



INSTITUTE OF WATER MODELLING NEWSLETTER

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- Assessment of effectiveness of bank protection works/river training works suggested by BWDB through mathematical modelling of the Padma river at Naria of Shariatpur district to combat bank erosion, BWDB
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- Study on Aquifer Mapping and Groundwater Resource Assessment for Management of Eco-friendly Sustainable Agricultural Development in Bangladesh, BADC
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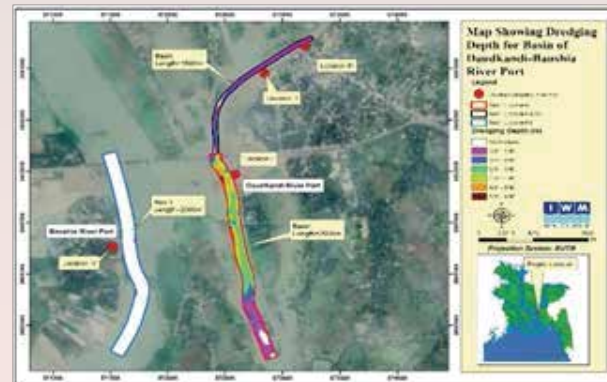
Feasibility Study for Modernization of Port Facilities for Khulna, Narsingdi & Barguna and Development of Galachipa, Mongla, Meghna, Sunamganj, Sirajganj-Jagannathganj, Ghorashal, Kanchpur, Moju Chowdhurirhat and Daudkandi-Baushia River Ports

IWM was assigned for the assessment of suitable & optimum location for the twelve new ports and landing stations, assessment of required area, required acquisition, traffic and vessel survey - both for cargo and passenger, land requirement of land development, topographic and bathymetric survey, dredging alignment and volume for port basin and approach channel, planning and design of port components, layout/alignment of jetties, gangway and spuds.

BIWTA has so far established 30 Inland Ports which were notified in the official gazettes describing the position and limits of each port. However, port infrastructure and facilities are not available at all places. Management units of BIWTA are also not present at all ports. Poor or no connectivity at inland River Ports and landing stations manifests the inherent inefficiency of transportation by inland waterways

In port lay-out planning and its infrastructure development & modernization, three main aspects have been taken into priority such as Passengers, Transportation Facility, Cargo Transportation infrastructure and its prospects, assessments of capacity of existing port and its potentiality and availability of foreshore lands. As a part of development of port facilities, it is suggested to increase port's capacity or upgrading port operations either by creation of a new port site or by expansion and modernization of an existing one.

Subsequently, Development & Modernization of different River Ports under this study has also been considered on the basis of location, size, shape and nature of the land as well as soil condition. The water front area has been checked in terms of depth, width, alignment of the channel after collecting necessary hydrographic data from BIWTA



Land area allocated for different River Ports have been determined accordingly. The hydrographic charts are utilized in determining the navigational depth, width etc. of the route for the vessel and estimating the required volume of dredging. For selection of River Ports, the Study Team conducted topographic survey in the area. Social impact assessment & public consultations were undertaken. The Project comprises with two different works a) Modernization of River Ports and b) Development of River Ports/ Landing Stations/Ferry Ghat.

Through methodical and comprehensive survey, the modernization of Khulna, Barguna and Narshingdi river ports and development of Galachipa landing station, M.G. Canal Monitoring & Sirajganj- Jagannathganj landing station, Kanchpur landing station, Moju Chowdhurir Hat Ferry Ghat, Sunamganj River Port, Meghna River Port, Daudkandi-Baushia River Port and Ghorashal facilities, building, terminal, approach road.

etc. were studied in this project. Dredging in the approach channel is most common in both development and modernization of River Ports and were recommended. Modernization of Ports includes rehabilitation, reconstruction, extension and creation of new infrastructure and facilities within the limits of Ports. Development of Ports, landing stations and IWT installation include construction of infrastructure and development. All proposed interventions were found technically viable, financially attractive, socially sound and environmentally friendly.



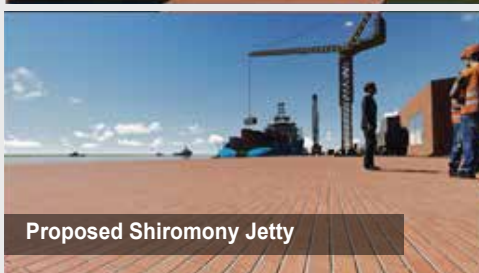
Proposed Khulna Terminal Building



Berthing facility at Shiromony Jetty



Proposed Galachipa Terminal Building



Proposed Shiromony Jetty

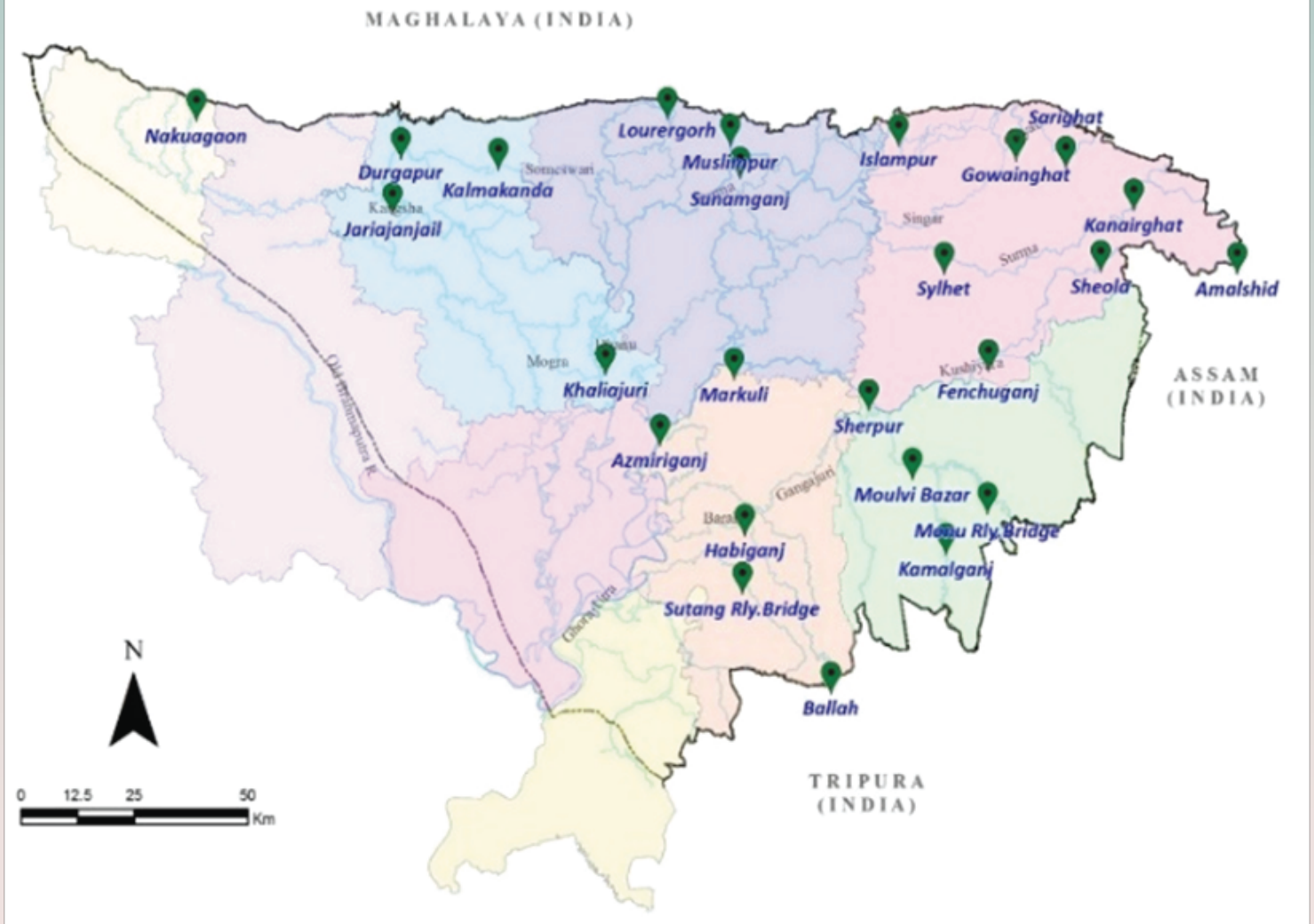


Loading-unloading Facility



Port Layout of Shiromoni River Port

Flash Flood Early Warning System for North Eastern Part of Bangladesh



25 Nos. Flash Flood Forecast Stations

Flood Forecasting and Warning Center (FFWC) of Bangladesh Water Development Board (BWDB) is officially responsible for flood forecasting in Bangladesh and Institute of Water Modeling (IWM) has been a valued partner in this endeavor by continuously providing modeling support to FFWC. The success in monsoon flood forecast was needed to be replicated in flash flood forecasting, particularly in the North-Eastern region comprising of haor basin. In June 2015, Bangladesh Water Development Board (BWDB) signed a MoU with Local Government Engineering Department (LGED) as partner institution to conduct a study titled as "Flash Flood Early Warning System (FFEWS)" supported by the Climate Adaptation and Livelihood Protection (CALIP) project and funded by International Fund for Agriculture Development (IFAD). Consequently, FFWC, BWDB has signed a contract with Institute of Water Modelling (IWM) on March 1, 2016 to carry out the consultancy services and the project was completed in June 2019. The overall objective

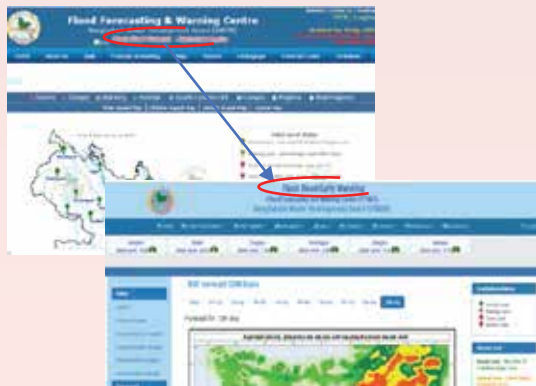


Fig-3: Flash Flood Forecasting Webpage

of the CALIP-BWDB part study was to develop a dedicated early warning system of flash flood in the NE region of Bangladesh for saving Boro crops. The major tasks that have been carried out under this project

a) Establish real-time data collection of 29 Nos. rainfall and 39 Nos. real-time water level gauges including two automatic sensor based gauges installed under this project; b) Update of flash flood forecast model, generate and disseminate forecast warning and evaluation of performance for 2017, 2018

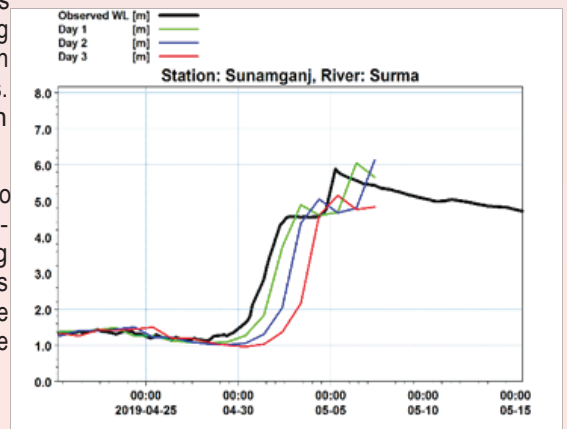


Fig-2: Cyclone "Fani" induced Flash Flood in Surma

and 2019 flash flood event; c) Increase forecast stations up to 25 Nos. and expand forecast coverage area in B.Barua, Sherpur, Netrokona, Kishoreganj along with Sylhet, Sunamganj, Habiganj and Moulvibazar in the North-Eastern Bangladesh; d) Fixation and implementation of pre-monsoon danger level at 25 Nos. forecast stations; e) Generation of flash flood forecast outputs (Hydrograph, Summary Bulletin, Observed and Forecast Bulletin, Embankment based forecast, Quantitative Precipitation Forecast, Mobile Apps based Forecast etc.). One can access the website using FFWC-website (www.ffwc.gov.bd) and then clicking on flash flood forecast page.

ESRI Singapore awarded IWM for Geoinnovation on Application of GIS in Smart Water Resource Project Monitoring in Bangladesh

All the computer user knows Microsoft as giant software leader in office documents and windows operating system. Similarly, ESRI is largest and the global market leader in GIS and helping the world community in GIS development since 1969. GIS is used for digital mapping and spatial analysis in the field of Water, Land, Agriculture, Environment, Communication, Health, Disaster Management, Urban and Rural Planning etc.; in short, all sectors where the space/location is involved. ESRI Singapore User Conference (ESUC) 2019 held on 3rd September 2019 at MAX Atria, Singapore EXPO. More than 500 GIS experts from the world participated in ESUC 2019 and more than a dozen paper was presented there on expert use of GIS.

The paper of IWM on Application of GIS in Smart Water Resource Project Monitoring in Bangladesh presented by Dr. Mollah Md Awlad Hossain was first winner of Geoinnovation award. The description of the presentation is given below.



Dr. Mollah Md Awlad Hossain, Director, ICT-GIS, IWM is receiving the Geoinnovation award from Mr. Leslie Wong, Managing Director, ESRI Singapore

Introduction

Revolution of the Information and Communication Technology (ICT) thrust positively in governance, policy and planning, and decision-making process in government and private sectors in all over the world. In line with national vision 2021, Bangladesh Water Development Board (BWDB) has taken an epoch-making step to develop Smart ICT system for managing and monitoring of BWDB Scheme information. The developed System is named SiMS-Smart, meaning Scheme Information Management System with Smart Technologies. BWDB engaged IWM for the development of this solution.

Project Goals

The overall objective of the SiMS-Smart is to support BWDB officials in planning, budgeting, estimating monitoring the rehabilitation/improvement works and O&M of all types of projects or Schemes. The SiMS-Smart extends its capabilities by utilizing Geo-spatial technologies (ESRI), Smart devices (Mobile, Tablets), IP-Camera, Skype, SMS integrated with web GIS and Oracle database.

Brief Description of the Solution Implemented to Achieve Project Goals

SiMS-Smart comprises of number of modules & tools which are based on the **ESRI Server Solution of Enterprise version**. This solution capitalizes the power "WHERE" using geo-locations. A very short description about some of the modules are given below

Web GIS Module enables user to visualize BWDB Schemes/Projects with physical features along with their detail information exploiting the advanced capabilities of ESRI Server based enterprise solution. The module provides facilities for selection, scale change, off/on layers, zooming facilities, feature identification, spatial queries etc.

Scheme/Project Inventory Database for maintaining all information about individual completed and ongoing schemes/projects including all infrastructures with design and as built data.

O&M Module enables user to store O&M data of BWDB completed projects including quantity estimates of embankment and canal earthwork volume, schedule of rates, cost estimates, budgets, work selections etc. for O&M or ADP headed BWDB works.

Monitoring Module enables user to store and maintain annual O&M implementation information for individual schemes/projects and monitor the progress towards the targets and completion of O&M works. This module extends for monitoring the progress of BWDB ongoing projects under ADP head. This module also includes the real-time monitoring of project activities through IP-Camera from remote location.

SIMS Mobile enables user to carry out works beyond office and allows to information and data collection. Data collection comprises filling table, capture photo & video and GPS locations for the sites. The collected field data/information can directly be registered in to the SiMS-Smart database server.

WMO Information Module stores and maintains Water Management Organization related information such as organization, status, membership, constitution, organization framework, meeting schedules and information and members responsibilities to BWDB Schemes and projects.

Scheme Performance Module can evaluate the agricultural, socio-economic, environmental and technical performance of schemes or projects based on some pre-defined set of performance indicators. The baseline and or annual indicator's parameters data can be entered through this web enabled module.

Flood Forecasting and Warning Sub-System enables user to get river flood information against project's or scheme's physical features with relation to the nearest FFWC river water level gauge. Design Level of Embankment/ Structure is also shown to realize the status of threat to corresponding embankment or structure during flood season.

BWDB Asset Information Management System (AIMS) enables BWDB to ensure the achievement of the utmost benefit from the resource invested against fixed and moveable assets of BWDB. AIMS comprises of three sub-system (i) Key Asset Information System Module; (ii) Cadastral/land Information Module; and (ii) Instrument & Vehicle Management Module.



Results achieved, outcomes and benefits gained from attaining the project goals

Through this GIS based solution BWDB will be able to monitor their projects/schemes in greater efficiency and effectiveness. This solution can add great value to their services. BWDB is moved with high interests in integrating geo-spatial aspects into projects for effective operational management. SiMS-Smart Application, monitoring of flood level using SIM based Sensor, integrated IP camera and GIS based visualization will save investments, livelihoods and huge amount of money and time.

Study on Aquifer Mapping and Groundwater Resource Assessment for Management of Eco-friendly Sustainable Agricultural Development in Bangladesh

Study on “Aquifer mapping and groundwater resource assessment for management of eco-friendly sustainable agricultural development in Bangladesh” of Bangladesh Agricultural Development Corporation (BADC) spreads over 25 districts in the two hydrological regions (NW and NC) of Bangladesh. The main objective of the study is to develop aquifer maps with an assessment of groundwater resources for acceptable agricultural development of the study area using mathematical modelling techniques. To achieve the study objectives the following hydrogeological investigations will be performed:

- I. Exploratory drilling up to 200m to 240m depth at 100 locations;
- II. Long term (3 days) aquifer tests at 75 locations;
- III. Short term (1 day) aquifer tests at 50 locations;
- IV. Water quality sampling at 1500 locations.

In the study of Aquifer mapping includes preparation of aquifer GIS Data sets and development of maps considering quantity, quality and movement characteristics of ground water in aquifers.

The modelling works include development, calibration and validation of surface water and groundwater interaction model for the study area to assess the surface water and groundwater resources. Interactive Information System (IIS) to be developed will be capable for visualization through GIS, graphs, charts and reports, data entry, modifications and data export, data storage and management tool.

IWM has mobilized the study team to have a thorough understanding of the assignment, identify data availability and gaps, assess data requirement and devise study methodology and other activities for smooth completion of the study.

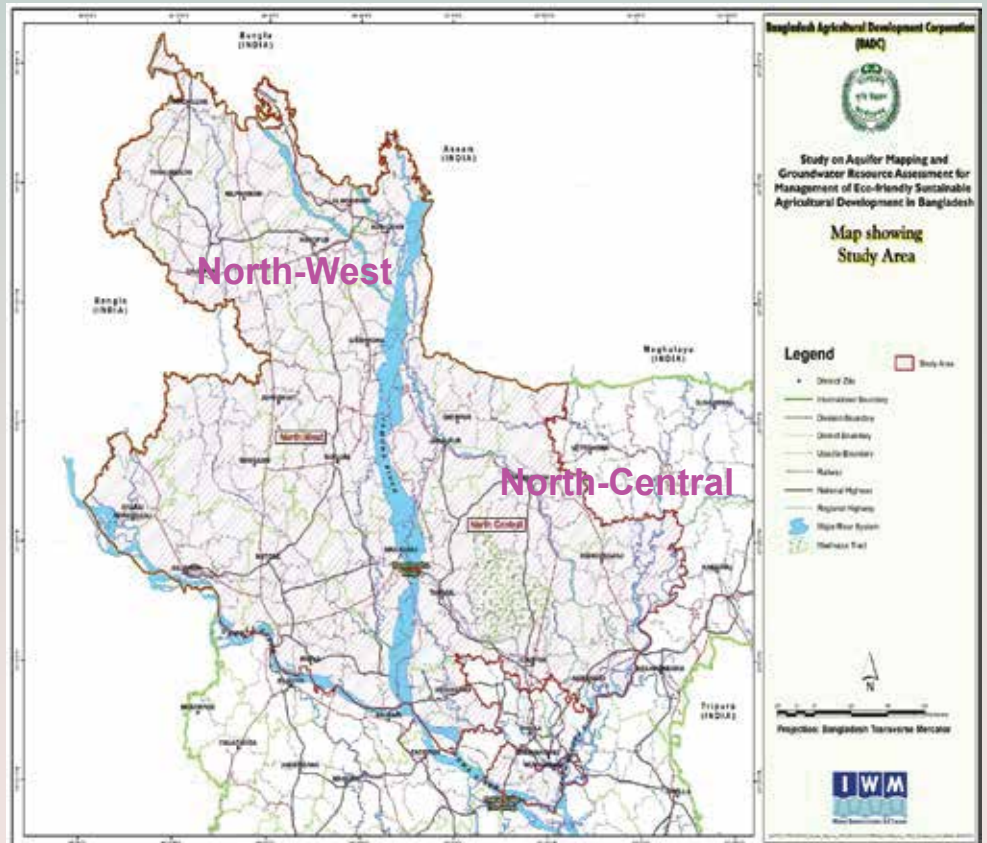


Figure: Map of the Study Area



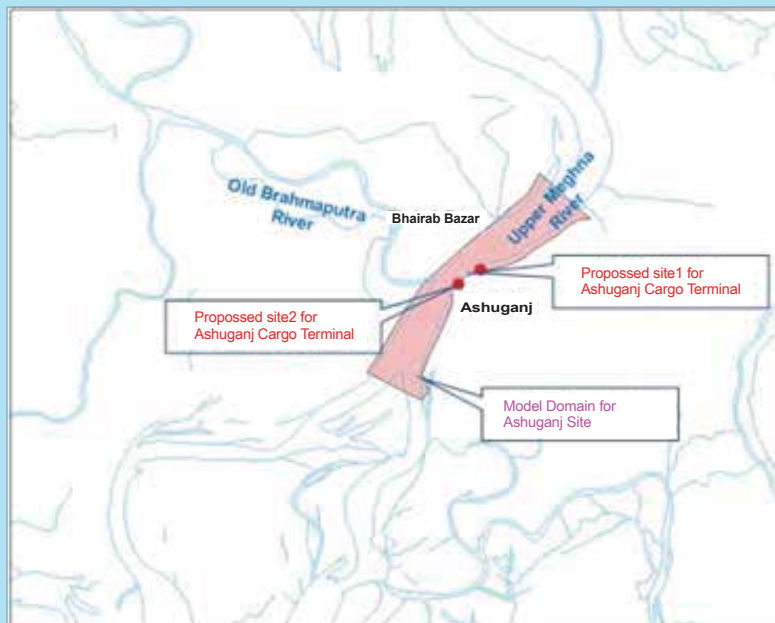
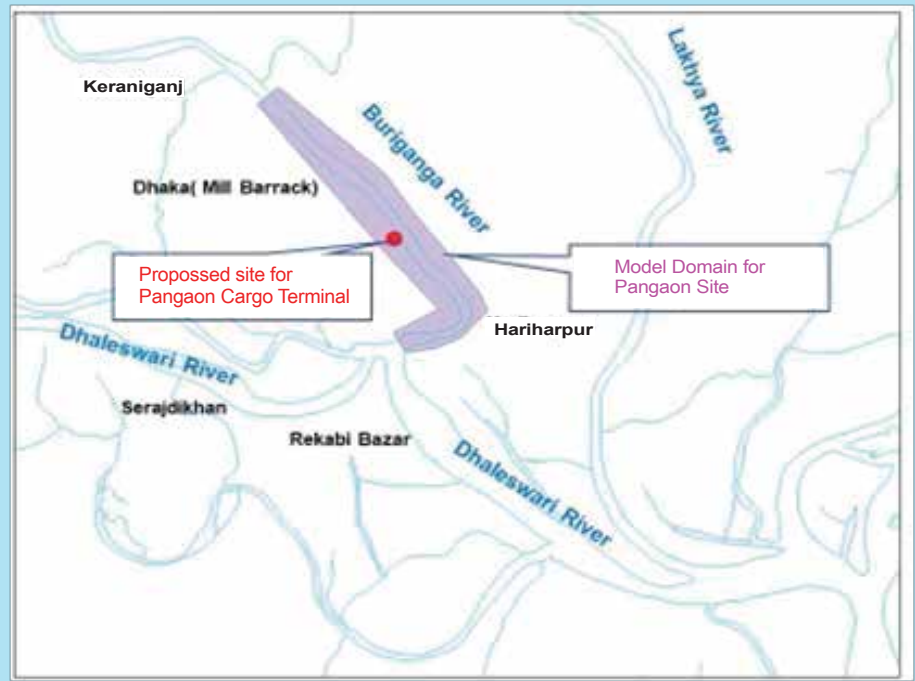
Figure: Exploratory drilling and collection of sediment samples in the project area

Numerical Modelling Study of the Buriganga and Meghna Rivers in connection with the Feasibility Study for Pangaon and Ashuganj Cargo Terminals

Bangladesh Inland Water Transport Authority (BIWTA) has planned to construct cargo terminals at Pangaon and Ashuganj along the Buriganga and Meghna rivers, respectively. The Joint Venture (JV) consortium of DDC-RAMBØLL-STUP has been contracted by BIWTA for the Feasibility Study, Survey, Detailed Design and Construction Supervision of the Cargo Terminals. In order to evaluate erosion-sedimentation pattern at and around the proposed cargo terminal sites, and to predict the impact of construction of the terminals on the rivers concerned, a morphological study including numerical morpho-dynamic modelling was felt necessary.

The JV Consortium approached IWM to carry out a study to assess the hydro-morphological features of the Buriganga and Meghna rivers in the vicinity of the proposed cargo terminal sites. A Contract Agreement was signed between DDC Ltd. and IWM on the 30th of June '19.

The sites chosen for the envisaged construction of the cargo terminals (the project areas) are situated at the left bank of the Meghna River (at Ashuganj) and at the right bank of the Buriganga River (at Pangaon).



The objectives of the assignment are to:

- Apprise the Client about the hydro-morphological aspects (probable channel migration, probable bank erosion, erosion-sedimentation of the river bed, etc.) of the Buriganga and Meghna rivers under existing as well as project conditions,
- Recommend suitable measures to protect the areas from the threat of river bank erosion in the vicinity of the sites concerned under project condition, and
- Assess erosion-sedimentation aspects of the river beds, in the vicinity of the project areas, to support (maintenance) dredging activity, if required.

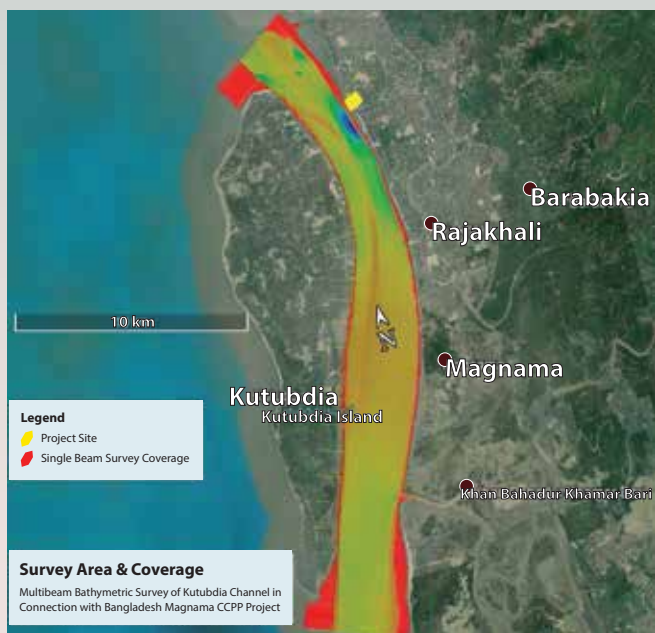
The following are the expected outputs from the proposed study:

- Baseline hydro-morphological feature of the Buriganga and Meghna rivers at and around the project areas
- Impact of the envisaged development of the project areas on the river hydraulics and morphology at and around the project areas
- Hydraulic design parameters for BPW (if recommended)
- (Maintenance) dredging volume in the vicinity of the cargo terminals
- Computed scours (general and constriction) around the piers of cargo terminals
- Study Reports

Bathymetric Survey of the Kutubdia Channel using Multibeam Echosounder in connection with Magnama CCPP Project

Institute of Water Modelling (IWM) carried out bathymetric survey at Kutubdia Channel using multibeam echosounder in connection with Magnama CCPP Project. The project is being implemented by Samsung C&T Corporation, Korea. Primary objective of the survey is to prepare a high resolution bathymetric chart of the channel to aid navigation. Following survey outputs have been delivered:

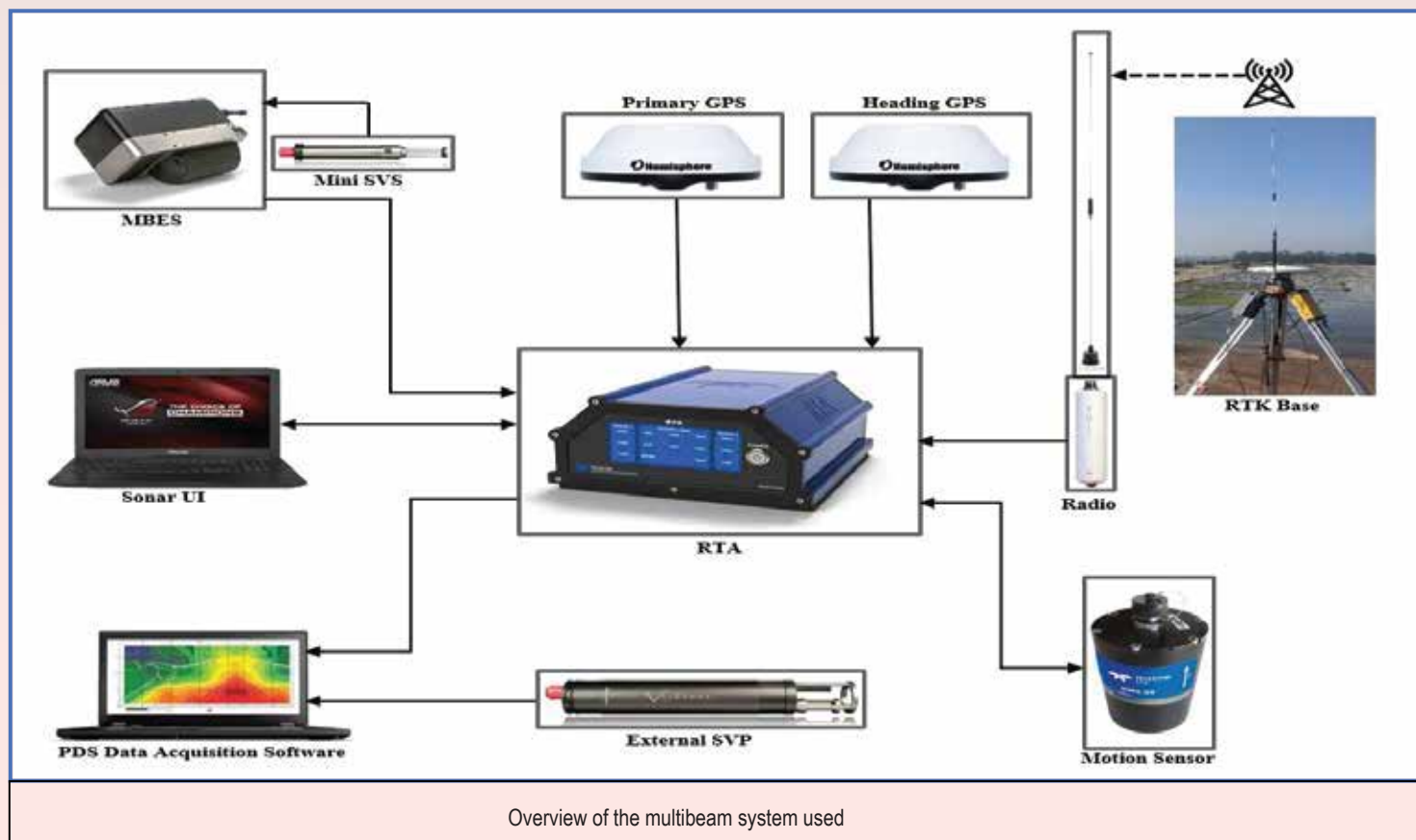
- Channel bed level data at 1m grid for the areas containing depth ≥ 5 m MSL
- 1m interval contour diagrams of the channel in AutoCAD drawing (.dwg) file. IWM started the survey work during April 2019 and completed the work successfully within one months time.



Survey area and coverage by single & multibeam echosounders



Hydrological Data Acquisition with Multibeam Echosounder



Overview of the multibeam system used

Preparation of Master Plan, Architectural Design, Detail Design, Drawings, BoQ, Tender Documentation and Construction Supervision of Bangabandhu Sheikh Mujibur Rahman Maritime University (BSMRMU) Permanent Campus at Chattogram

Bangabandhu Sheikh Mujibur Rahman Maritime University (BSMRMU), Bangladesh was established as the first ever maritime university of Bangladesh on 26th October, 2013. BSMRMU with its motto 'We Strive for Maritime Excellence' would provide necessary human resources for the nation, through creation of effective, well qualified and knowledgeable human resources in the coming days. It will endeavour to emerge as a centre of excellence in maritime higher education within the shortest possible time. The Government of Bangladesh has allocated 106.66 acres of land at Char Rangamatia and Bakolia Mouja under Bandar Thana in the district of Chattogram for the purpose of establishment of a permanent campus of the University.

BSMRMU has appointed IWM to conduct a study titled "Consultancy Services for Preparation of Master Plan, Architectural Design, Detail Design, Drawings, BoQ, Tender Documentation and Construction Supervision of Bangabandhu Sheikh Mujibur Rahman Maritime University (BSMRMU) Permanent Campus at Chattogram".

The main objective of this study is to carryout master plan, architectural plan and design, detail design and drawings of structural, electrical, mechanical, plumbing, firefighting components including cost estimates, bill of quantities and tender documentation. IWM will also conduct construction supervision of the work components of the project.

The scope of works of the consultancy services shall include preparation of a master plan for Bangabandhu Sheikh Mujibur Rahman Maritime University (BSMRMU), architectural plan and design, detail design and drawings including construction supervision.



Photograph of Project activities & field visit

Climate Change Cell, IWM

IWM has been working with climate projections and scenarios for different flood and drought management projects, drainage modelling, storm surge and sea level rise related research and studies in collaboration with BUET, DOE, BWDB, World Bank, CEIP-I and other government and international organizations.

IWM has a Climate Change Cell (CCC) that is responsible to perform all the climate related assignments/studies or projects. The main responsibilities of this cell are to conduct (i) Basic research in the field of Climate Change (ii) Climate Change impact assessment, (iii) Training and capacity building, (iv) Awareness building, (v) Developing local level Climate Change model and provide support to develop Climate Change services in line with Bangladesh situation, (vi) Downscaling with bias correction and find the suitable downscaling, (vii) Development of a climate database and (viii) multi-level collaboration with partners, research institutes, stakeholders and donor organizations. The vision of the Climate Cell is to enable better management of the risk of climate variability, changes and adaptation & mitigation to climate change, through the development and incorporation of science-based climate information and prediction into planning, policy and practice on the global, regional and national scale.

Under this cell, there are several active projects. Some ongoing project are:

1. Groundwater Rejuvenation As Climate change Resilience for marginalized and gender sensitive Ganges (GRAC ERS) in collaboration with Indian Institute of Technology Bombay (IITB)
2. Groundwater Resource Assessment and Impact of Climate Change in Coastal area

In addition to the active projects, the cell is also working on a number of research projects with different relevant academic, implementing authorities and research partners.



Glimpses from the workshop attended in Kathmandu, Nepal, 2019

Recently, Mr. Md. Tarikul Islam, head of CCC, attended a workshop on “Climate Services for water and hydro-power sectors in South Asia” held during 24 to 26 September 2019 in ICIMOD, Kathmandu, Nepal which was organized by Asia Regional Resilience to a Changing Climate (ARRCC) Programme & The Met Office Partnership (MOP), UK. The aim of the workshop was to bring together researchers, providers, boundary organisations, and users of future climate information to discuss the challenges and opportunities associated with the use and uptake of climate services for water and hydropower in South Asia. In that workshop, Mr. Islam presented the issue, Adaptation to Climate Change in Bangladesh: IWM’s Experiences.

Assessment of effectiveness of bank protection works/ river training works suggested by BWDB through mathematical modelling of the Padma river at Naria of Shariatpur district to combat bank erosion

Riverbank erosion is one of the most prominent natural disasters in Bangladesh which is caused due to the dynamic channel shifting of meandering and braided river. In the year of 2018, the devastating bank erosion of the Padma river reached a serious turn. It affected more than 5000 families in 12 villages of six unions and one municipality of Naria upazila; 500 business centers at Sadhur bazar & WAPDA bazar; several schools, mosques, roads, bridges, culverts and other critical infrastructures. Due to the vast impact on socio-economic infrastructures, river bank erosion at the Naria became a national issue. IWM felt the need to assist BWDB for the management of this disaster.

Major objective of the study is to assess the effectiveness of the BWDB suggested dredging works for the river bank protection at Naria, Shariatpur district through mathematical modelling. A field visit was organized to get clear idea about the present situation of bank erosion, existing bank protection works and opinion of the local people regarding the hazard. Relevant hydrometric and bathymetric data, satellite images and other related data and information have been collected from different organizations and sources such as BWDB, BIWTA, USGS and IWM own archives. Analysis of the planform changes for the river Padma in terms of bank shifting, erosion deposition assessment, analysis of trend of channel and incidence of channel for the Mawa reach of the Padma river have been examined. A two-dimensional erosion management model for the Padma river has been developed using MIKE 21C software based on the secondary source bathymetry data from BIWTA. Several options have been tested on the calibrated model which cover different dredging alignment proposed by BWDB, RRI etc. and consideration of spurs for the protection of bank erosion at Naria. Following figures are the glimpse of the site visit in connection with the research project.



Visit of bank protection works by BWDB near Kedarpur, Naria



Field Visit near Sureswar Bazar

DeltaCap Annual Meeting 2019

Prof. Dr. M. Monowar Hossain, Executive Director, IWM Chaired the 4th External Advisory Board (EAB) Meeting of DeltaCap Project. The meeting was held on 12th September, 2019 at the WARPO conference room.

In the Session the EAB member Dr. M. Abu Syed, Senior Fellow from BCAS; Dr. Md. Mashiur Rahman, Joint Chief from GED; Mr. Mohammad Humayoun Kabir, Monitoring & Evaluation Officer TTAP-BGP from DAE; Ms. Swarna Kazi, Disaster Risk Management Specialist from World Bank; Mr. Gopal Krishna Debnath, Superintending Engineer from LGED, Mr. Maminul Haque Sarker, DED from CEGIS participated in the dialogue. During the meeting they discussed many issues of water sector and BDP 2100. The meeting also discussed about the outcome of the ongoing activities under DeltaCap project.



Prof. Dr. M. Monowar Hossain and Other DeltaCap- External Advisory Board (EAB) Members Meeting At WARPO Conference Room.

From the Management Team of DeltaCap project Prof. Chris Zevenbergen, IHE Delft; Mr. Abu Saleh Khan, DED (Operation) of IWM, Ms. Catharien Terwisscha van Scheltinga, WUR; Prof. Shah Alam, IWFM, BUET and Mr. M Samiun Nabi, Manager, Business & Strategic Planning from IWM were also present in the meeting.

MOOC Launching Event & Certificate Awarding Ceremony under DELTACAP PROJECT, 2019

The DeltaCap a NICHE project is to help the Bangladesh Delta Plan 2100 to meet the demand for skilled water professionals. It works to strengthen the capacities of various government and non-government organizations in Bangladesh linked to adaptive delta management. After successfully completion of year 3 of DeltaCap Project, an App-based learning technology named MOOC (Massive Open Online Course) was launched on 12th September, 2019 at WARPO conference room.

By the help of this App 'Bangladeshi Water Professionals' can get access to news on water management, get informed of upcoming trainings on water management and get notified of any updates on the industry.



Prof. Dr. M. Monowar Hossain, Executive Director, IWM; Md. Mahmudul Hasan, Director General, Water Resources Planning Organization (WARPO); Dr. Md. Mashiur Rahman, Joint Chief from GED; Prof. Chris Zevenbergen, Project Director, DeltaCap, IHE Delft; Mr. Abu Saleh Khan, DED (Operation) of IWM, External Advisory Board (EAB) Members of DeltaCap, Management Team of DeltaCap and other senior officials were also present in the event.

Contract Signing Ceremony between BIWTA and IWM

Bangladesh Inland Water Transport Authority (BIWTA) and Institute of Water Modelling (IWM) signed a contract agreement on 25th April, 2019 for six years to carry out the study entitled "Supervision and Monitoring the Performance Dredging, Morphological and Environmental Impacts, Detailed design and Assessment of Effectiveness of Dredging for Restoration of Dry Season Flow, Improvement of Navigability and Flood Management of Four River Routes including Hydrographic and Bathymetric Survey Services".

The contract signing ceremony was chaired by Commodore M Mahubul Islam, (N), BSP, ndc, psc, BN, Chairman of Bangladesh Inland Water Transport Authority (BIWTA). Mr. Rokibul Islam Talukder, Additional Chief Engineer & Project Director of BIWTA and Prof. Dr. M. Monowar Hossain, Executive Director, IWM signed the contract on behalf of BIWTA and IWM, respectively.

Mr. Md. Abdul Matin, Chief Engineer, Dredging Department BIWTA, Mr. Md. Golam Mostafa, Member (Engineering), Mr. Md. Nurul Alam, Member (Finance), Mr. Md. Delwar Hossain, Member (Planning and Operation), Mr. Md. Abdul Awal, Director (Accounts) were present on behalf of BIWTA. From IWM, Mr. Abu Saleh Khan, DED(Operation), Dr. A F M Afzal Hossain, DED (P&D), Mr. Md. Zahirul Haque Khan, Director, Coast Port and Estuary Management Division, Mr. Md. Amirul Islam, Director,



Mr. Rokibul Islam Talukder, Additional Chief Engineer & Project Director of BIWTA and Prof. Dr. M. Monowar Hossain, Executive Director, IWM signing the contract on behalf of respective organizations

Survey and Data Division, Mr. Md. Sarafat Hossain Khan, Senior Water Resource Specialist & Team Leader of this project, Mr. M. Samiun Nabi, Manager, Business & Strategy from IWM and other senior officials were also present in the contract signing ceremony.

Managing Director of Deltares Visits IWM

Mr. Maarten Smits, Managing Director, Deltares & Mr. William Oliemans, Team Leader of Joint Cooperation Program (JCP) made a brief visit to IWM on 18th June 2019. Executive Director of IWM Prof. Dr. M. Monowar Hossain welcomed Mr. Maarten Smits & Mr. William Oliemans.

Mr. Abu Saleh Khan, Deputy Executive Director (Operation), Mr. S M Mahbubur Rahman, Director Water Resources Planning Division and Mr. Zahirul Haque Khan, Director, Coast, Port & Estuary Management Division of IWM were also present. During the visit, discussions were held on the cooperation between Deltares and IWM on water related study & research.



Prof. Dr. M. Monowar Hossain Presented Souvenirs and Crest to Mr. Maarten Smits, Deltares

Workshop on Decentralized Data Acquisition Techniques (DDAT) for Adaptive Delta Management

DeltaCap project works to strengthen the capacities of various Government and Non-Government organizations in Bangladesh linked to Adaptive Delta Management. In this project, there are various trainings for the professionals to enhance their capacity. In this regard a day long workshop on Decentralized Data Acquisition Using Drones was held on 12th September, 2019 at LGED training room.

Managing complex adaptive systems like Deltas in this context needs continuous monitoring and evaluation (M&E) of external influences on the systems, internal changes and impacts of different interventions. Continuous data acquisition is an essential part of these M&E activities.



Dr. Assela Pathirana – Associate Professor of integrated urban water cycle management, IHE-Delft Institute for water education and Dr. Willem Veerbeek – Senior Lecturer, IHE-Delft Institute for water education sharing knowledge with professionals from different organization.

World Water Day 2019



IWM Participates in World Water Day Rally 2019

IWM Participates in Training at Deltares



Metamodel Development Training and Working Sessions in Deltares, Netherlands

Contract Signing Ceremony of Joint Cooperation Programme Bangladesh - the Netherlands



For a long time, Bangladesh has been battling risks from natural hazards and simultaneously building the necessary physical and governance conditions for sustainable development of the country. The recent development of Bangladesh Delta Plan 2100 is a leading guideline and framework developed in this consequence. In this relation, a joint cooperation programme is developed in a structured approach; to bridge knowledge gaps and knowledge needs.

A formal signing ceremony of the Joint Cooperation Programme between Bangladesh and the Netherlands commenced on 18th June 2019. This four-year programme, funded by the Embassy of the Kingdom of the Netherlands is set up amongst the Institute of Water Modelling (IWM), the Center for Environmental and Geographic Information Services (CEGIS), Wageningen University and Research (WUR) and Deltares. It is aimed at developing and initiating long term knowledge sharing and capacity building amongst these institutes in the fields of integrated water resources management and adaptive planning.

Mr. Harry Verweij, Ambassador of the Kingdom of the Netherlands ; Mr. Peter de Vries, Thematic Water Management Expert and Additional Secretary of Ministry of Water Resources, Mr. Rokun ud-Doula was present during the signing ceremony.



Prof. Dr. M. Monowar Hossain, Executive Director, IWM, Signs agreement of joint Cooperation Programme (JCP).

The focus of the programme is on applied research, related to, work of the Planning Commission and General Economic Division (GED), the Water Development Board (BWDB), the Department of Environment (DOE), the Department of Agricultural Extension (DAE), Bangladesh Inland Water Transport Authority (BIWTA) and many other government agencies. Foreseen outputs are an application to access the knowledge portal of the delta plan, improved polder management and governance, real time water quality monitoring around Dhaka city, a Meta Model to structurally and integrally assess investments for the Bangladesh Delta Plan, sediment management for restoration of the Old Brahmaputra river, and insights in the future water requirements in agriculture.



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Initially started as a TA Project in 1986, Institute of Water Modeling is an independent TRUST established by the GoB to promote water modelling in managing the complex water resources ecosystem. Since 1996 IWM has been offering services in the water and water related environment to various govt. and other national/international agencies.

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