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MINISTRY OF WATER RESOURCES
BANGLADESH WATER DEVELOPMENT BOARD

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MEGHNA ESTUARY STUDY



QUARTERLY PROGRESS REPORT NO. 2

01 July 1996 - 30 September 1996

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JANUARY 1997

DHV CONSULTANTS BV

in association with

KAMPSAX INTERNATIONAL
DANISH HYDRAULIC INSTITUTE
RESOURCE ANALYSIS

DEVELOPMENT DESIGN CONSULTANTS
SURFACE WATER MODELLING CENTRE
AQUA CONSULTANTS AND ASS. LTD.

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SUMMARY

The Meghna Estuary Study is implemented under a cooperation programme between the Governments of Bangladesh, The Netherlands and Denmark. The executing agency is the Bangladesh Water Development Board (BWDB). MES is a component (FAP-5B) of the Flood Action Plan (FAP), the coordination with other projects under the Flood Action Plan is to be maintained by the Flood Plan Coordination Organization (FPCO), now WARPO.

The Meghna Estuary Study can be considered as the follow-up of the "marine based" activities of the Land Reclamation Project. The main goals of the study are to retain and increase the operational knowledge of hydraulic and morphological processes in the Meghna Estuary and to develop appropriate approaches and techniques for efficient land reclamation as well as effective river bank protection measures. In the long term the physical safety and social security of the people living in the coastal areas and on the islands in the estuary should be improved.

The MES area covers the Lower Meghna river from Chandpur town (the downstream extent of FAP9B) to the Bay of Bengal.

The eastern boundary follows the left bank and the coast line to the mouth of the Karnafuli near Chittagong (the boundaries of FAP5 and FAP5C).

The western boundary follows the right banks of the Lower Meghna and Tetulia rivers and the coastline to the bay (partly the boundary of FAP4). This boundary may be extended further to the west if it is considered necessary for the complete coverage of the mathematical model.

The southern boundary, which covers the eastern area and the off shore islands, is not specifically defined. But on the eastern side it should cover the entrance to the Karnafuli River.

Although Bhola island is in the project area, its internal area development and water management are covered by FAP4 South West Regional Study, and will thus be outside the MES responsibility.

The area has been served by the Land Reclamation Project (LRP) beginning 1978 by the assistance from the Government of The Netherlands and by the end of the Project in July 1991, the two Governments, in recognition of the two distinct approaches, divided LRP into Char Development and Settlement Project (CDSP) and Meghna Estuary Study. After the devastating cyclone in 1991, the Flood Action Plan gave priority to the area and thus the MES is designated as FAP5B.

The consultants have mobilised the project on 01 November 1995. Since commencement of the project, the consultants have produced Interim Inception and Inception reports in the second and the sixth months of project, respectively.

The objectives of the Quarterly Progress Reports are to report the progress and achievement of the Meghna Estuary Study for the reporting period as per operational work plan given in the Inception Report.

The Inception Report includes a Project Implementation Plan for the 35 months project period as well as confirmation of the approach and methodology to be followed.

In the Inception Report, the progress of the project activities has been reflected from the commencement to 31 March 1996.

This second Quarterly Report covers the period from 01 July 1996 to 30 September 1996, the report presents the progress in the reporting period and also the overall progress of the project in 7 different chapters.

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In Chapter 1 and Chapter 2, a general introduction and organisation about the project are provided.

Chapter 3 of the report presents the physical progress so far done from the beginning and particularly achieved in this quarter.

The main physical progress reported are:

- inventory and retrieval of the LRP data
- bathymetric survey
- modelling strategy
- progress of civil engineering and reclamation
- water management and drainage
- economic aspects
- rural development
- agricultural aspects
- environmental aspects
- remote sensing
- institutional development.

In this quarter, the survey vessel "Anwasha" made a survey cruise made in the estuary between 26 August and 11 September to collect bathymetric data, flow transects data, temperature/salinity data, suspended sediment samples and bed samples

The status of procurement and jetty at Chittagong and state of repair of "Anwasha" has been presented.

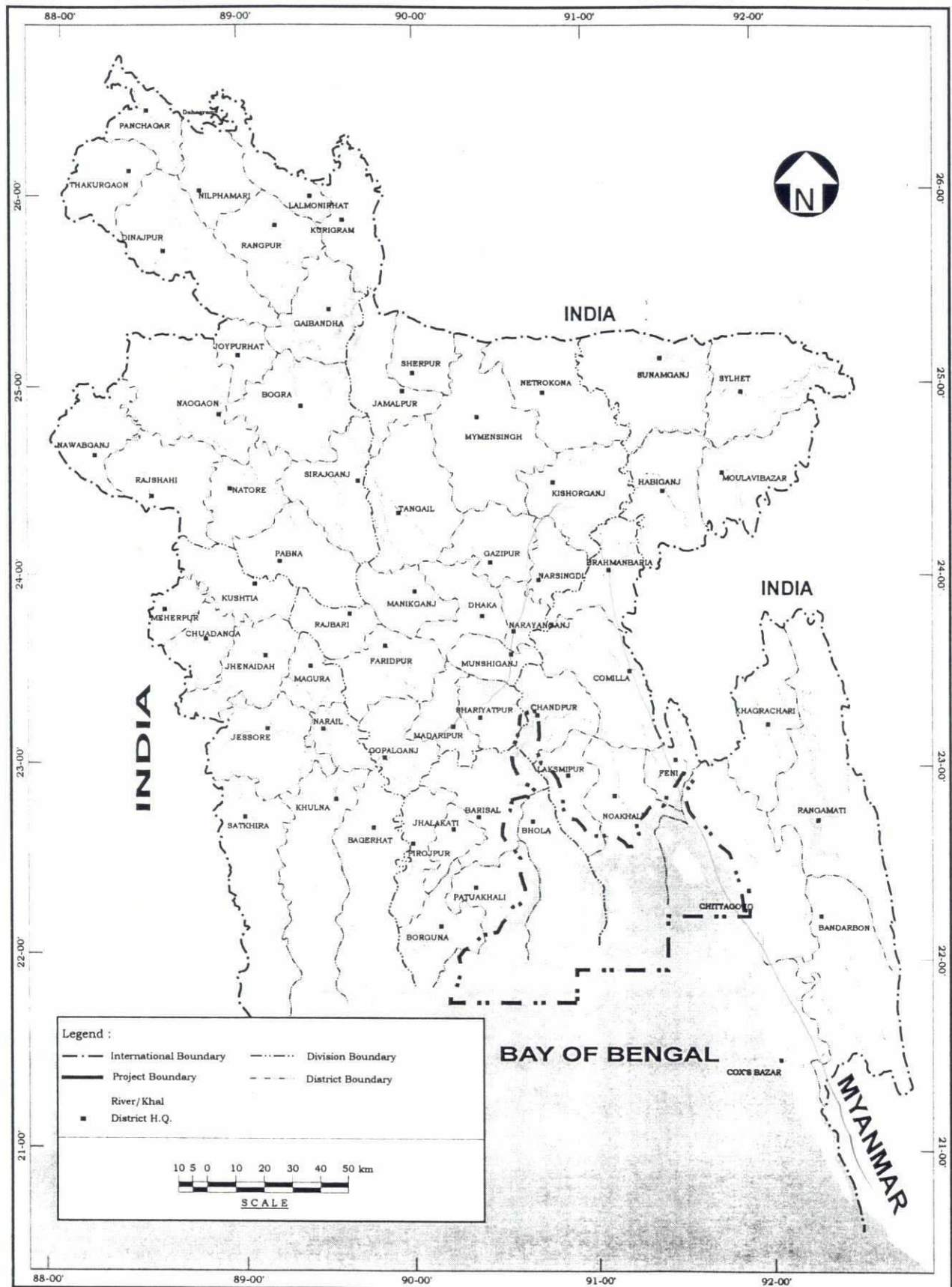
The staffing positions, expatriate and local professional staff, beginning of their assignments, man-months utilised, and man-months remaining etc. have been shown in Chapter 4, Table 4.1 and 4.2, respectively. Further information on local contract staff and project support staff are also given in Chapter 4.

The progress on Technical assistance, financial assistance and contribution of GoB has been given in chapter 5.

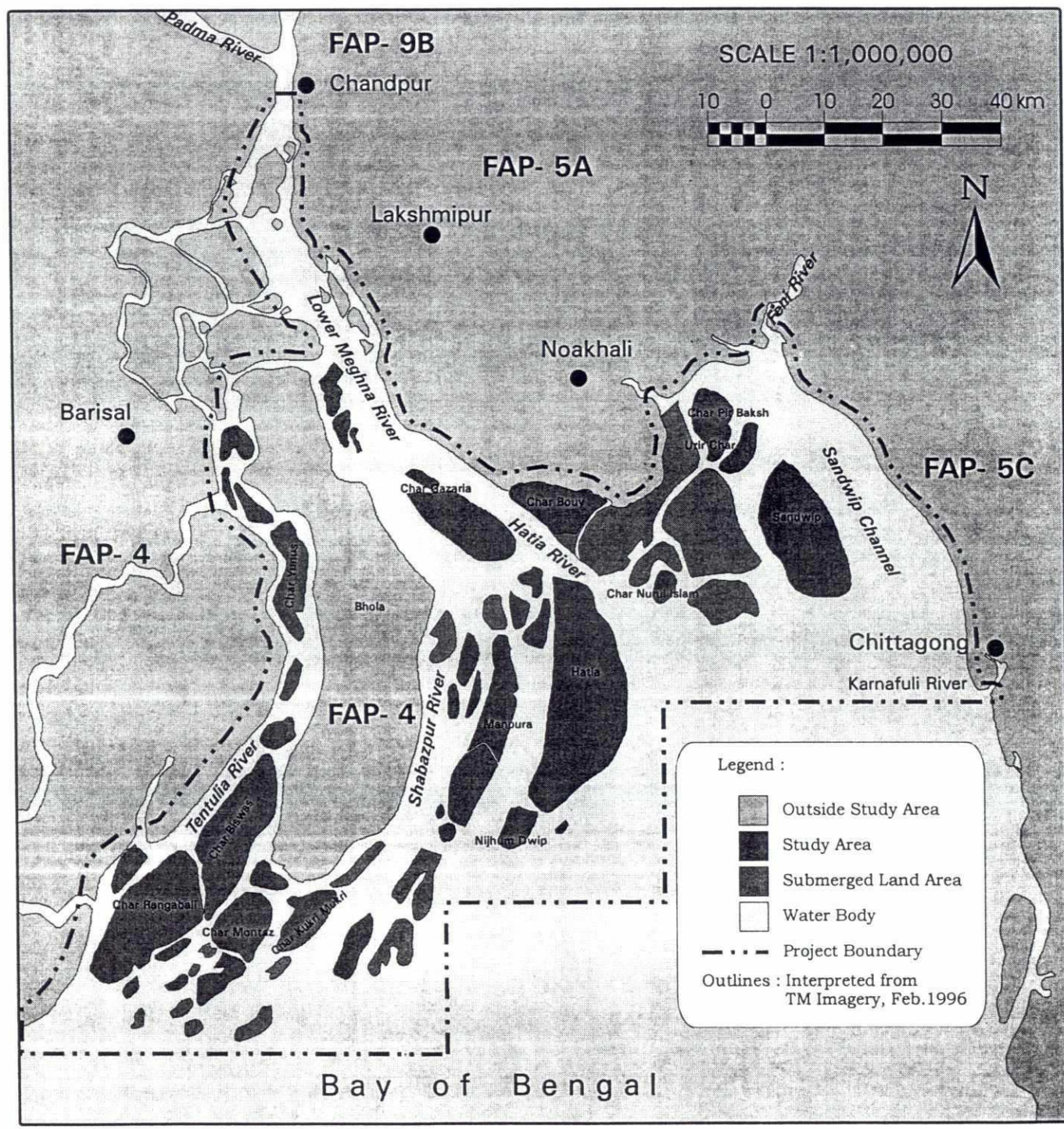
The main issues/activities for the period and bottle necks in resolving issues have been discussed in Chapter 6.

The final Chapter 7 of the report presents miscellaneous events like Meetings, Field trips, and Visitors etc. One of the main issues in this quarter is state of repairs of "Anwasha" and its two tenders as well as the institutional development for the sustainable estuarine development works even after the completion of the consultancy services.

Location of Meghna Estuary Study Area



Map of the Project Area



1. INTRODUCTION

The Meghna Estuary Study (FAP5B) is a component of the Flood Action Plan. This Plan has been launched with the assistance from the international donor community for the Government of Bangladesh (GOB) and is coordinated by the World Bank.

Most of the 26 components and supporting activities of the Flood Action Plan, which started in 1990, have been completed by now.

The Meghna Estuary Study (MES) project is implemented under a cooperation programme between the Governments of Bangladesh, The Netherlands and Denmark.

The administrative Agreements between the three governments was signed on 7 December 1995. The executing agency on the Bangladeshi side is the Bangladesh Water Development Board (BWDB). According to the Terms of Reference the coordination with other projects under the Flood Action Plan (FAP) is to be done by the Flood Plan Coordination Organization (FPCO). In the meantime FPCO has been merged with WARPO.

The MES project area covers the Lower Meghna river from Chandpur town (the downstream extent of FAP9B) to the Bay of Bengal.

The eastern boundary follows the left bank and the coast line to the mouth of the Karnafuli near Chittagong (the boundaries of FAP5 and FAP5C), see Figure 2.

The western boundary follows the right banks of the Lower Meghna and Tentulia rivers and the coastline to the bay (partly the boundary of FAP4). The western boundary may be extended further to the west if it is considered necessary for the complete coverage of the mathematical model, see Figure 2.

The southern boundary, which covers the eastern area and the off shore islands, is not specifically defined. On the eastern side the project area covers the entrance to the Karnafuli River.

Although Bhola island is in the project area, its internal area development and water management is covered by FAP4 South West regional Study, and will thus be outside the MES responsibility.

The area was surveyed by the Land Reclamation Project (LRP beginning 1978 by the assistance from the Government of The Netherlands) and by the end of the Project in July 1991, the two Governments, in recognition of the two distinct approaches, divided it into Char Development and Settlement Project (CDSP) and Meghna Estuary Study (MES). After the devastating cyclone in 1991, the Flood Action Plan gave priority to the area and thus the MES is designated as FAP5B.

The Terms of Reference for the project have been revised several times over the last 4 years; the study as it eventually has been formulated is rather complex, covering a number of components that have some degree of coherence. In addition it has connections with other projects being carried out or completed earlier in the same area. The project also has an important institutional component.

Ultimately the various components have to be brought together in a coherent manner for the working-out of overall plans, in the ToR referred to as the Master Plan for the total area and the Development Plan for the coastal islands included in the project area.



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This certainly is a complicated matter, which requires a well planned approach and the timely inputs of various experts and supporting tools and equipment, in order to produce eventually the outputs that satisfy the expectations of all participants in the exercise.

The objectives of the Quarterly Progress Reports are to produce the progress and achievement of the Meghna Estuary Study for the period concerned as per operational work plan given in the Inception Report. The Inception Report includes a firm Project Implementation Plan for the 32 months project period as well as confirmation of the approach and methodology to be followed.

In the Inception Report, the progress of the project activities has been reflected from the commencement to 31 March 1996.

The first Quarterly Report covers the period from 01 April to 30 June 1996.

This second Quarterly Report covers the period from 01 July to 30 September 1996.



2. ORGANIZATION

2.1 Government of Bangladesh

The project is implemented under a cooperation programme between the Governments of Bangladesh, The Netherlands and Denmark. The administrative agreements between the three governments was signed on 7 December 1995.

The executing agency on the Bangladeshi side is the Bangladesh Water Development Board (BWDB). According to the Terms of Reference (TOR) the coordination with the other projects under the Flood Action Plan (FAP) is done by the Water Resources Planning Organization (WARPO).

2.2 Consultants

The tender of consultancy services for the Meghna Estuary Study in Bangladesh was issued by the Directorate General (DGIS) of the Netherlands' Ministry of Foreign Affairs in April 1995.

The consultancy services have been awarded to the following group of consultants:

DHV Consultants,	Amersfoort, the Netherlands (lead consultant)
Kampsax International S/A,	Copenhagen, Denmark
Danish Hydraulic Institute,	Copenhagen, Denmark
Resource Analysis,	Delft, the Netherlands
Development Design Consultants Ltd.,	Dhaka
Surface Water Modelling Centre,	Dhaka
Aqua Consultants and Associates Ltd.,	Dhaka

The Main Agreement was signed on 10 December 1995, the starting date of the services was agreed to be 1 November 1995.

The organogram for the Meghna Estuary Study project is shown in Figure 2.1



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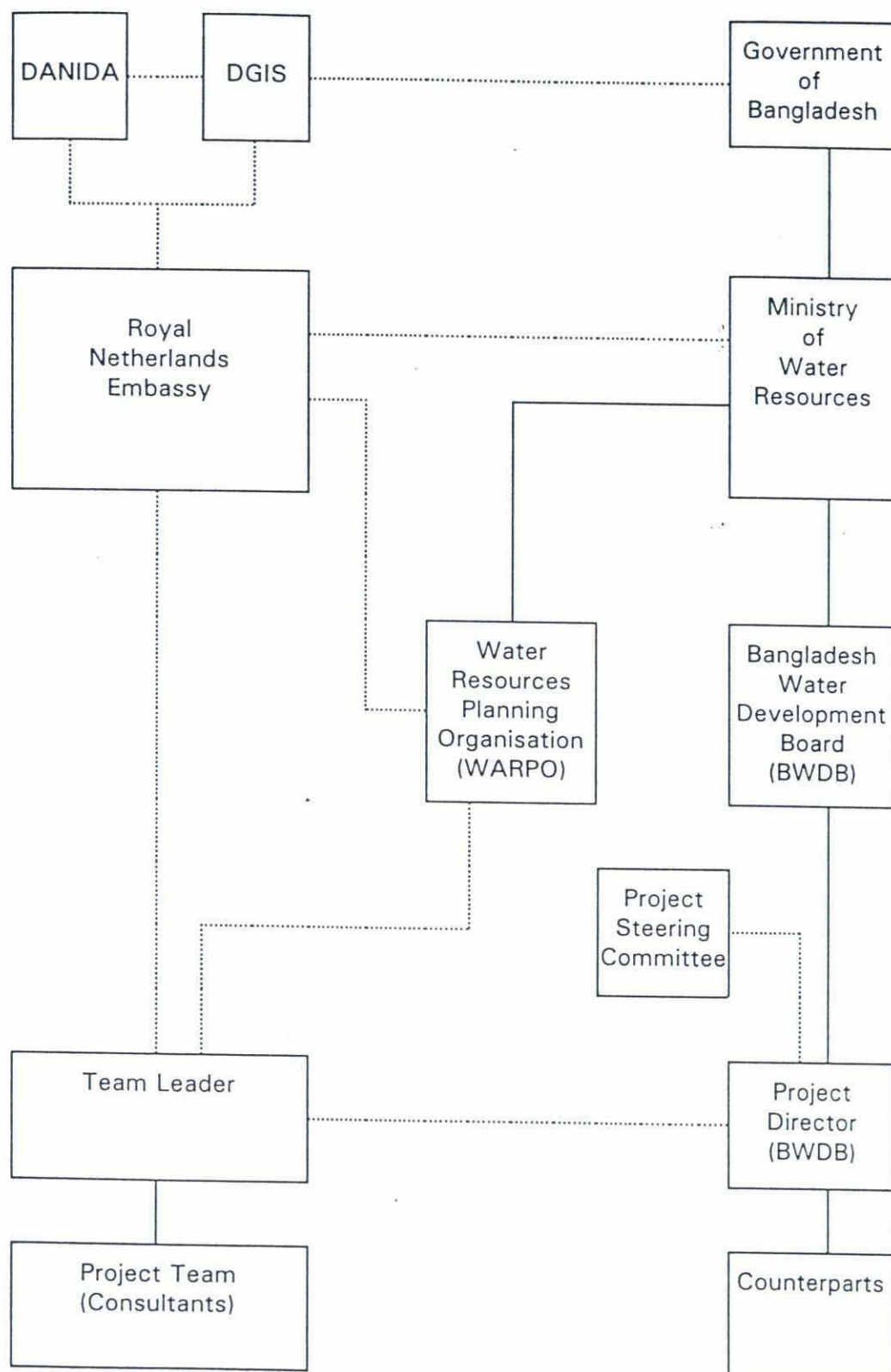


Figure 2.1 : Organogram Meghna Estuary Study

3. PHYSICAL PROGRESS

3.1 Estuary hydro-dynamics and morphology

The main tasks that were completed during the July 1996 through September 1996 period are narrated below.

A first draft final of inventory of available Survey and Study Division (SSD) data collected for the Land Reclamation Project (LRP) and retrieved by MES from SSD diskettes was published and is available in the MES library.

This draft inventory contains water levels, cross-sections, discharges, coastline development, decca charts, bathymetric charts, wind velocity and direction, laboratory analysis of soil and sediment samples, salinity and suspended sediment concentration data.

The SSD of BWDB conducted hydrometric and hydrographic surveys, meteorologic (wind only), salinity and sediment transport measurements, and laboratory analysis of soil samples in the Lower Meghna estuary during 1978-1992. These data were computerised by SSD, BWDB, Chittagong.

MES copied and brought these data from SSD. We were able to retrieve about 85% of these data. The rest could not be retrieved as the computer files were corrupted. Even after repeated attempts, the remaining 15% data could not be retrieved. Some LRP data were not processed by computer by SSD but are mentioned in our inventory.

An observation of MES regarding the discharges measured by LRP during spring and neap tides at many cross-sections is that the time lag between spring and neap tide at the same or adjoining cross-sections is only 3 days whereas tidal theories suggest that neap tide occurs one week later than the spring tide. Another observation is that during discharge measurements at the same cross-section, different water level gauges were referenced to.

An easy to handle database was designed for the retrieved LRP data. The database will help in picking required data quickly and easily. These data were organised yearwise and stationwise.

First draft final of review of relevant morphological studies and reports was prepared. The objective of this review is to present a description of the major morphological aspects in the Lower Meghna Estuary. The review of LRP reports will help in forming ideas about the driving morphodynamic forces which are active in the Lower Meghna Estuary.

Some comments were given on reports on empirical morphodynamic relations in the Dutch Wadden Sea, however it should be kept in mind that the Rhine delta in the Netherlands was formed by sea-dominated processes and the Meghna-Jamuna-Ganges delta in Bangladesh is a part of seaward river-driven processes. Despite that, some basic processes are the same.

Any intervention for the economic well-being of people in the highly dynamic Meghna Estuary Study area will affect the functional uses of the area like fishery and will probably also demand whole new concepts. Management of resources in the Meghna Estuary should be based on sound understanding of the complexity of coastal morphodynamic system and of the interaction between the coastal system and adjacent river basins and the Bay of Bengal. Therefore, the future morphological development will be of crucial importance.

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A reproduction of the morphological development of the Meghna Estuary by use of high resolution numerical modelling techniques with presently available knowledge and tools is not possible in an accurate way. Despite that, a distinct need exists to predict the impact of changing hydrodynamic and morphologic conditions in the Meghna Estuary due to natural and human interventions with a fair degree of accuracy. So, equilibrium empirical relations between morphodynamic parameters will be developed in addition to the numerical modelling techniques.

The morphologists participated in the 2nd 'Anwasha' reconnaissance trip to the MES project area. This trip was held between July 18, 1996 and July 23, 1996. During this cruise, we have seen Urir Char, erosion in north and western Hatia, erosion in the north-western part of Nijhum Dwip, accretion around southeastern part of Hatia and western part of Damar Char, Char Quasem, Char Rangabali, Char Momtaz, Char Biswas, accretion in the western part of Char Kukrimukri, erosion around Khorki, etc. We have spotted the places which are already accreting and have the potential of accretion in future. The eroding coastlines were also spotted during the trip.

Four fortnightly progress reports were prepared during this period.

Lectures were delivered on hydrodynamic and morphological mathematical modelling to the participants of survey training program conducted by MES for trainees from SSD, LAED and SWMC.

Dr. Mobarak Hossain delivered lectures on 'Hydrographic Data Collection in the Meghna Estuary for Mathematical Modelling' and Mr. Saifuddin Ahmed delivered lectures on 'Morphological Data Collection and Mathematical Modelling'.

Comments received from different agencies on the Inception Report of MES relevant to this discipline were answered.

Morphology part of CDSP Pre-feasibility study was reviewed and comments were delivered.

The MES specialists maintained close liaison with SWMC.

The survey vessel 'Anwasha' completed its first 1996 monsoon field cruise in the western part of the MES project area to collect different types of hydraulic and morphologic data between the period August 28, '96 and September 9, '96. Engineers and surveyors from SSD, SWMC, DHI and MES took part in field survey campaign.

Runlines, ADCP transects, suspended sediment sampling, current velocity and direction, salinity, conductivity, temperature, and depth by S4 current meter, and bathymetric data were collected at Chandpur, Dasmunia, Tazumuddin, and Hatia North during this cruise.

Data collected during the 1st 'Anwasha' field survey cruise will be processed by SWMC and they have started it.

A second 1996 monsoon field cruise of 'Anwasha' was supposed to start from September 16, 1996 for 11 days. But this cruise was cancelled due to malfunctioning of the gearbox of one of the main engines of 'Anwasha'.



3.2 Civil engineering and reclamation

A field visit by the engineers was made to Jamuna Multipurpose Bridge Project site at Bhuapur and to get familiarised with the protective measures taken on either ends of the bridge as guide bunds, use of geotextile along with bamboo fascine, process of sinking it by load of bolder rip rap, construction of submerged groynes as mitigative measures for protection of the guide bund.

Previous LRP reports were reviewed and sedimentation field for accretion trial were design and the detailed bill of quantities and cost estimate were prepared. The estimates and drawings prepared by Survey and Study Division (SSD) Chittagong in connection with the construction and repair of sedimentation trial field at Kattuli Chittagong were procured and consulted in preparing the above estimate.

Review of reports, publications, maps and satellite images collected from Land Reclamation Project (LRP) BWDB, Water Resources Planning Organisation (WARPO) for collecting data and information regarding morphological behaviour in the Meghna Estuary area, cross-dams previously planned and protective measures required for the erosion areas.

Discussions were held with the Deputy Project Manager, Jamuna Test Works Consultant (FAP 21/22) in connection with the trial protective works done by them in Kamarjani, Gaibandha.

Also discussion were held about the availability of piles, method of sinking and cost thereof and collected a copy of the detailed design drawing used for Jamuna Bank Protection trials. Consulted the Chief Engineer SRP, BWDB about availability, cost and other aspect of bank protection by piles of different shapes and sizes.

The requirements of protection of population, property and sustained agricultural developments have been made and will be continued.

The engineers visited Urir Char, Sandwip West, Hatia North, Nijhum Dwip, Damar Char, Bhola erosion area at Doulat Khan, Rangabali, Char Montaz, Char Kukri Mukri, Bhola South-east area, Gongapur erosion area at Bhola, erosion area at Meghna Left Bank in Haim Char, Ekhlaspur revetment works, Chandpur town protection work, by 'ANWESHA' from 18.07.96 to 23.07.96.

Selection of Low Cost method to reduce or to check erosion is being continued. Various alternatives such as use of porcupines, Surface Bottom Vanes (SBV) etc. are being studied.

Location areas for erosion reduction trials are being studied. Preliminary cross sections taken by Echo-Sounding method from Tender Boats were studied to see the pattern of erosion at Khorki erosion site at north-east of Bhola island.

3.3 Water management and drainage

In Meghna Estuary studies the progress in Water Management and drainage aspect has been made by local and expatriate foreign consultants shown below for the quarter ending on 30.09.96.

The specialist collected list of rain fall stations, location, Identification number, longitude, latitude, altitude, period of operation and total number of station years available. Analysis of rainfall depth frequency curves for 1,2,3,4,5 and 6 days of rainfall for once in 2,4 and 5 years curve for a few characteristic locations in the Estuary are being done.

Inventory of rainfall stations for 50 stations for more than 30 years, salinity data in MES area for a short duration between 1991 and 1993 in Hatia channel, Sandwip channel, Shahbazpur channel, Lower Meghna, Kazirhat Regulator, Rahmatkhali Regulator were received from SWMC. Soil data, water and soil salinity data of selected Chars have been collected. Listing and publication for each relevant project (LRP, FAP4, FAP5, FAP7, FAP13, FAP5A, CDSP, FAP20-CPP, SRP) and collection of documents have been made.

In MES three clusters have been selected. Out of these three clusters nine areas (Urir and Pibaks Chars, Char Buya, Nijhumdwip and South Hatiya, Char Younus, Kazal and Bishwas Chars, Boro Baishdia, Ganga and Halim Chars, Rangabali and Chato Baishdia, Char Momtaz, Char Kukrimukri) have been selected for reconnaissance survey and preliminary investigation. Base maps from satellite imagery have been prepared for these nine areas.

Questionnaires for (CPP) compartmentalization of pilot project for follow-up visit have been prepared. Field reconnaissance of the MES area was made by Anwesha (18.7.96 to 22.7.96), a visit report was prepared. In the reconnaissance, visited Urir Chars which are unprotected and subject to strong erosion and accretion. No infrastructural facilities were observed. Heavy on going erosion was observed along the north coast of Hatia.

In Nijhum Dwip all the people asked, were in favour of an embankment. Strong accretion take place south-east of the island and according to the population new land is available every year.

Visited Boro Baishdia, Char Ganga, Char Halim, Rangabali and Choto Baishdia. The latter two Chars are protected by embankment. The local population reported, BWDB has completed a topo survey for the construction of new embankments to protect the three remaining unprotected Chars. Returned to Dhaka on the 22nd July 1996.

Follow-up visit to CDSP (19.08.96 to 22.08.96) was made, a visit report was prepared. Visit report made I. Inventory of BWDB, O&M Division Noakhali was made in respect of stuffing, establishment (Building, transport etc). ADP (FY 95/96). O&M budget, FFW (preventive, routine or periodical maintenance).

Visit of local offices, Ground water circle II, Soil research laboratory, Directorate of LAED and the Chief Engineer, Hydrology BWDB were made. Collected ground water survey data publication.

3.4 Economic aspects

The economic aspects of the project are entrusted with one expatriate consultant who is assigned to the project intermittantly and with one local consultant who will also work intermittantly but for longer period.

These consultants have made their initial contributions for the preparation of Inception Report and afterwards during the first quarter they did not have any contribution. During the reporting quarter, they donot have any allocation of work in the man-month schedule.



3.5 Rural development and socio-economic aspects

The following activities have been completed at the end of the reporting period:

A plan for field operations has been outlined for the period of data collection (92 days). The investigators (10), assigned to the field work, have been divided into four groups and each group has been designated to one sample area. This way four groups have been given their respective assignment. In the operation plan all sample areas will be supervised by Research Associates. The Rural Development Specialist is the Team Leader of all field operations.

Field visits were undertaken for final location of sample areas (Char Majid, Nijhum Dwip, Urir Char and Boro Baisdia).

The research associates visited all the sample areas and made reconnaissance on the following:

- socio-economic condition of settlers
- temporary constraints faced due to erosion and other environmental hazards
- peoples' perception of environmental hazards
- land use pattern
- health and primary sources of drinking water

Along with listing household heads for making the sample frame, the Research Associates also made case list for in-depth study.

The Rural Development specialist paid random visits to a number of Adarsha Gram Projects and assessed NGO performance in overall development of Adarsha Gram as well as participation of the district and thana administration in Adarsha Gram during NGO assignment.

No doubt this project had a difficult start in fact the Adarsha Gram could not attain the success as expected due to cunning jotdars who always create bottlenecks by fictitious documents and force the settlers to yield to their wishes. Overall attitude of lack of cooperation and skepticism about the possible success resulted in slow progress of Adarsha Gram Project.

Several field trips were undertaken for holding discussion with relevant thana officers, NGO, CDSP staff to evaluate expert opinion on land settlement issues and also the legal basis for allocation of accreted land.

Critical issues of land settlement were identified and land allocation procedures evaluated. Almost each officer met had a feeling that the settlement issue and large scale land distribution will continually be a challenge to GoB commitment and capacity to implement the new land distribution policy including the necessary supervision of the process at the district, thana and also union levels.

Issues and bottlenecks

All issues were addressed and no bottlenecks created during the reporting period.



3.6 Agricultural aspects

The agricultural aspects of the project will be studied by one expatriate for five months and by one local consultant for 20 months. From the commencement till to-date they do not have any allocation of activity. The services of the local consultant for contribution for the production of the Inception Report were utilized for 15 days only. During the current quarter the local consultant has worked for 7 days for economic justification of trial fields for faster accretion.

3.7 Environmental aspects

There are scopes of works of expatriate and local environmentalists in this project. The expatriate consultant's man-months is 8(eight) and local consultant's man-months is 14(fourteen) only. The time of their activities did not appear in the schedule as yet, however the services of the local consultant were utilized for 15 days during the production of the Inception Report. In the former quarter and in the reporting quarter, there were no contribution from this discipline.

3.8 Institutional development

The objective of MES - to increase the operational knowledge in the area of hydrological and morphological processes in the Meghna Estuary and to increase the institutional capacity to retain and up-date that knowledge and to develop appropriate approaches and techniques for repaid and low cost land reclamation.

One of the area of institutional development task in MES is to find the institutions / organisations which are working towards meeting those objectives. The MES document mentioned that CDSP and MES keep close co-ordination in respect of their activities that is those related to the development of land / polder and settlement of landless people and those related to the study of the process of erosion and accretion.

In this connection one field visit have been undertaken (sept. 19-22, 1996) by MES institutional specialist to CDSP in Noakhali, discussed institutional development on participatory planning and implementation of CDSP's programmes in Char Baggardona, Char Majid and Char Batertek with local CDSP staff members and related local officer of GoB, NGOs who are in the MES area.

The institutional set up in the CDSP (project) is like this: three ministries are directly involved in the project, MOWR, MOL, LGED while six other ministries are involved at district and thana level as a matter of routine and attending management committees and co-ordinate their activities without formal commitment. Moreover, CDSP has co-operation with number of NGOs active in the area in a limited scale.

Contact made with LAED to evaluate its position in terms of strength and weakness to perform its functions as required. Contact has already been made with WARPO (FPCO) to assess their merger situation and expected organizational set up.

Questionnaires are issued to a number of water resources survey and data collecting agencies, not even one filled-in questionnaire returned from any of these agencies.

The co-operation from survey and data collecting agencies is far below what might be expected.



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Though MES's forwarding letter indicated that for any problems the agency may contact the concerned consultants in MES (given the name and telephone number). But there no call except from LGED and ground water (circle 1) of BWDB. This means that the agencies are not seriously interested to co-operate in MES effort and from MES's part it is not practically possible to contact all of them now and then.

The date of establishment and establishment order under which SSD started functioning is not available with SSD, Ctg. It was reported that this document may be available with BWDB (Chief Engineer-planning). PD MES may help to get this from BWDB.

For better cooperation between MES and WARPO it is suggested that WARPO may name a person in WARPO as contact person to facilitate exchange of ideas and views.

A formal meeting may be arranged between WARPO and MES as soon as possible.

Same kind of meeting may be helpful with BWDB, LAED and WARPO-BWDB and MES.

Effective cooperation and coordination is essential between MES and WARPO and BWDB through Project Director. Formal and informal contacts may be necessary to speed up activities of MES.

3.9 Remote sensing and GIS

A series of topographic maps, thana maps, district maps, administrative maps, satellite imageries covering the MES project area have been procured from different institutions. To maintain these documents in the library, one A₀ size and one A₁ size steel map cabinet were purchased as per our supplied design.

A light table is most suitable tools for overlays and identification and interpretation of diapositives films and paper prints of aerial photographs/ satellite imagery. After visiting different cartographic laboratories a most suitable portable light table (76 cm x 53 cm) was designed and made from wood in MES.

To get the latest bankline-shoreline position of the MES area, 4 landsat scenes in CCT (136/44-45, 18.02.96 and 137/44-45, 09.02.96) were procured from NRCT, Thailand. These images were processed for mosaicking by computer in EGIS. From these processed data 3 hard copy FCC print in 1:250,000 and 1:500,000 scale were produced by EGIS for MES.

A base map of the MES project area was prepared using FCC mosaic print in 1:250,000 scale of 1996 satellite imagery. Shoreline/ bankline, rivers streams, khals, mangroves forests, under water islands, sand bars, embankments, cross-dam, regulator, closure and other identifiable features were taken from the satellite imagery.

Other informations such as railway line, roads (National, Regional and Feeder), location name, etc. were taken from LGED thana maps and overplayed on the base map. Later on the base map will be digitized and computer print will be taken for use in different sections.

Three SPOT images (79J14, 79N2&6) of Noakhali coast covering from Muhuri mouth to Ramgati were selected for interpretation of morphological characteristics. Interpretation are being conducted visually. However a light table is used for better visualization of the imagery. The use of a light table, for this kind of visual interpretation of images, increases the capability of classification of images.

2/2

The signature of objects identifiable from the imagery are:

- homesteads
- agricultural fields
- ponds
- roads
- embankments
- mangrove forests
- rivers
- canals
- sand bars
- tidal flats surfaced during low tide
- turbid water
- clear water
- cloud and cloud shadow etc.

Preparation of draft landuse map are being progressing as per planning.

On requirement of satellite imagery a discussion meeting was held on 24.09.96 with Mr. Niklas Cassel of Swedish Space Corporation (SATELLITBILD) and Mr. Shafquat Haider of CIPROCO COMPUTERS LTD. They have been requested to submit price list of their products.

MES is urgently required mosaic digital data of February 1996 of the project area from EGIS. After receiving CD-ROM digital data from EGIS, FCC prints in 1:50,000 scale of 5 locations for the Civil Engineering and Hydraulic Engineering (Reclamation) will be supplied as per of their request. Water Management and Drainage Engineering section has also requested for FCC prints of February 1996 satellite imagery for 10 different locations in 1:50,000 scale. These satellite maps in conjunction with 1990 (latest) aerial photographs can be effectively used for water management and drainage planning of the area.

On request from CDSP three band false colour composite print of Muhuri accretion area was supplied to them. For this, digital data of February 1996 satellite imagery were used. Being satisfied with the qualities of map 70 prints of the same area have been ordered to MES.

Fixation of Digitizing Module of ILWIS GIS/RS software to the Digitizer was completed.

3.10 Procurement of equipment and vehicles

Procurement of equipment and vehicles to be imported from abroad was completed during previous reporting periods. During the reporting period some additional office equipment was procured locally.

3.11 Installation of equipment on board "Anwasha"

The installation of survey equipment and navigation equipment has been completed in mid August 1996. During the first survey cruise of "Anwasha" the equipment has been tested, it was found that the ADCP functioned erratically.

All attempts to remedy the faulty behavior failed and it was decided to send the instrument to the manufacturer for checking and repairs.

The dual frequency echospunder transducer was damaged during the survey works and had to be replaced urgently.



3.12 Refurbishing "Anwasha" and tender boats

Before the survey cruise most outstanding repair and maintenance jobs were completed. However before completion of the cruise severe problem had occurred, in particular serious damage to the gearbox and problems with the generators. Therefore a second planned survey cruise had to be cancelled and a proposal for thorough inspection of engines and generators was given to the competent authorities.

3.13 Repair of jetty and pontoon at Chittagong

This was kept pending during the reporting period.

3.14 Installation of equipment sediment laboratory SSD/BWDB

This was kept pending during the reporting period.

3.15 Sediment analysis sediment laboratory SSD/BWDB

This was kept pending during the reporting period.

3.16 Miscellaneous surveys

Since the reporting period was during the monsoon, survey work in the estuary had not been planned.



4. STAFFING

There are 4 (four) different categories of staff engaged in this project. These are:

- 1) Expatriate Professional staff;
- 2) Local Professional staff;
- 3) Local Contract staff; and
- 4) Project staff.

4.1 Expatriate professional staff

The list of the expatriate professional staff, name, total man-months as per contract and man-months utilization etc. are shown in the table below.

Sl. No.	Position	Name	Man month			
			As per P.I.P.	Upto period	During period	Balance
01	Team leader	Oosterman	29.40	6.48	2.53	20.39
02	Hydr. Eng. (Estuary)	Nielsen	9.00	1.81	0.86	6.33
03	Hydr. Eng. (Reclam.)	Ris	0.82	0.82	0.00	0.00
04	Morphologist	Louters	9.80	1.88	0.00	7.92
05	Chief Hydrographer	Andersen	10.00	0.49	1.64	7.87
06	Economist	Vestgaard	7.80	0.82	0.00	6.98
07	Water Man. & Dr. Sp.	Wijdeveld	10.60	2.66	0.89	7.05
08	Civil Engineer	Burger	9.00	1.97	0.00	6.31
09	Rural Dev. Specialist	Madsen	9.00	1.35	0.00	7.65
10	Environmentalist	Bird	8.00	0.00	0.00	8.00
11	Agronomist	Arif Qaraeen	5.00	0.00	0.00	5.00
12	Modelling Specialist	Rugbjerg	5.00	1.25	0.00	3.75
13	Institutional Specialist	van Ommen	5.40	1.88	0.00	3.53
14	Remote S. Specialist	van Deursen	2.50	0.82	0.00	1.68
15	Special Adviser	van Ellen	0.95	0.95	0.00	0.00
16	Instrument Specialist	Mikkelsen	3.20	1.02	0.86	1.32
17	Special Adviser	Odgaard	0.50	0.33	0.13	0.04
18	Surveyor	Haubirk	1.00	0.00	0.86	0.14
19	Software Specialist	Jonsson	0.63	0.00	0.63	0.00

Table 4.1: MES expatriate consultants staff input - as on 30 September 1996



4.2 Local professional staff

The list of the local professional staff, names, total man-months as per contract and man-months utilization etc. are shown in the below.

Sl. No.	Position	Name	Man-month			
			As per contract	Until period	During period	Balance
01	Co-Team Leader	M. A. Rahman	31.10	7.57	3.03	20.50
02	Hydr. Eng. (Est.)	M. Hossain	27.70	4.97	3.03	19.20
03	Hydr. Eng. (Rec.)	T. Hossain	27.30	7.27	3.03	17.00
04	Morphologist	S. Ahmed	27.30	1.45	3.03	22.82
05	Hydrographer	M. Choudhury	30.40	7.30	3.03	20.07
06	Economist	G. Mustafa	20.10	1.25	0.23	18.62
07	W. Mgt. & Dr. Sp.	M. S. Bhuiyan	28.00	5.26	3.03	19.71
08	Civil Engineer	M. Shahidullah	30.00	4.97	3.03	22.00
09	Rural Dev. Spec.	S. A. Naqi	27.40	5.36	3.03	19.01
10	Environmentalist	KBS Rasheed	13.40	0.39	0.23	12.78
11	Agronomist	H. U. Fakir	20.50	0.49	0.23	19.78
12	Modelling Spec.	Abdur Rahman	28.00	4.01	0.30	23.69
13	Institutional Spec.	K. Husain	12.00	3.95	3.03	5.02
14	Remote S. Spec.	M. A. Jabbar	11.90	5.20	3.03	3.67
15	Special Adviser	M. Hossain	5.00	0.00	0.00	5.00
16	Junior Eng./Spec.		150.00	7.00	10.82	132.18

Table 4.2: MES local consultants staff input - as on 30 September 1996

4.3 Local contract staff

Local contracts of MES Project		
Sl. No.	Description	Number
1	GIS specialist	1
2	GIS/computer operator	
3	Skipper "Anwasha" (temporary contract)	1
4	Survey crews	
5	EGIS (elaboration of existing map/satellite data)	1
Total		

Table 4.3 Staffing Local Contracts of MES Project

4.4 Project support staff

The office of the Consultants is established at "AFROZA" House No.34, Road No. 25, Gulshan, Dhaka 1212. The office will be self sufficient and properly staffed. Table 5.10 showS the staff that has been recruited for the operation and maintenance of the office.

Project staff of MES Project		
Sl. No.	Description	Number
1	Office Manager/Administrative Officer	1
2	Accountant	1
3	Secretary	1
4	Typist/Word Processor	1
5	Librarian/Word processor	1
6	Driver	3
7	Messenger/peon	2
8	Photocopy operator	1
9	Kitchen Assistant	1
10	Guard	3
11	Gardener	1
Total		16

Table 4.4 Staffing Office of MES Project

5. FINANCIAL PROGRESS

5.1 Technical Assistance

Table 5.1 shows the input in terms of funding by the donor agencies for Technical Assistance. Details about staffing, purchase of equipment, O & M and training are provided in Chapter 4.

Sl. No.	Description	Cost in Lakh Taka			
		As per Consultant's contract	Until period	During period	Balance
1	Contract staff	1550.6	475.4	106.0	969.2
2	Purchase/Investments	213.3	189.5	1.5	22.3
3	Operational costs	231.2	44.6	23.1	163.5
4	Training and courses	52.7	0.0	0.0	52.7
5	Contingencies	77.5	0.0	0.0	77.5
Total		2125.3	709.5	130.6	1285.2

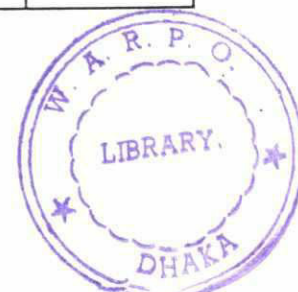
Table 5.1 Technical Assistance Input

5.2 Financial Assistance

Table 5.2 shows the input in terms of funding by the donor agencies for Financial Assistance. Details about the small scale interventions to be financed from this budget are provided in Chapter 4 and Annex 04 of the Inception Report.

Sl. No	Description	Cost in Lakh Taka			
		As per P.I.P	Until period	During period	Balance
1	Accretion trial	50.0	0.0	0.0	50.0
2	Bank protection scheme	100.0	0.0	0.0	100.0
3	Small cross dams	50.0	0.0	0.0	50.0
Total		200.0	0.0	0.0	200.0

Table 5.2 Financial Assistance Input



5.3 Government of Bangladesh

Table 5.3 shows the input in terms of funding by the Government of Bangladesh. Details about Government of Bangladesh staffing and purchase of equipment are provided in Chapter 5 of the Inception Report.

Sl. No	Description	Cost in Lakh Taka			
		As per TAPP	Until period	During period	Balance
1	Project personnel GOB	280.0	64.0	0.0	216.0
2	CDST & VAT	160.0	84.5	0.0	84.5
Total		440.0	148.5	0.0	391.5

Table 5.3 Government of Bangladesh Input

Note : 1 Lakh Taka = NGL 4,000
1 Lakh Taka = DKK 14,000
1 Lakh Taka = US\$ 2,500



6. ISSUES AND BOTTLENECKS

Issues in this report are meant by the major works which are already executed/to be executed during the reporting period or the next quarter. These types of activities may be planned and conceived in the Inception or may appear as emergent in implementing regular works. Bottlenecks are meant by the constraints either encountered in implementing works in the present quarter, and/or predicted to encounter in the future quarter.

6.1 Reporting Period

Issues and bottlenecks have been discussed by different disciplines in their physical progress in section and sub-sections 3 of this report. However, main issues/programmes for the project in this period were as follows:

- monsoon survey by M.V. Anwasha
- pretesting of socio-economic questionnaires
- streamlining institutional issues with relevant organizations
- clearing the vehicles
- training programmes
- coast line survey and inventory.
- finalization of plan of operations.

The bottlenecks/contraints in achieving the targets were as follows as in order above:

- inclement weather, defect with generator and port engines of Anwasha
- breakdown of the gearbox during the first moonsoon cruise of Anwasha
- delay in the arrival of container ship of the vehicles
- finalising candidates for training

6.2 Next quarter

The following issues/programmes may be expected in the next quarter/on-going quarter:

- dry season 1966/1997, survey 2
- coastline and coastline gradients survey of 1996
- data processing and analysis of hydro-morphological data
- morphological modelling works
- carry out visual surveys for morphological changes
- low cost measures enhancing accretion
- preparation of development plans, land and water use development plans
- socio-economic field investigations and surveys
- BWDB upgrading report?
- preparation of R S report and GIS maps

The expected bottle necks could be as follows:

- availability of the ship "Anwasha" in normal running condition
- availability of survey equipments in operating condition
- finding appropriate manpower for data processing and laboratory analysis
- counter part manpower availability
- fund allocation for coast line survey
- vehicles for field use

6.3 Remedial Measures

None required



7. MISCELLANEOUS

7.1 Meetings

The consultants held meetings several times with the Project Director, LAED(MES)/BWDB, officials of WARPO, and the Embassy officials to discuss important matters and issues of the project.

The consultants also held meetings with other agencies. The minutes of the meetings which were prepared by the consultants and are available with the consultants are annexed. (ANNEX A).

7.2 Visitors

During the period of reporting, Meghna Estuary Study project has received no important personalities from abroad.

7.3 Field Trips

Several field trips were undertaken by the consultants during this quarter. Also a cruise by the "Anwesha" for the trial moonsoon survey was undertaken between 26 August and 11 September in this quarter.

The list of the field visits is provided in the following paragraph. The details of the field visit notes are annexed (ANNEX B).

List of Field Trips

Sl.No.	Name/Names	Place	From	To
1)	Syed Ali Naqi, Khurshid Hosain, S. Bhuiyan	Char Baggardona I&II Char Majid & Batirtek	18.08.96	21.08.96
2)	K.Z.Hossain, N. Rahman	Ranga Bali & Boro Baishdia	27.08.96	05.09.96
3)	T. Hossain, M. Shahidullah E. Hoque, A. Rahman	Jamuna Multipurpose Bridge	26.08.96	-
4)	Syed Ali Naqi	Magura, Darshana etc.	16.09.96	19.09.96
5)	Anwesha Moonsoon Survey	Chandpur, Bhola etc.	26.08.96	11.09.96

7.4 Staff Training

The consultants have arranged a training programme for the surveys and surveyors Anwesha on 17/18 August at the MES office. The participants were from SSD/BWDB, SWMC and BUET. Also computer training programme to Miss Shahela Haroon, secretary to the Team Leader MES and Mrs. Wazifa Akhter Jahan, assistant librarian to MES has been arranged at IIT, Kalabagan, Dhaka for about 10 weeks in this quarter. They will take this training to improve their skill in DOS-Windows, MS-Word and MS-Excel in addition to their normal duties at MES. The details of the staff training programmes are shown in the Annex (ANNEX C).



21

PROJECT DATA SHEET

Project Name : Meghna Estuary Study (FAP-5B)

Location : Meghna estuary, Southeast Bangladesh

Objectives :

- To increase the physical safety of the population living in the South-Eastern coastal areas of Bangladesh
- To promote sustainable development in these areas.
- To increase the social security for the population in the coastal areas and on the islands.
- To enhance the operational knowledge of dealing with hydraulic and morphological processes in the Meghna Estuary
- to establish and strengthen the institutional capacity to maintain and update the same knowledge
- to identify suitable land reclamation and bank protection methods and to increase the capacity of BWDB to reclaim new land and to install river bank protection works.
- to develop a plan with priority project and programmes for flood protection, agricultural and socio-economic development for early implementation.

Activities :

- Institutional development
- Surveys
 - marine surveys
 - land based surveys
 - socio-economic surveys
- Studies
 - hydrodynamics studies
 - morphological studies
 - socio-economic studies
 - environmental studies
- Development of Reference Scenarios and Plans
- Preparation of Master Plan
- Preparation of Land and Water Development Plan
- Preparation of Priority Projects and Programmes
- Preparation of Small Scale Interventions, Design and Monitoring

Client : Ministry of Water Resources,
Bangladesh Water Development Board (Supervision of Execution)
WARPO/FPCO (Supervision of Planning and Project Preparation, Monitoring)

Consultants : DHV Consultants BV, the Netherlands, in association with:

- Danish Hydraulic Institute, Denmark
- Kampsax International, Denmark
- Resource Analysis, the Netherlands
- Development Design Consultants, Bangladesh
- Surface Water Modelling Centre, Bangladesh
- Aqua Consultants and Associates Ltd, Bangladesh

Financiers :

Government of Bangladesh	440 lakh Taka
Government of the Netherlands	1,178 lakh Taka
Government of Denmark	1,178 lakh Taka



ANNEX A
MINUTES OF MEETINGS



MINUTES OF MEETINGS

with
Project director MES

held in the office of LAED

on

27/07/96 and 28/07/96 at 1:00 pm and 10:00 am respectively.

The meetings were held under the Chairmanship of Mr. Anisur Rahman, P.D., LAED. Mr. Oosterman, the Team Leader and Dr. Ataur Rahman, Co-Team Leader, MES Project and Mr. S. Ahmed, EE, SSD/BWDB, Chittagong were present. The following agenda was placed in the meetings and the decisions taken thereof are presented as under.

1) Small scale interventions

There will be three kinds of interventions namely accretion trials, bank protection works and cross-dams. The funds provided for small scale interventions is very limited. Only works on a trial basis are possible with these funds. Full scale interventions are not at all feasible.

Accretion trials are proposed at two places: at Char Lakshi and one at south Hatia. Final selection will be done after further investigations. Tender and work order may be processed through respective Directors of BWDB as per established procedure.

Proposed Haim Char accretion/bank protection is a full scale intervention and is beyond the scope of small scale intervention of MES.

Trials with SBV at Khorki of Daulatkhan, Bhola are in active consideration.

Cross dams for very small creeks in the estuary may be considered with allowable cost (like Urir Char north and south, Rangabali etc.)

2) Inception Report

Draft of the minutes of the Steering Committee has been prepared. As soon as the minutes will be finalised, the Inception Report will be adjusted and comments incorporated for approval.

3) Anwesha trip between 17/07/96 and 23/07/96

A report will be prepared by the consultants and submitted to P.D. soon.

4) Installation of radio

The work has been started and the performance of the set will be reported to Project Director as soon as the work is complete.

5) Installation of survey equipment on "Anwesha"

The installation works of survey equipment on Anwesha have been commenced. Mr. Haubirk of DHI has started the installation works and P.D. will be informed in writing soon.

6) Assignment of skipper grade II

The approval procedures for the appointment of skipper II is in progress in the Ministry. Finalization may take about 15 days.

7) Assignment of engineer grade "A"

Same as agenda 6.

8) Assignment of river surveyors

The Team Leader proposed the appointments of 3 river surveyors from SWMC and 3 river surveyors from SSD/BWDB, Chittagong.

The appointments will be finalised with the consent from the P.D.

9) Assignment of boat operators

The Team Leader proposed 2 boat operators to be appointed from the FAP-24 project on contract basis. Decision is same as agendum 8.

10) Allowances for BWDB personnel

The proposal for allowances is given by P.D. The Team Leader agreed in principle to consider the allowances of BWDB personnel and will, after consultation with the Royal Netherlands Embassy, prepare a budget for it.

11) Training of River surveyors

The river surveyors from SSD/BWDB, Chittagong and SWMC will be trained in the use of the survey equipment installed at "Anwasha" and the tender boats.

Assistant engineers from LAED(4) and SDE from SSD, BUET personnel and other interested parties may join in the training.

12) Selection of site for SBV trial

Khorki of Daulatkhan, Bhola is located for SBV trials.

A design will be prepared and the possibilities to install steel pipes with a considerable length by a local contractor, will be investigated.

The tender and work order will be as normal for BWDB works.

Model testing is also discussed, which could be done at RRI, Faridpur (contact person - Mr. Emaduddin).

13) E -vessel of FAP-24

P.D. is not authorised to pay CDST/VAT. The Team Leader may however purchase the vessel and pay from the project budget.

14) Dockyard

Discussed about the payment of Dockyard's bill. The bill produced by the Dockyard is too exaggerated and the Team Leader is not willing to pay it unless discussed between G.M. Dockyard, P.D. and the Team Leader in person. P.D. will arrange a meeting for this purpose.

15) Miscellaneous

○ Clearing agent's bill

Mr. Jahangir, the appointed clearing agent could successfully release the goods from the airport and his bills and claims for demurrage may be considered for payment.

○ Photocopy machine

Photocopy machine supplied to SSD/BDDDB, Chittagong is new, however, it was used at the consultants office during April and May 1996. The initial reading on the copier should be for this.

○ Spare parts

The Team Leader mentioned that more spare parts are required for which the P.D. has to provide CDST funds.

○ Maintenance "Anwasha"

Regular costs of maintenance of Anwasha as explained by P.D. are fuel, oil, lubricants, water, etc. but also include insurance, certificates and others. The consultant is required to pay for this also during the project period.

○ Monthly worksheet

P.D. will provide the proforma of the monthly worksheet to the consultants for reporting at the end of each month.

- Survey programme with "Anwasha"
Survey programmes should be prepared and circulated at least 15 days before the commencement of such survey works.
Monsoon survey programme should be made and executed as much as possible before the end of monsoon this year.
- Monthly meeting
Once in a month there should be a monthly meeting of MES at the consultants office to discuss about the progress, bottlenecks and other issues pertaining to the project.

MEGHNA ESTUARY STUDY

MINUTES OF THE MEETING HELD ON 30 JULY 1996 WITH THE FOREST DEPARTMENT

A resume of discussion held on 30 July 1996 at 9-30 am in Banabhaban with Mr. Osman Gani, Conservator of Forest Department about their programme of plantation around south-east area of Lakshmir char and south-east of Hatia island.

From MES side the members present were M/s P. Burger, M. Shahidullah, T. Hossain.

Purpose of discussion was to know whether the Forest Department had any plantation programme around south-east of char Lakshmi and south-east of Hatia island where MES proposal to build sedimentation fields to be used exclusively for agricultural purpose and accommodation of landless people.

On an inquiry from the MES members regarding the subject Mr. Gani informed that the principle adopted on that respect was in general: the forest department start routine programme of plantation wherever any char starts developing in the estuary areas. In particular they had already obtained permission from the administration authorities concerned for providing plantation in thousands of hectares around areas the MES proposed for sedimentation field in south-east of Hatia island. Their programme of plantation covers also the future newly accreted lands around Damar char and Nijhum dwip.

In fact the forest department planted a large number of seedlings in recent years towards the south of Hatia island where new chars surfaced, but the areas raised around disappeared in the next monsoon and so also the seedlings. Mr. Gani also informed that the labour force for construction of sedimentation field in Hatia island would be available in sufficient number, but not the construction materials mainly bamboos suitable for such work.

Explaining the reason for such plantation Mr. Gani also told that wherever any new char develops, at the initial condition the soils remained mostly sandy and unsuitable for agriculture and human settlement. The plantation thus provides organic matters and binding properties in the soil. After about 5-10 years when the charland becomes higher in elevation the trees may be cut or they naturally dry up and die, giving way for human settlement and agriculture.

In reply to a question from the MES participants Mr. Gani told that in those areas generally the sulphur and acidity that supposed to be developed due to plantation did not count so much. The lands could be brought to cultivation immediately after felling of trees as it was found from practical experience.

As to the availability of labour force and building materials in Hatia Mr. Gani declared that labour was available in sufficient number to implement the construction works for the sedimentation fields. Construction materials, however, are not available on the island.

About char Lakshmi area Mr. Gani told that they did not have any specific programme at present. However, the general principle of tree plantation would also apply there normally. Discussion also extended to other matters about availability of materials and labour for the construction of sedimentation fields and plantation of trees in the downstream slope of the embankment and also beyond.

The meeting ended with thanks to Mr. Gani.

Further inhouse discussion

After returning from the meeting MES staff who were present in the meeting also had a discussion with Mr. Oosterman, Team Leader of MES. Results of discussion with Mr. Gani was communicated to him.

After a short discussion regarding the matter it was decided that detailed design, estimate, financial involvement to construction of the sedimentation field should be worked out first and then the final decision would be taken based on technical and financial viability. As a follow up action MES personal concerned also had a discussion with the Executive Engineer SSD and sent Mr. Alam, Junior Engineer to Chittagong to bring the copies of Schedule of Rates of Chittagong, design and estimate, and the construction documents of accretion field constructed in Sitakunda and Kattali by LRP.

Dhaka, 1 August 1996

Minutes of the Meeting with Project Director of the Land Accretion and Estuary Development/MES Project held in the Office of the Project Director on 30 September 1996

The meeting was held in the office of the Project Director and was presided by him. The other participants were Mr. J. Oosterman, the Team Leader and Dr. M.A.Rahman, Co-Team Leader of MES project and Mr. S. Ahmed, Executive Engineer, SSD/Chittagong. The following agenda were considered one after another and various points were discussed and the respective decisions were taken as shown below.

1. "Anwasha", state of affairs

The ship could hardly complete the first monsoon cruise when the gear box of the port engine started giving troubles. The ship was brought back to Narayangong, GoB dockyard for checking and afterwards was taken to Fatullah.

Mr. S. Ahmed, XEN, SSD/Chittagong met the General Manager, GoB Dockyard and discussed about the state of the gear and its likely cost of repair. Mr. Ahmed told to the meeting that the General Manager will repair the gear free of cost. He further told that the repair required this time will cost less than Tk. 20,000/(twenty thousand) and therefore the Manager will do the job free of cost. On inquiry about time required for repair, XEN told to the meeting that 2(two) days will be required to complete the job. Any spare parts required will be supplied by the dockyard from the best available quality from the local market.

It is proposed by the Executive Engineer that the repair of the gearbox will be done by the GoB dockyard and necessary action is required to bring the ship to dockyard.

2. Overhaul engines/generators

The consultants told to the meeting that overhaul of the ship engines will be required which could be done by the local GET-CO company. This is the the proper time for overhauling and only small numbers of parts may be required which can be obtained from GET-CO.

After the repair the ship may go for cruises with confidence. Mr. S. Ahmed, XEN, SSD Chittagong opposed the motion and told the meeting that according to the ship's engineer there is no need of overhauling now and "Anwasha" can run without any engines trouble for 10(ten) more years. He further reported that GET-CO is not a reliable firm and their previous performance was not that satisfactory.

3. Repair of ADCP in USA, export/import procedures

The ADCP did not perform reliably during the last cruise and the instrument will require repair in the USA. To obtain the necessary permits to re-export this instrument and re-import from USA will require a security bond in case the consultants send the instrument for repairs.

However, there is no requirement of bond if it is sent by GoB or its approved agency/owner. The consultants will bear all costs of transportation. If the exemption of the Bond is not availed by the owner or covered by the owner, the consultants will have to consult the Embassy on this matter.

4. Institutional Development SSD/BWDB, Working Paper

The Project Director has received the working paper prepared by the consultants. He will invite the concerned parties say BWDB, WARPO, Consultants and Embassy.

5. Processing of survey data at SWMC and
Deputation of Junior River Surveyors at SWMC, Dhaka

The survey data will be processed at the SWMC before use in the model. As part of the on-the job training the junior surveyors from SSD, Chittagong may join with the works of SWMC to learn the skill. The surveyors will do this work in between surveys, particularly when there will be no field works. PD told to the meeting that the surveyors are to be paid an allowance for this purpose and at present there no provision for this in the budget. He will discuss the matter with the C.E, Planning and inform the MES subsequently.

6. Transfer of responsibility for survey operations and O & M of "Anwasha" to MES
Definition of responsibilities:

- o Executive Engineer SSD ? Is EXEN to be responsible for the ship officially?
- o Assistant Engineer/Sub Divisional Engineer SSD, in charge "Anwasha" ? Is SDE to be responsible for the ship at sea?
- o Teamleader SSD during surveys "Anwasha" ? Is teamleader SSD only controlling the local river surveyors?
- o Teamleader MES ? Responsibilities not exactly known upto now!
- o Chief hydrographer MES during surveys "Anwasha" ? Responsible for survey operations with the ship while present?

The Team Leader of MES told that all the matters in item no.6 are to be resolved. He further told that he agrees with the TOR in this respect and wants that the full control of the ship and its crew is given to him. The Project Director responded to this and said that he will try to resolve the issues by discussing with the Chief Engineer, Planning.

7. Rotation of teamleader survey operations SSD

The previous system of rotating teamleader survey operations by SSD/BWDB is objected by Mr. Oosterman. He wanted only one person from SSD/BWDB as teamleader during the project period so that he can make him responsible for survey works with "Anwasha". It is agreed that henceforth one person will be nominated as teamleader survey operations.

8. Skippers/engineers "Anwasha"

The appointment of Skipper-I(Yunus), Skipper-II(?), Engineer Grade-B(Aziz), and Engineer Grade-A is discussed.

Mr. Oosterman wanted to draw the officers of "Anwasha" from the open market, in case only retired Navy personnel is proposed to be engaged. The aim of the MES is to leave behind a vessel and crew that continue the surveys.

Assignment of the ship's officers should be on a long term basis and not temporarily until final retirement of the concerned officer.

PD said that he will take up the matter with the Ministry for finalisation.

9. Appointment of "vessel manager" MES for "Anwasha"

The issue is discussed and the issue will depend on how the item no.6 of the agenda is resolved.

10. Temporary appointment of laboratory manager

The Team Leader proposed the appointment of a temporary laboratory manager for about 2 (two) months to start up the analysis of samples collected during the recent survey of "Anwasha". The manager will also install the new equipments procured by MES and provide training to the laboratory technicians.



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The PD proposed to form a subcommittee to evaluate the situation and find a process to hand over all personnel and materials to MES.

11. Re-arrangement of storage facilities at SSD office

Agreed that necessary action will be taken from both sides to rearrange the storing facilities at SSD office.

12. Removal of redundant equipment and sample bottles from laboratory

Agreed as item no. 11 of the agenda, action as soon as possible.

13. Extension of jetty/repair of pontoon/repair office and laboratory SSD

The works of repair of Jetty and Pontoon will be taken up as soon as possible. The other works will be taken up later on.

XEN, SSD/Chittagong will provide the bill of quantity and schedule of rates of Chittagong circle. The Team Leader will be responsible for executing the works.

One contractor may be invited for doing the works.

For reference BFDC may be consulted for painting repairs of the pontoon.

14. Payment of insurance premium "Anwasha"

The issue was discussed thoroughly and it is agreed that further discussion will be made with the Embassy(RNE) by the Team Leader of MES. The Team Leader will not make any reimbursement now. However the status of payment will be determined on the decision of the Embassy.

15. Inception Report & Plan of Operations

The plan of operations will be included in the Inception Report by the consultants and will be reviewed by the Project Director and BWDB to examine the suitability.

16. Extension of MES, Project Implementation Plan

This matter was first discussed in the Steering Committee meeting and is further discussed in this meeting. It is agreed that the consultants will include the extension in the Inception Report and will require to give a separate proposal for the extension for the purpose of processing it from the concerned parties.

17. Quarterly Progress report No. 2

The Team Leader reported that the first quarterly was very late in submission, however, he want the second quarterly report to be submitted intime.

18. Small scale interventions

○ accretion trials

The economic evaluation of this item has been done and it was found that under the existing situation and with some assumed future situations for with and without project and taking into account incremental benefits, measures to accelerate accretion are economically not justifiable. Hence, accretion trials will not be considered.

Cf

- bank protection trials

It is not possible to go for bank protection works in the field in the coming dry season. Now MES will go for preliminary model (physical) testing at BUET or RRI at Faridpur. It is agreed that if the cost of model is minor it will be spent from the TA, but if the cost of modelling is substantial than it will be spent from the RPA.

- cross dams

A project profile will be created for Urir char and Nijhum Dwip cross dams.

Reassessment of Nijhum Dwip will be done in this effort.

If the projects become viable, these may be implemented by RPA fund provided sufficient funds can be made available. However, the Teamleader informs the meeting that in this season there is no construction work to be done.

- reporting/implementation

The consultants will prepare reports for the small scale interventions and its suitability for implementations. The reports will become available at a later date than stipulated in the TOR.

19. Extra input professional personnel, during implementation

○ Planner	expatriate	3 manmonths
	local	12 manmonths
○ Fisheries expert	expatriate	3 manmonths
	local	6 manmonths
○ Forestry expert	expatriate	5 manmonths
	local	12 manmonths

Project Director wanted to look into the above proposal and also to study the recommendations of the Steering Committee. He wanted to know the scopes of works for these newly proposed consultants. He requested time for discussing these with the C.E., Planning.

20. Miscellaneous

- 5 days working week.

PD will look into the proposal and will discuss with C.E.

- Vehicles

The vehicles will arrive later than expected due to shipping reasons. Estimated date arrival Dhaka 28 November 1996.

- Insurance of Tender Boats

The Team Leader proposed that Tender Boats are to be covered with the Insurance of the Anwasha. The PD will take necessary action.

ANNEX B
DETAILS FIELD VISIT REPORTS

Meghna Estuary Studies

Tour Report

1. Field Visit

- a) A field trip was under taken from 19/08/96 to 22/08/96 to CDSP in Noakhali district.
- b) The team will visit CDSP office and project areas to get information regarding water management and drainage, institutional and rural development and legal basic for allocation of accreted land.

2. Participants : Mr. M.S.Bhuiyn.
Mr. S.Ali Naqi.
Mr. Khurshed Hussain.

3. Tour itinerary :

Departure from Dhaka on 18/08/96 at 7-30 am for Noakhali by MES project vehicle and reached there at 12-30 noon. Discussion with the MES consultants and with the Executive Engineer BWDB held. Visited the project areas from 19.08.96 to 21.08.96 and back to Dhaka in the evening.

4. Tour Diary :

19/08/96 : All the participants were picked up by the driver of the Rockey Jeep and started for Sonapur at 07-00 am. Arrived Sonapur at 12-30 noon and went to the office of the Executive Engineer Noakhali. The Executive Engineer with his SDES went to Comilla, the zonal office to attend a meeting. The team members held discussion with the consultants of CDSP, Mr. Shyamal Kumar Roy whose responsibility to ensure peoples participation and progress monitoring and Mr. Abdur Reggaq, quality control Engineer. The team leader of CDSP consultant was out of headquarter. It has been reported that in Baggar Dona I, re-excavation of 4.23 km main canal and 10.89 km of secondary canal had been completed. Previously LRP completed one regulator (3-5'x 6'), one bridge and 2 no pipe culverts. LRP also constructed 5 no cyclone shelters. LRP established cluster villages inside the polder. Each cluster village is surrounded by secondary embankment which form a compartment. Each such compartment has inside tertiary canal which is connected by pipe outlet to the secondary/primary canal in LRP area. In Baggar dona II, re-excavation of 14.57km of main cannel, 20.09km of secondary cannel, 8.65 km of re-sectioning embankment and one regulator(3-5'x 6') have been completed. Before excavation /re-excavation of canal there was drainage congestion in Baggar dona I & II but now it is free from drainage congestion. In Baggar Dona, 3 LCS groups have been formed and executed the work of value 5 lacs. No maintenance group like CMG, EMG has been formed as the project yet to be declared complete. The sluice khalasi is operating the two regulators in Baggar Dona I & II, but no sluice committee has yet been formed for operating the sluice. In the evening at 7-30 pm discussion was held with the Executive Engineer and the SDES of Noakhali O&M division, BWDB regarding development and O & M of the division after their return from the zonal office.

20.08.96 : Inventory of BWDB, O & M division was made in respect of stuffing (technical), establishment (Buildings, Transport etc.), ADP (FY 95/96), O&M budget, FFW, (Preventive, routine or periodical maintenance).

At 2-0 pm inspected Noakhali khal near Sonapur, when there was incessant heavy rain fall in

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Noakhali district. Noakhali khal became over flooded and does not flow towards South to the sea. It flows very slowly towards North to WAPDA khal to Rahman khali regulator. The whole Sonapur area was submerged under water. Noakhali khal has been silted up badly towards South and the bed of the Noakhali khal rose to the land level near Oli Majhir Kheya and near char Nalua about 7.0 km & 10 km respectively down to Sonapur. In group discussion of the local population they want immediate re-excavation of the khal so that water can drain out towards South to the sea. Mr. Giasuddin Ahmed, contractor Sonapur opined to put a cross bundh over the Noakhali khal and make embankment to both banks of the khal to conserve water for use in dry season crop. The drainage may be done through WAPDA khal by putting an additional regulator near the existing Rahman khali regulator.

At 4-0 pm went to inspect the drainage condition towards X-dam no2. Due to continuous heavy rainfall the adjoining area of X-dam no2 including polder 59/3B with T.Aman have been submerged. Part of polder 59/3B drains to the Noakhali khal & part of it goes to the South to Hatia channel. But due to the siltation of the internal channels of the polder, the main drain of Noakhali khal, also the cross path made by the inhabitants on both banks of borrow pit of road cum embankment made the drainage congestion more acute. Returned to Sonapur at 7-30 pm and night halt at BWDB rest house.

21.08.96 : At 7-30 pm started for inspection Baggar Dona I&II, accompanied by sub.assistant Engineer/surveyor Mr. Anamul Hoq. It was raining incessantly throughout the night and the day. Reached sluice no1 (3- 5'x 6') of Baggar dona I, water was draining out heavily. Sluice guard Mr. Abdur Rahman was present at site. One of the three vertical gate hoisting rod partially damaged. Repair and placement work has been taken up. It will be completed after the rain is over as reported. There is no gauge which is generally engraved on the head walls inside & outside of the sluice. For drainage monitoring and water management gauge recording is necessary. It was seen two temporary gauges had been installed few days back but the guard could not say who installed it. Later at Sonapur it was ascertained that Christine Van Kuik CDSP (HASKONING) installed the gauges both u/s and d/s of sluice no 1 & 2 of Baggar Dona I & II. Christine Van Kuik arrived at Sonapur from Dhaka on 22.08.96 and talked to her. She said the gauges have been installed but B.M. connection has yet to be made. Inspected Baggar Dona II and regulator no2, water was draining out with great velocity not less than 3 to 3.5 m/sec, the head difference u/s & d/s quite prominent but in absence of gauge actual reading could not be taken. The project area was inspected with great caution at a time when heavy rainfall occurred and it was observed that due to the excavation / re-excavation of the internal drainage system, no drainage congestion observed. Group interview of the following farmers was made in Baggar Dona II.

1. Mr. Hazrat Ali
2. Mr. Abdul Hasem
3. Mr. Ali Ahmed
4. Mr. Abdul Shahid
5. Mr. Rahmatullah

They all are living in the cluster village, Digi Madha Bagga (no 1, 5, 6, 9). They said cultivation of salt lerant crop (Raja shail, Kajal shail) started in 1978. The yield varies from 320 kg to 380 kg. Now they grow two crops Aus and transplanted Aman and some rabi crop like chilly, mug, sweet potato, khesari. The farmers got 2.5 acres of land of which 0.5 acre for homestead and 2 acre for cultivation. In group discussion it came out that in cluster village they cannot grow poultry, can not keep cow, can not keep kitchen vegetable garden and can not cultivate their land independently. They face problem in getting co-operation from each other timely in cultivating land jointly. They prefer independent settlement of their own.

At 3-0 pm inspection of char Majid started. In this polder 8.6 km embankment has been completed. 27.00 km drainage channel and 1 no regulator (8-5'x 6') have been taken up for execution in 95-96. Drainage congestion is prominent as the regulator and the internal drainage channel have not been completed. Plot to Plot survey for the settlement of landless people almost completed. At 8-0 pm returned to Sonapur and night halt at BWDB rest house.

22.08.96 : Started at 7-0 am to inspect Batir Tek accompanied by the S.O (Mr. Rabindra Kumar Das). Resectioning of embankment from 15.00 km to 19.5 km has been completed. Part of the embankment will be completed under CERP (coastal Embankment Rehabilitation Project) this year. 35 km of drainage channel and 1no regulator (2- 5'x 6') will be done. There is drainage congestion in some areas as the regulator and the internal drainage channel have not been completed. The farmers grow Auscrop (Halia Dhan) in a limited area but they cultivate salt tolerant T.Aman in the whole area inside the polder, whose yield varies from 380 kg to 480 kg/acre. Interviewed the following farmers regarding their problems. They want removal of the drainage problem from inside the polder and also re-excavation of Noakhali khal towards south to the sea.

- | | |
|---------------------|----------|
| 1. Mr. Nurul Islam | Nabagram |
| 2. Mr. Yasin Uddin | Nabagram |
| 3. Mr. Ala Uddin | Nabagram |
| 4. Mr. Jainal Abdin | Nabagram |

Returned to Sonapur at 12-30 noon.

5. Persons Met

- | | | |
|-------------------------------|--------------------|------|
| 1. Mr. Masud-uz-Zaman | Executive Engineer | BWDB |
| 2. Mr. Kazi Abubakar Siddiqui | Sub-divin.Engineer | BWDB |
| 3. Mr. Shamsuddin | Sub-divin.Engineer | BWDB |
| 4. Mr. Tofazzal Ali | Sub-divin.Engineer | BWDB |
| 5. Mr. Mohammed Ali | Sub-divin.Engineer | BWDB |
| 6. Ms. Christine Van Kuik | CDSP (HASKONING) | |
| 7. Mr. Shyamal Kumar Roy | CDSP Consultant | |
| 8. Mr. Abdur Rezzaq | CDSP Consultant | |
| 9. Mr. C.S. Rodrigues | CDSP Consultant | |

6. Wrap up meeting

The Executive Engineer & the Sub divisional Engineers, BWDB left Sonapur for Dhaka to attend Board's meeting. The wrap up meeting was held with the section officers BWDB and CDSP consultants. The section officer of Baggar Dona has been advised to repair the hoisting rod of the vertical gate of regulator no1 on emergency basis. Also advised to fix permanent gauge on the head walls of the regulator. In the meeting the section officer pointed out the drainage congestion of polder no 59/3B. He was advised that the internal drainage channels leading to Hatia channel should be taken up for re-excavation & the drainage channels leading to Noakhali khal should be taken up under a comprehensive drainage scheme. The section officer Baggar Dona (Mr. Abdul Mannan) and Batir Tek (Mr. Rabindra Kumar) informed that LCS had been formed & work was done by them. The section officers have been advised to form CMG & EMG for Baggar Dona & Batir Tek. CDSP consultant (Mr. Shyamal Kumar Roy) informed that they have selected some farmers to train up for introducing HYV in monsoon season (T.Aman). In Baggar dona I & II, BWDB and the consultant have been advised to form sluice committee soon for operating the sluices according to the manual. In the afternoon at 3-0 pm started for Dhaka.

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and reached at 8-0 pm on the same day.

Observation : A comprehensive drainage improvement scheme for polder 59/3B, Sonapur and Begumgong depression should be prepared by BWDB which will include re-excavation of internal drainage channel of polder 59/3B, re-excavation of Noakhali khal, WAPDA khal and Rahmat khali khal and construction of an additional drainage cum flushing regulator near Rahmat khali existing regulator. The existing Rahmat khali regulator also needs modification.

Sanagi

HA



(M.S. Bhuyian)

Water Management & Drainage Engineer
MES, Dhaka.

c.c

1. Team Leader, MES Project Dhaka
2. Co-Team Leader, MES Project Dhaka
3. Team Leader CDSP (BWDB) Noakhali
4. The Project Director, LAED, BWDB, Dhaka.
5. The Superintending Engineer, Feni O&M circle, BWDB, Feni.
6. The Executive Engineer, Noakhali O&M Division, BWDB, Noakhali

MEGHNA ESTUARY STUDY

Tour Report

1. Field Visit

A field trip was undertaken from 19-8-96 to 22-8-96 to visit Sonapur and Majidi for holding discussion with relevant thana officers, district officers, NGO and CDSP staff to evaluate their opinion on land settlement issues and also the legal basis for allocation of accreted land.

2. Participants:

Mr. M.S. Bhuiyan
Mr. S. Ali Naqi
Mr. Khurshed Hussain

3. Tour Itinerary:

Departure from Dhaka on 18-8-96 at 7-30 am for Noakhali by MES project vehicle and reached Sadar headquarters at Majidi at 12-30 pm. Discussion with thana and district officers, CDSP Staff and NGO personnel at the headquarters.

4. Tour Diary:

19-8-96: All the participants were picked up from the respective points in the city and the vehicle started for Sonapur at 7-30 am. Arrived Majidi at 12-30 noon and went direct to CDSP office. The team members held discussion with CDSP consultant Mr. Shamol Kumar Roy (Planning and Monitoring officer). His responsibility is to ensure people's participation and progress monitoring of CDSP. Team Leader was out of station and MES consultants failed to see him.

Mr. Roy gave the team his idea of land settlement issues. Accreted land comes under three ministry (Ministry of land, Ministry of LGRD and Ministry of Water Development). MES consultants also visited N-RAS (NGO) office, but could not find any body in the office.

20-8-96: Met Shamsuddin, SDE, Hatia at 8-30 am in BWDB guest house. Since he recently joined the office on transfer, he could not furnish the consultants with his idea on land settlement issues.

At 10 in the morning the consultants visited several NGO offices (Shagorika and NRDS). Held discussion with Anisur Rahman Harun (NRDS) on issues of land settlement. Met Mr. Zakir Hussain (RDC) at 12 o'clock and discussed with him on land issues particularly accreted land. Mr. Hussain elaborated points on land settlement issues and gave his opinion. Collected some information on land allocation of Char Majid from Nurul Islam, Data Analyst CDSP.

21-8-96: Visited UPAMA (NGO) office at 10-30 am and held discussion with John Mendes, accountant of UPAMA. He provided MES consultants with UPAMA'S activities in Char areas.

22-8-96

Visited Najera Kari (NGO) office at 10 am and held discussion with Gauranga Ghosh. He elaborated some weak and strong points of present land settlement procedure. *what's arrival*

time at Dhaka 7:30 pm.

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5. Persons Met:

Mr. Maser-uz-Zaman, Executive Engineer, BWDB ✓
Mr. Shamol Kumar Roy, Planning & Monitoring Officer (CDSP) ✓
Mr. Abdur Razaque, Quality Control Engineer (CDSP) ✓
Mr. Shamsudding, SDE, Hatia ✓
Mr. Nurul Islam, Data Analyst, CDSP ✓
Mr. Anisur Rasul Harun, Coordinator, NRDS (NGO) ✓
Mr. Gauranga Ghosh, Coordinator, Nijera Kori (NGO) ✓
Mr. Joher Mendes, Accountant, UPOMA ✓
Mr. Ruhul Matin, Coordinator, Shagorika ✓
Mr. A.K.M. Zakir Hussain, RDC, Noakhali ✓

6. Observation

Critical issues of Land Settlement are identified as follows:

- ✓ Survey and mapping of khas land
- ✓ Identification of real landless as per definition (no land or upto 50 decimal of land).
- ✓ Selection of landless living in and around the allocated/developed Char land.
- ✓ Overall supervision and monitoring of land allocation.
- ✓ Coordination between ministry of land ministry of LGRD and ministry of water development.
- ✓ Identification of khas land by plot to plot survey.
- ✓ Preparation of Mauza map.
- ✓ Publicity to identify landless by miking, meeting etc.
- ✓ Jotdar's writ petition to establish their rights over occupied land.
- Allocation of land for shrimp culture.

Land allocation procedures

The procedure of land allocation is unreasonably long and time consuming and often with many obstacles. Before any reclaimed land can be declared as khas land it has to be surveyed by the DLRS, this is called the Diary Survey, Survey capacity has been one of the constraints faced. Subsequent to surveying the land is allocated to Government Revenue Department, that is represented at the district level by the AC Land.

The actual occupants or the potential settlers selected by the thana committee can on own initiative apply to the AC Land for legal documents in their labour. At this stage the settler can get a temporary user right of the particular plot for a year, the issued document is the Duplicate Carbon Receipt (DCR) for which the legal registration costs are fixed at Tk. 300. The settler can then apply for getting permanent rights of the plot, through a prolonged procedure. It includes hearings by committee comprising the TNO, Tashildar, AC Land, the Union Parishad Chairman and possibly others as well, if they find the applicant acceptable they make a positive recommendation to the DC through appropriate channels. He will make his own examination, call for interviews, etc., and if he approves the application it is passed on the Office of the District Registrar for signing of the deed of registration, i.e. the Kabuliat. The application - now the Kabuliat - can then go to DLRS for publication as the Khatian. Once the Khatian is published the settler has the legal right to land with issuing of title deed.

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During this long process, and even with publication of the khatian, people who are unsatisfied or other people who make claims on the same plot may challenge the decision; this can be the beginning of a long court case which can defer final issuing of the title final title deed shall often be counted in years rather than months.

It can thus safely be stated that settlement itself is the first major problem to face in the process of rural development, including socio-economic development. There is ample documentation that settlement on khas land is a very difficult process to address in a controlled manner if the rules and regulation issued by the government are to be followed.

Conclusion:

Settlement is the main issue to deal with in the rural development process to appraise. So the relevant Thana officers, District officers, NGO and CDSP staff were contacted to evaluate their opinion on land settlement issues. Almost each officer met had a feeling that the settlement issue and large scale land distribution will continually be a challenge to GoB commitment and capacity to implement the new land distribution policy including the necessary supervision of the process at the district, thana and also union levels.

Ali Naqi

Syed Ali Naqi

Rural Development Specialist

Copy to:

Team Leader, MES

Co-Team Leader, MES



MEGHNA ESTUARY STUDY

Institutional Development

Field Visit Report : CDSP-Noakhali

Date: 19 August to 22 August 1996)

Discussion Meeting with:

1. Mashiuzzaman, Executive Engineer, BWDB, Noakhali
2. Shamol Kumar Roy: Planning & Monitoring Officer, CDSP, Noakhali.
3. A.K.M. Zakir Hossain: Revenue Deputy Collector, Noakhali
4. Fakrul islam: Engineer, Shinuze corporation (for shelter construction in Char area- Hatia, Char Bata, Char clerk, Ramgati.
5. Md. Mokselin: Thana Engineer, LEGE, Noakhali Sadar.
6. Mr. Harisuddin Ahmed: TNO, Sader Noakhali.
7. Gauranga Ghosh: Negera Kari, Noakhali (NGO).
8. Jhon Mendes: Accountant, UPOMA.
9. Mr. Imtiaz Ahmed: Engineer, CDSP, Noakhali.

Discussion mainly confined to institutional development on participatory planning and implementation of CDSP's programmes in Char Baggardona, Char Majid and Char Batertek, which are in the Meghna Estuary area.

The CDSP's objective is to find a replicable approach for char development which is economically viable, socially and environmentally acceptable and technically feasible.

During the three years project period CDSP is to settle about 5000 landless households in three new polders-Char Baggar Dona, Char Majid, Char Bater Tek in the district of Noakhali, and support for economic activities and to assist in increasing the availability of and access to social services.

The institutional set up is like this-three ministries are directly involved in the project: Ministry of Water Resources, Ministry of land, Ministry of Local govt. and Rural Development each with its own commitment through project proforma. Six other ministries involved at district level as a matter of routine and attending project management committees, and co-ordinate their activities without formal commitment through project proforma approved by their respective department. Moreover, CDSP has cooperation with a number of NGOs active in the area in a limited scale.

While NGOs should cooperate for group formation, respective government agencies are responsible to implement the following activities; infrastructure, land distribution, agriculture, fishery, livestock, health, education and credit. Peoples Participation and Women In Development are considered as an integral part of all activities of CDSP.

Bottom-up planning process is the core method for development under CDSP - where local people's felt needs are projected and planned through polder committees to management committee. The implementation job of these plans are individually and jointly performed by CDSP-GoB agencies and NGOs.

The project is committed to ensure peoples participation in project planing, implementation and monitoring. CDSP though has been working based on the peoples participation guidelines of MOWR but piloting to evolve a method that would be suitable for a complex multi-sectoral project development. CDSP's initial attempt has been to form polder committees (PCs), sub-polder committee (S-PCs) where local people participate CDSP has been working with this committees but the composition of these committees, number of member in the committees, how the committees should be formed, functions of the committees, duration of the committee, powers and authority of the committees, follow-up actions etc. are not clear since these committees are working on experimental basis.

Observations: CDSP has been working under an interim informal arrangement that is through a Management Committee which is attended by local level officials from Ministry of LGED, BWDB,

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Ministry of land, Ministry of agriculture, District and Thana GoB administration officers, and NGOs. Three ministry have to work with CDSP under approved project proforma. The PP of BWDB and LGED have been approved by the their representative ministry as reported but land ministry's PP is yet to be approved. Beside these there is no formal commitment by way of circular or order or instruction from each department participating in this management committee so that whatever decisions has been taken in this committees will be backed and supported and followed by the department. This kind of formality in the form of a circular or order instruction by each department participating will greatly enhance the chance of successful implementation of plans and programmes.

Land distribution is stopped in the Char area - CDSP's work confined to detail survey, mapping, land holding identification; actual possessors of land through plot by plot survey; prepares mouza map, khas land identification, land settlers identification of landless people residing in the Char in association with land ministry. But there are instances that land ministry allocated land for prawn culture. Under such situation-settlement of landless people-the issue remains as defeated.

Forest department take care for new Char. This is the arrangement but none could tell how this arrangement in made (years). After laps of sometime where land become settled and suitable for production purposes (a few years) - the land is handed over to government (Ministry of land) for settlement. Then the Project management starts working from that stage. Land distribution work followed as per decisions of the Land Allocation Committees. The decision of the Thana Land Allocation Committee is forwarded to District Land Allocation Committee for discussion and approval.

1) Thana Land Allocation Committee:

TNO	-	Chairman
Chairman (UP)	-	Member
MP's representative	-	Member
NGOs representative	-	Member
Landless peoples rep.	-	Member
AC	-	Land as member secretary

2) District Land Allocation Committee

DC	-	Chairman
ADC	-	Land revenue, member secretary
TNOs	-	(all Thana TNOs) members
BRDB	-	District officer, member

CDSP's consultants and developments staffs member meet the local level officers (both in thana and district) and co-ordinates development activities. They sit in the polder committees sub-polder committees, when development plans are proposed. CDSP helped in feasibility studies (including financial viability) for these proposed plan implementation-discussed thread-bare in the Field Management Committee. Implementation schedule/program and progress monitoring is done by CDSP for discussion in the field management committee. In all these activities CDSP co-ordinates with other respective GoB agencies and where needed works with NGOs or farm out some work to NGOs who work under CDSP's supervision.

Khurshid 3/9/96
Khurshid Husain
(Institutional Specialist)

Copy to:
Team Leader, MES
Co-Team Leader, MES

Visit to : Rangabali & Boro Baishdia

By : Mr. Kh. Zahir Hossain (Research Associate)
Mr. Md. Naimur Rahman (Investigator)

Purpose of visit :

The Team will further visit Rangabali & BoroBaishdia for the listing of Household Heads

Tantetive Tour Itinerery:

August 1996

Date	Time	Activities
27.08.96	1700 hrs	Leave Dhaka for Barishal.
28.08.96	0600 hrs	Reach Barishal.
28.08.96	0800 hrs	Leave Barishal for Patuakhali.
28.08.96	1200 hrs	Reach Patuakhali & halt overnight
29.08.96	1000 hrs	Leave Patuakhali for Rangabali
29.08.96	Evening	Reach Rangabali & halt overnight.
30.08.96	Full day	Listing of Household Heads.
31.08.96	Full day	Listing of household Heads.
01.09.96	Morning	Leave Rangabali for Boro Baishdia.
01.09.96	Full day	Reach Boro Baishdia and Listing of Household heads.
02.09.96	Full day.	Listing of Household Heads at Boro Baishdia.
03.09.96	1100 hrs	Leave Rangabali for Patuakhali & halt overnight
04.09.96	0600 hrs	Leave Patuakhali for Barishal
04.09.96	1900 hrs	Leave Barishal for Dhaka
05.09.96	0900 hrs	Reach Dhaka

CC: Team leader, MES Project
Co-Team leader, MES Project
Managing Director, Aqua Consultants & Associates

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Date: August 26, 1996

MEGHNA ESTUARY STUDY

1. Field Visit

Visit to Bhuapur Jamuna Multipurpose Bridge Project site to see the River training works and protective measures taken up to protect the banks of the river on both ends from possible erosion.

2. Participants

Dr. Md. Ataur Rahman, Co-Team Leader, Mr. T. Hossain, Formerly Hydraulic Engineer (Rec), Md. Shahidullah, Civil Engineer, and Mr. A.K.M Emdadul Haque, Hydraulic Engineer (Rec).

3. Tour Itinerary

26/08/96: Start from MES office, Gulshan for Bhuapur Jamuna Bridge site at 9:30 am by departmental vehicle and arrive there at 11:30 am.

Visit River training and bank protective works at Jamuna Bridge site.

Leave Bhuapur at 5:00 pm and reach Dhaka at 7:30 pm.

4. Tour Diary

26/08/96: Started for Bhuapur at 9:30 am by departmental car and arrived at 12:30 pm. Met with Brigadier (Retd) Abdullah, Deputy Project Manager, Jamuna Multipurpose Bridge Project. Held a brief discussion about the river training, bank protection and other works of the bridge. Then started for the right bank (western) of the Jamuna River where protective work was going on. Boarded on river craft Dhaleswari-1 the team was accompanied by Engr. Sanowar Hossain, Section Engineer and Mr. Monjur-ur-Rahman, Manager (Admin) of the project.

The original river width at the bridge construction site is about 10 km to 12 km. The river width is designed to be restricted to a width of 4.80 km to minimise the length and thus the cost of the bridge by constructing two guide bunds at two ends of the bridge. One guide bund at the west end (Sirajgonj end) is almost completed. The straight length of the guide bund is 2.20 km while the curve length is 3.50 km. The top width of the guide bund is 5.00 m, top R.L is 16.5 m PWD, country side slope is 1:15 while the river side slope is variable. At river side from top a slope of 1:3.5 will continue upto R.L +9.3 m, then a slope of 1:5 will continue upto R.L (-) 4.00 m, then another changed slope of 1:6 will continue upto RL (-) 18.00 m in the bridge corridor of 200.00 m and upto -15.00 R.L in other areas.

Then a falling apron of 15 m in the bridge corridor and 11.25 m in other areas is provided at toe end. Bridge corridor along the guide bund extends upto 100.00 meter both at upstream and downstream (totalling 200 m length) from the centre line of the bridge.

Slope protection: The crest and river side slope of the guide bund upto R.L 9.30 was covered with 0.15 m thick stone asphalt mixing 20 mm - 40 mm stone chips with 80/100 bitumen and Jamuna sand having F.M = 1.00 over double layer of Geotextile. The stone asphalt was not mechanically compacted, but only levelled. Down to R.L 9.30 upto a length of 2 meter in the falling apron the slope surface was also covered by Geotextile applying special technic of laying it under water. A grid of 30 m x 60 m bamboo fascine having 1 m x 1 m cross grid was made by tying bamboos cross wise.

Under this fascine double layer of Geotextile sewn together (one woven and one nonwoven) was tied. Then the whole fascine was sunk by applying stone load on it. The total thickness of stone dumping was 0.5 m with 10 kg - 60 kg stone rocks. Each bamboo fascine overlaps the other by 2 m. In the falling apron stone was dumped @ 36 m³ of stone per running meter of the falling apron.

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In the bridge corridor area the falling apron (bed level-18.00) was filled by dredge fill upto R.L 0.00 m, so that there may not occur any slip of the slope of guide bund due to vibration during pile driving under pier and abutment foundation of the bridge.

During construction of the guide bund soil sliding took place at the river side slope while dredging was going on nearby. Consequently there needed to construct one additional guide bund in the upstream with some groynes as mitigative measure. These groynes were made by Geotextile bags filled with sand asphalt to divert the flow from eroding the original guide bund and thus to save it.

The guide bund at the Bhuapur end (east) is yet to be completed.

Started back for Dhaka at 6:30 pm and reached at 9:30 pm.

5. **Persons Met:**

- 1) Brigadier (Retd) Abdullah, Deputy Project Manager, JMB Project.
- 2) Engr. Sanowar Hossain, Section Engineer, JMB Project.
- 3) Mr. Monjur-ur-Rahman, Manager Administration, JMB Project.

6. **Discussions and Observation**

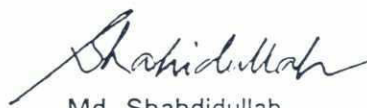
Team's main object of the tour was to see the river training works and protective measures taken against erosion of the banks in Jamuna Bridge site and to consider their application in the MES area. While visiting site the team enquired about availability of drawings relevant to the protective work. The Deputy Project Manager JMB project said that copy of such drawings would be available in JMB office at Dhaka and obtained through proper authority. Attempts would be made to collect the drawings from JMB authority office at Dhaka.

7. **Suggestions and Recommendations**

Erosion at the guide bunds has been controlled by laying Geotextile under layer of stone dumped over it, upto a height of R.L = 9.30 m which is average water level. Above this level upto the crest level of the guide bund the slope is also covered by Geotextile. But over it there is a layer of 0.15 m thick stone asphalt instead of stone. Protective measure as taken up in protecting the guide bunds as measures against erosion caused by water flow and wave action may be considered to apply under suitable conditions at MES areas.

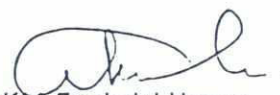


Dr. Ataur Rahman
Co-Team Leader



Md. Shahidullah
Civil Engineer

Md. T. Hossain
Formerly Hydraulic Engineer (Rec)



AKM Emdadul Hoque
Hydraulic Engineer (Rec)

Copy to:

1. Project Director, LAED, BWDB Dhaka.
2. Team Leader, MES
3. Co-Team Leader, MES
4. Mr. T. Hossain, Formerly Hydraulic Engineer (Rec),
5. Mr. Md. Shahidullah, Civil Engineer, MES
6. AKM Emdadul Hoque, Hydraulic Engineer (Rec) MES

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MEGHNA ESTUARY STUDY Tour Report

1. Field Visit (objective) :

To have idea of Adarsha Gram Projects and assessment of NGO performance in overall development of Adarsha Gram Project as well as participation of the district and thana administration in Adarsha Gram during NGO assignment.

2. Participant :

Syed Ali Naqi. (Rural Development Specialist)

3. Tour Itinerary :

Departure from Dhaka on 16.09.96 at 7 am. for Magura by MES project vehicle and reach Magura at 2 pm. On 17.09.96 visit to a Adarsha Gram under Magura thana. Leave Magura for Darshana on 18.09.96 . Reach Darshana at 9 am the same day. On 18.09.96 from 10 am till 5 pm visit to Adarsha Gram under Damurhuda thana. Leave Darshana for Dhaka on 19.09.96 at 7 am . Reach Dhaka the same day at 1 pm .

4. Tour Diary :

16.09.96 The participant was picked up from the respective point in the city and the vehicle started for Magura at 7 am . Arrived Magura at 2 pm . The specialist held discussion with a local leader Sharfu to have idea about the local situation in regard to Adarsha Gram Project.

17.09.96 Spent full day visiting Chowlia Adarsha Gram and held discussion with household heads and reviewed the overall situation of the project. Left for Darshana at 5 pm .

19.09.96 Spent full day visiting two Adarsha Gram (Akandabaria and Chitilia) under Damurhuda thana. Discussed with household heads about the problems they are facing from the local elites and land revenue department.

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5. Persons Met :

Sl. No.	Name	Occupation
01.	Tozam	Farmer, Chowlia Adarsha Gram.
02.	Md. Sattar Molla	Boatman, Chowlia Adarsha Gram.
03.	Nemai Sarkar	Fisherman, Chowlia Adarsha Gram.
04.	Adhil Sardar	Agricultural day labor, Chowlia Adarsha Gram.
05.	Sudhir	Farmer, Chowlia Adarsha Gram.
06.	Md. Atiquzzaman	Farmer, Akandabaria Adarsha Gram.
07.	Ayeb Ali	Van driver, Chowlia Adarsha Gram.
08.	Rajbal Sheikh	Farmer, Chitlia Adarsha Gram.

6. Observation :

Though the possession of a small homestead, a house and credit for income generation and production have been the key parameters in the Adarsha Gram formula developed by the Ministry of Land, the objectives of the project have not been realized in the Adarsha Gram projects the specialist visited.

The project started as a land reforms project focussing on the distribution of khas land and the construction of houses, the development approach to the randomly visited project is not at all satisfactory. As the specialist can evaluate from the visit, the project in some places has produced very little result while in other areas it has brought some positive direction. The situation of the landless has not improved as expected. Changes towards they remain economically depended on their patrons as they were before. Their only gain by keeping in possession of homestead land. The agricultural land allotted to them under 'Kabliati' has not come under their possession, since the musclemen and Jotdars have acquired fictitious document in their name by which they claim the land and forcefully occupy it.

There has been no effective support by the NGOs for the human development of landless families through settling them as small rural communities in Adarsha

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Gram. The Govt. institutions at the thana level particularly land revenue department remains indifferent towards the settlers.

In the process khas land is recorded in the name of Govt. and the AC land invites application from the landless people giving a target date and after that all the application are scrutinized by the thana committee headed by TNO and forwarded to the DC through ADC revenue for approval. On approval it is sent to AC land who opened Jamabandi in the name of individual landless people showing dag and area of land. Thereafter the record is sent back to DC through TNO and ADC revenue for approval and after having their approval it is again sent back to AC land who on his turn prepare Kabalyat in the prescribed proforma and takes salami of land at the 1/- per acre or part of it.

After execution of the Kabalyat by the tenant it is again forwarded to DC in the same process for approval, if and when it is approved by the DC the record comes back to AC land who sends it to registrar for registration. After registration the record comes back to AC land who opens Khatian and Jama in the name of the tenant and this is called (Khatian Churantia) final stage of the settlement process. Once lands are allocated to individual or groups through process as described, the land records are updated through normal process by the Tahsilder, the lowest revenue office, collecting land revenue and taxes.

Settlement Pattern

The residential houses are built in a scattered way. There is no pond around the settlement.

NGO involvement

There is no effective NGO programm in Adarsha Gram visited by the specialist. For the landless people no special arrangement has been made to extend credit facilities for income generation activities.

7. Conclusion

From random visits to Adarsha Gram Projects the specialist understands that no doubt the project had a difficult start and numerous mistakes, the Adarsha Gram could not attain the success as expected due to cunning Jotders who always create bottlenecks by fictitious documents and force the settlers to yield to their wishes. Overall attitude of lack of cooperation and skepticism about the possible success resulted in slow progress of Adarsha Gram Projects.



Ali Naqi
Mr. Syed Ali Naqi
(Rural Development Specialist)

cc: Team Leader, MES

✓ Co-team Leader, MES

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বাংলাদেশ পানি উন্নয়ন বোর্ড

অফিস
নির্বাহী প্রকৌশলী
জলপ ও সমীক্ষা বিভাগ
ভূমি পুনরুদ্ধার প্রকল্প
চাঁদপুর আ/এলাকা,
চট্টগ্রাম-৪২১২

সূচী :

তারিখ : _____

" SAILING ORDER FOR M.V. ANWESHA "

M.V. Anwesha will sail from Patullah, Maryangonj at 1000 hrs. on 26th August/96 for survey and data collection in Meghna Estuary area between latitude from 22°-20'N to 23°-20'N, Longitude from 91°-15'E to 90°-45'E (area Chandpur Tazumuddin, Hatiya, Tetulin river) for period 15 days approximately 26.08.96 to 10.09.96 .

The following officers/Hydrographers including all crew members will accompany to carry out the survey work as per programme (Copy enclosed)

1. Mr. Md. Nurul Amin, Sub-Divisional Engineer, Survey & Study Division, BWDB, Chittagong. (Team Leader)
2. Mr. Khan Md. Mostafa Kamal, J.R.S. Survey & Study Divn. BWDB, Ctg.
3. Mr. Md. Moshazzaman, J.R.S. - do -
4. Mr. P.C. Das. J.R.S. - do -

The following expatriate staff will be on board " ANWESHA."

1. Mr. C.H. Anderson, Chief Hydrographer, Whole period .
2. Mr. T.K. Nielsen, Hydraulic Engineer, One week.
3. Mr. P. Mikkelsen, Instrument specialist, Two weeks.
4. Mr. N. Joneson, Software Engineer, One week .

The following local consultant staff will be bound "ANWESHA" for the survey work.

Mr. D.K. Kundu
Mr. Md. Wakhul Abedin
Mr. Sajidul Rahman Sarder.

The Executive Engineer, Survey & Study Division, BWDB, Chittagong will inaugurate the survey programme at Chandpur, on board "M.V. Anwesha"

Memo.No.581/(4)/SSD/2v-19/96 dated 25.8.96

Copy forwarded for favour of kind information to :-

1. The Commdre Commanding, Bangladesh Navy, Flotilla, How Mooring Chittagong.
2. The senior Naval Officer (Afloat), How Mooring Chittagong.
3. The Director, Land Accretion & Estuary Development, BWDB, Dhaka.
4. Mr. J. Oosterman, Team Leader, MES, Dhaka .

(Md. Sultan Ahmed)
Executive Engineer,
Survey & Study Division,
BWDB, Chittagong.

Memorandum No. 581(4)/5/SSD/2V-19/96

Dated. 15.8.96.

Copy forwarded for information and necessary action to :-

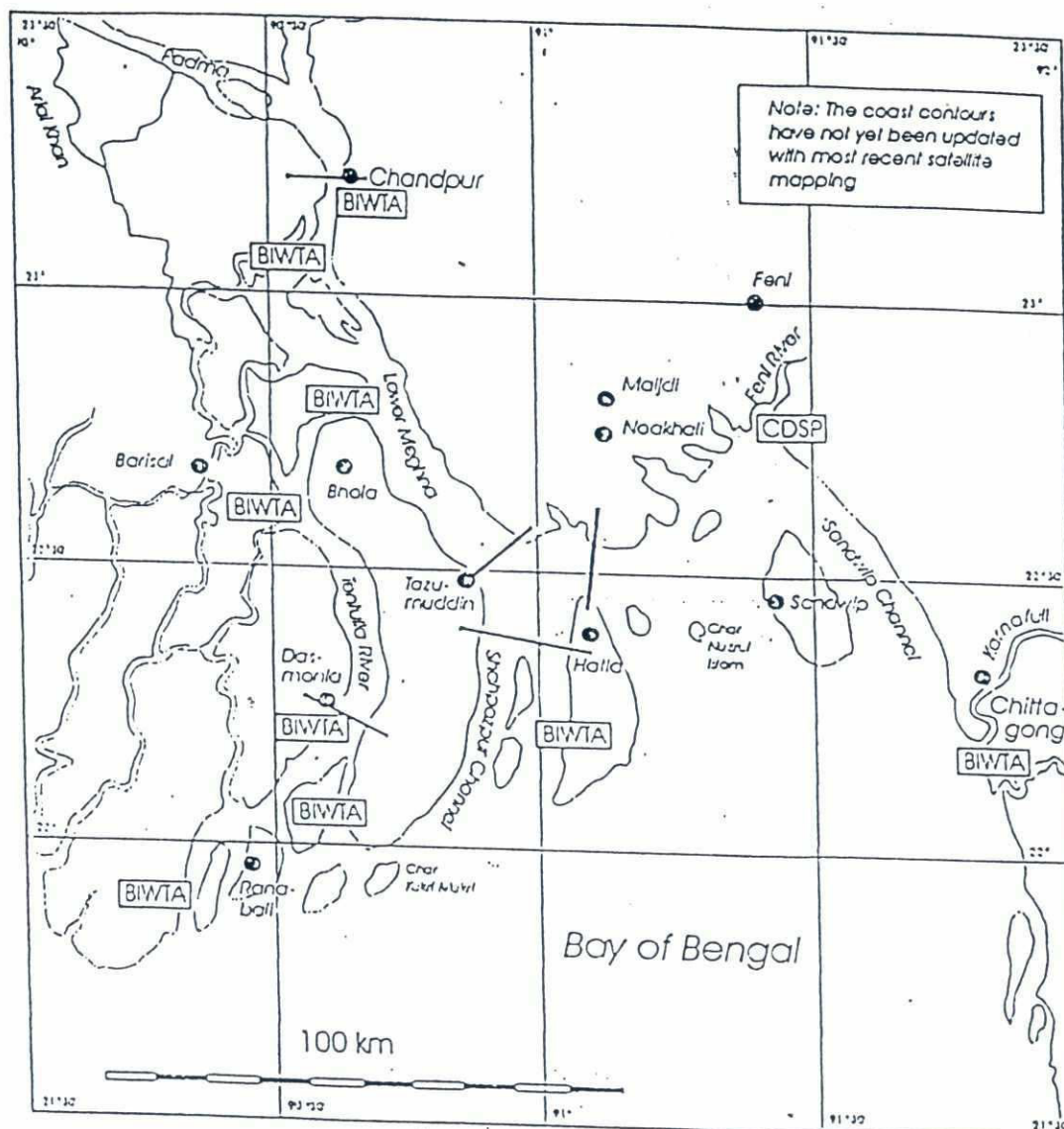
1. Mr. Nurul Amin, E.D.E. Survey & Study Division, BWSS, Ctg. (Team Leader).
He is requested to carry out the survey work as per programme. The movement of the ship will be made by him as per requirement of the work.
2. Mr. _____ (Expatriate). MSS
3. Mr. _____ J.R.S. Survey & Study Divn. BWSS, Ctg.
4. Mr. _____ (Local consultant).
5. The Skipper, M.V. Anwesha, MSS. He is requested to take care of all navigational and bad weather precautions for safety of the vessel.
6. Engineer, Grade-2, M.V. Anwesha, Survey & Study Division, BWSS, Ctg.

Executive Engineer,
Survey & Study Division,
BWSS, Chittagong.

Work plan, 1st cruise

Day no.	Place	Activity
1	Naryanganj to Chandpur	Transfer, reconnaissance, Incl. BIWTA WL gauge
2	Chandpur	Set-up of reference station, deployment of S4, selection of runlines
3	Chandpur	Flow measurements, S/T measurements, sediment samples
4	Chandpur to Dasmonia (Tentulia River)	Withdrawal of S4 and reference station, transfer, reconnaissance, Incl. BIWTA WL gauge
5	Dasmonia	Set-up of reference station, deployment of S4, selection of runlines
6	Dasmonia	Flow measurements, S/T measurements, sediment samples
7	Dasmonia to Tazumuddin (Halia River)	Withdrawal of S4 and reference station, transfer, reconnaissance of BIWTA WL gauges
8	Tazumuddin	Set-up of reference station, deployment of S4, selection of runlines
9	Tazumuddin	Flow measurements, S/T measurements, sediment samples
10		
11	Tazumuddin to N Halia	Withdrawal of S4 and reference station, transfer, reconnaissance
12	N Halia	Set-up of reference station, deployment of S4, selection of runlines
13	N Halia	Flow measurements, S/T measurements, sediment samples
14	N Halia to Chandpur	Withdrawal of S4 and reference station, transfer
15	Chandpur to Naryanganj	Transfer

Map of survey area, with transect locations



file mes-03.cdr

- Geometry and flow gauging transect, 1996 monsoon survey
- BIWTA BIWTA water level gauge - location shown in BIWTA Tide Tables
- CDSP CDSP wave and water level gauge, to be established

ANNEX C
STAFF TRAINING PROGRAM

TRAINING PROGRAM SURVEYS ANWESHA

SATURDAY, 17 AUGUST 1996

09.00 hrs - 09.30 hrs	Arrival of participants
09.30 hrs - 10.00 hrs	Mr. J. Oosterman, Team leader MES Introduction
10.00 hrs - 10.45 hrs	Mr. M. Hossain, Hydraulic Engineer Estuaries Hydrographic data collection in the Meghna Estuary for Mathematical Modelling
Tea/Coffee break	
11.00 hrs - 11.45 hrs	Mr. M. H. Chowdhury, Chief Hydrographer Bathymetric surveys in the Meghna Estuary
12.00 hrs - 12.45 hrs	Mr. P. Mikkelsen, Instrument Specialist Survey spreads "Anwasha" and Tender boats
Lunch break	
14.00 hrs - 14.45 hrs	Mr. P. Mikkelsen, Instrument Specialist Positioning system DGPS - RTK - OTF
15.00 hrs - 15.45 hrs	Mr. Saifuddin Ahmed, Senior Morphologist Morphological data collection and mathematical modelling
Tea/Coffee break	
16.00 hrs - 16.45 hrs	Presentation of slides/video General discussion and answering questions

SUNDAY, 18 AUGUST 1996

09.00 hrs - 09.45 hrs	Mr. P. Mikkelsen, Instrument Specialist Measuring of flow transects by ADCP
10.00 hrs - 10.45 hrs	Mr. M. Jonsson, Software engineer Hydrosoftware used for data acquisition
Tea/Coffee break	
11.00 hrs - 11.45 hrs	Mr. P. Mikkelsen, Instrument Specialist Radar, gyroscop, auto-pilot
Lunch break	
13.00 hrs	Departure "Anwasha"
14.30 hrs - 17.00 hrs	Training by Mr. Yunus, Captain "Anwasha" Radar, gyroscop, auto-pilot

✓

List of Participants in The Training Programme of MES on 17-18 August 1996
(in Office & on Ship Anwesha)

- | | | |
|-----|---------------------------|--|
| 01. | Md. Sultan Ahmed | Executive Engineer, SSD, BWDB, Chittagong. |
| 02. | Md. Nurul Amin | SDE, SSD, BWDB, Chittagong. |
| 03. | Md. Abdus Samad | SDE, SSD, BWDB, Chittagong. |
| 04. | A K M Kamal Uddin | SDE, SSD, BWDB, Chittagong. |
| 05. | Khan Md. Mostafa Kamal | Jr.RS, SSD, BWDB, Chittagong. |
| 06. | Md. Masiuzzaman | Jr.RS, SSD, BWDB, Chittagong. |
| 07. | Paresh chandra Das | Jr.RS, SSD, BWDB, Chittagong. |
| 08. | Nasreen Mohal | Modeller, SWMC, Dhaka. |
| 09. | Mahbubur Rahman | Equipment Manager, SWMC, Dhaka. |
| 10. | Bishawjit Kumer Kundu | Jr. Professional, SWMC, Dhaka. |
| 11. | Md. Sajidur Rahman Sardar | SDE, SWMC, Dhaka. |
| 12. | Md. Fakrul Abedin | SDE, SWMC, Dhaka. |
| 13. | Md. Yunus | Skipper, MV Anwesha, MES, Dhaka. |

C:\TRAINING



MEGHNA ESTUARY STUDY

To: Mr.K.M. Rahmatullah
M.D.
Infinity Institute of Technology
166 Lake Circus, Kalabagan, Dhaka-1205
Fax: 880 2 810685

Road 25, House 34
Gulshan, Dhaka, Bangladesh
Telefax +88-02-881891
Telephone +88-02-871370

Dhaka, August 4, 1996

Your ref. : Your fax dated 20th. and 28th. July 1996
Our ref. : EQUI9608-041
File : K4121.02.001
Subject : Participants in your training program.

Dear Sir,


Thank you for your quotation and clarifications on the above. We are pleased to confirm to send the following three persons in your institute for attending the courses mentioned below :

Sl.	Name	Course on	Time	Fee (Tk.)
01	Ms. Shahela Haroon	DOS-Windows, MS-Word, MS-Excel	4 to 6pm	4,000/=
02	Mrs. Wazifa Akhtar Jahan	-do-	-do-	4,000/=
03	Mr. Shaheenoor Islam Khan	Fox-Pro Programming	6 to 9pm	1,500/=
		Total amount		9,500/=

We will be paying the said Tk.Nine Thousand Five Hundred only officially.

Thanking you

Yours sincerely,



J. Coosterman
Team Leader

cc: 01. Dr. Ataur Rahman, Co-Team Leader
02. Mahfuzur Rahman Choudhury, GIS/RS Specialist, Head: Computer & Library Section
03 to 05. The Three Participants



MEGHNA ESTUARY STUDY

Road 25, House 34
Gulshan, Dhaka, Bangladesh
Telefax +88-02-881891

Date : Dhaka, August 4, 1996
To : Team Leader, Meghna Estuary Study
From :
Subject : Undertaking

I am pleased to know that the MES management is providing me a Training Course on DOS-Windows, MS-Word, MS-Excel/ Fox-Pro Programming at the Infinity Institute of Technology, Kalabagan for my Computer skill development.

I do hereby giving you the undertaking that, if I leave this organization within Six Months or One Year after getting the Training; I will be bound to pay the 100% or 50% of the Training cost respectively to MES authority.

Thanking you with best regards.

Yours sincerely

MEMORANDUM

CLC

Date : July 30, 1996
 To : Mr. J. Oosterman, Team Leader
 From : Mahfuzur Rahman Chowdhury
 Subject : Computer Training for the Secretary and Operators

Further to our discussion on the above, please find a briefing on the quotations we have received:

01. Concept Computer Network: (Office at the Science Lab. Crossing)

- Offered a Windows Package Training Programme @Tk.7000/= per person which includes (a) Windows 3.11, (b) MS Word, (c) Excel and (d) FoxPro.
- The Course Duration is 120 hours for 10 weeks- 6days /week
- Time: 4pm to 6pm

02. Infinity Institute of Technology : (Office at Kalabagan, by the side of Dhanmondi Lake)

Subject	Duration	Fee (Tk.)
DOS & Windows	1 Month	1200
MS-Word	1 Month	1400
MS-Excel	1 Month	1400
Fox-Pro Programming	1 Month	1500
Total	4 Months	5,500

- The Course Duration is programme dependent and since it is not a package we can choose itemwise also
- They have 5 shifts of training courses; the *best two* for us are: (i) 4pm to 6pm and (ii) 6pm to 9pm
- The Programme starts from August 07, 1996.

It appears that the course offered by the Infinity Technology (no.02) is much reasonable. It would be suggested that, (a) let the Secretary and Lib. Assistant be sent for the DOS & Windows, MS-Words and MS-Excel course amounting Tk. (4,000 X 2) = 8,000

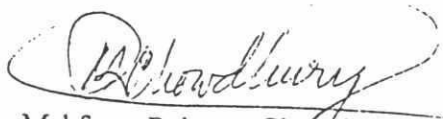
(b) let Mr. Shaheen, Comp. Operator be sent for Fox-Pro Programming course amounting Tk. 1,500.

Hence, the total implication would cost Tk.9,500/= only.

Under the above circumstances, I would like to draw your kind attention to give me the decision ASAP-- so that it would be possible to arrange the needful for the BOOKING .

Thanking you with best regards.

Yours sincerely,



Mahfuzur Rahman Chowdhury
 GIS/Remote Sensing Specialist and
 Head: Computer and Library Section



