Year 18: Issue 59
January-March 2019

Misery of Elephants in South East part of Bangladesh

Upcoming

- Ecosystem based Development, Management and Conservation of the Saint Martin's Island
- IEE Study of Siddirganj, Feni and Gazaria Power Plant
- Feasibility Study of Expansion and Strengthening of Power Network in Chattogram Area

Inside

CEGIS
Center for Environmental and Geographic Information Services
(A Public Trust under the Ministry of Water Resources)
House 6, Road 23/C, Gulshan 1
Dhaka 1212, Bangladesh.
Phone: 88 02 58817649-52; 9842581, 9842551
Fax: 88 02 9843128
Email: cegis@cegisbd.com, Web: www.cegisbd.com

the CEGIS NEWSLETTER

Quarterly Newsletter of the Center for Environmental and Geographic Information Services (CEGIS)

Reception of Hon'ble Minister of State Mr. Zaheed Farooque, MP and Hon'ble Deputy Minister Mr. AKM Enamul Hoque Shameem, MP in the Ministry of Water Resources

Mr. Kabir Bin Anwar, Secretary, Ministry of Water Resources and Engr. Md. Waji Ullah, Executive Director of CEGIS are seen in the reception of Hon'ble Minister of State Mr. Zaheed Farooque, MP and Hon'ble Deputy Minister Mr. AKM Enamul Hoque Shameem, MP in the Ministry of Water Resources

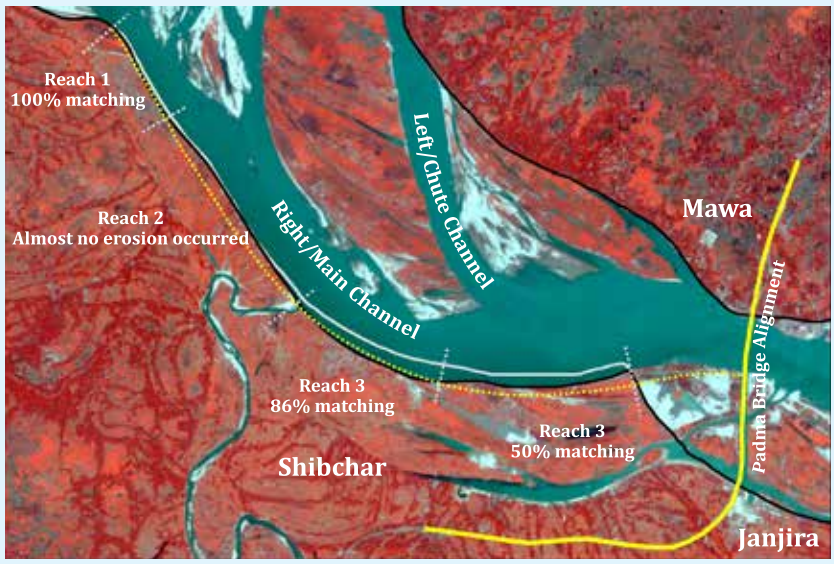
Mr. Zaheed Farooque, MP, and Mr. AKM Enamul Haque Shameem, MP, honorable members of parliament, have taken oath as Minister of State and Deputy Minister respectively during an oath taking ceremony. Through the swearing in as State and Deputy Minister, they will both be responsible for the Ministry of Water Resources, Government of the People's Republic of Bangladesh to discharge their duties and perform their functions honestly to the best of their ability. A reception was accorded on 8 January, 2019 by the Ministry of Water Resources in honor of them. Mr. Kabir Bin Anwar, Secretary, Ministry of Water Resources, presided over the program. High profile guests, including heads of different organizations under MoWR were present at the reception arranged for them.

Engr. Md. Waji Ullah, Executive Director, Center for Environmental and Geographic Information Services (CEGIS) welcomed and greeted Mr. Zaheed Farooque, MP, Honorable Minister of State, and Mr. AKM Enamul Haque Shameem, MP, Honorable Deputy Minister, Ministry of Water Resources, Government of the People's Republic of Bangladesh on behalf of CEGIS for taking over their charges by presenting them with bouquet as a token of respect.

Monitoring and Predicting Morphological Changes in the Padma River at PMBP Site at Mawa, Munshiganj

Jakia Akter, River, Delta and Coastal Morphology Division

CEGIS has been providing consultancy services to the Korean Express Corporation (KEC) who are the main consultant for the Padma Multipurpose Bridge Project (PMBP) for monitoring and predicting morphological changes in the Padma River at PMBP Site at Mawa since 2017. CEGIS's services include assessment of present and future morphology (channel alignment and cross section changes), and the potential risks morphological changes which would have on PMBP temporary and permanent works. CEGIS presents updated prediction and risk assessment based on continued monitoring of the river.



Matching between observed and predicted banklines in 2019

During carrying out the Padma Bridge Detailed Design Study (PBDDS), the Mawa Reach shows a cyclic process of planform development from straight to meandering to anabranching over time. A sequential change of planform at Mawa Reach, starting from 1963 to 2009, was identified by the study carried out during the PBDDS. But later, CEGIS updated the planform changes at Mawa Reach following a similar procedure. In 2010, some predictions made by CEGIS, were evaluated in 2013. After good matching, the prediction was updated in 2013 to the year 2020. Figure shows the matching between observed and predicted banklines in 2019.

Analysis of water incidence in this Mawa Reach, illustrates that water flow in the Chute Channel, i.e. left channel, has been increasing over time. It ensures the hydro-morphological development of the Left Chute Channel. The probability of further development of this channel is high in the coming years. So, it is expected that in 2020, this Left Chute Channel will develop more. This development may have an impact on Padma Bridge infrastructures.

The scour hole at Mawa had been persistently migrating downstream from 2008 to 2018 (except 2009-10) with an average migration rate of 260 m/y. The location of the deep scour hole depends on the development of the upstream left and right channels. Analysis of depth data indicates a seasonal variation of the scour depth and extent. The scour depth and extent become low during the dry season. Over the years the scour is moving downstream. But, autonomous development of the location of the scour is now controlled by the bridge construction. In 2018, the maximum depth was observed as -30mPWD under the bridge alignment, around the Pier 4 of the Padma Bridge. The scour was in the same location even in 2017 monsoon. It is observed that maximum velocity was concentrated at the right side of the river (Janjira Side). High convergence of flow has occurred at immediate upstream of the bridge.

From the ADCP measurements on 8 September 2018 by the KEC, turbulence is observed at and around Pier 4, where the maximum scour observed. High scour depth at Pier 4 might be the combined effect of bend scour and pier scour. After comparing the scour hole and velocity distribution, it is clear that Pier4 has additional hydraulic stress that needs to be monitored. There is a high probability of occurrence of maximum scour depths at different pillars in the coming years. This extent and location of the deepest scour hole need to be monitored. CEGIS recommends monitoring the river bed in the vicinity of the yard that is erosion vulnerable. In addition, CEGIS found about 16 km of river bankline at the outer bank of the Padma Main Channel erosion-vulnerable. This part needs to be observed for the sustainability of the Padma Bridge structures.

Land Acquisition and Resettlement Management Training for BWDB Professionals

Farhana Ahmed, Research, Development and Training Division

Land acquisition and resettlement are vital and critical issues that need to be considered prior to project planning and implementation. With a view to enhance proficiency of the BWDB officials in addressing and assessing rights and needs of land owners hereby conducting interactions that foster trust and mutual respect, a training program was organized by CEGIS. The five-day training program titled 'Land Acquisition and Resettlement Management' was held from 5th to 9th January with the assistance from Flood and Riverbank Erosion Risk Management Investment Program (FRERMIP) under BWDB. The training was attended by 15 participants from BWDB.

The inaugural session took place on 5 January which was graced by Dr. Khondaker Azharul Haq, Regional Chair of Global Water Partnership-South Asia as Chief Guest. Engr. Md. Waji Ullah, Executive Director, CEGIS chaired the session. The training program included several lecture sessions on financial, socio-economic and legal aspects of Land Acquisition Planning process; implementation and budget management of Resettlement Action Planning and

Cont'd on page 3

Contract Signing for Different Studies

Dr. A.F.M. Mizanur Rahman, Principal Scientific Officer, Nuclear Power and Energy Division of Bangladesh Atomic Energy Commission and Engr. Md. Waji Ullah, Executive Director of CEGIS are seen in the contract signing ceremony with other officials of CEGIS

During the first quarter of the year 2019 (January-March) a number of contracts have been signed between CEGIS and other organizations and clients.

These contracts are signed on hydro-morphological and topographic studies, feasibility studies, site selection for construction of nuclear power plant, development of GIS based web application, IEE, EIA, EMP, MIS, etc. The titles of the contracts with dates of signing are as follows:

i) "Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) Study of a) Saidpur 150 MW ± 10% Simple Cycle (HSD Based) Power Plant Project, Nilphamari, b) Shahjibazar100 MW Gas

Cont'd on page 4

Land Acquisition and Resettlement ... (Cont'd from page 3)

CEGIS' experience & commitment in Resettlement Planning. Resource persons from renowned organizations shared their knowledge as well as experience on those topics. The participants also took part in a field visit at a resettlement site of Padma Bridge at Mawa, on 8 January. The 'Certificate Awarding and Closing Ceremony' was held on 9 January. Engr. Md. Mahfuzur Rahman, DG, BWDB dignified the ceremony as Chief Guest. A.K.M Shamsul Karim, Chief Engineer, South Eastern Zone (Chattogram) and Md. Rafiqul Islam Choubey, Project Director, PMO-FRERMIP, BWDB were special guests. Engr. Md. Waji Ullah, Executive Director, CEGIS chaired the ceremony. At the end of the closing session, certificates were awarded among the participants for successfull completion of the training program.

Trainers and Trainees of the program with Engr. Md. Mahfuzur Rahman, DG, BWDB and Engr. Md. Waji Ullah, Executive Director, CEGIS with other officials

Feasibility Study of River Management ... (Cont'd from page 7)

rest and enjoy the scenic beauty, enjoy picnic, river cruse etc. Different types of trees will be planted on dredged/excavated earth dumping places. These trees will provide timber, fire wood, shelter and nesting, roosting and food sources for birds. These trees would also sequestrate carbon and conserve the environment. After implementation of the project, economic activities will be improved which will further increase per capita income and thereby improve the quality of life.

The guideline for EIA of water sector projects from WARPO as well as approved ToR from DoE were followed to conduct the ESIA. Major environmental impacts of the project activities of river dredging, management of dredged materials and development of landing stations were assessed under pre, during and post-dredging/ construction phases. The ESIA infers that there would be some temporary negative impacts during the construction phase, but no significant negative or irreversible impacts may occur after the river dredging and construction of landing stations. The overall long-term environmental impacts will be positive after successful implementation with suggested mitigation measures and associated monitoring plan. In the above context, it is recommended the project is technically feasible, economically viable, socially acceptable and environmentally sustainable.

Misery of Elephants ... (Cont'd from page 5)

ecological damages. It showed that 6,163 acres of forests, including, 4,136 acres of natural forests and 2027 acres planted forests, on the hills were razed for making 2,12,607 makeshift shelters, 30km roads, 8,524 water sources, playing grounds, offices, schools and other infrastructure for Rohingyas at Ukhiya and Teknaf. A study launched by UNDP in October 2018 forecasted disappearance of 26,000 hectares (64247 acres) of forestland within 10km radius of the Rohingya camps in a year if Rohingyas are not provided with alternative fuel for cooking. The study revealed that, Rohingyas used 6,800 tons of firewood collected from forests a month, and each family used about 60 culms of bamboo to build shanties. According to local people, about 40 hills were cut for developing infrastructure since the beginning of the Rohingya influx in August 2017. Such ecological damages for destruction of forests and hills have a series of negative impacts at local, national, regional and global levels and among the wildlife the foremost victim of this situation is elephant as they require huge area to survive. In fact, elephants of Bangladesh are starving. The forests of Bangladesh have become smaller in size and are no longer typical rain forests with various types of big and small trees and plants which provide abodes and food to varieties of birds and animals. Such habitat loss cornered and isolated resident elephants to a small area. This situation is very alarming for local elephants. If this situation continues the corridors will be entirely blocked gradually, resulting in the elephants being more packetized and loss of their genetic viability, which would ultimately lead to extinction of this species. The net result of this situation is sufferings, of both elephants and humans. Sincere desire of the government and a meticulous planning and vigorous, coordinated action by the concern authority may correct this intolerable situation.

Land Acquisition Plan (LAP) for Chattogram City Water Logging Project

Muhammad Shifuddin Mahmud, Socio-Economic and Institutional Division

The Chattogram Development Authority (CDA) has taken a project titled "Re-excavation, Renovation and Development of Khals for Mitigating Water Logging Problems in Chattogram City Project" for mitigating waterlogging problems and future expansions of the city. In this context, this development projects requires land, which is intended to acquire from the private owners and to reoccupy the state-owned khas land. Thus, the study prepares a LAP following the project requirement.

1. Process of LAP preparation: The LAP for khals has been prepared following several general steps and strategic assumptions. These are a) Determining the mauza alongside the khals b) Collection of BS and RS mauza maps/sheets c) Digitizing collected mauza maps/sheets d) Collection of satellite image e) Geo-referencing of mauza maps with RTK survey f) Collection of images/data from SoB g) Overlay of SoB image with BS mauza maps h) Rechecking and fine tuning of satellite image data with SoB and BS mauza data i) Structure survey following digitally generated structure data j) Khatian data collection k) Entry of collected khatian data l) Checking of restored data.

2. Basic assumptions for LAP preparation: In LAP preparation, some basic assumptions have been taken into account are a) Consider encroachment b) Consider free land c) Consider number of structures to be affected d) Consider type of structure e) Consider land price.

3. LAP execution: a) Joint verification with CDA authority b) Demarcate khas land with separate color c) Demarcate private land to be acquired with separate color.

(from left) Col. Nasir Uddin, Project Director, 34 Engineer Construction Brigade, Bangladesh Army; and Maj. (retd.) Ziaur Rahman, Deputy Team Leader, CEGIS are seen with others during Field survey for LAP preparation at Mirza Khal in Chandgaon, Chattogram

Contract Signing... (Cont'd from page 3)

Turbine (Aeroderivative) Power Plant Project, Habiganj and c) Raozan 600 MW ± 10% Hi Efficient Combined Cycle Power Plant Project, Chattogram, Bangladesh" with Bangladesh Power Development Board on 10 January, 2019; ii) "Morphological Study of Meghna (Gomoty) River Crossing of the Kachua-Gazaria 230 kV Four Circuit Transmission Line under Enhancement and Strengthening of Power Network in Eastern Region Project (ESPNERP)" with Power Grid Company of Bangladesh on 10 January, 2019; iii) "Forecasting and Development of Drought Indices using SPI (Standardized Precipitation Index) Data from BMD Model Output for Micro Level Agriculture Water Management" with Bangladesh Meteorological Department on 13 January 2019; iv) "Probable site selection for construction of nuclear power plant in Southern Part of Bangladesh" with Bangladesh Atomic Energy Commission on 20 January, 2019; v) "Morphological Study" with Fuzikura Ltd on 21 January, 2019; vi) "Development of GIS based Web Application of Schools' Infrastructure Management System (GSIMS)" with Local Government Engineering Department on 20 February, 2019; vii) "Monitoring of Environmental Parameter and Implementation of Environmental Management Plan during construction period along with engineering activities for 2x660 MW Maitree Super Thermal Power Project at Rampal in Bagerhat District of Khulna Division, Bangladesh" with Bangladesh-India Friendship Power Company Ltd. on 26 February, 2019; viii) "Feasibility study of River Management by enhancing the navigability, removing/minimizing drainage congestion, wetland ecosystem, irrigation and landing facilities of the Khulna Division for supporting M-G Cannels" with Bangladesh Inland Water Transport Authority on 26 February, 2019; ix) "Feasibility Study and Master Plan for Ashuganj-Palash Agro-Irrigation Project (APAIP) of BADC - 5th Phase (1st Revised)" with Bangladesh Agricultural Development Corporation on 27 February, 2019: x) "Maintenance and Enhancement of existing Management Information System (MIS) including ICT infrastructure (Network & Server) and Software of the Bangladesh National Museum" with Bangladesh National Museum" on 27 February, 2019.

New Faces

Razoyan Mahabub joined CEGIS in January 2019 as Junior Consultant under Water Resources Division. He completed his B.Sc. in Civil Engineering from BUET, Dhaka in February, 2011. After Graduation he worked in UGI Limited as Assistant Manager. He pursued his M.Sc. degree in Groundwater Management from TU Bergakademie Freiberg in May, 2018. He is very interested to enrich and utilize his potentiality to face challenges in a competitive environment. His areas of interest are Water Resource Management, Environmental Modeling and Groundwater Table Restoration. He has participated in different workshops. Recently on behalf of CEGIS he participated in a workshop on 'Rapid Assessment of Greater Dhaka Groundwater Sustainability" Organized by 2030WRG.

Md. Rezaul Islam joined CEGIS in January 2019 as a Junior Consultant. He had completed his M.Sc. in Water Resources Development from BUET and B.Sc. in Civil Engineering from AUST. His career started in the field of Water and Environment related Engineering in a World Bank funded project. Before joining CEGIS, he worked with BUET faculty members as a team player in several research and consultancy projects. He is interested in water resources planning and management, climate change and its impact on water and environment, river morphology, hydrological and hydro-dynamic modelling, local scour, bridge engineering, hydro-morphological design of bridges etc. He is interested to develop his career in water and environment sector.

CEGIS Environmental Lab: UV-1800 Spectrophotometer

Rafiqul Alam, Water Resources Management Division

UV-1800 Spectrophotometer

This UV Spectrophotometer works with light source. It has two light sources. Deuterium and Halogen. It consists of Light source, Monochromator, Rotating Mirror or Semitransparent Mirror, Sample compartment (reference cell, sample cell), Detector, Amplifier and Display.

This Spectrophotometer is a double beam configuration system, it divides light which comes from light source and enters to monochromator that is monochromatic light into two beams using mirrors, so as to make two beams, the sample beam and reference beam. When the sample cell with sample in it is placed for the sample beam and the reference cell with solvent in it is placed for reference beam in the sample compartment, each transmitted light enters the detector. As a result, transmittance and absorbance can be measured once from the sample and the reference simultaneously.

This Spectrophotometer measures absorbance and wavelength and the concentration of a sample with unknown concentration from the absorption of a sample with known concentration by calibration curve method. That is, the main function of Spectrophotometer is for quantitative determination of different analyses in analytical chemistry such as transition metal ions, highly conjugated organic compounds and biological macromolecules. In CEGIS, till now NO_3, SO_4, PO_4, NH_4, Fe and Silica ions of water can be measured if standard solutions and accessories are available. This instrument is used for environmental monitoring or related projects.

ISO Activities of CEGIS... (Cont'd from page 8)

certification. In the meantime, the consulting firm has reviewed the organizational structure and operating procedures of CEGIS. Several meetings and review talks have already been done between the consulting firm and CEGIS. An Integrated Management System Policy (IMSP) has been prepared for CEGIS in consultation with the consulting firm. In line with IMSP, a self-contained manual, Operating Procedure/Standard Operating Procedure (SOP), various types of checklists and official forms are in the process of formulation. CQS by making an extensive review and examination of CEGIS's office environment, has made 15 observations with a view to improve it. Appropriate measures have been taken by CEGIS for implementation of those observations.

ISO is a comprehensive phenomenon, comprising of three substantial components. So, it is a bit time consuming process to achieve the final certification. However, the total activities for ISO Certification are being carried out under the leadership of Mr. A.L.M. Abdur Rahman, Ex. Secretary and Senior Advisor of CEGIS. Presumably, by fulfilling all the necessary conditions and acquiring competency, CEGIS will be able to achieve ISO certification by December, 2019.

Nature: Misery of Elephants in South East Bangladesh

Mushfiq Ahmed, Ecology, Forestry and Biodiversity Division

The Asian elephant is the largest living land animal in Bangladesh as well as in Asia. They inhabit in the semi-evergreen and in the cultivated secondary forests of Bangladesh. They are intelligent, fascinating, beautiful, and an important link to our national and global heritage. They are keystone species, playing an important role in maintaining the biodiversity of the ecosystems in which they live.

This giant mammal naturally moves through a corridor. Elephant corridors are strips of land that the large animals use to move from one habitat patch to another. According to the 2016 elephant census conducted by the International Union for Conservation of Nature (IUCN), 63 wild elephants were found in the South Forest Division of Cox's Bazar while another 205 were spotted in the country's other regions, including Bandarban, Sherpur and Mymensingh. These elephants are Critically Endangered Species in Bangladesh, according to the IUCN Red List of Threatened Species. This striking species is primarily threatened by loss of habitat, habitat degradation, fragmentation and poaching to some extent.

At present the overall situation of elephants in Bangladesh is truly vulnerable. The largest group of elephants still resides in the Southeast part of Bangladesh. Currently they are confined to small patches of hilly forests in Inani-Shilkhali area as Rohingya settlements have taken over their migration corridors that lead to parts of Bandarban and Myanmar. Two major corridors for elephant migration are now blocked due to unplanned settlements

Asian Elephants seen in Bandarban, South-East of Bangladesh

and establishments. As the refugee camps were set up on the elephants' migration corridors, Human-Elephant conflict is common phenomena in that area. At least 15 people were killed in wild elephant attacks in and around the camps in the last one year. Restrictions on elephants' free movement, scarcity of their food and development work in their habitats by government and non-government organizations fuelled the elephant-human conflict there, leading to deaths on both sides. Therefore, a big portion of the wild elephant population in Southern Cox's Bazar is at risk of being wiped out.

Bangladesh have already lost forest resources of about Tk 1,800 crore for hosting Rohingyas at Ukhiya and Teknaf Upazilas in Cox's Bazar, according to a Bangladesh Forest Department (BDF, 2019). It estimated the loss of Tk 456.08 crore for disappearance of trees of 6,163.5 acres of hilly land for building 30 makeshift camps and Tk 1,400 crore in

Cont'd on page 3

Monitoring of Aminbazar Sanitary Dumping Site Expansion using Satellite Images

Feroze Ahmed Kanak, Remote Sensing Division

The Aminbazar sanitary dumping site is located at the right side of Dhaka-Aricha highway which belongs to Baliarpur and Kunda Mauza under Banagram Union, Savar Upazila of Dhaka District. It was built on 52 acres of land in 2006. According to Detailed Area Plan of 2010, it exists in the flood flow zone. Due to increased volume of urban wastes, the area of the dumping site is expanding in an unplanned way which has negative impacts on the surrounding environment. Actually, it was designed as a sanitary dumping site but later it became an open dumping site. The expansion of the dumping site was monitored using high resolutions satellite images of 2006, 2014, 2015, 2017 and 2018 which are available in the google platform. It started to expand since 2015 and was expanded 59 acres between 2014 and 2015. It was increased up to 70 acres and 73 acres in the year of 2017 and 2018 respectively. The total area of the dumping site was increased by 20 acres between 2015 and 2018.

Aminbazar Sanitary Dumping Site in Google Earth on 25 December 2006

Aminbazar Sanitary Dumping Site in Google Earth on 27 September 2015

Aminbazar Sanitary Dumping Site in Google Earth on 29 January 2017

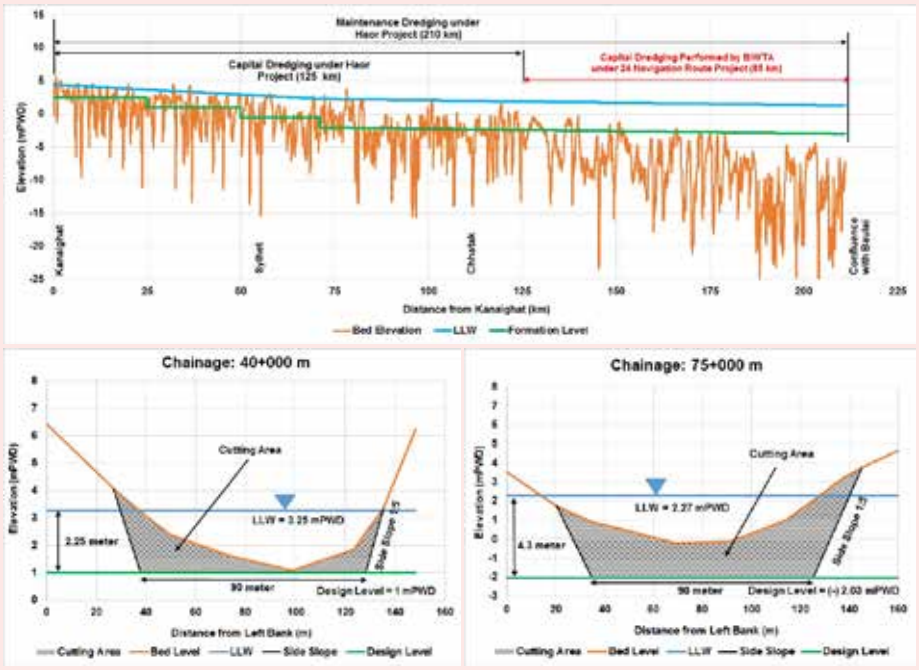
Aminbazar Sanitary Dumping Site in Google Earth on 25 April 2018

Feasibility Study of River Management by Dredging in the Haor Region

Mohammad Abdur Rashid, Agricultural and Fisheries Division

Inland navigation is the main mode of transport in the haor area. Most of the rural populations have only access to this means of transport. Majority of the bulk cargo, like construction materials, food grains, fertilizer, fish etc are transported through the rivers. But Inland waterways network in haor is gradually deteriorating due to i) reduction in cross-boundary flow during dry season and ii) silting up of rivers and off-takes etc. As a result, the length of navigable waterways has decreased drastically. As such, BIWTA has taken an initiative for improving the navigability by dredging which will ensure smooth and safe plying of cargo and passenger vessels, as well as enhance tourism, wetland ecosystem, irrigation facilities and minimize drainage congestion. For sustainability of the project, CEGIS has conducted Feasibility Study including hydro-morphological study, selection of dredging alignment and estimation of dredge volume, planning of landing stations, ESIA and Economic feasibility. Eighteen rivers have been selected on a priority basis for achieving the project objectives. Among the rivers, Jadukata River was found not feasible for dredging. On the other hand, Meghna (Upper) River did not require dredging because of sufficient water depth. The Kalni and Kushiyara River dredging has been conducted through Protocol Route Project. The dredging volume was estimated for each river independently for navigability in the rivers as well as to provide other services. Total 350 km and 994 km river length will be dredged for capital and maintenance dredging respectively under this Haor Project. The total project period is about 8 years. Capital dredging will be conducted by first one year and maintenance dredging will be conducted during the rest seven years.

Both dredgers and excavators will need to be involved for capital dredging. The placing locations of dredged/excavated earth have been selected based on consultation with stakeholders such as local administrations, representatives of local government institutes, land owner as well as local people. The dredged/excavated earth would be placed in private/public land for upgrading and expanding homestead, playground, eidgah, graveyard, lowland, fallow land, ditch, recreational/tourism site development and would be placed on the river bank for raising existing embankments and roads.



Long profile and Cross profile of different sections along the Surma River

A total of 256 landing stations were surveyed and the problems were identified for these landing stations. Many landing stations became seasonal due to siltation in rivers like Kangsa, Mogra, Sutang and Titas. Most landing stations lack important facilities like pontoon, stair, jetty, waiting area, toll booth, toilet complex etc. Total 71 landing stations have been selected for development/rehabilitation which includes Launch, Cargo, Kheya and Tourist Ghats.

The investment cost of the project comprises of capital dredging, maintenance dredging, development and rehabilitation of landing stations and others costs. The results of economic and financial analyses indicate that the project is economically viable. The greater area of benefits would include but not to limited increase in ghat revenue, enhancement of IWT related services like river crossing, operation of inland services, investment in existing industries due to navigation services, ease of goods movement facilitating better marketing and distribution of different industrial and agricultural products, safety and reliability of cargo and passenger movements, comfort and ease of women and children movement as well as generation of employment in different industry directly and indirectly dependent on services from the landing stations. The improvement of water availability will facilitate irrigation thereby agriculture, fisheries, ecological health and services, reduction of flood damage, remove drainage congestions etc. The inhabitants along the river face problems of bathing and washing during dry season due to high iron contamination in groundwater and the problem would be solved due to surface water availability. The reactional places will have setting arrangements for visitors, playground, amusement park and different ornamental trees. After completion of the tourism site both the local and outside visitors may take

Cont'd on page 3

3D view of Launch Ghat - Type A

7th International Conference on Water and Flood Management (ICWFM, 2019) with Special Focus on Water Security under a Changing Climate

Farhana Ahmed, Research, Development and Training Division and Abhijit Das, River, Delta and Coastal Morphology Division

Engr. Md. Waji Ullah, Executive Director, CEGIS is receiving a Creast as the Chair of the Session form Professor Mohammad Rezaur Rahman of IWFM, BUET

The 7th "International Conference on Water and Flood Management", with special focus on 'Water Security under a Changing Climate' was held from 2 to 4 March 2019 at Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP), Dhaka. It was organized by Institute of Water and Flood Management (IWFM) of BUET. CEGIS participated in this conference and also was involved as a co-sponsor of the event. Engr. Md. Waji Ullah, Executive Director, CEGIS and Dr. Maminul Haque Sarker, Deputy Executive Director, CEGIS joined in the Inauguration Ceremony and also presented papers. Mr. Ullah conducted a technical session as Session Chair. CEGIS facilitated the conference and played active role as some of the CEGIS professionals contributed as rapporteurs.

A total of 13 technical papers were presented by the professionals of CEGIS in different technical sessions held parallel in the conference. These papers covered various studies and research such as river morphology, climate change, water resource management, environmental and social considerations, eco-friendly infrastructure development etc.

Bangladesh Delta Plan 2100 and SDG, Sediment balance and morphological evolution of the river and estuary in Bangladesh, Climate change effect on marginal farmers at severe drought prone area of Bangladesh, Lightning Trend in Haor Area of Bangladesh, Flood Vulnerability Assessment and Hazard Mapping of Rivers in Bhutan for Different Climate Change Scenarios using Hec-Ras 2d, Development of 2D Hydrodynamic Model for Bay of Bengal (BoBM) Using Delft3d Flexible Mesh, Eco-friendly and climate resilient water management project, eco-friendly communication in the haor region, Planning for Sustainable use of marine resources, Generating Runoff Scenarios for Ganges-Padma River Basin of Bangladesh, Assessment of Environmental and Social Issues of Savar Tannery Activities, etc were the topics presented by CEGIS.

ISO Activities of CEGIS

ISO (International Organization for Standardization) is a worldwide federation which is an independent, non-governmental organization with a membership of 164 national standard bodies. It is the World's largest developer of voluntary international standards and facilitates world trade by providing common standards between nations. ISO comprises of three comprehensive components, i.e.

ISO 9001:2015: (Quality Management System) Policy
ISO 14001:2015: (Environmental Management System) Policy and
ISO 45001:2018: (Occupational Health and Safety Management System) Policy

CEGIS is committed to providing highest quality services for its clients, through timely submission of proposals, quality reporting with authentic data, proper analysis and relevant training. It ensures innovation, excellence and transparency in all level of works. It is devoted in conservation of nature and natural resources by solid waste management and optimal energy consumption. CEGIS is committed to prevent human injury and eliminating ill health hazards, with a view to reduce Operational Health and Security (OH&S) risks at work place. To fulfill above mentioned issues CEGIS needs to achieve ISO certification.

CEGIS has taken initiatives to achieve comprehensive ISO certification. It has deployed Centre for Quality Solution (CQS) as a consulting firm to assist in achieving the

Cont'd on page 5