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MASTER PLAN OF OPERATIONS

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CHILDREN AND WOMEN IN
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THE GOVERNMENT OF THE PEOPLE'S
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Chapter 3

PRIMARY ENVIRONMENTAL CARE HYGIENE, SANITATION, AND WATER SUPPLY

3.1 OBJECTIVES

The Programme adheres to the Convention on the Rights of the Child (CRC) which confirms access to safe water and sanitation as a basic right of every child. It also supports follow-up to Agenda 21 towards sustainable environment and development as defined during the Earth Summit in 1992. The general objective is to contribute to improved quality of life, primarily of women and children, through reduction of diarrhoeal diseases by improving access to sanitation, hygiene education and safe water. The specific objectives are:

- To protect and promote safe environment;
- to improve hygiene practices of all family members;
- to increase regular and sustained use of sanitary latrines by all family members;
- to increase use of safe water for drinking and personal hygiene;
- to improve safe water access and use in the underserved areas and hence save energy and time of women and girls, the main water collectors, and reduce risks of infections; and
- to strengthen national capacity for sustained basic sanitation, hygiene and water supply.

3.2 STRATEGIES

- Primary Environmental Care: The programme places special emphasis on primary environmental care to meet the objectives of sustainable livelihood and development as stated in Agenda 21. It seeks to reduce the pathogen load in the environment and decrease the incidence of diarrhoeal diseases and worm infestation by reaching a national sanitation coverage of 80 per cent and also by motivating people to adopt more hygienic behaviours.

The indiscriminate disposal of human excreta, not only pollutes the environment, but is a waste of a rich source of fertilizer and energy. The programme will give priority to safe disposal of human waste and converting excreta to fertilizer. Safe disposal of garbage and waste water as well as promotion of smokeless chulhas will also be integrated into the programme as appropriate.

In the water sector, a major challenge is the declining water table below the suction limit which renders a large number of suction pumps inoperative during the dry season. The findings of a DPHE/UNICEF study that forecasts decreasing trends in the groundwater level will be used to support research and development (R&D) activities to meet future drinking water needs. Monitoring of water table trends as well as chemical and bacteriological quality of water will be pursued.

In collaboration with the Ministry of Environment, a good information base will be developed to create greater public awareness about the health implications of pollution from different sources (including effluents from industries) and empower people to take appropriate action. The activities will be carried out in conjunction with other UN agencies, particularly WHO.

- Enhancing Programme Sustainability: More active community participation has been built into the programme. The objective is to empower and increase the role of communities, particularly women, in programme planning, implementation, cost sharing, management of facilities and monitoring. The current level of services will be sustained by regular maintenance of water supply and sanitation systems by the users themselves. The water systems which are out of operation will be replaced or repaired by the caretakers with support from the DPHE. Private initiatives in installing family water supply and sanitation facilities will be encouraged through social mobilization to complement Government inputs. Demand creation will further stimulate the growth of the private sector. Support will be extended through DPHE to private industries to improve their technologies.

- Capacity-building: The programme will enhance the capacity of DPHE, City Corporations, Pouroshovas and other partners to facilitate and motivate local community towards behavioural change as well as ensure programme implementation and sustainability. This will be achieved through staff training, and the provision of equipment. Resource institutions at the national and sub-national levels will be strengthened. Change agents and community representatives, particularly women, will be trained, towards decision-making, participation, and empowerment. A mechanism will be introduced to ensure women's participation at all levels.

- Promoting Gender Balance: The programme will aim at bringing about an equitable gender balance by involving both men and women in planning and implementation. Training on gender issues will be supported. In particular, women will be empowered to enhance their life skills and decision-making for their effective involvement.

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- **Intensifying Advocacy, Social Mobilization, and Programme Communication:** High level advocacy activities will be undertaken to sustain the programme momentum generated by political and social leadership. Partners will be carefully selected for social mobilization to have a large-scale impact and increase women's participation. Allies will include NGOs, NGO umbrella organizations, schools, Girl Guides, women's groups, soap manufacturers, latrine producers, various Ministries, political bodies, and social groups. Activities include development of communication and training packages by professional agencies to motivate behavioural change and testing of communication channels and materials.
 - **Promoting Low-cost Appropriate Technologies:** The programme will continue to support low-cost, cost-effective and appropriate technologies that use local skills and materials and are socially acceptable and environment-friendly. Existing technologies will be improved through R&D. The programme will consider options and technologies which can be managed by communities and have the potential of providing economic gain (e.g. turning excreta into fertilizer and energy). Methodologies of participatory action research as well as mechanisms of going to scale will be examined to this effect.
 - **Accelerated District Approach (ADA) : Decentralising Planning, Implementation, and Monitoring:** The programme will promote a decentralized district approach for planning, implementation and monitoring to achieve the decade goals. Accelerated District Approach (ADA) will be adopted as an important strategy in an effort to reduce social disparities at the district level. This will better identify the financial and human resource requirements of districts as well as make interventions more focussed. In the urban areas, the Pourashova or City Corporation approach will be promoted.

Specific Strategy for the Rural Areas

- **Reducing Disparity:** The project aims to increase access and use of safe water for drinking and hygiene needs in coastal areas, low water table areas, and stony areas, including the Chittagong Hill Tracts. Although no new tubewell will be provided in the high water table areas, sample surveys will be undertaken to assess levels of service and coverage. More intensive inputs will be provided to districts with low sanitation coverage and poor hygiene practices.

Specific Strategy for the Urban Poor

- **Reaching the Underserved:** The project aims to provide basic services to the underserved communities. The target population at the ward level will be identified through surveys; the community will be organized to play an active role in the programme. Community facilities, to be co-financed by the users, will be planned at the ward level; family systems will be provided at the users' cost.

3.3 COMPONENTS

The Programme has two major projects :

- Project 1: Environmental Sanitation, Hygiene, and Water Supply in Rural Areas; and
- Project 2: Environmental Sanitation, Hygiene, and Water Supply Project in Urban Slums and Fringes.

GOVERNMENT OF BANGLADESH - UNICEF

1996 - 2000

PROJECT SUMMARY SHEET

Project : Hygiene, Sanitation and Water Supply
in Rural Areas

Sponsoring Ministry : Ministry of Local Government, Rural Development
and Cooperatives (LGRD)

Implementing Agency : Department of Public Health Engineering (DPHE)

Project Cost : In Million US\$

Government:	16.02	(Proposed)
UNICEF :	28.94	
Total :	44.96	

3.4 PROJECT I: ENVIRONMENTAL SANITATION, HYGIENE, AND WATER SUPPLY IN RURAL AREAS

3.4.1 IMPLEMENTING AGENCY

The project will be implemented by the DPHE under the sponsoring Ministry of LGRD and Cooperatives.

3.4.2 OBJECTIVES

- To increase the use of sanitary latrines from an estimated 45 per cent in 1995 to 80 per cent;
- to improve personal hygiene practice, mainly proper hand washing with soap/ash before taking food and after defecation to 80 per cent;
- to improve access to and use of safe water for drinking and hygiene purposes from:
 - * about 252 persons per source in the low water table areas in 1995 to 190 persons per source, by installing 52,000 tubewells serving about 9.88 million persons;
 - * about 185 persons in 1995 to 175 persons per source, by installing 7,860 deep tubewells and other systems in the coastal belt areas serving an estimated population of 1.37 million persons; and
 - * about 84 persons in 1995 to 70 persons per source, by installing 2,675 tubewells and ring wells in Chittagong Hill Tracts and stony areas serving an estimated population of 0.19 million persons.

3.4.3 ACTIVITIES

Project Planning

District Base: The sanitation, hygiene, and water supply requirements of the district will be assessed by the Executive Engineers in collaboration with other district and sub-district officials. The requirements will be translated into a tentative annual workplan. The DPHE Circle annual and total needs will be consolidated to provide the national requirements. These will be analyzed by DPHE headquarters in collaboration with the Superintending Engineers. The district allocation of the various resources/materials for a given year will be modified according to national annual allocation but giving priorities to the underserved districts.

Intensive inputs will be provided to all the districts excluding five districts to be covered by other agencies, phased over the project period, to achieve the decade goals. The concentrated inputs and the phasing process will allow better implementation and monitoring as well as facilitate the application of lessons gained. During the first year, 14 districts will be taken up for intensive sanitation and hygiene education. In each subsequent year, 13 new districts will be taken up so that all the districts will be covered by the year 2000. However, districts covered in early years will be monitored and provided with necessary inputs.

National Base: Major activities on advocacy, awareness-building, training, and capacity-building will be undertaken nationwide. In the water sector, water supply systems and training activities will be carried out in underserved areas nationwide.

Building Capacity and Developing Human Resources:

Following an organizational study of DPHE (Matrix, 1994), DPHE will be strengthened to enable it to respond more effectively to future needs. The areas cover leadership skills, planning and design, social mobilization and training, monitoring and evaluation, financial management, R&D, and gender sensitivity.

In the field, bi-annual training on social mobilization and communication will be conducted to improve effectiveness in developing partnership with other agencies. Opinion and community leaders, government functionaries, field workers, and other change agents, including union chairpersons, WATSAN committee members and teachers, will be trained to improve their skills in awareness-raising and dissemination of information. Technical training and on-the-job training supported by appropriate short courses will be conducted. Courses on relevant hydrophysical investigation techniques will be provided to the hydrogeologists of the R&D Division of DPHE.

The project will use the training modules on communication, which were developed earlier, to promote environmental sanitation and hygiene among the DPHE staff, school teachers, religious leaders, and others. Qualified institutions and NGOs at national and sub-national levels will be identified as training centres, which will conduct training/orientation to complement the DPHE training cell. They will be trained on training methods by experts and provided with teaching aids.

Strengthening Partnership with NGOs and the Private Sector:

Sanitation and Hygiene: DPHE will encourage NGOs and the private sector to promote sanitation, safe water, and hygiene. The greater demand for sanitary latrines and the phasing out or relocation of DPHE production centres will increase the production of sanitary latrine parts by the private producers. Groups engaged in income-generating activities (like NGOs and the Grameen Bank) will be approached to assess the potential of setting up private latrine production centres in unions/villages. Business enterprises

such as soap manufacturers will be encouraged to develop promotional materials on hygiene. Business enterprises will be encouraged to promote sanitation and hygiene among their employees.

Water Supply: With the growing demand for suction (No. 6) pumps for family tubewells, better quality product on the market will add to long-term sustainability. Manufacturers will be encouraged to meet specifications for the No.6 pumps and TARA Pumps established by the Bangladesh Standard and Testing Institute. These products will be promoted by the project and through other agencies such as the Grameen Bank. This will also apply to the spare parts which users of community pumps will procure for themselves.

Improvement in the design of hand pumps and technology innovations, through R&D, will be carried out by the manufacturers, technical research institutions, and BSTI, with support from DPHE and UNICEF. Experience gained by UNICEF and DPHE will be shared with other interested parties to build up the capability of local manufacturers. Tubewell materials will be provided to NGOs who meet the requirements. The quantity of materials will be limited to five per cent of the total allocation.

Promoting Research and Development: R&D activities will be supported to ensure that emerging issues are addressed for long-term sustainability. The project will collaborate with appropriate research institutions. In sanitation, action research will be directed at examining low-cost and durable excreta disposal systems and promoting their use. This will include the wider application of clay rings, bamboo or other low-cost alternatives for latrine pit lining in weak soil formation. Designs will be updated to improve the strength of latrine structures to withstand rain and minor floods. The performance of offset pit latrines will be assessed and improvement will be incorporated in new designs.

The use of human waste as fertilizer will be promoted and sustainable technology options will be tested using participatory action research methodologies. This includes the two-pit latrine design and the use of biogas plants and as well as the promotion of smokeless chulhas to reduce exposure to smoke in the house (hence, acute respiratory infections or ARI) and reduce fuel use.

Conversion of TARA Direct Action Pump into Lever Action Pump: Development work will be carried out to assess the viability of providing the lever action mechanism.

Improvement of TARA II Hand Pump: Based on field surveys and assessments, improvements will be made on TARA II to facilitate operation and maintenance.

Design of New Pumps: Since the development of a new pump takes several years, the R&D committee will assess future technological needs based on the recently completed forecasts of future groundwater trends (EPC, 1994). The potential of using wind-powered or solar-powered pumps will be assessed.

Identification of Iron-free Aquifers: The optimal depth of tubewells to reach iron-free aquifers is being updated based on analysis of tubewell log data. Further analysis of existing data will be done; this will be complemented by test drilling.

Rain Water Harvesting and Home Chlorination: In some coastal and stony areas, fresh ground water extraction is not feasible. A feasibility study has recently been initiated to determine the potential of rainwater harvesting from roof tops. Home chlorination will be promoted primarily in cluster of few families where the settlement pattern is scattered and the cost of community system could prove expensive.

Other Technologies: Infiltration galleries have been installed in the bed of a few hilly streams to tap shallow ground water. Further development works to improve this technology will be undertaken.

Sharing of Costs of Installation of Facilities: The cost of family sanitary latrines will be met entirely by the users. Users will contribute part of the installation cost of community water supply. The latrines, water supply and smokeless chulhas in schools, health centres and EPI outreach centres will be provided free by the project.

3.4.4 ACTIVITIES (For Environmental Sanitation and Hygiene)

Using Schools as Focus and Channel for Behavioural Change: Sanitary and water facilities will be provided in primary schools to start the education of children on the concept of sanitation and hygiene and to increase girls' enrollment. These sanitary and water facilities will serve as model for the community. Children will be motivated towards self-discovery about hygienic behaviours and encouraged to take appropriate measures, personally and in the community.

Some 10,000 selected primary schools and madrasahs will be provided with sanitary latrine and tubewell complex. The latrine will consist of a two-latrine seater which can serve as urinals. Water supply will be provided for drinking and latrine maintenance. The project will conduct training of headmasters and head mistresses, teachers, and representatives of School Management Committees to enhance their skills in promoting sanitation and hygienic practices among students and families.

All primary schools will be motivated to undertake promotional activities to improve sanitation practices among school children, parents, siblings, and communities. Teaching aids will be developed and distributed to teachers. The Child-to-child concept, which has been tried in selected schools with encouraging results, will be expanded to cover all schools. Teachers and students will also be oriented to become change agents in the school catchment area. Headmasters and the Head of madrasahs will maintain the facilities and ensure that they are used by students. Deworming of children will be carried out primarily as an educational tool and entry-point for the promotion of sanitation and hygiene.

Promoting Sanitation and Hygiene at Household Level: Families will be motivated to adopt hygienic practices including food hygiene, proper home management of water, and to build and use a sanitary latrine. In cases where space is limited, the shared-latrine concept will be promoted. For lower income groups, homemade latrines will be promoted. Sanitary latrines will provide health benefits as well as convenience and privacy to women. Women are effective change agents and they will be trained as trend setters and promoters. Women as well as men will be reached through interpersonal communication as well as other means.

Promoting Sanitary Facilities at Health and EPI Outreach Centres: The CDD/EPI centres, popular among rural communities, will be the central points in the promotion of sanitation and hygiene. Sanitation and water facilities will be provided in government health centres; about 50 per cent of 1,800 centres will require such facilities. A system for collection of fees and their utilization will be developed.

A smokeless chulha will be constructed in each of the centres to serve as a demonstration site to promote the benefits of saving fuel and eliminating harmful smoke from cooking, thus reducing acute respiratory infection (ARI). A fieldworker, who will be provided training on the construction of the smokeless chulha, will promote the technology and construct the stove for interested families on a "fee for service" scheme. Some 20,000 EPI outreach centres will be provided with a sanitary latrine with concrete slab, and a smokeless chulha.

Meeting the Demands for Concrete Waterseal and Non-Waterseal latrines: The concrete direct pit or waterseal latrines are available in production centres across the country. The national survey of latrine producers and the market situation (House of Consultants, 1994) indicated a significant increase in the number of private and NGO latrine producers from 1,539 in 1990 to 3,231 numbers in 1994. The total number of latrine producers, including the 928 DPHE centres and pourashovas, is 4,159. It is estimated that 70 per cent served the rural population and 30 per cent serve the urban population. However, about 50 per cent are located within three kilometers from the Thana centres, which lead to high transport cost.

The viability of DPHE village sanitation centres will be assessed towards re-allocating unproductive centres to unions where there are no producers. Also, mobile centres will be operated from the production centres to reach out to villages and reduce transport costs. The project will provide training to private producers on health, sanitation, and maintenance so that they can provide education to potential buyers. In unions where there are no production centres, the UP Chairperson, as the head of the Union WATSAN Committees, in collaboration with DPHE and other allies will identify potential local masons to encourage them to establish centres.

3.4.5 ACTIVITIES (Rural Water Supply)

Monitoring Ground Water Quality: With the increasing use of fertilizers and pesticides, the potential for contamination of groundwater exists. The DPHE Laboratories will establish a national network of observation tubewells to monitor water quality and assess toxic levels. The information will be regularly shared with the Ministry of Agriculture and the Ministry of Environment and published for public awareness. The project will procure equipment to conduct the chemical tests; training will be provided to the laboratory staff.

Controlling the Quality of Installation: Contractors have been provided training on the proper installation of Tara tubewells. Hence, only trained contractors will be engaged in installing Tara tubewells. As new contractors come, their staff will be trained by recognized institutions to qualify them for contract bidding.

Managing of Hand Pumps by the Community: Orientation of tubewell users will be provided on management of the facilities, quality control in installation, and benefits of safe water. A male and a female caretaker for each tubewell will be trained on maintenance and repair of hand pumps. In late 1994, it is expected that all suction (No. 6) hand pumps will be maintained by communities. Pilot studies for eventual transfer of the management of Tara pumps to the user groups are being undertaken.

Choosing Appropriate Technology: In low water table areas, the standard Tara will be installed following site selection criteria and participatory processes. In an area where water table decline is beyond 15 metres, the Tara II will be installed. To locate aquifers free from iron, guidelines indicating the optimal depth of tubewell will be followed. Where iron free aquifers are not available, iron removal plants will be constructed on demand by the consumers.

If the viability of the mini-Tara is proven by the field tests due for completion by early 1995 under the on-going R&D works, the programme will concentrate on rehabilitating affected suction tubewells and installing a limited number of new Tara tubewells. On the other hand, if the mini-Tara proves to be non-viable, only new Tara tubewells will be installed.

In coastal belt areas, the selection of technologies will be based on DPHE guidelines. In the Chittagong Hill Tracts, DPHE and the Chittagong Hill Tract Development Board (CHTDB) will carry out a mapping exercise to determine the actual needs of each cluster, para, and settlement. In non-stony and non-rocky areas where the water table remains within seven metres throughout the year, shallow tubewells will be installed through the Sludger method. Standard Tara and Tara II will be installed in places where the water table fluctuates between seven and 15 metres, and beyond 15 metres, respectively. In stony/rocky areas drilling will be done by mechanical rig. Other alternatives will be installed wherever appropriate. For very small pockets, distribution on water purifying

tablets may be the most economical approach. For stony areas outside the Chittagong Hill Tracts, in addition to the drilling rig, a small drilling rig will be procured to undertake mechanical drilling where the traditional sludger method cannot work.

3.4.6 SOCIAL MOBILIZATION

Social mobilization--supported by advocacy and programme communication--is the cornerstone of the project. Key partners such as policy makers, planners, politicians, NGOs, and NGO umbrella organizations will be tapped to support initiatives to promote improved hygiene practices among families and communities.

National and district seminars and special advocacy events will be organized to maintain the momentum. Promotional materials will be developed and widely distributed. Experiential/learning visits for decision-makers and community leaders will be organized. Partnership with allies will be forged and strengthened to integrate sanitation and hygiene into their activities. Other parties include community leaders, religious leaders, school teachers, extension workers.

A communication strategy and promotional package-- developed in 1994--will be updated based on feedback from the field. New communication materials will be developed. The materials will take into consideration the low literacy level of the community and will keep a proper gender balance. Flipcharts and posters will be developed and updated to supplement the work of change agents. Activities at the grassroots level include awareness-raising campaigns, focused group discussions, and courtyard meetings.

A participatory approach will be adopted to enable villagers to express their needs and priorities. Visual aids (slide shows and films) will be used for initiating discussions. Effective channels of communication (including radio) will be utilized to promote messages in the regional dialects. Television, cinema, folk drama, and folk music will be promoted. A Meena film on the promotion of sanitation will be shared with partners in the field to reach communities. Other media including loud speakers, making at the railway stations, ferry ghats, and inter-city trains will also be used to reach large target audiences.

3.4.7 PROJECT MANAGEMENT

The Ministry of Local Government, Rural Development and Cooperatives (MLGRD&C) takes overall responsibility over Project I. Execution will be done by DPHE, in collaboration with communities, other government agencies, the private sector, and NGOs. DPHE headquarters will coordinate the programme through the seven DPHE

circles headed by a Superintending Engineer (SE). The Executive Engineer (EE) will plan, implement, and monitor progress jointly with partners and allies.

DPHE Dhaka will provide technical inputs to the field through training and information sharing, undertake R&D activities, generate political will, mobilize support at national level, provide general direction, and provide solutions and alternatives. UNICEF will provide advisory and technical support to DPHE including policy inputs, advocacy, social mobilization and programme communication, R&D, needs assessment, monitoring, and impact assessment. DPHE and UNICEF will jointly prepare the annual workplan. In the field, support will be given to implementing agencies to assist in mobilizing allies and monitoring performance.

3.4.8 MONITORING AND EVALUATION

DPHE will monitor progress in the districts in collaboration with partners. The key indicators to be monitored are: number of sanitary latrines constructed and in use; number of people practicing proper hand-washing with soap or ash before preparing food, eating, and after defecation; and number of people using safe water for drinking and hygiene needs. Key physical targets such as the number of tubewells installed, the number of training carried out will be monitored.

A community-based monitoring process will be followed. Field motivators will assess progress through courtyard meetings or group discussions. Individual members of the union WATSAN Committees will conduct a quantitative assessment of accomplishment in their respective areas. The WATSAN Committee will collect data monthly. The information will be consolidated by the SAE to produce the thana statistics. The EE will compile the monthly district achievements, provide statistics to the Superintending Engineer (SE), and review monthly progress together with partners at district and thana levels. Quarterly field visits will be organized in selected areas to assess field situation and obtain feedback from the community.

The DPHE Zonal Review Committees headed by the respective SEs will hold quarterly progress reviews. The DPHE headquarters will prepare a monthly district and thana progress report which will be shared with all field staff.

UNICEF field offices will monitor the quality performance of installation and training/orientation and will participate at the district and zonal level meetings. UNICEF Dhaka together with LGRD and DPHE will review monthly and quarterly progress.

DPHE will initiate--with UNICEF support--the conduct of studies and surveys to supplement field monitoring. Activities include a national survey in late 1995 to assess mid-decade performance; evaluation of specific projects; studies on specific areas like effectiveness of communication packages, effectiveness of technology, women's participation; and studies on feedback of communities on activities, performance of

technologies, extent of behavioural change, and lessons learnt. Results will be used in assessing and revising strategies.

3.4.9 LINKAGES WITH OTHER PROGRAMMES

Mobilizing Government Agencies and Non-governmental Organizations: Ministries and institutions (Health and Cooperatives) will be motivated to use their infrastructure to mobilize society for improved sanitation and hygiene. Other allies will include schools, religious leaders, Rotarians, and local clubs.

Collaboration with other UN and Bilateral Agencies: Support will be provided to implement the maintenance system being developed by DPHE-World Bank-DANIDA in Rajshahi area. In addition, collaboration will be extended in water and sanitation projects implemented by other UN and bilateral agencies.

Linkages with education and health programmes: The success of sanitation, hygiene, and water supply programmes hinges largely on behavioural change and health impact. Thus, linkage with education and health programmes will be pursued. The use of schools as channel for behavioural change and that of health and EPI outreach centres as avenues for sanitation and hygiene promotion are major strategies under the project.

GOVERNMENT OF BANGLADESH - UNICEF

1996 - 2000

PROJECT SUMMARY SHEET

Project : Hygiene, Sanitation and Water Supply
in Urban Slums and Fringes

Sponsoring Ministry : Ministry of Local Government, Rural Development
and Cooperatives (LGRD)

Implementing Agency : City Corporations and Pourashavas

Project Cost : In Million US\$

Government:	1.87 (Proposed)
UNICEF :	4.16
Total :	6.03

3.5 PROJECT II: ENVIRONMENTAL SANITATION, HYGIENE, AND WATER SUPPLY PROJECT IN URBAN SLUMS AND FRINGES

3.5.1 IMPLEMENTING AGENCY

The project will be implemented by the City Corporations and Pourashavos under the sponsoring Ministry of LGRD and Cooperatives.

3.5.2 OBJECTIVES

- To increase the use of sanitary latrine to 80 per cent by the year 2000;
- to improve personal hygiene practices--mainly proper hand washing with soap or ash before eating and after defecation--to 80 per cent by year 2000; and
- to improve water supply coverage to an average of one operating tubewell per 200 people in the year 2000 by installing 12,010 new tubewells covering a population of about 2.4 million.

3.5.3 ACTIVITIES

- Achieving Universal Coverage: Community water and sanitation facilities will be installed in all slums (on public and private lands), fringes, and areas of the floating population based on needs assessment by the Corporations and pourashovas in consultation with the beneficiaries. NGOs and private agencies will also be encouraged to install facilities. Community facilities created by Corporations/pourashovas and NGOs will be handed over to the community for operation and maintenance at their own cost. Facilities at public places would be leased out to private agencies or community groups for commercial operation and maintenance. Facilities put up by private agencies at their cost will be operated and maintained by them, using common guidelines.

To avoid land tenureship problems, the water supply system, community latrines, and public toilets will be established on public lands as far as feasible, close to the target beneficiaries. While communities will select the site of the community facilities, approval will come from the pourashovas/Corporation. The Corporation/ pourashova will select the site of public facilities. Families will be motivated to construct their own family latrines or "shared latrines" and to use and maintain them properly.

- Assessing the Existing Situation: Each Corporation/ pourashova will survey its slums and fringe areas and prepare maps showing the location of each cluster/ settlement with boundary lines. The status in each cluster/settlement will be

reflected, including parameters like population size, settlement type, access to safe water services and sanitary facilities, waste water and solid waste disposal systems, and others. The survey will provide the basis for planning the needs of each area. However, actual resource allocation will be based on beneficiaries/users' agreement to participate in capital cost-sharing.

- Preparing the Annual Development Plan (ADP) and Implementing the Physical Works: In the initial stages, DPHE will distribute the annual national targets of different interventions among the project Corporation/ pourashovas based on survey findings. The future ADPs will be firmed up based on progress in the prevailing ADP year by DPHE and Corporation/pourashova. Physical works will be started by the pourashova/ Corporation when full understanding and firm agreement with the community has been reached. A certificate will be obtained by the Corporation/pourashova from the users that the works have been satisfactorily completed before payment to the contractor and release of the security deposit to the contractor.
- Strengthening the Corporations/Pourashovas: Support will be given to strengthen the technical/managerial capability of the Corporation/pourashova to plan, design, and implement various kinds of intervention. DPHE--in collaboration with Corporation/pourashova chairperson-- will arrange the training of the Corporation/pourashova on management, leadership, communication, training, gender and development, social mobilization, participatory approaches to strategy formulation and programme implementation, and issues concerning sustainability.
- Organizing the Community: The Corporation/pourashova will organize the community to foster ownership of the project and to define duties and responsibilities in cost sharing, operation, maintenance, and long-term sustainability. Community organization includes helping the community to decide on the water technology, sanitation and garbage disposal method/technology, site selection for the water and sanitation systems, community contribution for installation, operation, and maintenance.

Private agencies/NGOs will be recruited for community organization by the implementing Corporation/pourashova through bidding. The agency will be accountable to the Corporation/pourashova concerned. DPHE and UNICEF will be involved in the selection process.

Community development starts with the formation of beneficiary groups, with each group consisting of 10-30 families. The groups will be sensitised on key project components through regular meetings and visits. Each group will form a management committee which will have at least 50 per cent female members.

The committee will also include concerned staff of the corporation/ pourashova as well as NGOs. The committees will select their representatives in the Corporation/pourashova and ward level committees for water supply, sanitation and hygiene.

- Choosing Appropriate Technology: In the water sector, the following low-cost and cost-effective options will be considered: shallow tubewell (STW), deep tubewell (DTW), Tara tubewell, ring well, Pond Sand Filter (PSF) and standpost. Families will be encouraged to construct individual family latrines using their own resources. Where space is limited, shared latrines will be encouraged with cost sharing by families. Community latrines will be provided where family latrines and shared latrines are not feasible.

Depending upon technical feasibility and social acceptability, community bio-gas plants will be installed to benefit families in a community. Training will be provided on methods of collecting biodegradable and non-biodegradable waste from the community. Non-biodegradable waste will be sold to the private entrepreneurs for recycling, and biodegradable waste will be converted into fertilizer by composting. DPHE will develop the system jointly with Corporations/pourashova and communities through pilot projects. Trained community members will promote the smokeless chulha and construct these units for interested families on a commercial basis. The Bangladesh Centre for Scientific Institute and Research (BCSIR) and other NGOs or research institutions will provide the training and necessary technical support.

- Preparing the Design, Specification, and Manuals for Construction Works: DPHE will provide the designs, specification, and manuals on existing technologies. For other technologies such as bio-gas plants and community latrines, DPHE will develop and provide them to the Corporations/pourashovas accordingly. DPHE will also develop a pilot project on composting of solid waste. DPHE will provide training for the Corporation/pourashova staff and contractors on the various technologies.

- Operating and Maintaining the Facilities: The community will operate and maintain the systems. Before installation, the community will develop a mechanism to collect water tariff for standposts and other systems and the maintenance cost from the users. Community latrines will be leased out either to private entrepreneurs on commercial basis or to a group formed by interested community members. The maintenance agency will generate income from the users. A family will be responsible for its own latrine; families sharing a latrine will maintain their latrine based on a mutually agreed arrangement. Appropriate training and tools will be provided to designated community members and caretaker families. Private entrepreneurs will maintain community and public water supply systems as well as toilets on a commercial basis.

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- Promoting Gender Balance: Implementing agencies will employ female staff at 50 per cent proportion at all levels. Gender training will be provided to staff of implementing agencies to foster gender sensitivity and enlist the active participation of women. In the community committees, 50 per cent women representation will be promoted. Hygiene education will be focused on both men and women. In the operation and maintenance of various systems, women will be given the key role with proper training.
 - Monitoring Water Bodies: Surface and underground water bodies can be at-risk of pollution due to industrial effluents and waste water discharge. DPHE, in collaboration with the Ministry of Environment, UNICEF and WHO will establish a network of points to monitor the quality of the water.
 - Sharing of Costs: Beneficiaries will contribute their share for the installation of new facilities. UNICEF will provide handpumps, pipes, screens, solvent cement, and cement through DPHE. For all UNICEF offshore supplies, DPHE will pay CD-VAT to the government. GOB will provide the funds for construction and for the procurement of the remaining materials through DPHE.

Training funds will be initially provided by GOB. UNICEF will reimburse the expenditure on receipt of certified vouchers from the Project Director (PD). UNICEF and DPHE will jointly prepare the training modules and the budget. GOB will provide funds for community organization to the Project Director; the PD will allocate the same among the Corporations/pourashovas. UNICEF will annually reimburse the expenditure incurred upon receipt of certified vouchers from the Project Director.

DPHE and UNICEF will coordinate the development of communication and information materials. UNICEF will finance material development; DPHE will distribute the materials to the Corporations and pourashovas.

Social Mobilization: Social mobilization activities, a significant aspect of the Urban Project, aims to increase public awareness and create demand for quality services in the slums and fringes. Social mobilization strategies will be formulated jointly by City Corporations, pourashovas, NGOs, other agencies, and UNICEF. Health messages will be developed and communicated through posters, flipcharts, flash cards, and other information and education materials. A protocol for community visits and health education sessions will be developed jointly with partners.

- Mass Media Campaign and Special Events: Appropriate messages focusing on urban slum communities will be developed for radio, television, and cinema. Other activities include making at strategic locations like railway and bus stations

and market places to create awareness for good hygiene practices; organization of "Handwashing Day" with Girls Guides and Boys Scouts every six months in the slum communities; and deworming campaigns. These activities and events will help promote behavioural change among community members.

Promoting Practical Application of Hygiene and Sanitation Practices: Communities in slums and fringes community will be visited by pourashova/Corporation/NGO workers to discuss relevant issues concerning sanitary latrines and safe water supply systems. Slum owners and community leaders will be motivated to establish these facilities in their localities. Schools will be used as focal points for hygiene education. Hygiene educational packages will be developed for specific age-groups in primary and secondary levels in collaboration with the Ministry of Education. Training will be provided to headmasters who will, in turn, train school teachers on how to motivate students and engage in self-discovery towards improving their personal and family hygiene.

Teachers and students will motivate neighbours and other community members in the school catchment areas to improve the environment in their homes and in the community. At the community level, leaders of organized groups will conduct regular sessions with families to assess the current hygiene practices and motivate them for improvement.

3.5.4 PROJECT MANAGEMENT

The City Corporations and the selected pourashovas will implement their respective components of the project. NGOs and other local agencies will assist in organizing communities and conducting promotional and educational campaigns. DPHE will coordinate at the national level for technical and logistic support; appoint a Project Director; and provide support staff. The local DPHE engineering staff will provide advisory, logistics and technical support to the Corporations/ pourashovas at the local level.

In the four City Corporations, delivery of water and sanitation services will be integrated with other basic services such as primary education, health, nutrition, and others. At the Corporation/pourashova levels, a water supply and sanitation (WATSAN) Committee, headed by the Mayor/Chairperson, will coordinate activities. At the ward level, a committee headed by the Ward Commissioner with representatives from partners and the community will coordinate activities and monitor progress monthly.

A similar committee at the community level--headed by the community leader with representatives from partners--will monitor performance bi-weekly. In all committees, efforts will be made to reach at least 50 per cent of women representation.

3.5.5 MONITORING AND EVALUATION

The Corporations and pourashovas will monitor project performance while partners will be responsible for their respective components. Ward commissioners will prepare monthly progress reports based on information provided by the community-level committee. The Corporation/ pourashovas will compile information in a monthly report which will be shared with the DPHE Executive Engineers. Progress reports will be reviewed monthly with DPHE and UNICEF divisional offices. The DPHE Project Director will compile a monthly progress report for discussion at the DPHE-UNICEF monthly meetings.

Gender indicators will be used to monitor welfare, access, participation, and control of women at different levels of project implementation.

Trained staff will provide supervision to achieve quality and timely accomplishments of targets. The pourashova/ Corporation engineers will ensure technical supervision and quality; prepare annual workplan for key activities; and monitor progress with the local EE of DPHE and District Coordinator of UNICEF. The local EE of DPHE will inspect monthly at least five per cent of the works completed in the previous month. He/she will share the findings with the Corporation/pourashova, the PD of the project, UNICEF Divisional Office, and UNICEF WES Section at Dhaka. During visits, the EE will also see that defects deviations/inadequacies observed in the previous visits are rectified.

For each completed work, the EE of DPHE will prepare a technical report which will be the basis of payment or rectification by the Corporation/ Pourashova. The UNICEF Divisional Office will periodically inspect a percentage of the completed works. If deviation is found in more than five per cent of works, DPHE will suspend the release of resources to the Corporation or pourashova, and will not resume until modifications have been made. The findings of UNICEF inspection will be shared with the Corporation/pourashova, the local DPHE EE, and the Project Director.

Studies on specific aspects of the project (e.g. degree of people's participation, extent of women's involvement, level of maintenance and functioning of facilities) will be conducted jointly by pourashovas/ Corporation, DPHE, and UNICEF to assess progress and effectiveness. Lessons learnt will be incorporated in activities and strategies will be modified accordingly. DPHE and UNICEF will also organize a mid-term and final evaluation of the project.

3.5.6 LINKAGES WITH OTHER PROGRAMMES

The project will contract NGOs with good track record to organize communities and motivate them to participate in the project. The project will also consider using private agencies and recruiting community leaders. Integration of water and sanitation services with primary education, health, nutrition, and other basic services in the four City Corporations will be emphasized. Coordination mechanisms at the national and Corporation levels will be developed for this purpose.

3.6 RESOURCE ALLOCATION

UNICEF will make available the sum of US\$ 5.5 million from its General Resource and US\$ 30.0 million from its Supplementary Funds, subject to availability and utilization of funds, which includes programme support cost(Ref.para 1.8.7, page 15). The indicative annual planning figures are as follows:

in million US\$

WATER AND SANITATION	1996	1997	1998	1999	2000	Total
General Resources	1.5	1.0	1.0	1.0	1.0	5.5
Supplementary Funding	5.5	6.0	7.5	7.0	4.0	30.0
Total	7.0	7.0	8.5	8.0	5.0	35.5