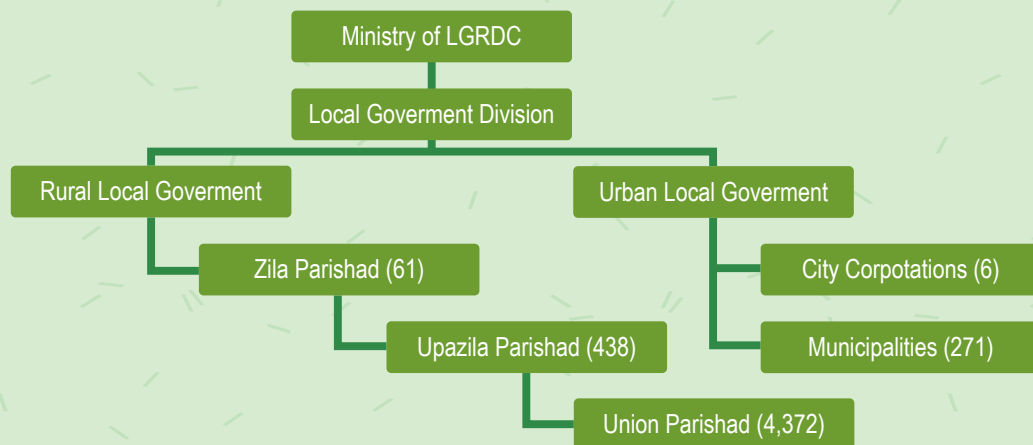
The Project involved user groups in rural and urban areas as focal points for its activities, and made use of national and local NGOs as providers of software support such as social



This household latrine has hygiene messages

mobilization, community awareness campaigns, training community groups, production of IEC/BCC materials and others. Today, partly as a result of opportunities provided by the Project, there are many NGOs at national and local levels making useful contributions to the water and sanitation sector.

Figure 2: Local Government Administrative Structure



Source: adapted from Ahmed (1999)



Drilling to depths of over 300 meters can be done using manual methods

The Project also provided opportunities for the private sector to participate as private latrine producers, consultants for studies, planning, design and construction supervision, contractors for construction of urban water supplies, supervising and drilling tube wells, and as suppliers of a wide variety of goods and services. The Project has contributed to the private sector's capacity to provide many high-quality products and services to the sector which was not possible only 10-15 years ago.

The Project has promoted development of appropriate water supply and sanitation approaches and technologies for specific hydrogeological conditions and social groups by supporting research and development activities in arsenic and iron removal, pond sand filters (PSF), rainwater harvesting units (RWHUs), mini-piped water supplies (MPWSS), among others.



Public toilets in urban areas



Mini-piped water supplies are in high demand, but require large subsidies and tend to benefit better-off areas

The Project has recognized and promoted the important role of women in the sector through their active role in planning and siting of water supply and sanitation facilities, as DHTW caretakers, as members of school management committees, as professional staff and field workers, and as users and beneficiaries of the water supply and sanitation facilities provided by the Project.

In rural areas, users are responsible for routine operation and maintenance of their water and sanitation facilities. In urban areas, the pourashava water supply and conservancy sections are responsible for the operation and maintenance of piped water supply systems, drainage and solid waste management.

Good Gender Practices

The Project has significant achievements in promoting gender balance by:

- ▶ Promotion of participation, equal access to resources and influence in planning, implementation and management.
- ▶ Women actively participated in site selection of water points, and the female head of household signed the HTW application form along with the male head of household.
- ▶ Equal participation of men and women was ensured in HTW caretaking training – both woman and man were trained in O&M of DHTWs
- ▶ Hygiene promotion sessions were conducted for women in nearby courtyards to facilitate participation, while hygiene promotion sessions for males were conducted at tea stalls.
- ▶ In schools in Barisal region, separate latrines were provided for boys and girls at opposite corners of the compound to encourage girls to use latrines. In the Comilla region, latrines with two units – one for girls and one for boys – were constructed in schools.
- ▶ In urban areas there are group taps and community latrines managed by women. Their performance in maintaining these facilities is very encouraging.
- ▶ Staffing of the Project (advisers and RSO field staff) showed gender balance.
- ▶ A gender guide has been produced and is used by RSO and NGO staff.



Strong female leaders and caretakers improve the sustainability of facilities



Group taps in can serve the poor in urban areas but are not promoted by pourashavas

Institutional Arrangements

The Project has been planned and implemented as a bilaterally-executed project. The Department of Public Health Engineering (DPHE) has been responsible for managing GOB's inputs to the Project during all phases, mainly in management, procurement and installation of water supply facilities. In the pilot phase and Phase I, there was a parallel management structure where Danida engaged expatriate and national management, engineering and socio-economic advisers to manage Danida's contribution and activities funded by Danida.

In Phase II, a Project Director (PD) from DPHE had increased authority for management of staff and activities funded by Danida, with advisers playing a supporting role, and an expatriate senior adviser having co-signatory rights for expenditure. This development was in line with Danida's new aid management guidelines and based on the Paris Declaration on Aid Effectiveness goals of alignment with country policies, systems and procedures.

Joint ventures/consortia of national NGOs and engineering firms, known as Regional Support Organizations (RSOs) with combined hardware and software expertise were contracted after prequalification and tendering. The two consortia selected as RSOs were Aqua Consultants and Dhaka Ahsania Mission in the Barisal region, and Dushtha Shasthya Kendra (DSK) and Bangladesh Consultants, Ltd. (BCL) in the Comilla region.

Institutional arrangements

Phase I

Bilaterally-implemented project with parallel management structure

- ▶ DPHE overall responsible for project preparation and planning, management of GOB funds and activities, tendering/supervising construction and reporting to GOB
- ▶ Danida engaged expatriate and national advisers and firms for supervision of drilling test and production wells, design and construction supervision of piped systems, advisers managed Danida-funded inputs and activities
- ▶ Pourashava responsible for construction of pipelines and house connections

Phase II

- ▶ Overall project management by a Project Director (PD), two Deputy Project Directors (DPDs), the Superintending Engineers (SEs) in Comilla and Barisal, with Danida advisers at central and regional levels
- ▶ Project implemented through DPHE structure at central, circle, district and upazilla levels with some involvement of UPs and SMCs
- ▶ RSOs engaged for technical supervision, software and monitoring activities located at DPHE circle, district and upazilla offices in Comilla and Barisal regions with union facilitators and 3-4 health promoters in each union who worked with UPs.



Training of male and female caretakers



Deep tube wells are used for many domestic purposes

DPHE Superintending Engineers in Comilla and Barisal served as Deputy Project Directors (DPD). The two RSOs were attached to DPHE's offices in Comilla and Barisal to support implementation in rural areas. RSO District Support Teams (DST) with technical, social and monitoring staff were attached to DPHE Executive Engineer's office in the eight project districts, and an RSO Upazila Support Team (UST) consisting of staff with technical and software expertise was attached to the DPHE Sub-assistant Engineer's (SAE) office.

RSOs engaged a Union Facilitator (UF) and 3-4 Health Promoters (HPs) in each union who supported UPs to mobilize communities, site tube wells, promote sanitation and hygiene, assist in training DHTW caretakers and school

management committees (SMCs) and other project activities in the union.

At community level two tube well caretakers, one male and one female, were selected by the user group and trained by the Project. At the end of their training, caretakers received a tool box and an illustrated repair manual in Bangla.

In urban areas, local partner NGOs were engaged, trained, supervised and managed by the Project for communication, social mobilization, hygiene promotion activities, including campaigns to connect to piped systems, billboards and monitoring use and condition of water supply and sanitation facilities, including DHTWs in urban areas.

Good Governance/Institutional Integrity

- ▶ Rural communities and urban neighborhoods, user groups in rural and urban areas, and especially the poor lacked organization and voice to demand accountability from service providers.
- ▶ Specific activities, outputs and indicators should be included in project design, including management performance, channels for expressing grievances, feedback mechanisms to promote accountability of public officials to local institutions and citizens.

At schools, School Management Committees (SMCs) were supported to mobilize contribution money and manage construction of school toilets by engaging local masons. RSO union-level staff also assisted teachers in conducting school hygiene sessions and distributing IEC/BCC materials in schools.

In the pilot phase, social mobilization and communication activities, including baseline and impact studies, were undertaken by a Communication and Action Research Unit (CARU) with staff employed directly by Danida, in Phase I by a consultant (DHV) and a national NGO (Dhaka Ahsania Mission) and its partner NGOs, and in Phase II by the staff of the two consortia described above. In the pilot and first phases, expatriate and national advisers engaged by Danida planned and supervised social mobilization and communication activities, whereas in Phase II, these tasks were carried out by national socio-economic advisers at central and regional levels.

In all phases of the Project, male and female field staff at district, upazila and union levels were responsible for social mobilization, awareness raising, and training community members in site selection and mobilizing user contributions, promoting sanitation and hygiene at union and ward levels. Field staff were typically young, well-educated men and women who lived in the areas where they worked. Many union-level field workers worked in both Phases I and II, which increased the effectiveness of mobilization and promotional work in Phase II.

Phase II of the Project intended to test decentralized implementation strategies by actively involving the UP in planning, supervising and monitoring project activities and in managing funds. Efforts to strengthen the capacity of Local Government Institutions (LGIs) - pourashavas and UPs, to plan and manage their water supply and sanitation facilities were emphasized.

Decentralization

Goals

- ▶ Local Government Institutions (pourashavas and union parishads) were to be involved in planning, siting HTWs, procurement and fund management and supervision/monitoring of activities.
- ▶ Linkages to be established with health and education authorities at various levels.
- ▶ MPWSS and school management committees established and PWSS staff and DHTW/PSF caretakers trained.

Lessons

- ▶ LGIs and user groups should be given specific roles and responsibilities for planning/siting, resource mobilization, fund management, supervision and monitoring.
- ▶ Continuous training, management support and monitoring of LGIs required over a longer period.
- ▶ Works best if a group of key donors decide to support a single GOB-led programme, e.g. GOB-5, Sector Development Framework (SDF), etc.

Roles and Functions of Central and Local Government

Central level

The Ministry of Local Government, Rural Development and Co-operatives, through the Local Government Division (LGD) is responsible for ensuring access to adequate water supply and sanitation services throughout the country. The LGD is also responsible for policy formulation, regulation, strategic planning and implementation of the Annual Development Plan (ADP). DPHE is responsible for planning and implementing water supply and sanitation in rural areas and growth centers.

DPHE Head Office

The main responsibilities of DPHE Head Office are to implement sectoral policies and plans, administration of staff, research and development, budgeting and management of GOB funds, procurement and tendering, project management and implementing GOB plans and projects through Superintending Engineers (SE) at circle level, Executive Engineers (XEN) at district level and Sub-assistant Engineers (SAE) at upazila level.

DPHE provided project managers/director and support staff, office space, and other facilities to the Project as well as requisitioning, channeling and accounting for GOB funds, and preparation of progress and financial reports to GOB and Danida.

DPHE Self-Perceptions

- ▶ DPHE as an organization was adept at accommodating donors' wishes without assimilating donor's recommendations. DPHE's staff tended to reject the notion that DPHE should play a facilitating and supportive role in the sector, but maintained that DPHE was best suited to play an implementing role.
- ▶ This view emphasized that DPHE is mandated to implement GOB and large-scale donor-assisted programmes and projects, has relevant experience, can respond on a large scale to national emergencies, and is the only government organization in the sector with a countrywide presence, being represented in all districts and upazilas in the country. In contrast, local government institutions were viewed as being highly fragmented and politicized, and lacking technical competence, experience and resources to implement large-scale programmes and projects.

DPHE at Circle/Regional Level

At regional level, DPHE has territorial/circle offices headed by a Superintending Engineer supported by technical and administrative staff. Implementation of project activities were managed from offices in Barisal and Comilla by DPHE Superintending Engineers who served as part-time Deputy Project Directors (DPDs). DPDs are supported by project engineering, socio-economic and institutional advisers responsible for independent monitoring and quality control of activities and outputs. Regional RSOs based at DPHE's offices in Comilla and Barisal supported implementation of hardware, software and capacity-building activities through District and Upazila Support Teams (DSTs and USTs) and facilitators and health promoters based at union level.

DPHE at District Level

A main task of DPHE's district offices are to compile demand for new water supply facilities from each upazila and forward this information to the DPHE Territorial/Circle Office for inclusion in the ADP; to requisition funds, float tenders, select and manage contractors, and supervise and approve contractor's work. XENs facilitated and supported installation and quality control of water supply facilities through USTs at upazila level; made payment of bills certified by UPs and USTs, and coordinated, supervised and monitored activities of USTs with RSO district level staff.

DPHE at Upazila Level

The main responsibilities of DPHE at upazila level are to compile union-wise demand for water supply facilities from UPs and forward it to DPHE district office; monitor and supervise activities of Union Facilitators (UFs); assist in training and support to union WATSAN Committees; plan and supervise activities at union level; verify and approve sites for DHTWs and school sanitation facilities; to coordinate,

supervise and monitor installation of water supply facilities and construction of school sanitation facilities; and to carry out water quality tests for DHTWs.

Role of Local Government Institutions

Provision of water supply and sanitation constitutes an important part of the functions of Local Government Institutions (LGIs)-pourashavas and UPs.

Figure 3: Size and Typical Population of Local Government Units in Bangladesh

Administrative level	Local government tier	Number	Average population	Average land area (sq km)
Division	---	6	20.5 million	24,595
District	Zila Parishad	64	1.9 million	2,250
Upazila (Thana)	Upazila Parishad	460	250,000	300
---	Union Parishad	4,500	27,000	30

Source : Adapted from several sources



Community meetings

Pourashavas

Pourashavas operate under the Pourashava Ordinance, 1977 and are responsible for provision, operation and maintenance of water supply and solid waste management and for maintaining a sanitary environment. Pourashavas are authorized to raise revenues from various sources, including charges for services such as water supply and garbage collection.

However, in practice, the autonomy of pourashavas is undermined by a high degree of administrative and budgetary control from the centre. Approval from the LGD at central level is required for many decisions and actions, such as staffing according to an approved

organogram, planning and undertaking development projects, tax rates, fees for services, etc.

Lack of autonomy is often due to restrictive regulations, but can also be due to lack of initiative on the part of pourashavas themselves. Lack of funds for development activities is frequently cited as the most important constraint for pourashavas and other LGIs to function effectively.

Union Parishad

The Union Parishad (UP) is the local government institution responsible for development in the union, and consists of an elected Chairman and 12 Ward Members. Of them, at least three members should be women. Being the lowest level of local government, the UP plays an important role in planning and implementing development activities and mobilizing local resources.

During Phase II it was envisaged that the UP would be the focal point for implementation of project activities at union level. The main responsibilities of the UP in the Project were to provide office space; mobilize local resources

(teachers, imams, youth, SMC members, staff of line ministries); and identify un-served and underserved areas for water supply facilities, collecting and depositing users' contributions and maintaining registers/inventories of water supply and sanitation facilities at union level, organizing and monitoring tube well caretaker training; conducting participatory monitoring and follow-up of use and maintenance of WSS facilities and hygiene practices.

Union Facilitators (UFs) and Health Promoters (HP) engaged by the RSOs visited households, organized information meetings and social mobilization activities; advised on collecting contribution money, visited schools, institutions/public places and held meetings/discussions at courtyard and tea stall sessions, at schools and madrasas; supported and monitored school hygiene promotion activities; assisted SMCs to select and supervise local masons and organized training in construction and facilitated construction/rehabilitation of sanitation facilities at schools and markets. Construction of school toilets was managed by SMCs.

Planned Project Outputs (Phase II)

1. 9,000 safe water supply facilities (DHTWs, PSFs, RWHUs, MPWSSs, etc.) installed in unserved and underserved areas.
2. All households use and maintain sanitary latrines.
3. Community sanitation facilities established, used and maintained.
4. Water supply facilities are maintained and functioning properly.
5. Key hygiene behaviors in use of safe water and hygiene practices changed.

For the urban (pourashava) sub-project:

6. Remaining work in pourashavas completed, handed over and being operated and maintained by the pourashavas.



Courtyard meetings are useful in creating awareness

Social Mobilization and Demand Creation

The Project developed and used a variety of participatory social mobilization and communication approaches, guidelines, and materials to create demand for improved water supply and sanitation services suitable for use with the following groups:

In rural areas:

1. HTW user groups and caretakers
2. UP WATSAN Committees
3. Private latrine producers
4. School Management Committees
5. Youth, imams, tea stall patrons
6. DPHE staff
7. Staff of partner NGOs

In urban areas:

1. Pourashava water section staff
2. Pourashava conservancy section staff
3. Customers of piped water supply
4. HTW caretakers
5. Users of group taps and community latrines
6. Caretakers of public toilets
7. Staff of partner NGOs
8. The general public

These methods included information and awareness at UP level, courtyard and tea stall sessions, social mapping, training staff of local NGOs, deployment of Union Facilitators (UFs), Health Promoters (HPs), among others. Intensive social mobilization and communication activities over a long period created a high (and partly unmet) demand for improved water supplies, DHTWs in rural areas and house connections in urban areas.

Institutional Development

The Project's institutional development activities focused mainly on two institutions, DPHE at central level and pourashavas. In Phase II, UPs played an increased role in the Project.

In pourashavas, institutional development activities included preparation of staffing and organizational development plans and proposals, manuals, job descriptions, staff training, preparing guidelines and by-laws, financial analyses, developing an MIS, provision of equipment, vehicles, and other measures.

Hardware support received relatively more attention during the Pilot Phase and Phase I, and was largely supply driven, provided by the Project with no financial contribution from the pourashava. This may partly explain the relative lack of a sense of ownership and generally poor maintenance of the hardware (vehicles, dust bins, drains, tools, etc.) provided by the Project at no cost to the pourashavas.



IEC materials produced by the Project

Technology and Research and Development

Support to R&D activities and the DPHE zonal laboratory in Noakhali and DPHE's R&D Division at Headquarters was provided by the Project during Phase I. Three advisers in engineering, sanitation and social mobilization were engaged by Danida and were attached to the R&D Division at DPHE Head Office from 2003 to 2005 to support R&D work.

Designs for iron and arsenic removal units, pond sand filters (PSF) and MPWSS were developed, piloted and disseminated. Work with iron removal units and household level arsenic removal units using pots and buckets was not continued, as their user-friendliness, effectiveness and sustainability was judged to be poor. Designs for PSF and MPWSS are used by other organizations and projects in Bangladesh.

Pond sand filters can be used in areas where deep tube wells are not feasible

Technology

- ▶ Technologies were largely appropriate, but MPWSSs have a high investment cost and a large subsidy element and tend to favor better-off areas/groups.
- ▶ Need for continuous expansion of urban WS systems to meet growing demand and to generate additional income.
- ▶ PSFs/MPWSS require careful siting, close supervision and periodic post-construction follow-up.

Findings

Poverty Targeting

The Project addressed the issue of poverty by identifying and involving the poor in rural and urban areas. Siting criteria for DHTWs require that a minimum number of user households are poor. Urban poor were located in crowded slum areas, sweeper colonies or permanent encroachments on public land.

In spite of efforts from the Project, some of the extreme poor and socially disadvantaged groups such as new char areas, urban slums, sweeper colonies and others could not adequately benefit from the Project for a variety of reasons, among which are the size of the user contribution (presently taka 4,500 for a DHTW) and, in Phase II, the short time (only 2 weeks) allowed for collecting user contributions.

Additional work is required to identify, involve and serve the extreme poor in the project area with adequate and safe water supply and sanitation facilities.

In urban areas, good examples of technologies that can benefit the poor are group taps and community toilets. Unfortunately, pourashavas do not currently attempt to promote or scale up these facilities, and give higher priority to network expansion and providing individual house connections.

Contrary to the Project's rules, some public officials attempt to influence siting of tube wells in order to benefit others (as well as themselves). The presence of field-level staff from NGOs and RSOs was partially successful in resisting such attempts, but this issue is likely to persist if not strongly addressed by future programs and projects in the sector.

Social Equity

- ▶ Project field staff and partner NGOs compensated for lack of accountability of public agencies and served as the users' "voice".
- ▶ Size of user contribution should be graduated and carefully targeted to specific sub-groups.
- ▶ In future programmes and projects, the user's contribution should not go into DPHE's revenue account, but rather be managed and used by the UP to provide additional facilities.
- ▶ It is difficult to reach the extreme poor in large centrally-managed, time-bound projects. There is a need to consider a specific activity involving organizations with experience working with such groups.

Mini Piped Water Supply System (MPWSS)

Mini Piped Water Supply System (MPWSS) is an alternative where there is arsenic contamination in shallow aquifers and has become an area for piloting and action research in the WSS sector. The system is quite different from the conventional piped water system in terms of its technical, financial and institutional issues. Three MPWSSs were visited – Eklashpur, Begumgonj, (Noakhali) built in Phase I and two in Barisal (Padrishipur, Bakergonj, Barisal), of which one was built in Phase I and the other in Phase II.

Activities included social mobilization for piloting the scheme, identification of potential sites for the scheme, preparation of engineering design and cost estimates for the system, development of management and financial manuals, collecting contribution money (10% of construction cost), construction, commissioning and handing over the scheme to communities after receiving management and technical training, operation and maintenance of the system, monitoring and evaluation of pilot schemes.

MPWSSs are highly subsidized schemes and very useful from users' convenience point of view. They require a large investment which cannot be afforded by even the affluent households, let alone the poor. However, MPWSS can be sustainable where there is a concentration of rich households. All schemes have been built with a high subsidy and serve households, many of whom are rich and also have other sources of drinking water such as tube wells.

Padrishpur - Phase I

A total of 66 households use this scheme. The socio-economic status of user households indicates that 4 are rich, 10 middle class, 40 marginally poor, 10 poor and 2 hardcore poor. There is a managing committee consisting of 11 members represented by a Chairman, Vice-Chairman, Secretary, Cashier and seven general members.

The Management Committee, in the opinion of RSO staff, is representative of different social groups and includes women. Users are satisfied with the water quality (color, taste and smell) and with the reliability and functioning of the system. However, since households are charged a flat rate rather than by the volume of water used, there were reports of misuse of water by households with taps.

The Management Committee and its sub-committees reportedly failed to prevent the wastage of water. RSO staff underlined the need for reorientation on the use of water for both the Management Committee Members and users to stop the misuse.

Eklashpur - Phase I

A total of 117 households have a connection (yard tap) from this scheme. Of these, 102 households use water and 15 do not since they do not live in the area. Three household connections have been temporarily disconnected because of irregularities in payment of water bill for the last three months. There is an eleven member Management Committee and eight sub-committees to supervise and manage the scheme. Sub-Committees are mainly responsible for monthly bill collection, control of water wastage and misuse, providing information to the Management Committee in the event of any leakage in the system and hygiene and sanitation promotion in their respective areas.

Water is provided for 40 minutes a day, 20 minutes in the early morning and 20 minutes in the late afternoon. The average monthly electricity bill is taka 450, the operator is paid taka 2,000 per month and miscellaneous expenses are taka 200 a month. The water tariff per household connection is taka 45 per month. Water quality is very good in color, taste and smell. However, there have been complaints from households at the end of the scheme about the lack of water because of low pressure. Most households served by the scheme appeared to be relatively well off.

Conclusion

In spite of the relative convenience and higher level of service, MPWSSs present a number of socio-economic and social equity issues. Capital investment for MPWSSs is high, as much as taka 2.5 million. With a user contribution of only 10%, the subsidy element is as high as taka 2.2 million for a single scheme. Due to its cost, complexity of operation and the relatively large user contribution required, MPWSSs are more suitable for better-off communities. Even in better-off communities, poorer households may not be served or may need to be cross-subsidized by richer households. For these reasons, MPWSSs may not be appropriate seen from a cost-benefit or social equity perspective.



Community toilets are used by the poor in urban areas

The long period of training and technical support to the pourashava water supply section (PWSS) had significant impact on the knowledge, skills and motivation of PWSS staff. Institutional development helped pourashavas to monitor performance and operating costs and set tariffs based on cost recovery. Institutional development of the pourashavas' conservancy sections proved to be more difficult and was less than successful in most pourashavas.

There was little evidence that the community had been sufficiently involved in supporting solid waste management activities or actively encouraged to do so by the pourashava. Engaging partner NGOs to support awareness, applications for connections and hygiene promotion in pourashavas was a positive step, but the short time available for this work in Phase II (9-10 months) limited its

impact. Continuous efforts over a longer period are required to improve solid waste management in urban areas and to ensure that the growing number of urban poor have equitable access to adequate water supply and sanitation facilities.

In practice, involvement of the UP in project activities in Phase II was less than envisaged in the Project Document. The UP's role was limited to activities like approval of sites for water points, school latrines and assisting in implementing social mobilization activities.

The limited involvement of UPs may be partly due to a mutual lack of confidence and trust between implementing agencies and UPs, and partly due to the short time for implementing Phase II. Also, the Project's institutional development activities were more focused on

pourashavas than on UPs, where the need for institutional development and capacity building remains great.

The Project was not able to provide adequate guidance and support to the UP Chairman on the targeting and use of the 20% Annual Development Plan (ADP) allocation for promotion of sanitation in their unions as was intended in the Project Document. It was found that UP Chairmen in the project area have used the ADP allocation in a variety of ways, including establishing casting yards for producing rings and slabs, contracting the production of rings and slabs or purchasing rings and slabs from private producers for free distribution to households. Some of these efforts are likely to be of questionable effectiveness.

Future programmes and projects should emphasize the importance of providing such guidance as well as monitoring impact of actions by the UP to promote sanitation in their unions.

Mainstreaming Project Elements

Apart from its physical achievements, the Project has both contributed to and benefited from the dynamic development in the water sector in Bangladesh during its lifetime. Project management and staff participated in national and international fora and training events contributing to development of knowledge and consensus on approaches and good practices in the sector. Examples include attractive IEC/BCC materials, technical and training manuals and guidelines, development of alternative technologies, poverty targeting procedures, gender-sensitive implementation approaches, and development of knowledge, experience and skills of a large number of NGOs and individuals working in the sector at national and local levels.

Findings-Gender

- ▶ Project approaches were largely successful in increasing women’s access to information, influence on project decisions and access to benefits.
- ▶ Women’s sphere of influence is still largely confined to the informal, domestic and social arena, whereas males continue to dominate formal sector institutions and local government and political organizations.
- ▶ Gender-sensitive siting and design of public and school sanitation facilities should be emphasized.

R&D activities supported by the Project have had a lasting impact on the development and promotion of designs for MPWSS and PSFs, and by adopting community-led total sanitation (CLTS) the Project has supported GOB’s sanitation strategy. At the same time, the Project has served to reinforce DPHE’s dominant role in the procurement and management of construction of DHTWs for GOB and donor-assisted projects in rural areas.

It is perhaps more useful to think of mainstreaming of Project approaches,

procedures, technologies and IEC materials in the sector as a whole rather than within a single organization. In this sense, many project elements and activities are “mainstreamed” and form an important part of the collective knowledge and experience that make up the sector as we know it today.

At the same time, the Project could have been more outward-looking, using its central position and role as a large and continuous nationally-executed project to have made a larger impact on

the practices of its partner organizations.

Sustainability

The ownership and sustainability of benefits in rural areas appeared to be generally high, as tube wells are a familiar technology in rural villages, and the above-ground pump components can be maintained and repaired satisfactorily by trained male and female caretakers.

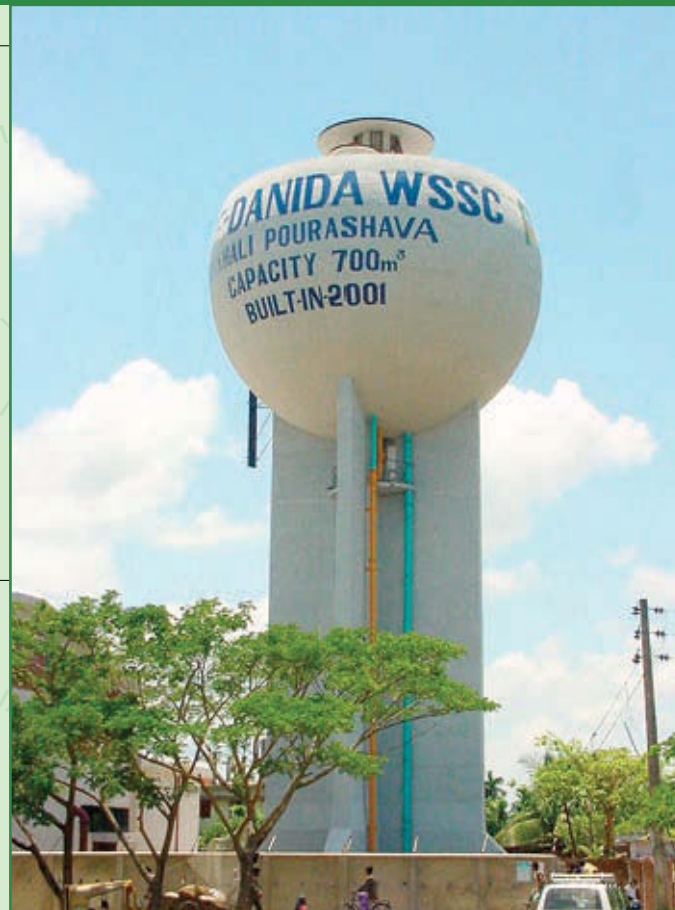
Community-led Total Sanitation

Definition of total sanitation:

- ▶ No open defecation or open/hanging latrine use
- ▶ Effective hand-washing after defecation and before eating/taking or handling food
- ▶ Food and water are covered
- ▶ Good personal hygienic practices, such as brushing teeth and trimming nails
- ▶ Latrines are well managed
- ▶ Sandals worn when using the toilet
- ▶ Clean courtyards and roadsides
- ▶ Garbage is disposed of in a fixed place, such as a pit
- ▶ Safe water use for all domestic purposes
- ▶ Water points are well managed
- ▶ Waste water is disposed of through drains or in a fixed place

The approach is based on the following principles:

- ▶ People’s skills, abilities and knowledge are valued
- ▶ 0% subsidy for latrine construction
- ▶ ‘Whole community’ approach
- ▶ Use of participatory research methods to analyze problems
- ▶ Identification of potential community leaders and involve them as community ‘catalysts’
- ▶ Involvement of local government
- ▶ Mobilization of local resources



Adapted from: *Achieving 100% Sanitation*, WaterAid Bangladesh, 2006

The Project designed and constructed overhead tanks and iron removal plants in pourashavas

In pourashavas, water supplies are currently being operated and maintained, and many show an operating profit. Technical and management support is still required to ensure the proper management and optimal functioning of the water supply systems in areas such as management of unaccounted-for-water (UAW), design of extensions and operational and staffing improvements. In Laxmipur, many PWSS staff have been working on casual (muster role) basis for many years. Transfer of water superintendents affects operation of the

pourashava water systems and highlights the need for training new staff as well as refresher training for existing staff.

Sustainability of public facilities (toilets and taps) is threatened by lack of interest and ownership and unclear management and maintenance responsibilities. Most public toilets are leased out, and in some cases sub-leased. Most pourashavas have reduced or eliminated public taps completely due to alleged mis- and overuse and difficulty in maintenance.

The Project's support to solid waste management and drainage in pourashavas had not yielded the desired results, and dumping sites identified by the Project during Phase I have long since filled up. The situation today is as critical as ever, with many pourashavas engaging in unsustainable and environmentally harmful garbage disposal practices.

Environment

- ▶ The urban environment needs to be treated as a subject for project monitoring, with appropriate indicators.
- ▶ There is a high environmental risk in disposal of urban solid waste, not adequately addressed after handover to pourashava.

Sustainability and Impact

- ▶ Continuous, long-term technical and managerial support, refresher training necessary for Pourashava WSS, MPWSS
- ▶ Sufficient time (at least one year) needed to consolidate project achievements, especially to strengthen institutions and to reinforce behavior change
- ▶ Periodic monitoring and refresher training required for SMC for school WSS facilities, PSFs
- ▶ Public and school toilets require gender-sensitive design and siting
- ▶ Urban solid waste management requires larger-scale and continuous inputs and support over a longer term based on a comprehensive plan Sanitary landfill, sorting, recycling of solid waste to relieve pressure on unsanitary dumping sites
- ▶ Where possible, group and community WSS facilities which target the poor should be preferred over public facilities

DHTWs in pourashava fringe areas had been provided during the Pilot Phase and Phase I without user contributions, which can lead to a lack of ownership and responsibility among the intended user group and the "capture" of the HTW by land owners or the nearest household.

Sustainability of water and sanitation facilities depends on a number of factors such as participation of users in planning and managing facilities,

participation and influence in decision-making, contribution to construction costs, sense of ownership of facilities, suitability of the technology to users, suitability of location/sites of facilities, quality of construction and environmental sustainability of interventions and trained and effective caretakers or operators.

In rural areas, project interventions like DHTWs, PSF, rainwater harvesting

units (RWHUs) and school latrines can be sustainable if there is a demonstrated need, if they are carefully sited, if there is a strong and effective management group, if there are contributions to construction costs, the technology is understood and is user-friendly, and if the facilities are designed with the social and cultural practices of users in mind. Where these factors were not present, facilities were found to have been neglected or fallen into disrepair.



Trained caretaker with toolkit provided by the Project

Responsibility given to women for operation and maintenance and development of skills through tube well caretaker training increased the sustainability of facilities. Factors affecting sustainability of PSF are similar. PSFs can be feasible where other technical options for water supply are impossible. Sustainability of PSFs constructed in Comilla region was poor, partly due to the availability of alternative sources of water and the relative difficulty of maintaining PSFs.

Since sustainability of RWHUs depends on the frequency, quantity and distribution of rainfall, and since Bangladesh has high seasonal variations in rainfall, there is a risk that users may not maintain the unit properly during dry periods. To be sustainable, RWHU's require careful siting, close supervision, monitoring and post-construction follow-up to ensure proper and hygienic use and maintenance.



Separate toilets are constructed for girl students with colorful health messages

Latrines and tube wells at schools are managed by a SMC. SMCs, especially at primary schools, tended to be weak, as they include teachers who may be transferred and who may give HTW maintenance and cleanliness of student's toilets lower priority than their other duties. Schools are also closed for long periods during school holidays, which leaves their facilities exposed to misuse, vandalism or theft.

For this reason, periodic monitoring and refresher training is required to ensure that school toilets and tube wells are maintained and used properly and to reinforce hygienic practices and behavior changes among students.

Since schools are supervised by the Department of Education, future programmes and projects should involve the district and upazila education office in the selection and planning of activities in schools as well as monitoring maintenance of latrines and tube wells at schools.

In urban areas, operation of the water supply can be sustainable as the service is in high demand, as evidenced

by the number of applications for new connections. The pourashava's water account in most cases shows a sizeable operating profit. With assistance from the Project, pourashavas have established separate water accounts, set their own tariffs and collect revenue through regular monthly billing. A few pourashavas have recently introduced computerized billing.

The Project introduced group taps and community latrines for the urban poor, including sweeper colonies, permanent encroachments on public land and other groups. If sited and planned properly, and supported by trained caretakers, these facilities can be managed and maintained satisfactorily, particularly by women.

Public toilets in urban areas and growth centers are showing signs of neglect and deterioration, as they are generally not well managed or maintained by the leaseholder or supervised and monitored by the pourashava conservancy section.

In some cases, the original leaseholder sub-leased the public toilet to another person for 50-70 taka per day. It was reported in one case

that an average of 60-100 people use the public toilet per day, almost all of which are men, paying 1 or 2 taka per visit. pourashavas report that they leased each public toilet out for between 20,000 and 100,000 taka a year, depending on the location and condition of the toilet. Sub-leaseholders are usually quite poor, and do little more than collect money and show little responsibility for the condition of the toilet.



Crowded tap

Public Toilet at Zamidarhat Market – Failure of Ownership and Accountability

The Situation

The Project promoted sanitation facilities at markets in growth centers which included emphasis on operation and maintenance by user groups such as market committees and union WATSAN committees. A number of public toilets in growth centers, bus stations and other locations were constructed during Phase I of the Project.

In April 2009, a visit was made to the public toilet at Zamidarhat market constructed during Phase I of the Project at Rasulpur in Begumganj Upazila in Noakhali District. The public toilet was constructed in 2001 at a cost of taka 1,071,000 which included the cost of other facilities such as dustbins, billboards, etc.

The toilet has two sections – a women's section with two latrines and a section for men with six urinals and six latrines. The toilet was provided with water supply with overhead reservoirs. It was constructed under the supervision of the Market Management Committee and the union parishad. Now it has been leased out to a private operator for day-to-day operation for taka 30,000 per year. There is an average of 400-500 male users of this toilet daily, while very few women use the toilet. An inspection revealed that most doors, mirrors and taps in the toilet were broken or missing, and the toilet was very dirty and had a bad odor.

There were about 2,500 people living in the growth center. Team members wanted to have an interaction with users of the toilet but they were found shouting accusing one another. Some complained that there was no market committee. Some also said there was a committee formed by a group of influential people without participation of people living in the market place. However, the UP Chairman, who is also the Chairman of the Market Committee said that the committee was formed properly. People also requested financial assistance from the Project to repair the toilet.

The UP Chairman informed that taka 198,000 had accumulated in a bank account from income from leasing the toilet for the last 4-5 years. The bank account was operated under the joint signature of UP Chairman and SAE from DPHE. Both were asked why the funds were not used to repair the toilet, but they could not give a satisfactory answer why this was not done. They claimed that they were not sure of the procedures for using the funds in the account. The SAE did not accept any responsibility for taking action in this regard.

The visit gave the impression that neither the Market Committee, the UP nor users were interested in or felt responsible for maintaining the public toilet. They were dependent on an expected external support from the Project or Government/DPHE to maintain the toilet. Their attitude suggests that there is a lack of a sense of ownership of the public toilet among residents of the growth center.

The SAE did not show much interest in monitoring the toilet. He gave lip service to the UP Chairman and when he was asked about using funds in the bank account he avoided responsibility for advising the UP Chairman by quoting bureaucratic rules and procedures, saying it was not his job. Likewise, the UP Chairman was not very interested in the condition, operation or maintenance of the toilet.

An atmosphere of lethargy was observed in the UP Chairman and users concerning the condition and maintenance of the toilet. There were also reports of two hand pumps from tube wells being stolen from the market place, and nobody could tell exactly when or how it happened or who could be responsible. Neither the Management Committee nor users were interested to find and take disciplinary action against those responsible.

Possible Solutions

Following the visit, the problems of the public toilet at Zamidarhat Market were discussed with the DPHE Superintending Engineer in Barisal, who said that such repairs are not so complicated. For amounts up to 20,000 taka, repairs can be undertaken by a local mason or carpenter and paid with funds from the Bank account by joint signature of UP Chairman and the Sub-Assistant Engineer. If the cost is between taka 20,000 and 150,000, repairs can be undertaken by a contractor selected through spot quotations. Repairs and renovations may be undertaken by the UP WATSAN Committee with the consent of the Market Committee. The leaseholder is responsible for day-to day management and cleanliness of the toilet. If the leaseholder is negligent, penalties can be imposed by the UP.

To improve operation and maintenance of public toilets in the future, the condition and performance of public toilets can be on the agenda of regular meetings of the Upazila Parishad. This arrangement would make the UP Chairman accountable to the Upazila Parishad which would help to ensure proper management of the public toilets.



Dustbins and drains are often poorly maintained

In many cases a public tube well was located at or near a public toilet and was heavily used. Expenses for repair and maintenance were typically provided by nearby shopkeepers, who also used water from the tube wells.

Many public toilets are designed and located in places that are not suitable for use by women, with entrances in full view of the public, with male attendants and having an unattractive appearance and odor.

This situation may lead one to ask what was the nature of the “demand” for public toilets in the first place? Did anyone really want these toilets? Or were they part of a standard package of inputs provided by the Project, with little or no contribution from the pourashava or others. The lack of ownership, even by the pourashava who receives income from them, suggests that the latter is the case.

In any case, in future programmes and projects, a new approach to provision of public toilets is needed based on a significant contribution to the construction cost from the pourashava, market committee, etc., a strong local management group who receive income from its use and effective

monitoring and maintenance from the pourshava conservancy section.

In summary, pourashavas, after many years of assistance from the Project, have shown significant progress in their ability to provide and maintain water supply services, although only a few have achieved the original goal of providing a 24-hour supply.

The present state of solid waste management, drainage and public toilets is disappointing. If the present situation continues or grows worse, there is a strong likelihood that pourashavas will be faced with even more serious environmental problems in the near future.

Reasons for the relatively low effectiveness of the Project’s institutional development activities include the early emphasis on hardware support, optimistic assessments of the ability and commitment of central and local governments to change, especially in an institutional environment which restricts the creation of new government posts or recruitment of new staff and allowing construction of new facilities to start and proceed independently of institutional changes.

Changes in pourashava mayors and key staff trained by the Project as well as changes in project staff also negatively affected the progress and effectiveness of the Project’s institutional development activities.

Monitoring Assumptions and Mitigation of Risks

Assumptions and risks are critical elements affecting project success.

At least two assumptions proved not to be valid during Phase II of the Project:

1. GOB commitment to financial support is available on time, and
2. UPs mobilize local resources effectively and efficiently

This situation exposed the Project to risks which affected its efficiency and effectiveness. While Danish funds for Phase II could have been available on time, GOB funds could not be released until the DPP and other documents were approved by GOB. A third assumption, that working relations and cooperation among project partners at all levels would be positive, proved to be only partly valid, as a mutual lack of trust exists between DPHE and UPs and NGOs, as evidenced by reported conflicts over siting DHTWs.

Assessing the validity of assumptions and risks could have been aided by strict use of the Project’s Logical Framework (LFA) or a Project Assessment Framework (PAF) matrix as a management and decision-making tool. No indicators were identified or used for assessing the status of risks and assumptions and mitigation measures, or for the performance of project management.

Use of Project Planning, Analytical and Monitoring Tools

In its social mobilization work, the Project made good use of participatory methods and tools, most of which were developed during Phase I. At the same time, there was a relative absence of the use of robust tools for analysis and assessment of critical issues, decision-support tools, critical path analysis, monitoring, e.g. LFA/PAF, SWOT, problem and decision trees, among others. On the other hand, the MIS used by RSOs and PWSS was a good practice.

Monitoring/Data Management/Documentation

- ▶ Adequate attention should be given to process and effect monitoring, and its use to improve management decisions and project performance.
- ▶ Pre-project baseline data should be collected and used to assess changes and impact over time.
- ▶ GPS data, mapping location of facilities and issuing regular reports should be included in project design and included as outputs.
- ▶ Extensive documentation and IEC/BCC materials should be made accessible to others working in the sector.



IEC materials are used to communicate health and hygiene materials

Knowledge Transfer

During its lifetime, the Project generated an impressive amount of information, data and knowledge products, e.g. data from baseline studies, manuals, guidelines, effect monitoring and completion reports, assessments and IEC/BCC materials, project database, among others. Many of these products would be useful to DPHE and others in the sector. A way

should be found of storing, managing and disseminating these items in the future. In particular, the database of DHTWs, PWSS, and other facilities and installations with GIS coordinates should be transferred to, maintained, updated, and accessible to DPHE, future programmes and projects and other development partners.

It should be added that a significant amount of institutional knowledge and memory was lost due to the frequent transfer of GOB/DPHE staff, changes in advisers, as well as the prolonged gap between the end of the Pilot Phase and the start of Phase I and between the end of Phase I and the start of Phase II, typically 2-2 ½ years. Recruitment of field-level staff (UFs and HPs) who worked in Phase I by the RSOs in Phase II is a good practice and was an important reason for the impact achieved in Phase II.

In summation, the policies, objectives, staff composition and skill sets of the implementing agency(ies) affected the Project's outcomes. The more these were supportive of users' priorities and preferences rather than those of external parties, and sensitive to social, gender and poverty issues, the better the results were on the ground.

Unintended Consequences of the Demand-driven Approach

When the Project ends, the funding for tube wells and other inputs will decrease dramatically, since both the GOB and Danida contributions will end at a time when demand for improved water supply and sanitation facilities in the project area is at an all-time high, especially among better-off groups, who express dissatisfaction with the fact that the Project targeted the poor.

This situation has the unintended consequence of creating a "supply" gap for DHTWs and connections to piped water systems. This gap, which has existed from Phase I, coupled with the limited availability of subsidized HTWs, creates opportunities for "selling" HTWs to those willing to pay more than the subsidized price (presently taka 4,500) or "speed money" to obtain house connections in pourashavas. Such opportunistic behavior has the effect of frustrating the work of field staff and partner NGOs and denying much-needed services to the poor.

General Conclusions

- ▶ There is a continued role for targeted external aid to support water and sanitation services in the coastal belt for the extreme poor and schools WSS projects/programmes.
- ▶ LGIs need further capacity building, management, technical and software support.
- ▶ Even after many years of assistance, there is still a dependency on external support from pourashavas, UPs and rural residents to maintain or extend their water services and public facilities. This dependency is much less in the case of household sanitation.
- ▶ Future sector development should involve increased multilateral efforts, decentralized planning, implementation, resource flows and capacity building in WSS projects/programmes.

Sustainable Public Toilets

Future programmes and projects should give careful consideration to the following factors regarding public toilets in urban areas:

- ▶ Clear roles and responsibilities for maintenance, with the pourashava responsible for structural maintenance, periodic painting and regular monitoring and the leaseholder responsible for day-to-day maintenance, safekeeping of equipment, providing cleaning materials and damage from misuse. The lease agreement should clearly prescribe penalties to leaseholders for violating the terms of their lease agreement. Sub-leasing public toilets should generally not be allowed.
- ▶ A separate and private entrance for women which is located away from public view should be provided.
- ▶ Income generated from leasing public toilets should be retained in the relevant pourashava account and used by the Conservancy Section to maintain, repair, paint, etc. the toilet.
- ▶ Public toilets located in growth centers and other locations outside pourashava areas should have a clearly-defined and adequately trained management group such as market committees, group of nearby shopkeepers, etc. which is registered with the UP.

Lessons

- ▶ Experience from implementing the Coastal Belt WSS Project suggests that interventions are more likely to be successful when they are planned and managed with the active participation of the community/future users who express a demand for the intervention, make a meaningful contribution to its cost and when management and maintenance is handled by a suitably trained and organized group of users who have a real interest in the functioning of the facilities.
- ▶ When interventions are consistent with user's expressed demands and social and cultural practices, they are more likely to be acceptable to and owned by the community.
- ▶ Capacity building and training is a continuous process. There is a need for periodic refresher training for such groups as union WATSAN Committees, SMCs and HTW caretakers where the original caretakers are absent or have become inactive.
- ▶ Government agencies such as the Department of Education and the Directorate of Health/Health Education Bureau at all levels can contribute to activities in the water and sanitation sector and should be included in the design of future programmes and projects. When project interventions are relevant, poverty-targeted and gender-sensitive, they are likely to be positively accepted. Involving women who are also users in planning, managing and maintaining water supply and sanitation facilities will further improve sustainability.
- ▶ There should be a realistic - and strict separation of - time allocated for programmes/project preparation and that for implementation of project activities on the ground. Delays in the former should not affect the time available for the latter.

Efficiency and Effectiveness in Implementation

The project's organization and the decision-making process cannot be said to be conducive to efficient implementation. This was evident during Phase II as part of the sector programme (WSSPS II), which involved additional levels of decision-making. In the urban sub-project, significant delays occurred in tendering and construction of some components of water supply systems.

Phasing

The Project was implemented in three consecutive phases. However, the transition between the phases was often overly lengthy, fraught with delays and less than efficient. The

transition between phases deserves much greater attention to increase the efficiency of planning and approvals of future programmes and projects.

Phase II of the Project was incorporated as a component in the Water Sector Programme Support II, which in its planning and start-up phase faced a number of problems, including:

1. Formulating and submission of programme components as individual projects instead of a single integrated programme
2. Underestimation of time taken for GOB procedural requirements for approvals of components and recruitment of Project Directors, expatriate and local staff and RSOs

Project Planning and Management: Grappling with Complexity and Ambiguity

From studying the many documents and discussions with key actors, one gets the impression that a rather heterogeneous group of people from various backgrounds, LGD, DPHE, sector programme managers and Coastal Belt Project management and staff, Embassy and teams of external consultants, some of whom entered or changed during the critical Phase II formulation period in 2005 and 2006, found themselves grappling with a number of complex issues simultaneously and were confronted multiple sets of roles and rules.

In this ambiguous atmosphere, it proved to be difficult to reach a common understanding of complex issues such as alignment and harmonization, integration of projects into a coherent sector program, assess institutional capacity, and to make and implement optimal decisions.

3. Placing both financial management and technical assistance directly under the line department (DPHE)
4. External pressures to align to GOB administrative systems before GOB/DPHE was ready to handle such alignment
5. Lack of understanding and awareness of the complexity and rules and regulations of the GOB administrative system
6. Underestimation of the time required to implement harmonization and alignment in the water sector
7. Ambiguity in roles and responsibilities of the Project Director and advisers
8. Lack of clarity in which procurement rules and procedures to use
9. Unrealistic budget projections leading to periodic spending pressure

Project Efficiency and Effectiveness

- ▶ The Project was mostly effective in achieving its objectives, but at an additional cost and with significant delays.
- ▶ Efficiency in preparing bilaterally-executed projects can be improved by an MOU which outlines the broad planning parameters and then using GOB documentation or, if two sets of documents are required, by concurrent preparation of planning documents, with appropriate time-critical dates for approvals.
- ▶ Renewable contracts with consultants, contractors and suppliers based on performance and price should be considered.
- ▶ The programme/project planning and preparation period should be strictly separated from the time needed to implement project activities on the ground.

Extensions

Two extensions of six months occurred during the implementation of Phase II, in addition to two extensions to the Inception Phase.

The extensions were useful in completing activities in rural areas and schools, but in urban areas the short lead-time (1-2 months) for decisions to extend the Project compared to the time taken to complete construction of civil works limited their usefulness in completing larger civil works in pourashavas such as construction of overhead tanks. Even with two extensions totaling one year, it was not

possible to complete, commission and test run the scaled-down civil works in one pourashava.

Alignment

An examination of project documents indicates that there was a lack of clarity and differing perceptions of what alignment meant and the speed at which alignment should be introduced during preparation of the Project in 2006-7. This situation led to the use of different sets of rules for planning, management, procurement, approvals and reporting. This situation tends to show that if a question has no one right answer,

then people or groups will argue for the answer they want in practice.

There was a relatively high degree of alignment of the Project's objectives and activities with GOB's policies and strategies, including the National Policy for Safe Water Supply and Sanitation, The National Sanitation Strategy and the Gender Equity Strategy. However, the Pro-poor Strategy for the Water and Sanitation Sector, which had clear guidelines for user contributions for poor households, was not systematically followed.

Alignment

- ▶ During 2006-07 greater alignment introduced as an additional strategy as a result of Danida's commitment to implement the Paris Declaration on Aid Effectiveness and to new Aid Management Guidelines
- ▶ Alignment with national policies, strategies and systems for planning, management, procurement, public financial management, monitoring and reporting
- ▶ Use of Public Procurement Rules 2003 for some procurement
- ▶ Co-signatories (PD and Senior Project Adviser) for Danida-funded staff and activities was introduced

Lessons

- ▶ Alignment with national systems should be preceded by a degree of donor harmonization and with focus on improving national systems according to an agreed plan/agenda and standards to accompany alignment.
- ▶ Link sectoral alignment with wider public sector reform efforts.

Increased alignment with GOB/DPHE systems and procedures in project management, procurement and financial authority during Phase II contributed to delays and exacerbated differences between the Project's management and advisers. The co-signatory arrangement for expenditure involving the PD and Senior Project Adviser (SPA) was perceived more as an external control of the PD and was not backed by adequate authority for the adviser.

There was a lack of delegation of financial authority to the DPD, and as a result many matters were referred to the PD with recommendations for payment which took additional time, causing delays in payments of RSO salaries, contactors and suppliers.

Other approaches to incremental alignment practiced in other programmes and projects involve granting authority for approving expenditure up to a certain threshold amount to the PD, above which approval or no objection would be required from the Embassy and with an opinion from the SPA. Yet another approach could have been for advisers to review plans, designs and estimates and recommend expenditure for approval by the PD.

After the decision was made to pursue an alignment strategy, both parties proceeded to apply their own separate planning processes, resulting in two parallel and consecutive planning, budgeting and approval processes. An alternative

would have been to establish a joint planning team and work with the GOB project planning process from the beginning.

Alignment should usually not be attempted unilaterally within only one sector, project or department, but rather undertaken as part of a larger public sector reform effort, including procurement, public financial management and decentralization. This process requires a much longer time than unilaterally prescribed alignment, but is ultimately more likely to yield effective results. Multi-donor/joint country procurement assessments, public financial management reviews/fiduciary risk assessments and similar instruments are useful tools in this regard.

A Missed Opportunity?

After a long period of technical, institutional, logistic and other support to pourahavas over many years, the situation at the beginning of Phase II in 2006 could have been favorable for introducing earmarked budget support to the pourashavas to implement agreed water supply, sanitation, solid waste management and hygiene promotion activities according to plans prepared with assistance from, supported and monitored by the Project. Instead, Project-managed inputs continued during Phase II, using much the same modalities as Phase I. Thus, an opportunity may have been lost to make an important step forward in the move toward greater alignment.

In the absence of delegation of meaningful financial authority, co-signing documents relating to expenditure, time sheets, etc. is not a very effective measure in itself, and can lead to conflicts between signatories. In the present context, this measure can be seen by both parties as more an instrument of external

control than alignment with national systems. Throughout the project period, DPHE proved to be adept at accommodating donor wishes within programme and project settings without actually assimilating these changes within their own organization.

Better results could have perhaps been obtained if a group of key sector donors agreed to support a common alignment agenda and process and if more emphasis was placed on improving GOB's own systems and procedures for financial management and reporting before attempting greater alignment.

Trade-offs of Alignment

The planners of Phase II may or may not have been aware that efficiency and effectiveness are often trade-offs for closer alignment with national systems and the associated shift of executive authority from external managers/advisers to national agencies that occurred between Phases I and II. Still, using and improving one imperfect system may be preferable to trying to work with two imperfect systems.

Using Consortia of Engineering Firms and NGOs

Regional Support Organizations (RSO) with skills in hygiene education, sanitation and water supply were a

prerequisite for the implementation of Phase II.

"Traditional" roles in the sector where consulting firms carry out engineering tasks and NGOs are responsible for social and software activities was

considered as a risk for the Project. It was thought by project planners that forming a joint venture between these two types of organizations would help to change the traditional division of labor in the sector.

The combination of firms who are in fact private businesses whose motive is to earn profit and national NGOs who have social and development objectives working with a public sector agency like DPHE revealed inherent differences in objectives, priorities, management styles, level of bureaucracy and approvals, etc. between these three types of organizations. The time available to implement and test this new arrangement, only about 15 months, was too short to address the many issues it produced.

There were several unintended consequences of this arrangement during Phase II.

1. Project advisers found that they spent more time on routine administrative tasks such as approval of expenditure and time sheets for RSO staff than in Phase I, where many of these tasks were handled by a national NGO. Consequently, less time was available for professional tasks.
2. Greater dissatisfaction was expressed by advisers, NGOs and field staff, compared to how they worked during Phase I. RSO field

staff reported experiencing a reduction and late payment of salary, reduced benefits and leave and had fewer facilities to carry out their work than in Phase I. Policies regarding leave for RSO staff were very strict indeed, and was a source of dissatisfaction.

3. Placing the Consortia under the direct management of the technical implementing agency reduced its independence, flexibility and in some cases influenced its reporting.
4. Higher transaction and unit costs (per time period)

Unless specifically required in tenders in future programmes and projects, it is unlikely that consortia of engineering firms and NGOs working under DPHE's management to implement large-scale water and sanitation projects will be replicated in the future.

The preceding discussion of introduction of alignment and consortia of NGOs and engineering firms in a project which is in a final - and shortened phase - suggests that such efforts are not likely to increase

the efficiency and effectiveness of the Project. In the case of the Coastal Belt RWSS Project, these measures resulted in a loss of time and momentum, increased transaction and other costs and increased dissatisfaction among advisers and project staff.

Future Directions

Some thoughts concerning future directions for work in the water and sanitation sector in the coastal belt will be presented here.

Several unresolved issues affecting project planning and implementation persist which have proven to be difficult to address through a centrally-managed bilateral project. These are:

1. Planning, resource allocation and decision-making in the sector by GOB remains highly centralized and largely supply-driven (e.g. deciding ADP allocations).
2. Reaching the extreme (hard core) poor with information, social mobilization and appropriate WSS services

Good Project Design and Implementation Practices

The following good project design and implementation practices were identified during the assignment:

1. High implementation rates of HTWs during an extended period over a wide geographic area
2. Effective response to the Sidr disaster
3. Pilot Water Safety Plans for pourashavas
4. Social mobilization at union and local level by Union Facilitators and Health Promoters
5. Social mapping, courtyard, tea stall and sessions for school teachers
6. IEC materials, guidelines, technical manuals and documentation
7. Training and equipping male and female caretakers
8. Training PWSS staff and thorough technical documentation of the

piped water systems

9. MIS in pourashavas and Regional Support Organizations
10. Promotion of Pond Sand Filters where DHTWs are not feasible
11. Provision of a voltage regulator for PWSS
12. Community taps and toilets targeting the urban poor
13. Poverty targeting in rural areas using baseline studies, social mapping and other participatory methods
14. GPS locations of all facilities
15. Project data bank
16. Mobile phones for field staff and e-mail access for project management and advisers at all levels

Key Success Factors

A number of factors are seen as contributing to the Project's successful achievements.

- | | |
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| <ol style="list-style-type: none"> 1. Conducive policies, strategies, regulations, rules and procedures adopted and practiced in implementing organizations 2. Experienced and dedicated professional/technical staff 3. Responsibility, commitment and accountability for results at all levels 4. Firm commitment to guidelines and procedures for poverty targeting, social mobilization and siting of facilities 5. Rate and quality of DHTW construction 6. Social mobilization/customer briefings supported by high quality IEC materials 7. Adequate cost-sharing to promote ownership | <ol style="list-style-type: none"> 8. Cooperation from DPHE and local government (pourashava mayors and UP chairmen) 9. Appropriate and adaptable technologies to suit various hydrogeological conditions 10. Thorough documentation, accurate reporting, MIS and database updated and used 11. Baseline data, effect monitoring and impact assessments 12. Post-construction technical and managerial support for urban and school WSS facilities <p>The Project has helped to produce a number of competent sector professionals who continue to make important contributions to the sector. Outside the coastal belt, this may prove to be one of the Project's most important and lasting legacies.</p> |
|--|--|

3. Financial/cost-benefit analysis of technologies (e.g. MPWSS)
4. Appropriate size and targeting of subsidies
5. Urban solid waste management and drainage
6. Involvement of GOB education and health staff in WSS activities at all levels
7. A functioning data management and reporting system for the WSS sector that is user-friendly and accessible to external users
8. Financial, social mobilization and technical capacity of local government bodies

Future sector programmes and projects need to explicitly address the other unresolved issues as well,

through a combination of such mechanisms as targeted urban infrastructure funds and/or co-funding of such initiatives as the Local Government Support Programme. Other measures could include identifying and supporting local NGOs who work with the extreme poor in rural and urban areas in the coastal belt. Some of the other issues may be addressed by targeted, time-bound Technical Assistance (TA). The ongoing revision of the Sector Development Framework (SDF) and involvement of civil society and key donors in preparing the next GOB-6 and moving toward common funding arrangements based on the SDF would be a potentially good way to address many of the above issues.

This approach is consistent with a growing trend in the sector toward decentralized planning, fund flows,

implementation responsibilities and capacity-building.

The effectiveness of these efforts would be greatly enhanced by a higher degree of donor harmonization in approaches to funding modalities, alignment, decentralization, subsidies, technologies, institutional development, social mobilization/software support, data and information management, among others.

Concluding Remarks

Other water supply and sanitation activities such as those supported by GOB-5, HYSAWA; Bangladesh Water Supply Program Project (BWSPP), NGO-Forum; Islamic Development Bank (IDB) and others will continue to work in the coastal belt for some time to come and can, in their own way, continue to meet the demand created by the Project.

Missed Opportunities?

- ▶ It was felt by some partners that Danida has not fully used its important position in the sector to effectively advocate significant sector reforms, or to successfully promote wider donor harmonization around issues such as roles of sector agencies, approaches to decentralization, fund flows, monitoring indicators, instruments and responsibilities, among others.

In concluding, it can be said that in spite of the numerous challenges and constraints faced by the Project during its long and eventful life, in the end, aided by the patience, perseverance and tolerance of the Project's sponsors and implementers, it proved to be largely effective in achieving its objectives of providing improved water supply and sanitation facilities and

promoting behavior change among the rural and urban population in the coastal belt.

A large, centrally-managed project such as the Coastal Belt WSS Project is at best a blunt and imperfect instrument to achieve its many and varied objectives in a difficult institutional environment and among diverse organizations and social

groups spread over a large geographic area. Still, the Project's achievements have been many and important, and its legacy will surely be remembered favorably by the millions of people in the coastal belt whom it benefited, former project staff whom it provided qualifications and many others whom it affected in various ways for years to come

Reading, multi-media and web-based resources

1. Evaluation of the National Water Supply and Sanitation Programme, 1988-1997, DANIDA, 1999
2. Harmonization and Alignment in Water Sector Programmes and Initiatives, Good Practice Paper, Ministry of Foreign Affairs–Danida, 2006
3. Bangladesh – National Water Sector Assessment, WaterAid, Dhaka, 2005
4. Water Supply and Sanitation in the Coastal Belt Project, Phase II, Project Document, Government of Bangladesh and the Ministry of Foreign Affairs Denmark – Danida, October 2005
5. Socio-Economic Interventions under the DPHE-Danida Water Supply and Sanitation Components, July 1999–December 2005, Dhaka Ahsania Mission, 2006
6. Completion Report, Phase I, Coastal Belt Water Supply and Sanitation Component, February 2006
7. Draft Completion Report, Phase II, Coastal Belt Water Supply and Sanitation Component, December 2008
8. Sector Development Programme – Water and Sanitation Sector in Bangladesh, Local Government Division, Ministry of Local Government, Rural Development and Cooperatives, 2005
9. Pro-Poor Strategy for Water and Sanitation Sector in Bangladesh, Local Government Department, Ministry of Local Government, Rural Development and Cooperatives, February 2005.
10. Current Situation – Institutional Review, Water Supply and Sanitation Sector, Bangladesh, Final Summary Report, September 2004
11. National Policy for Safe Water Supply and Sanitation 1998, Local Government Division, Ministry of Local Government, Rural Development and Cooperatives, 1998
12. Gender Policy (draft), July 2008
13. National Sanitation Strategy 2005, Local Government Division, Ministry of Local Government, Rural Development and Cooperatives, Dhaka, 2005
14. Scaling up Rural Sanitation in South Asia, Water and Sanitation Program-World Bank, May 2005.
15. Customer Relations Manual, Pourashava Water Supply Section, DPHE-Danida Water Supply and Sanitation Wing, n.d.
16. Administration and Financial Management Manual for Pourashava Water Supply Section, DPHE-Danida, May 2004

Copies of the above materials can be requested from:

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Relevant websites:

DPHE: www.dphe.gov.bd

WSPS II Policy Support Unit:
www.psu-wss.org

Danish Embassy:
www.ambdhaka.um.dk (follow links to relevant documents)

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