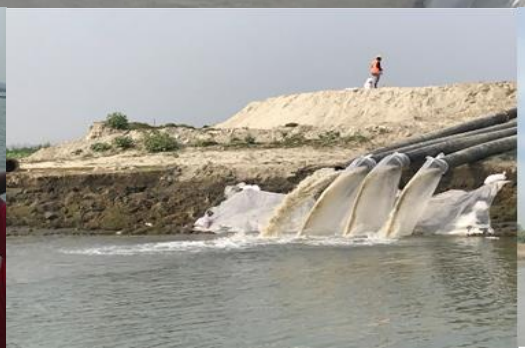

Government of The People's Republic of Bangladesh
Ministry of Shipping

Bangladesh Inland Water Transport Authority (BIWTA)

MONTHLY PROGRESS REPORT

APRIL 2023

Consultancy Services for Supervision & Monitoring of Performance-Based Dredging Contracts with Maintenance Dredging and Installation & Maintenance of Navigational Aids along the Navigational Routes under the Contract

Bangladesh Regional Waterway Transport Project 1 (BRWTP-1)- S1A

Jurutera Perunding Zaaba SDN.BHD, Malaysia (JPZ)

Demas Dredging Consultants BV, the Netherlands (DEMAS)

JPZ Consulting Ltd., Bangladesh (JCL)

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ABBREVIATIONS

ASAP	As Soon As Possible
ASCII	American Standard Code for Information Interchange
BDT	Bangladeshi Taka
BELA	Bangladesh Environment Lawyer Association
BIWTA	Bangladesh Inland Water Transportation Authority
BIWTC	Bangladesh Inland Water Transportation Corporation
BIWTMAS	Bangladesh Inland Water Transport Master Plan
BM	Bench Mark
BRAC	Bangladesh Rural Advancement Committee
BRWTP	Bangladesh Regional Waterway Transport Project I
BWDB	Bangladesh Water Development Board
CD	Chart Datum
CEAP	Conservation Effects Assessment Project
CSD	Cutter Section Dredger
DCC	Dhaka Chittagong Corridor
DPD	Deputy Project Director
EIA	Environmental Impact Assessment
EMP	Environment Management Plan
ESHS	Environment, Social, Health and Safety
ESMP	Environment and Social Management Plan
GBM	Ganges, Brahmaputra (Jamuna) And Meghna
GBV	Gender-Based Violence
GIS	Geographic Information System
GPS	Global Positioning System
GRC	Governance, Risk, And Compliance
GRM	Grievance Redress Mechanism
HSE	Health and Safety Expert
IALA	International Association of Marine Aids and Lighthouse Authorities
IBC	Idle Berthing Centre
ID	Identity
IHO	International Hydrographic Organisation
IWT	Inland Water Transport
JPZ	Jurutera Perunding Zaaba
JV	Joint Venture
LAD	Least Available Depth
LLW	Lowest Low Water
MCD	Meters Above Chart Datum
MOEF	Ministry of Environment, Forest and Climate Change.
MSL	Mean Sea Level
NID	National Identity
OPBC	Output and Performance-Based Contract
PD	Project Director
PIU	Project Implementation Unit
RAP	Resettlement Action Plan
RCC	Reinforced Cement Concrete

RTK-GPS	Real-Time Kinematic- Global Positioning System
SE	Senior Engineer
SOB	Survey of Bangladesh
TBM	Temporary Bench Mark
US	United States
UTM	Universal Transverse Mercator
VSS	Vessel Storm Shelter
WB	World Bank
WGS	World Geodetic System

EXECUTIVE SUMMARY

Bangladesh's Inland Water Transport sector is indeed a significant part of the country's transportation system. The country has an extensive network of rivers, including the Brahmaputra, Ganges, and Meghna rivers, which provide a natural transportation network throughout the country. According to the Bangladesh Inland Water Transport Authority (BIWTA), approximately 50% of the country's cargo is transported via waterways. In addition, about 25% of passengers travel by waterways, including ferries and other vessels. The total length of riverways in Bangladesh is estimated to be around 24,000 km. However, only a portion of this is navigable year-round. During the monsoon season (June-September), approximately 5,923 km of the country's riverways are navigable. However, during the dry season (October-May), the navigable length of the rivers shrinks to around 3,865 km. Despite these challenges, the water transport sector in Bangladesh continues to play a crucial role in the country's economy and transportation system.

BIWTA, under the Ministry of Shipping (MoS), takes care of the development and control of Inland Water Transport (IWT) in order to ensure safe passenger traffic, maintain inland routes at the Least Available Depth (LAD) and width by carrying out necessary surveys with dredging require dredging works for smooth navigation of the vessel. The BIWTA takes proper care to develop and maintain river ports, landing ghats, and terminals to ease the problem of passenger, and cargo traffic economically.

In order to improve key multi-modal transport corridors and networks that would address current transport bottlenecks in Bangladesh, the world bank financed the dredging project "OPBC Works of Development Dredging with Maintenance and Aids to Navigational Installation Along Inland Waterways". The works package on dredging shall operate for 66 (Sixty-six) months on the river routes presented in Routes 12,13,13a,15,16,17and 21 Contractor DHARTI-BANGLA JOINT VENTURE herein referred to as Lot 3, Route 3,4,5,6,7,8,9,10 & 11 Contractor GULF-COBLA KARNAFULY JV herein referred to as Lot 2 under Bangladesh Regional Waterway Transport Project -1(BRWTP-1), Contract Number BRWTP-W1A-03&02.

JPZ-DEMAS-JCL, the consulting firm herein referred to as S1A appointed as the consultant to execute the consulting service in order to monitor, supervise, & administer the contracts for performance-based dredging works. It is centered on the main Dhaka- Chattogram IWT route with branches to Ashuganj, Ghorashal and Barishal.

This Monthly Progress Report (MPR) compiles construction and quality control activities of the Development, Improvement, Maintenance & Emergency dredging and interrelated services of Navigational Aids, Environmental & Social, Health & Safety, GRM, and Gender issues following contractual standards, specifications, guidelines, rules and policy. At present dredging along Route 21 (Class I, length 8.5km, Tentulia River), Route 9 (Class III, length 80km, Titas River) & Route 16 (Mehendiganj to Bheduria, Tentulia River) is in progress with hydrographic surveys and development dredging works by cutter suction dredger for the routes to maintain LAD according to the route classification all the year round.

During this month, Route 21& Route 16 under Lot 3 and Route 9 under Lot 2 were included in the execution plan. According to the contract, the S1A team provided their services to the contractors to commence works, i.e., mobilization, public consultation, environmental data collection, dredging alignment, dredging section design, pre-dredged survey, dredging quality control and dredged material management and the team visited the sites to monitor the dredging operations.
During this month, air quality, surface water quality and dredge material quality assessments were conducted at Lot 2 contractors' site at Solimganj ghat. Lot 3 Contractors monthly report for the month of April is yet to receive. So S1A could not evaluate Lot 3 environmental parameters' quality assessment.

During the site visit by the S1A team, no significant environmental pollution issues were observed. All the air pollution and noise pollution indices were found to be as per standards after the initial activity of the dredging work.

Regarding water quality measurement, BOD in the surface water was found above the standard level. BOD values indicate that the water is polluted with organic compound. The sources for such pollution may be organic compound runoffs from the adjacent settlements, plant material, etc.

S1A submitted the 1st quarterly report and previous monthly reports to the PIU. The team is vigilant towards documenting all their performances regularly and hopefully will be able to submit monthly reports timely from this month and onward.

CHAPTER 01: INTRODUCTION

1.1 Overview

The rivers of Bangladesh mark both the physiography of the nation and the life of the people. About 700 in number, these rivers generally flow south. The larger rivers serve as the main source of water for cultivation and as the principal arteries of commercial transportation. Rivers also provide fish, an important source of protein. Flooding of the rivers during the monsoon season causes enormous hardship and hinders development, but fresh deposits of rich silt replenish the fertile but overworked soil. The rivers also drain excess monsoon rainfall into the Bay of Bengal. Thus, the great river system is at the same time the country's principal resource and its greatest hazard.

Most rivers in Bangladesh are facing a serious navigability problem, hampering the movement of boats and vessels as repeated requests for dredging fell on deaf ears. Over the decades the navigability during dry season in many rivers of the country has been deteriorating because of morphological processes and for withdrawal of water from the rivers beyond the border and within the country. The navigability has been further aggravated by poor or no maintenance of inland waterways. The navigability of inland waterways is intensely influenced by river morphology and hydraulics. Inland waterways, once the prime mode of transportation in Bangladesh, have declined fast as many rivers, canals, and other water bodies have disappeared in riverine Bangladesh over the past decades. The waterways were lost for decades due to the thin flow of waters from the upper Himalayan ranges, natural sedimentation, encroachments, and erosion of the embankment. A study by Bangladesh Water Development Board (BWDB) found that 80 percent of the 300 major rivers in Bangladesh lack navigability. Trade utilizing inland water transport (IWT) services can serve as one of the key factors for economic recovery in Bangladesh, as well as in South Asia. But lower navigability and inadequate infrastructure at river ports are now the biggest challenges faced by the country.

Navigable rivers are important for commerce and most of the commercial centers of Bangladesh are located on the banks of the rivers beside river ports. Optimum utilization of these inland water ports would result in a large traffic flow carrying passengers and cargo, sharing much of the burden of the total transportation. Navigability has been an important factor causing hindrance to the development of Inland Water Transport. Most of the urban centers and industrial belts are located close to the river network, but Bangladesh is yet to fully utilize the massive potential of waterways. However, the government has recently prioritized improving the IWT sector and taken infrastructure projects in this regard. In a country like Bangladesh where capital and maintenance dredging are required for a number of reasons besides navigability, there is a need for introducing modern technology to gear up performance levels. The government has undertaken a mega project to excavate 178 rivers of the country to make around 10,500 kilometers of waterways, which have either dried up or disappeared, navigable by 2025.

In this reporting month the apparent view of environmental and social management during dredging operations and other construction periods which is being followed by the Contractor for sustainable management of different environmental and social issues mentioned in the CEAP. It is mandatory to perform different environmental and social issues, as prescribed by EIA and the Contract Document.

This Monthly Monitoring report covers the Environmental and Social aspects of the GULF COBLA-KARNAFULY JV's and DHARTI-BANGLA JV's activities for Bangladesh Regional Waterway Transport Project -1 (LOT-2 and Lot3 respectively).

This report is prepared to encompass the following approach to ensure all measures necessary to be included in this report are addressed in a comprehensive manner:

a) Field Visit
b) Checklist and form
c) Training and meeting
d) Consultation
e) Review of environmental safeguard specifications.
f) Review of the proposed dredging/dike layout on the site.
g) Review of Project implementation schedules.

The desk-based review of the secondary information and the primary information from the site visit has been incorporated into the monthly report. The outline of the present Monthly Monitoring Report is as under:

1.2 ES Staffing status

The ES staff of BRWTP-1 has sound experience of both national and international projects. BRWTP-1 recruited the most efficient and experienced professionals who are determined to make an impact into the ES sector by providing premium services that can be evaluated against measurable outcomes. A group of Environmental and Social Specialists are working on the BRWTP-1 project at PIU, DSC, S1A and 3rd party is monitoring other packages and contractors. The details of ES staffing status for the contractors are given below.

1.2.1 Recruitment status in Contractor's part:

Contractors of Lot 2 and Lot 3 engaged personnel who manage, perform, and verify work affecting environmental matters.

Table 1: Key ES Personnel of the Dharti-Banga JV (Lot3)

Sl. No.	Name	Designation	Contact Number	Email
1.	Captain A. Razzak Bhuyian	Team Leader	01730029850	capt.razzak@bangadredgers.com
2.	Md. Aftabuzzaman	Social- Communication Officer	01719031938	aftabbdl2019@gmail.com
3.	Md. Shafiqul Islam	EHS Officer	01715156143	shafiqul.islamlot3@gmail.com
4.	K.M Shakik Ahmed Walid	Environmental Inspector	01303719776	shakik.ahmedlot3@gmail.com
5.	Tanvir Hossain	Safety Officer	01712163187	thossain7746@yahoo.com
6.	Ashraful Hauqe	Ecologist	01844584988	ashraful.hoquelot3@gmail.com

Source: Report March 2023

Table 2: Key ES Personnel of the Gulf Cobla-Karnafuly JV (Lot2)

Sl. No.	Name	Designation	Contact Number	Email
1.	Dr. Engr. Mrinal Kanti Saha	EHS Manager	01715-091090	
2.	Amit Kumar Saha	Ecologist/ Environmental Officer	01303-429207	
3.	Aminur Rahman	Social/ Communication Manager	01723-042360	

Source: Report April 2023

Table 3: Details of Environmental and Social Supervision by the Responsible Personnel of Lot3

Designation	Days Worked	Inspection Area	Highlights of Activities
EHS Manager	Full time	Dredging section, houseboats, dredged material disposal area	Air quality, Noise level, waste management, sediment and drainage, hydrology, riverbank erosion, road and river traffic, occupational and community health safety, labor camp and accommodation facilities, and Hazardous materials.
Aquatic Ecologist	One Weeks	Dredging section, houseboats, dredged material disposal area	Aquatic ecosystems including fisheries, dolphins etc.
Social/Communication Officer	Full time	Dredging section, houseboats, dredged material disposal area	HIV-AIDS, Gender, Grievance, Incidents, and accidents, communication, and consultation with relevant stakeholder

Source: Report March 2023

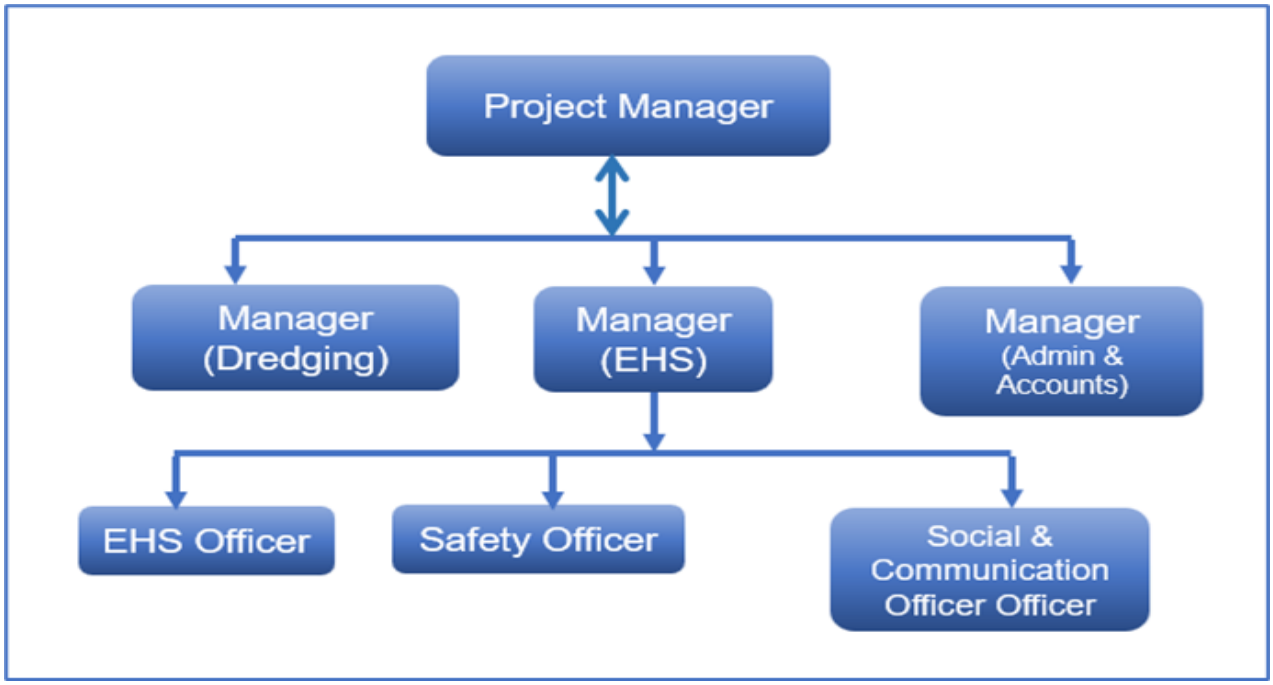


Figure 1: Environmental Management Organization Chart (Source: Banga Dredgers Limited, 2022)

1.2.2 Recruitment status in the S1A:

Consultant S1A has recruited necessary and sufficient experts and manpower during this reporting period, to carry out the project works efficiently and smoothly. Project work is progressing well with the overall responsibility, sound communication skill,s and experienced working ability of the project personnel and staff.

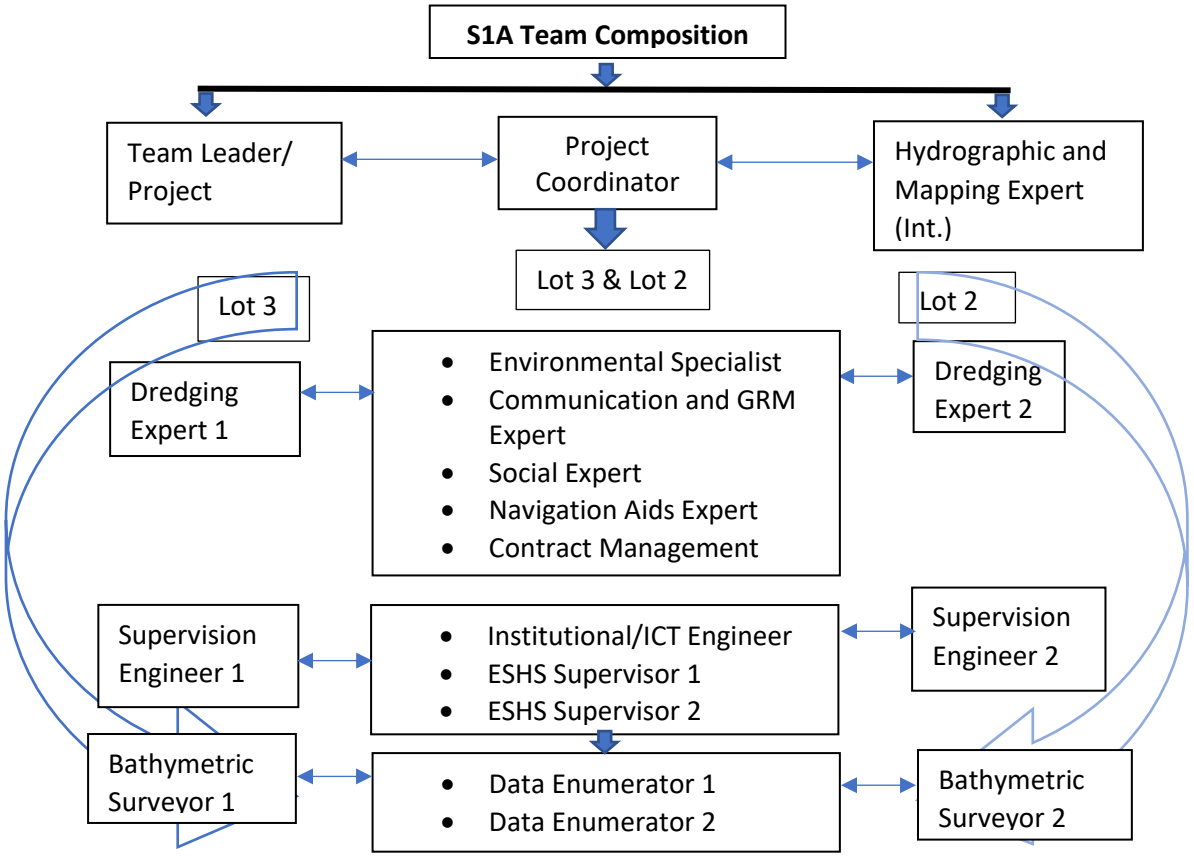


Figure 2: S1A Team Composition

CHAPTER02: PROJECT DESCRIPTION IN A BRIEF

2.1 Background:

Bangladesh lies predominately within the Bengal basin, the world's largest delta formed by the Ganges, Brahmaputra (Jamuna), and Meghna (GBM) river system and its tributaries and distributaries. Bangladesh is a riverine country with some 700 rivers, streams, and canals with a total length of about 24,000 km. Approximately 6,000 km are navigable during the monsoon (wet) period for different-sized vessels, shrinking to about 3,900 km in the dry periods. While the larger rivers are up to 50 meters (m) in depth in places and the Lower Meghna (the main trafficked route on the Dhaka Chittagong Corridor or DCC) is generally 10-25m deep. Navigation is hindered by very shallow depths on bars, especially in the delta area, at the confluences of the major rivers and their tributaries, river bends, and estuaries. Navigation is further complicated by the braided nature of the main rivers. In total, the GBM System annually carries up to one billion tons of sediment and drains into the Bay of Bengal principally through the Shahbazpur and Hatiya estuaries in the Mouths of the Ganges - feeding the Bengal Fan, the largest depositional system in the world.

Inland Water Transport (IWT) carries over 50 percent of all Bangladesh's cargo traffic and one-quarter of all passenger traffic. There are over 22,300 registered vessels engaged in this trade, mainly transporting dry and liquid cargo in bulk or break-bulk form. Investment by the vibrant shipping and inland water transport industry in Bangladesh totals approximately US$ 4 billion. The Government has identified 65 main river navigation routes that are essential to passenger and freight transport within Bangladesh. The routes are categorized as Classes I through IV depending on their advertised depths as given below (Table 4).

Table 4: Main River navigation routes that are Essential to Passenger and freight transport within Bangladesh

Class	Max Vessel Draft/Least Advertised Depth	Length	%
I	3.65m/3.96m	683 km	11
II	2.13 m/2.43 m	1000 km	17
III	1.52 m/ 1.82 m	1886 km	32
IV	<1.52 m	2400 km	40

The development and control of Inland Water Transport is the responsibility of the Bangladesh Inland Water Transport Authority (BIWTA), under the Ministry of Shipping (MoS). Among its functions for passenger traffic, BIWTA is responsible to:

- Develop, maintain, and operate inland river routes to maintain the advertised Least Available Depth (LAD) and width by necessary surveys and dredging works including maintaining the necessary navigation measures to operate the vessels effectively;
- Develop, maintain, and operate inland river ports, landing ghats, and terminal facilities in such ports or ghats; and,
- Develop the most economical facilities for passenger traffic to ensure comfort, safety, and speed on mechanized craft.

In order to improve key multi-modal transport corridors and networks that would address current transport bottlenecks in Bangladesh, the World Bank is financing the Bangladesh Regional Waterway Transport Project I (BRWTP-1). It is centered on the main Dhaka-Chattogram IWT route, with branches to Ashuganj, Ghorashal and Barishal. Major components of BRWTP-1 include the following:

- Capital and maintenance dredging, installation, and operation of aids to navigation and construction and maintenance of Vessel Storm Shelters (VSS) / Idle Berthing Centers (IBC);
- Development of Cargo Terminals;
- Development of Passenger Terminals; and,
- Development of Landing Ghats.

The above-mentioned works are to be undertaken under an output and performance-based method of contracting. Output and Performance-Based Contracting for Inland Water Navigation (OPBC-IWN) is a results-oriented contracting method that focuses on the outputs, quality, or outcomes and ties at least a portion of a contractor's payment, contract extensions, or contract renewals to the achievement of specific, measurable performance standards and requirements. Supervision of OPBC-IWN contracts is to be done with due care and diligence following the highest professional practices and International Hydrographic Organization (IHO) S-44 5th edition standards and surveys.

This Monthly Report includes Commencement of Work, Mobilization, Document Review and Inception, Workshop and Training Program, Managing, Supervision and Monitoring of the OPBC-IWN Contract, Technical and Management Support to Client, Monitoring, and Supervision of Environmental and Social Outputs, etc., from 1st April to 30th April 2023.

2.2 Objectives:

The main objective of this consultancy service is to monitor, supervise, and administer the contracts for performance-based dredging works, installation and operation of aids to navigation along the navigational routes under the BRWTP-WIA package (Lot-2 & Lot 3).

2.3 Scope of Works:

2.3.1 Approaches for the Assignment

The Consultant must be aware that the Output and Performance-Based Contract for Inland Water Navigation has its own characteristics. The performance 'Statement of Objectives are:

2.3.2 Purpose

To guarantee advertised depths and widths on all river routes except some routes in the delta area for at least 95%, i.e., 347 days/year, whilst, the dredging availability target will be 85% for the routes in the delta area (Route 21 under Lot-3) and to guarantee a 95% availability of aids to navigation.

2.3.3 Scope and Period of Performance

The scope of the OPBC-IWN (Works Package No. W1A, comprises two (2) Lots, under two (2) separate Contracts including:

2.3.3.1 Mobilization, Setup, and Establishment:

Mobilization/Demobilization, Rental of Major Plant and Equipment, Site Set-up and Establishment (including ESHS) which will include mobilization of all necessary survey, dredging and other vessels and attendant plant to Bangladesh, retention of the all plant and equipment in Bangladesh for the duration of the Works, site establishment, setting up and eventual demobilization.

2.3.3.2 Development of Dredging Works:

The activity of restoring advertised navigation channel depths and widths on the various Inland Waterways under Package No. W1A contract(s) is to be conducted over the first 30 (thirty) months period of the contract.

2.3.3.3 Improvement Works:

Consisting of a set of specific interventions indicated in the Specifications to add new characteristics, including the provision of new aids to navigation to the Inland Waterways under Package No. WIA contracts, which shall be conducted over the first 18 (eighteen) months period of the contract.

2.3.3.4 Maintenance Services:

Consisting of all interventions on the inland waterways, which are to be carried out by the Contractors in order to keep the Inland Waterways to specific performance standards, including all activities related to management and evaluation of the Inland Waterways network

under the contracts. Inter-alia, Maintenance Services include: (i) Maintenance Dredging Works starting from the 31st (Thirty-one) month of the contract and continuing up to 66 (Sixty-six) months of the contract, and (ii) Maintenance of Aids to Navigation starting once installed and continuing up to 66 (Sixty-six) months of the contract.

2.3.3.5 Support on Environmental and Social Safeguards:

To prepare site-specific Dredge Disposal Management Plan and Resettlement Action Plans (RAPs) as required for on-land disposal of dredge materials and support the PIU in the ES management under the W1A package including implementation of the Dredge Disposal Management Plan, RAPs, GBV Action Plans and project's GRMs.

2.3.3.6 Emergency Works:

Consisting of activities needed to reinstate the Inland Waterways and reconstruct their structure or their right-of-way which has been damaged as a result of natural phenomena such as cyclones and earthquakes with imponderable consequences, or severe accidents blocking the passage of vessels, which may be required at any time during the contract, up to 66 (Sixty-six) months from the Starting Date.

2.3.4 Place of Performance

The works package on dredging shall operate for 66 (Sixty-six) months on the river routes presented in the box below.

LOT 2: Route 3&4, Route 5, Route 6, Route 7&8, Route 9, Route 10, and Route 11

Route 3&4:	Shitalakshya (Munshiganj to Ghorashal)
Route 5:	Meghna (Munshiganj to Ashuganj)
Route 6:	Meghna (Loop joining Route 5)
Route 7&8:	Meghna (Narshingdi Northern and Southern Approaches)
Route 9:	Meghna (Bancharampur/Homna Loop)
Route 10:	Meghna (Homna to Daudkandi)
Route 11:	Gumti (Meghna to Daudkandi)

LOT 3: Route 12, Route 13, Route 13a, Route 15&16, Route 17, Route 21

Route 12:	Meghna (Chandpur to R140 Bridge)
Route 13:	Meghna Arial Khan Route (Approach from Alubazar North of Batamara up to Hat Hazar)
Route 13a:	Meghna (Looping Route inside Char Hijla)
Route 15 &16:	Meghna (Mehendiganj to Bheduria)
Route 17:	Meghna Tentulia (Bheduria to Route 14)
Route 21:	Tentulia (Bheduria to Laharhat)

2.3.4.1 The Scope During Dredging Operations:

- Joint hydrographic survey by the Contractor, S1A, BIWTA
- Supervise and certify dredging performance, review achieved depth, compare with targets and identify shortfalls;

- Supervise, witness, and certify pre, post, and monitoring surveys, environmental monitoring, and monitoring of hydraulic and morphological parameters performed by the Contractor;
- Check dredged volumes based on pre- and post-survey hydrographic data;
- Calibrate and update of available water model with data from surveys and monitoring;
- Assess backfilling rate and maintenance dredging requirements based on survey data;
- Update dredged material management plan;
- Verify and certify contractor's invoices;
- Organize progress meetings with the contractor, the client and the donor on a regular basis;
- Organize stakeholder meetings, RAPs, and GRM action plan/workshops to disseminate project schedule and progress.

2.3.4.2 Scope of Environmental Assessment and Monitoring:

- Environmental assessment and mitigation measures
- Investigation of baseline information of physical, biological, and social environment;
- Assessment of anticipated impacts of the project activities on the physical, biological, and social environment;
- To ensure that the Environmental Management Plan (EMP) and monitoring plan are followed strictly in order to minimize the adverse effects due to project interventions.
- Monitoring water availability, irrigation, fisheries and livelihood, and flooding through field surveys and consultation with multi-stakeholders
- Prepare environmental monitoring report
- Review and comments on W1A contract environmental reports

2.3.4.3 The Scope of Social Services:

- Resettlement Action Plans-
- Good faith agreements
- Organize stakeholder meetings

2.3.4.4 The Scope of Hydrographic Survey Services:

- Joint survey by S1A, PIU & Lot 2 & Lot 3 to identify and select the dredging area
- Joint pre-work survey (in survey) by S1A, PIU & Lot 2&3 in the dredging-required area
- Monitoring survey before post-work (out the survey) in the dredged area
- Joint post-work survey (out survey) by S1A, PIU & Lot 2 & Lot 3 in the dredged area

- Periodic monitoring survey after post-work (out the survey) in the dredged area
- Monitoring Survey after the monsoon in full route length and covering the full width

1.4 Outputs:

- Baseline hydrological, morphological, and environmental conditions of the project rivers routes
- Prepared hydrological data and hydrographic charts for the project rivers routes
- Best-suited dredging alignments for dredging different navigational routes;
- Dredged material disposal plan
- Development and maintenance of dredging volumes for different river stretches of project rivers routes
- Benefit of dredging maintaining LAD on physical and socio-economic conditions
- Monitoring results on dredging, water availability, navigability, irrigation, erosion, and flood improvement
- Monitoring results on agriculture, fisheries, livelihood, and environmental conditions
- Reports: All work performed by the consultancy team of engineering services shall be documented in written reports submitted to the PIU
- Preliminary charts for delineating dredging alignments and computation of dredging volume
- Different reports that shall highlight the output of survey works through a preliminary estimate of dredging requirement, Volume of dredging needed as per Joint Pre-work Survey and design, Progress of dredging work, the actual volume of dredging performed as per Joint post-work Survey
- Report mentioning the status of the dredged channel after the completion of dredging work. All work performed by the survey team services shall be documented in written reports submitted to the PIU.

In light of the basic information of this project, the S1A consultant arranged the monitoring and supervision program. From the beginning, the supervision was divided into three major parts- dredging works, environmental monitoring, and monitoring social aspects. During this reporting period project establishment and management, and field movements were important activities.

CHAPTER 03: PERFORMANCE OF THE CONSULTANTS ON DREDGING WORK, ENVIRONMENTAL AND SOCIAL ISSUES

Since the commencement of the project, the contractors of Lot 2 and Lot 3 have been submitting their performance reports as per their contract. The S1A team prepared this chapter based on their own observation and supervision considering the information submitted by the contractors and the projected output of the project.

This chapter covers hydrological survey data and hydrographic charts for the project river routes. Also, the most suitable dredging alignment for dredging selected navigation routes and dredged material disposal plan.

Development and maintenance of dredging volume of various rivers of the project river routes and benefits of dredging while maintaining LAD on physical and socio-economic conditions are included in this chapter.

Monitoring results of dredging, water availability, navigability, irrigation, erosion, and flood improvements; and

Monitoring results on agriculture, fisheries, and ecological aspects, livelihoods of the riverside people, environmental quality measurement, and other environmental conditions, etc. are illustrated in this chapter. The chapter is mainly divided into three main parts:

3.1 Environmental Assessment/ Environmental Issues;
3.2 Social and Resettlement Issues; and
3.3 Development and Maintenance of Dredging Works.

3.1 Environmental Assessment/ Environmental Issues

3.1.1: Introduction

Monitoring the environmental impact is one of the main tasks of this project. However, social and other issues are closely related to the environment. The issues specifically related to the environment that were observed at the commencement period of the project are included in this part. The S1A team hopes that gradually it will be possible to do more specific and clear documentation. During this month environmental supervision is mostly done on the site visit and by collecting data from the reviewed reports provided by the contractors.

The main objective of this section is to understand the current environmental condition of the project area, and how the project needs to be implemented considering these conditions. This part also provides a standard guideline and approach to preserving key environmental aspects by preventing and controlling environmental pollution and the management of challenges and difficulties, resulting from the Improvement/dredging work of Inland Waterway routes under Bangladesh Regional Water Transport Project-1 (Lot 2 and Lot 3), in accordance with the conditions of contract and clients' requirements. The main objectives of this part are as follows:

- To present the records of monitoring and its mitigation measures, taken thereafter, of the environmental parameters, including noise, air, riverbed sediment, and water quality, for identifying the deviation of environmental quality if any due to construction-related activities.
- To evaluate and confirm whether the Contractor has met the environmental compliance requirement, as was committed in the CEAP to protect the surrounding environment of the construction site.

In this part of the report, we have illustrated the monthly quality measurement of different environmental parameters which may be affected by the dredging work according to the environmental management plan (EMP) of the project.

The monitoring includes air, surface water, groundwater quality, dredge material, and noise level testing according to standard procedures.

3.1.2 Summary of environmental protection and pollution control/mitigation measures, as recommended in the site-specific EMP and SMP

Table 5: Summary of the Major Findings in the Reporting Month (April 2023) of Lot 2

Issues	Present Status	Mitigation Measures	Comments of S1A
Plankton and Benthos	Four (04) species of Phytoplankton, two (02) species of Zooplankton and four (04) species of Benthos were also identified during this reporting period.	Dredging is done in blocks with intervals for recovery of benthos	Map or Dredging Chainage needed to verify
Aquatic Fauna (Fish)	During the field visit, fishing activities by angling were observed. There was no visible fish mortality around the dredging site location.	No mitigation measure is required	
Aquatic Fauna (Dolphin)	There is no presence of Ganges River Dolphin in the study area	No mitigation measure is required	Aquatic fauna does not include only dolphin
Air quality	Monthly monitoring of two Air quality has been conducted in this reporting month. All the testing parameters were found within the standard limit.	No mitigation measure is required.	Air quality supposed to do from 12 locations, quarterly. So monthly at least 4 locations. Same should be for surface water, riverbed material, erosion, etc.
Noise level	Monthly monitoring of noise level has been conducted in this reporting month. Results were found within the standard limit.	No mitigation measure is required.	Supposed to do at 10 locations: monthly & quarterly
Riverbank Erosion	During the reporting month, there were no issue was observed regarding riverbank erosion or flooding.	No mitigation measure is required.	
Drainage congestion	The dredging work in April 2023 is being carried out in Solimganj Ghat (Route-9) area. During site observation, the outline for water passing from the dredge material was found to be functional.	No mitigation measure is required.	Dykes breached river bank eroded
Quarries, borrow areas, spoil areas, asphalt plants, batch plants	No such activities and issues were observed during this reporting month.	No mitigation measure is required.	
River transport	River traffic related sign boards have been observed in this reporting month to ensure a safe river traffic movement.	No mitigation measure is required.	No signs observed during our visit on 30th April
Blasting	No such activities have been conducted during the reporting month.	No mitigation measure is required.	
Spills from chemical storage	No spills both at land and river section were noticed during the reporting period.	No mitigation measure is required.	
Sediment leakages from pipes	During this reporting month no leakage was found in the dredge pipe.	No mitigation measure is required.	Dredgers found out of order

Issues	Present Status	Mitigation Measures	Comments of S1A
Waste Management	During the reporting month, waste bins have been placed on the houseboat as well as in dredger. Different color-coded dustbins with specific waste category levels on the waste bins have been installed in the dredging site. At the Karnafuly-7 dredger, oil cleaning cloths were observed here and there during this reporting month. No wastewater and solid waste are discharged into the rivers.	Oil cleaning cloths need to be disposed of in hazardous waste bins.	
Water and Swamp Protection	Equipment is inspected and maintained regularly, in order to prevent leaks. To check the water quality at the dredging points, five water samples have been collected and tested in the laboratory. Adequate toilet facilities have been provided in houseboats and dredgers as well.	No mitigation measure is required.	Needs clarification, whether five samples from two locations as mentioned in the executive summary
Drinking water and sanitation	Safe drinking water is being supplied for the site workers also toilets were found clean during this reporting month. However, the daily checklist was missing during observation.	Toilet checklists need to be maintained on a regular basis.	Supposed to determine the primary productivity of the river at that site

Table 6: Summary of the Major Findings in the Reporting Month of Lot 3

Note: S1A is yet to receive Lot 3 report for the month of April 2023

3.1.3 Environmental Quality Measurement:

The main objective of this monitoring program is to assess the basic environmental variables in and around the dredging sites considering the possible exposures. Specific environmental and biodiversity conservation clauses are measured for understanding the probable impacts. The monitoring includes air, surface water, groundwater quality, dredge material, waste management, and noise level testing according to standard procedures.

S1A did not get the report from Lot 3 in the month of April 2023. So, in this report, S1A included the results of the different environmental parameters provided by the Lo2 contractors. Also due to Ramadan and *Eid-ul Fitre* site visit was limited but the information collected from monitoring visits have been encompassed properly.

3.1.3.1 Air Quality Measurement:

Dredging work can pollute ambient air in several ways. Considering this issue, the CEAP has suggested many mitigation approaches to lower air pollution. The contractors are maintaining these management plans to control air pollution. As frequent monitoring is required to ensure the implementation of CEAP, the contractor measures suggested parameters of ambient air quality in and around the dredging site on a monthly basis but as per CEAP it was said to maintain the Dredging Time as and when required.

Monthly monitoring of air quality has been conducted during this reporting month. In this reporting period, all the testing parameters were found within the standard limit in the Lot2 site.

During this month, air quality assessments were conducted at two locations, namely Solimganj ghat (R-9). The first location was near the dredging point (AQ1), while the second was near the disposal point of dredge material (AQ2). The aim of this monitoring was to gather information on the air quality at these locations.

Table 7: Sampling locations of air quality

SI. No.	Sampling Station	Station Code	GPS Coordinates	Sampling Date
1.	Solimganj ghat (R-9)	AQ-1	23°50'50.93"N 90°50'39.31"E	27/04/2023
2.	Solimganj ghat (R-9)	AQ-2	23°50'31.08"N 90°50'33.67"E	27/04/2023

Figure 3: Air quality monitoring for April month at Lot2

The above photographs (Fig3) were taken during air quality monitoring at Solimganj**Error! R eference source not found.**.

Table 8: Summary findings of in-house air quality monitoring at Lot 2 in April 2023

Location	Sampling Date	Ambient Air Pollutants' Concentration in µg/m³					CO mg/m3
		SPM	PM10	PM2.5	SO2	NO2	
Route 09 (Solimganj ghat)	April 2023	132.76	59.49	28.16	16.38	9.41	1
Route 09 (Solimganj ghat)	April 2023	140.31	62.81	30.25	14.59	10.52	1.2
Baseline Air Quality Route 09	January 2023	157.82	72.37	41.35	18.25	15.89	1.3
Weather	Sunny						
Bangladesh Standard **Air Pollution (control) Rules, 2022**		**-**	**150**	**65**	**80**	**80**	**5**
Method of Analysis Instrument Use: Haz-Scanner TM (HIM, 6000)		Particulates Sensor Light Scattering Nephelometer			High Sensitivity Electrochemical		

(Source: Field Measurement and Laboratory Findings by the Contractors
Legend: PM_{10} -Particulate Matter of a diameter of 10 microns or less. $PM_{2.5}$ -Particulate Matter of a diameter of 2.5 microns or less, SO_2 – Sulphur Dioxide; NO_2 –Nitrogen-Dioxide; CO –Carbon Monoxide)

In comparison with the baseline period (January 2023) before the beginning of the dredging work and with the information collected in April 2023, we found no significant changes in air quality in River Route 09.

3.1.3.2 Water Quality Measurement:

As per CEAP, quarterly water quality monitoring was carried out and no significant observations were found.

3.1.3.2a Surface Water Quality Measurement: In the month of April 2023, the status of surface water quality is measured by the contractors to determine the impact of dredging activities on adjacent water bodies of the dredging sites.

The samples were analyzed as per the standard procedure/method given in Standard Method for Examination of Water and Wastewater Edition 20, published by APHA as well as using an on-site field test kit.

In April 2023, surface water sampling was conducted at 2 locations in Solimganj ghat (R-9) due to the ongoing dredging works at this site.

Table 9:Surface water quality Sampling locations

SI. No.	Sampling Station	Station Code	Geographical Location	Sampling Date	Type of Source
1.	Solimganj ghat (R9)	SW-1	23°50'20.39"N 90°50'41.94"E	28/04/2023	River
2.		SW-2	23°50'33.23"N 90°51'3.54"E	28/04/2023	River

Figure 4: Surface water sample collection at Solimganj Ghat

Analytical results from the surface water sampling test are presented in **Error! Reference source n ot found.** and the test results.

Table 10: Surface water quality Testing Results

Parameters	Unit	Concentration Present (Route -9)		Bangladesh Standard
		SW1	SW2	
Temperature	°C	28.2	28.7	-
EC	µS/cm	234	172	-
Turbidity	NTU	4.9	5.3	-
pH	-	7.62	7.78	6 - 9
TDS	ppm	232	241	1000
DO	mg/L	5.6	5.3	5 of more
Potassium	mg/L	32	29	-
Calcium	mg/L	34	31	-
Magnesium	mg/L	18	21	-
Phosphate	mg/L	1.4	1.5	-
Chloride	mg/L	25	29	-
Fluoride	ppm	0.8	1	-
Nitrate	mg/L	0.7	0.9	7.0
BOD5 (at 20°C)	mg/L	6.5	6.2	6 of less
Sulfate	mg/L	19	21	-
TSS	mg/L	181	193	-

Note: Bangladesh Environment Conservation Rules, 2023- Schedule 2 (Standards for Inland Surface Water). DO: Dissolved Oxygen; BOD: Biological Oxygen Demand; EC: Electric Conductivity, TDS: Total Dissolved Solids; TSS: Total Suspended Solids. Water usable by fisheries

Biological Oxygen Demand (BOD)

BOD values in the sampling points were found within the standard level as per ECR'23. Higher BOD indicates more oxygen was required, which is less for oxygen-demanding species to feed on and signifies lower water quality. Inversely, low BOD means less oxygen is being removed from the water. Runoff carrying waste from streets and sidewalks; nutrients from fertilizers; leaves, grass, and paper from residential areas, are all contributors to increase oxygen demand. In this month a little increased BOD values indicate that the water is polluted with organic compound. The sources for such pollution may be organic compound runoffs from the adjacent settlements, plant material, etc.

Dissolved Oxygen (DO)

Dissolved oxygen (DO) is one of the most important indicators of water quality. It is essential for the survival of fish and other aquatic organisms. Oxygen is also introduced into the water as a byproduct of aquatic plant photosynthesis. When dissolved oxygen becomes too low, fish and other aquatic organisms cannot survive. DO value in all samples also met the standard level of Bangladesh.

pH

The acceptable range of pH set by the DoE is between 6.5 and 8.5. This is the range, which indicates adequate protection to the life of freshwater fish and bottom dwelling invertebrates. The pH value ranged from 7.62 – 7.78. The pH value follows both Bangladesh standards (ECR, 1997).

Total Dissolved Solid (TDS)

The concentration of Total Dissolved Solid (TDS) of surface water was between 232 – 241 ppm. Test results showed that the TDS value for all the locations was found within the national standard.

Total Suspended Solid (TSS)

The concentration of Total Suspended Solid (TSS) of surface water was between 181 – 193 mg/L. There is no stipulated standard in Bangladesh for TSS.

3.1.3.2b Ground Water Quality Measurement:

No data was generated in this reporting month.

Based on previous information, it can be concluded that the groundwater quality in the dredging area is considered to be satisfactory for drinking purposes.

***3.1.3.2c Drinking Water Quality Measurement*:** Safe drinking water is being supplied for the site workers. Also, toilets were found clean. However, the daily checklist was missing during the observation.

3.1.3. 3 River bed Sediments Quality Measurement:

There is no stipulated standard value for sediment or dredge in Bangladesh, as well as in IFC EHS general guidelines. During the site visit on 30th April 2023 discussion on the management of the dredged material was a high point.

To assess the riverbed sediment quality of the project area, one sediment sample was collected from the dredging sites of Route-9 named Solimganj ghat.

Figure 5: Riverbed sediment sampling at Solimganj ghat

Analytical results from riverbed sediment sample test are presented in below **Error! Reference s ource not found.**

Table 11: Sediment Quality Analysis Results

SL.	Testing Specification	Method	Unit	SedQ1
1.	Pb	Inductively Coupled Plasma Mass Spectrometry (ICPMS)	mg/kg	10.32
2.	Cadmium		mg/kg	0.078
3.	Cr		mg/kg	14.31
4.	Zn		mg/kg	25.33
5.	As		mg/kg	2.1

Note: Methods for Collection, Storage and Manipulation of Sediments for Chemical and Toxicological Analysis, USEPA, 2001.

3.1.3.4 Dredge Material

The dredge material sampling strategy was designed to assess the dredge material quality in the

ongoing project area. Each location used a composite sampling technique for dredge sampling.

There is no stipulated standard value for sediment or dredge in Bangladesh, as well as in IFC EHS general guideline. Dredge samples were collected from the disposal location. At each location, dredge samples were collected from one spot and homogenized. The homogenized sample was then packed in polyethylene plastic bags, sealed, and sent to the laboratory for analysis.

To assess the dredge material quality of the project area two samples were collected from two dredging disposal site following the USEPA technical manual. Sampling locations has been given in **Error! R eference source not found.**.

Table 12: Details of Dredge material sampling locations

SI. No.	Sampling Station	Station Code	Sampling Date	GPS Coordinates
1.	Solimganj ghat (R-9)	DM-1	28/04/2023	23°50'29.66"N 90°50'38.42"E
2.		DM-2	28/04/2023	23°50'29.85"N 90°50'37.90"E

Figure 6: Dredge Material sampling from Dyke no.2 & 5

The analysis results of physicochemical parameters of dredge samples are presented in **Error! R eference source not found.** below.

Table 13: Dredge Materials Analysis Results

Parameter	Unit	Dredge Material – Route 9		Methodology/Instrument
		DM1	DM2	
Lead (Pb)	mg/kg	12.24	13.37	Atomic Absorption Spectrophotometer
Cadmium (Cd)	mg/kg	0.08	0.06	Atomic Absorption Spectrophotometer
Chromium (Cr)	mg/kg	22.29	20.11	Atomic Absorption Spectrophotometer

Zinc (Zn)	mg/kg	33.18	39.46	Atomic Absorption Spectrophotometer
Arsenic (As)	mg/kg	1.89	1.92	Atomic Absorption Spectrophotometer

The analysis of the samples showed that the concentrations of Lead (Pb) ranged from 12.24 mg/kg to 13.37 mg/kg, and the values for Chromium (Cr) varied from 22.29 mg/kg to 20.11 mg/kg. The highest content of Zinc (Zn) was detected in the DM2 sample, with a value of 39.46 mg/kg, while the lowest content was recorded in the DM1 sample, with a value of 33.18 mg/kg. Dredging work is in a beginning stage, significant impacts are not visible yet.

3.1.3.4 Noise level/ Noise Quality Measurement:

Noise level monitoring was conducted during the ongoing work activities at the Solimganj ghat (R-9) location. The objective of these assessments was to measure and evaluate the levels of noise generated during these activities. During the site visit, no significant noise pollution issues were observed. Ambient noise was found at a negligible level due to the initial activity of the dredging work. The GULF COBLA KARNAFULY JV ensured that earplugs were provided to all workers and visitors on the operating barges. Monthly monitoring of noise level has been conducted in April 2023 according to the monthly report but Underwater noise data was not collected by the contractors this month. Though the contractor reported that earplugs were provided to all, the S1A team didn't have even one during their three visits.

3.1.3.5 Waste Management Monitoring: During the dredging period, the contractors did not mention any information in their reports about whether the oily wastewater from the dredger or the ship, solid waste from the ship, etc. was released, however, traces of oil on the surface of the water near the dredgers and houseboats were observed at both the dredging sites. The contractors were notified about it and advised to take proper precautionary measures.

The CEAP states that the discharge of wastewater and solid waste into rivers is prohibited and must be unloaded to nearby treatment plants for treatment. The S1A team has no observations at this reporting time.

3.1.3.6 Effects on Biological Resources: Biodiversity Conservation status will be documented and included in the monthly and quarterly environmental monitoring report. The protection of Flora, Fauna, and particularly the protection of aquatic resources like fisheries are of major concerns.

During the field visit, a few fishing (Aquatic Fauna-Fish) activities by angling was observed. There is no visible fish mortality around the dredging site location. The area consisted of several pile fishing

structures, locally known as 'kata' installed by the local fishermen community. Considering the shallowness of the river, lack of flowing water, and presence of water hyacinths that choked the river, no presence of Dolphins was reported in that particular dredging section.

3.1.3.7 Reports on Environmental Management Plan: The results of the riverbed material, surface water, groundwater, air, and noise were included in the Contractor's Environment Action Plan (CEAP) which was submitted and has been reviewed by S1A and submitted to the PIU for their comments prior to the finalization and subsequent submission to the WB.

Based on the observations and monitoring results, it can be concluded that the project has not had any significant negative impact on the environment in terms of ambient air, ambient noise, water quality, and other health and safety factors during the reporting period. Also, the project has no mentionable detrimental impact on the environment in terms of ambient air, ambient noise, and water and other occupational health and safety during this beginning phase.

According to the Contractor's Environment Action Plan (CEAP) the parameters of environmental monitoring are mentioned to be measured monthly or weekly or quarterly, but the contractors are not measuring them regularly. No underwater sound has been recorded by the contractors of both Lot 2 and Lot 3 as has been mentioned in the contract document. The contractors have been notified to comply with the contract agreement.

Monitoring the environmental impact is one of the main tasks of this project. However, social and other issues are closely related to the environment. The issues specifically related to environment that were observed at the commencement period of the project are included in this part. The S1A team hopes that gradually it will be possible to do more specific and clear documentation.

Environmental supervision is mostly done on the site visit and by collecting data from the reviewed reports provided by the contractors. The chemical analysis indicated the presence of some heavy metals in the riverbed samples. Also, the analysis of air quality found increased CO in a few dredging sites and found increased BOD, TSS etc. levels of water quality. The sources of pollution will be identified and appropriate mitigation measures may be suggested to the contractors for implementation.

3.1.4 Field Visit

On 30th April 2023 the environmental and social expert visited the site Lot 2 Route 09: Solimganj, Bancharampur along with the PIU to observe the dredging operation & dredged material disposal sites

of Route 09; to meet Upazila Nirbahi Officer (UNO), Bancharampur Upazilla and to Check on sampling of environmental parameters

Figure 7: Field visit participants: (from left) Dr. SMA Rashid. ABM Anwar, Md. Golam Rabbani & Md. A. Didder Alam

3.1.4.1 Salient Features of the Visit:

Meeting with Mr. Aki Mittra Chakma, Upazila Nirbahi Officer (UNO) Bancharampur Upazila. The UNO was, in fact, wishing to meet the project representatives and fortunately we were there. The UNO was briefed about the various components and activities of the project. Discussion on the management of the dredged material was a high point. Documents related to the project were requested by the UNO, which was assured by the Team Leader. The Team Leader/ Project Manager-S1A informed the UNO that Dr. Md. Monzur Rahman, Social & Resettlement Expert, S1A & JPZ-DEMAS-JCL JV will maintain regular contact with the UNO to update him on the progress and challenges, hinderances that need to be resolved in consultation with his good office. The Team Leader sought all necessary cooperation of the Upazila Nirbahi Officer for successful completion of the Project.Dredging work was temporarily stopped/discontinued due to low water level as stated by the Gulf Cobla-Karnaphuli JV staffs, however

Figure 8: (Left) S1A Team briefing the UNO, Bancharampur about the project; (Right) discussion with the contractor's representatives

the dredger operator refuted it after discussion with him. The dredger operator mentioned that the lack of availability of disposal sites as the main factor for the temporary discontinuation of dredging operation. Sampling of surface water, river bed material, noise, and air samples were collected on 27th April 2023 and sent to the laboratory for analysis. Gulf Cobla-Karnaphuli JV have not appointed any staff designated for environmental works, but have made an arrangement with EQMS to carry out the requisite tasks for which no permission/authorization has been granted by the PIU.

3.1.4.2 Observations:

1. Concentration of floating water hyacinths was reduced probably due to either water in-flow or by the movement of the dredger. This allows sunlight to penetrate below the water's surface thus facilitating to enhance primary production of the river.

2. Display of information on the project details in English fixed at the site office. However, it is recommended that the information be published in Bangla as well.

3. The dykes of the dredged material disposal sites are not well protected. Moreover, despite the instruction to use biodegradable materials to strengthen the dykes, it was observed that plastic sheets were used. Recommended to fix the dykes.

4. Detailed site-specific descriptions of the dredged material disposal sites were not provided. Moreover, some trees were removed from the disposal sites. The contractor was informed earlier not to fell/remove any trees which is a violation of the agreement.








Tattered condition of the dredged material disposal sites which is evidence of non-compliance of the Code of Conduct guidelines. Checking of dredging depth with the help of lead, Lot-2, Route-09. (Bancharampur-Homna Loop) Solimganj.

5. The dredging area dredged by dredger Karonfuly-07 & Karonfuly-03, near Solimganj Bridge has been inspected by the team using an engine-driven boat. The team visited the whole length of the dredging area, the depth of cutting was randomly checked at several sections of the river. After site visit the Team Leader advised the site engineers/representatives to expedite and boost up the dredging works following the rules and regulations.

6. Recommended that the internal monitoring of the dredging, dredged material management and other associated issues by the contractor needs to be boosted, improved, and documented.

3.1.5 Comments, Suggestions and Recommendations:

- During the site visit S1A team observed surface water, river bed material, noise, and air samples were collected on 27th April 2023 for the month of April 2023 and sent to the laboratory for analysis.
- If sample was collected before middle (Date 15-16) of the month, it would have been easier to analyze the results and take necessary action during S1A visit.

- Gulf Cobla-Karnaphuli JV have not appointed any staff designated for environmental works, but have made an arrangement with EQMS to carry out the requisite tasks for which no permission/authorization has been granted by the PIU.
- The dredging site at Solimganj under Route 9/Lot 2 is located downstream of the local market and launch ghat. The Titas River at this section is utilized by small boats, local mechanized cargo boats. The river section is choked with water hyacinth which is known to have absorbing properties of some heavy metals, and to clean the aquatic habitat. The Solimganj market has some sawmills and huge numbers of logs are kept soaked in the river as a method of wood treatment. Exudation of plant materials, along with the liquid wastes, and other diffused sources may be responsible for the heavy metal contamination of the riverbed material at Solimganj.

3.2 Social and Resettlement Aspects:

The Resettlement ad Social Expert monitors the compliance in respect to Social Safeguard issues of this project and gives feedback to the project director and also the World Bank. Evaluation of mitigation measures have been carried out for the project affected persons with special attention to women, tribal & indigenous peoples and other vulnerable groups. In addition, overall project performance, issues related to land acquisition and resettlement with a focus on social inclusion has been evaluated. Socio-economic risks and impacts are identified and suggested adequate mitigation measures following the project Social Impact Management Framework (SIMF). The updated SIMF provides guidance for management of community engagement, land acquisition and involuntary resettlement, indigenous peoples, risks of gender and gender-based violence (GBV) in the project.

The scope of this task is to monitor and supervise all relevant environmental and social management activities including those specified in the Project's ESIA, RPF and EMP, and any additional ESHS provisions in the contract. The Social and Resettlement Expert is responsible for ensuring that the Contractor complies with all checking and reporting, especially in respect to the Contract Dredge Disposal Management Plan, and the quality of dredged materials. The Consultant has done social screening for identification of safeguards issues likely to be associated with the subprojects, to verify the adequacy as per requirement of the SIMF. Identify the strengths and weaknesses of social screening, Land Acquisition/ Resettlement, Good Faith Agreement with land owners, Compensation, Approaches and Implementation strategies. The Consultant has monitored the working conditions according to the safeguard rules of the World Bank, monitored gender sensitive actions and objectives that include gender analysis for gender inclusive design, implementation and operation have been achieved or in progress to be achieved. The Consultant has monitored the compliance of GAP including agreed actions necessary to address risks of labor influx and Gender Based Violence (GBV) due to the prevalence of high levels of poverty, including sexual exploitation and abuse (SEA), violence during project implementation.

3.2.1 Survey of land lease value:

S1A team conducted a survey for land lease value of Bancharampur and Salimgonj Upazila of Brahmanbaria and Mehendiganj Upazila, Barisal in April 2023. The land lease profile has already been made. It will submit to PIU as soon as possible.

3.2.2 Progress of Land Lease:

Land has not been acquisitioned in the present working areas. The rivers are dredged and the dredge material has been dumped on land on some government and some private lands who willingly provided the land on a good faith agreement. So, no compensation rules were applied and involuntary resettlement of individuals or families, compensation for unemployment, re-employment of affected people were not required and no harassment occured to collect the compensation. Progress on the land lease process is almost complete for Route 21 and Route 9.

3.2.3 Good Faith Agreement:

The dredging materials will be placed in an identified suitable location at each dredging site. In case the dredged materials were dumped in private land, an agreement has been made between two parties (project and landowners). A Good Faith Agreement is a contract between two parties that outlines the terms of the deal, including what will be exchanged and how it will be done.

For selecting a land/place for dredged material placement, priority can be given for demand of beneficial uses of the materials if it is suitable. At some villages near the dredging locations, there is a demand for the material for repairing of the village roads and public facilities such as school and *Eidgah* grounds.

Some good faith agreements have been done between the land owner and BIWTA in a prescribed format provided by the World Bank. At present 16 (Sixteen) agreements have been completed and 4 (Four) are under process. Most of the places people are willingly entering into good faith agreement. In some areas some influential people are leading this matter. General people of the project sites were informed about river dredging, dredged materials dumping and good faith agreements through several meetings with local people in local bazars, Union Council, villages and the local schools.

Table 14: Progress of Good Faith Agreements Bancharampur and Nabinagar, Brahmanbaria. Dredging Company: Gulf Cobla – Karnafuly Joint Venture (Lot2).

Dyke No.	Route No	Land Owner		Land			Good Faith Agreement
		Name and NID	Address	Description	Quantity (Decimal)	Quality of Land	
1	9	Md. Monir Hossain NID: 6447046241	Village: Joy Nagar Upazilla: Bancharampur District: Brahmanbaria	Plot No: 1117.1118, 10, 65, 1016, Mouza: Joy Nagar	95	Agricultural land (Two Crops)	Done
2	9	Siblu Mia NID: 1210488091772	Village: Imam Nagar, Upazilla: Bancharampur	Plot No: 158, 155, 166, 147.	270	Agricultural land (Two Crops)	Done

Dyke No.	Route No	Land Owner		Land			Good Faith Agreement
		Name and NID	Address	Description	Quantity (Decimal)	Quality of Land	
			District: Brahmanbaria	Mouza: Imam Nagar			
3	9	Md. Afzal Hossain NID:1210488092232 (Chairman of the School committee)	Village: Joy Nagar Upazilla: Bancharampur District: Brahmanbaria	Plot No: 461, 711, 712, 713, 714, 715 1016. Mouza: Joy Nagar	150	School and School Field	Done
4	9	Md. Monzur Mahabub NID: 1210488092428	Village: Imam Nagar Upazilla: Bancharampur District: Brahmanbaria	Plot No: 3473, 3474 Mouza: Imam Nagar	55	Agricultural land (One crop)	Done
5	9	Jharna Begum NID:5546582981	Village: Barail Upazila: Nabinagar District: Brahmanbaria	Mouza: Imam Nagar	132	Agricultural land (Two Crops)	Done
6	9	Md. Dostogir NID:7813941536	Village: Barail Upazila: Nabinagar District: Brahmanbaria	Plot No: 326, 353,314, 622, 312, 126, 319, 320, 321, 334	141	Agricultural land (Two Crops)	Done
7		Monir Hossain NID: 12104880921009	Village: Imam Nagar Upazilla: Bancharampur District: Brahmanbaria	Plot No.127	40	Agricultural land (Two Crops)	Done
8	9	Abdus Salam NID: 1210488089240	Village: Aka Nagar Upazilla: Bancharampur District: Brahmanbaria	Plot No.6021, 5622, 5627, 6620, 3277	90	Agricultural land (Two Crops)	Done
9	9	Md. Zakir Hossain NID: 2693016135957	Village: Aka Nagar Upazilla: Bancharampur District: Brahmanbaria	Plot No. 2611, 2612, 6036	139	Agricultural land (Two Crops)	Done

Table 15: Progress of Good Faith Agreements Mehendiganj, Barishal and Bhola Sadar. Dredging Company: Dharti – Banga Joint Venture (Lot3).

Dyke No.	Route No	Land Owner		Land			Good Faith Agreement
		Name and NID	Address	Description	Quantity (Decimal)	Quality of Land	
1	21	Salam Fakir NID:8223014047	Village: Ghagoria. Upazila: Mehendigonj District: Barishal. (Near Bheduria Ferryghat)	Plot No: 1901/56	200	Agricultural and (Two Crops)	Done
2	21	Mizanur Rahman NID: 6850475422	Village & Char Veduria. Upazila and District: Bhola	Plot No: 1901/28	121	Agricultural land (Two Crops)	Done

Dyke No.	Route No	Land Owner		Land			Good Faith Agreement
		Name and NID	Address	Description	Quantity (Decimal)	Quality of Land	
3	21	Salam Fakir NID:8223014047	Village: Ghagoria. Bheduria Upazila: Mehendigonj Dist: Barishal.	Plot No: 1901/56	224	Agricultural land (Two Crops)	Done
4	21	Jahingir Hossain NID: 0616213052704	Village:Sripur, Upazila: Mehendigonj Dist: Barishal.	Plot No: 1501	80	Fallow land	Done
5	21	Mizanur Rahaman Harun 6860475422	Char Veduria. Upazila and District: Bhola	Plot No: 1107. 1181, 1182, 2123, 2124, 2119, 2125	300	Agricultural land (Two Crops)	Done
6	21	Nur Nabi Vhuya NID: 0616213050970	Village: Seripur Upazilla: Mahandigong, District: Barishal	Plot No: 1468, Mouza: Ghaguria	365	Agricultural land. (Two Crops) (Watermelon, Bitter Gourd)	Done
7	21	Nur Nabi Vhuya NID No: 0616213050970	Village: Seripur Upazilla: Mehendiganj, District: Barishal	Plot No: 1468, Mouza: Ghaguria	120	Agricultural land (Two Crops) (Watermelon, Bitter Gourd)	Done

3.2.3 Grievance Redressal Mechanism (GRM):

The BRWTP-1 project has its own GRM system with three stages of mechanism (Field site level, River port level and Project level) and the compensation system follows the World Bank rules. The Consultant assists the Client in monitoring the functioning of the GRM that have been set up by the Client to receive and process project-related feedback, suggestions, concerns and complaints, especially in relation to the dredging activity carried out under the OPBC-IWN contracts and the Vessel Storm Shelters construction contract. This includes the following: (i) continuously checking in the field to ensure that the information on GRM remains publicized in an appropriate manner at the relevant sites and any complaints received by the Contractors and the Consultant himself is forwarded to the Client. (ii) Assisting the Client to prepare and disseminate brochures and signboards containing information of interest to people living close to the project sites.

The dredging consultant 'DHARTI–BANGA JV' (Lot 3) has formed two Grievance Redressal Committees (GRC), but no grievance complaints/incidents have yet been reported to be resolved. The GRM Expert will start work soon on behalf of S1A. The GRC committees of 'DHARTI–BANGA JV' are as follows:

Table 16: The Local Level Complaint Resolve Committee

Name	Designation	Organization	Position in GRC	Mobile No.
Capt. Abdur Razzak Bhuiyan	Team Leader	DHARTI–BANGA JV	Chairman	
Md Aftabuzzaman	Social and Communication Officer	DHARTI–BANGA JV	Member	
Mizanur Rahman	Environmental Specialist of Engineer	BRWTP-1	Executive Member	
Tanvir Hossain	HSE Manager	DHARTI–BANGA JV	Executive Member	
Walid Hossain	Environmental Health Safety Officer	DHARTI–BANGA JV	Member	
Robiul Islam	Site In charge	DHARTI–BANGA JV	Member	

Table 17: The Project Level Committee

Name	Designation	Organization	Position in GRC
-	Project Director		Chairman
Md. Khandekar Mahbub	GRM Expert	BRWTP-1	Executive Member
Mizanur Rahman	Environmental Specialist	BRWTP-1	Executive Member
-	Project Manager	BRWTP-1	Executive Member
-	Project Manager	DHARTI–BANGA JV	Member
Mr. Shahid Ali	Team Leader, Social	RDM – EQMS JV	Member
Dr. Rezaul Karin	Team Leader	S12/3	Member
-	Environmental Expert	S1A	Member

3.2.4 ESHS Status and OHS Related Incident:

Labor/Worker's employment status, health, safety, and security such as accommodation facilities, working condition, sanitation, safety, and security, drinking water supply, reporting accidents, dust control, noise control, waste management, emergency response facilities, and grievance mechanism were observed through direct visual observation, site visit, consultation with workers and respective officers of the project.

An accident record/register book is kept to record any accidents. Designated personnel have been assigned to maintain the safety book and datasheet with collaborating checklists. A dedicated first aid box is also available at the project site office for ensuring emergency response to any accidents/incidents and first aid requirement by workers and other staff.

If any health safety issues raised or an accident occurred, first aid is ensured immediately. If further medical support is required or in case of any major accident, the immediate medical treatment is ensured at nearby hospital. Safety signboards are also installed in the project site area for workers' and community people's awareness.

3.2.4.1 Labour and Working Condition: Most of the dredging works are ongoing. So, the data has been collected through direct contact and consultation with the working laborers and directly observing their working condition. No female labors are available in the project sites. Data are collected about working situation, presence of male and female laborers, working environment, wage, first aid, labor shed, etc. First-aid medical boxes, safe drinking water, toilet facilities are available in the project areas and were found clean. No child laborer and no forced laborer have been engaged in the project work. Laborers have received wage in proper time and no harassment / time lengthening happened. They are satisfied with their work and wages.

3.2.4.2 Impact of Labor Influx: For the dredging works, some male laborers have arrived in the subproject sites. These subprojects are not mega projects and do not work continuously for long time (5-6 years) in one place/village and the laborers are the inhabitants of Bangladesh who share the same socio-cultural and religious values. So, the occurrence like conflict with local people, shouting or group singing with loud voice at night, teasing, robbing, sexual harassment, HIV transmission, drug addicting, etc. have not happened in the subproject areas.

3.2.4.3 Indigenous People: No indigenous people inhabit the present project sites. So, there is no comment on that issue.

3.2.4.4 Cultural Properties / Heritage: The project sites have not used any cultural land or inflicted any damage to the cultural properties or values. So, no comments are available on that issue.

3.2.4.5 Gender Issues: No female laborers are working together with male laborers in the project site. On the other hand, the local people have reported that the dredging workers/ laborers have no congenial or free mixing relationship with the local female. No incident about the violence against women was reported. Everybody reported that no sexual exploitation, sexual violence, or gender-based violence happened in the project sites at Barisal and Brahmanbaria.

3.3 Development and Maintenance Dredging Works:

3.3.1 Introduction

The activity of restoring advertised navigation channel depths and widths on the various Inland Waterways under Package No. W1A contract(s) is to be conducted over the first 30 (thirty) months period of the contract. Class-wise River Routes under the dredging work is shown in Table 14 below.

Since the commencement of the project, various preparatory works have been carried out. Dredging work under Lot 3, Route 21 was carried out due to the urgent need as a national emergency. During this reporting period dredging work mostly covered the necessary progress meetings with the contractor, client and the donor, conduct baseline survey, joint hydrographic survey, check dredged volumes based on pre- and post-survey hydrographic data, disposal area selection and preparation, calibrate and updating available water model with data from surveys and monitoring, preparation to develop dredged material management plan, etc. Following are the major River Routes that will be carried out during this project period with the highlighted in red River Routes (09,16 and 21) where the dredging work is ongoing up to April 2023.

Table 18: Class- Wise Route Details

Dredging Routes			
Class I			
Lot No.	**Route No.**	**Intersecting River**	**Length (km)**
2	Route 3&4	Shitalakshya	56
2	Route 5	Meghna	82
2	Route 6	Meghna	25
ClassII			
Lot No.	**Route No.**	**Intersecting River**	**Length (km)**
2	Route 7&8	Meghna	30
3	Route 12	Chandpur	10
3	Route 13	Meghna and Arial Kha	84
3	Route 13a	Meghna	10
3	Route 21	Tentulia	7
Class III			
Lot No.	**Route No.**	**Intersecting River**	**Length (km)**
2	Route 9	Meghna	58
2	Route 10	Meghna	48
2	Route 11	Gumti	16
3	Route 15&16	Meghna and Tentulia	46
3	Route 17	Tentulia	10

Table 19: Route Class and Design Specification

Dredging Channel Design Standards and Specification			
Dredging Specification			
Route Class	**Component**	**Sub Component**	**Requirement**
I	Depth	Design Water Reference Level	Lowest Astronomical Tide+ Meteorologic Variance
		Nominal Channel Bed level	4 m
		Maximum Channel Dredged Level Including Tolerance	4.30 m
	Width	At Nominal Bed Level	76 m
		At Design Water Reference Level	100 m
	Bends	Length	300 M
		Angle	120 Degree
II	Depth	Design Water Reference Level	Lowest Astronomical Tide+ Meteorologic Variance
		Nominal Channel Bed level	2.5 m
		Maximum Channel Dredged Level Including Tolerance	2.8 m
	Width	At Nominal Bed Level	76 m
		At Design Water Reference Level	100 m
	Bends	Length	250 m
		Angle	120 Degree
III	Depth	Design Water Reference Level	Lowest Astronomical Tides+ Meteorologic Variance
		Nominal Channel Bed level	1.9 m
		Maximum Channel Dredged Level Including Tolerance	2.2 m
	Width	At Nominal Bed Level	30 m
		At Design Water Reference Level	45 m
	Bends	Length	200 m
		Angle	135 Degree

3.3.2 Progress of Hydrographic Survey and Dredging Activities:

3.3.2.1 River Route 21 (The Tentulia):

- Laharhat-Bheduria Route 21 is located in the Tentulia river and its length is about 8.50km (Ch0+000 to Ch8+500).
- Laherhat ferry ghat situated at Ch0+000 in union Tungibaria under sadar upozilla, Barisal district and Bheduria ferry ghat at Ch8+500 in union Bheduria under sadar upozilla, Bhola district.

- In Laharhat-Bheduria route 21 dredging work done by two numbers of CSD dredgers named Banga Jamuna (20") and Banga Padma(20").
- Banga Jamuna (20") mobilized at Patharhat on dated 26.10.2022 and after that mobilized in Bheduria on dated 10.12.2022
- Banga Padma (20") mobilized at Laharhat on dated 17.10.2022 and after that mobilized in Bheduria on dated 27.11.2022

3.3.2.1a Dredging works:

- Laharhat-Bheduria route 21 dredging work started in on dated 12thDecember 2022 and work finished on dated 12thMarch 2023.
- Dredging works done Chainage/km from Ch8+500 to Ch6+400. Total dredging length of first stage development dredging is 2.10km, cutting width 65m and cutting depth on avg. 2.5m and dredged by two swings. This is class I type route and LAD is 4.0m.
- Dredging carried out from Ch8+500 at location Bheduria ferry ghat, union Bheduria under sadar upozilla in Bhola district and ended at chainage Ch6+400 at location near Sreepur launch ghat, Sreepur union under Mehandiganj upozilla in Barisal district.

3.3.2.1b Hydrographic survey:

- Hydrographic Pre survey done on dated from 25th November 2022 to 28th November 2022. Pre survey Chainage from Ch0+000 to Ch8+500.
- Hydrographic Post survey done on dated from 16thMarch to 17th March 2023. Post survey Chainage from Ch8+500 to Ch6+400.

3.3.2.1c Disposal area:

Laharhat-Bheduria Route 21 dredges material suspending into seven (7) numbers of individual disposal areas. Following disposal details shows capacity, activity record and Locations, details:

(1) R21-D1: Area is 12729sqm, Height is 1.8m and estimated capacity containing 22912.2 cum spoils. Its Located at Left bank of Tatulia River in Mehandigonj Union under Mehandiganj Upozilla in Barisal district. (Used from 12thDecember 2022 to 1st February 2023)

(2) R21-D2: Area is 4899 sqm, Height is 0.974m and estimated capacity containing 4772 cum spoils. Its Located at Left bank of Tatulia River in Bheduria Union under Bheduria Upozilla in Bhola district. (Used from 12thDecember 2022 to 1st February 2023)

(3) R21-D3: Area is 9069 sqm; Height is 1.62m and estimated capacity containing 14692 cum spoils. Its Located at Left bank of Tatulia River in Mehandigonj Union under Mehandiganj Upozilla in Barisal district. (Used from 12thDecember 2022 to 1st February 2023)

(4) R21-D4 (Gucho-gram): Area is 3358 sqm; Height is 1.1m and estimated capacity containing 3391.58 cum spoils. Its Located at Right bank of Tatulia River in Sreepur Union under Mehandiganj Upozilla in Barisal district. (Used from 28th February 2023 to 11th March 2023)

(5) R21-D5: Area is 16,062 sqm; Height is 1.7m and Estimated capacity containing 27,305 cum spoils. Its Located at right bank of Tatulia River in Ghagoria Union under Mehandiganj Upozilla in Barisal district. (Used from 28th February 2023 to 11th March 2023)

(6) R21-D6: Area is 18571.5 sqm; Height is 1.5m and estimated capacity containing 27857.25 cum spoils. Its Located at left bank of Tatulia River in Ghagoria Union under Mehandiganj Upozilla in Barisal district. (Used from 1st February 2023 to 28th February 2023)

(7) R21-D7: Area is 7900 sqm; Height is 1.2m and Estimated capacity containing 9480 cum spoils. Its Located at left bank of Tatulia River in Ghagoria Union under Mehandiganj Upozilla in Barisal district. (Used from 1st February 2023to 28th February 2023)

3.3.2.2 River Route 16:

Patarhat-Bheduria Route 16 dredging alignment is situated between two rivers. The name of the river at the north side is Maskata River (adjacent of Patarhat ghat) and connected with eastern one called Tentulia River.

Currently dredging work alignment situated on Maskata River and dredging Chainage from k0+000 to K3+500.

Starting Chainage from Ch0+000 located at patarhatghat (launch ghat) on Maskata river, union Mehandiganj under Mehandiganj upozilla in Barisal district and end part of Chainage Ch3+500 is located at eastrn side of Tentulia River, union Alimabad under Mehandiganj upozilla, Barisal district.

In Patarhat-Bheduria Route 16 dredging work is in progress using two CSD dredgers named Banga Shitalakhya (20") and BangaJamuna (20").

Banga Shitalakhya (20") mobilized at Alubazaron dated 18th October 2022 after that mobilized in Patarhat on dated 30th March 2023

Banga Jamuna (20") mobilization at Patarhat on dated 13th April 2023.

Survey work upto 30th April 2023:

1. Hydrographic survey/Pre-work:
   Location: Laharhat-Bheduria Route 21
   Chainage: Ch0+000 to Ch8+500
   Line survey done on dated 25.11.2022
2. Hydrographic survey/Pre-work:
   Location: Laharhat-Bheduria Route 21
   Chainage: Ch0+000 to Ch8+500
   Line survey done on dated 26.11.2022 to 28.11.2022
3. Hydrographic survey/Pre-work:
   Location: Alur-bazar to At Hazar/ Route 13
   Chainage: Ch0+000 to Ch95+000
   Line survey done on dated 08.01.2023 to 18.01.2023
4. Hydrographic survey/Pre-work:
   Location: Patharhat to Bheduria/ Route 15 & 16
   Chainage: Ch0+000 to Ch3+500
   Line survey done on dated 19.01.2023 to 21.01.2023
5. Hydrographic survey/Pre-work:
   Location: Patharhat to Bheduria/ Route 15 & 16
   Chainage: Ch0+000 to Ch3+500
   Line survey done on dated 22.01.2023 to 24.01.2023
6. Hydrographic survey/Pre-work:
   Location: Bheduria to At Hazar(north)/ Route 17
   Chainage: Ch0+000 to Ch11+000
   Line survey done on dated 29.01.2023
7. Hydrographic survey/post-work:
   Location: Laharhat to Bheduria Route 21
   Chainage: Ch8+500 to Ch7+500
   Survey done on dated 08.02.2023
8. Hydrographic survey/post-work:
   Location: Laharhat to Bheduria Route 21
   Chainage: Ch8+500 to Ch6+400
   Survey done on dated 16.03.2023 to 17.03.2023

Dredging work upto April 2023:

Location: Patarhat-Bheduria Route 16
Date: From 14th April, 2023 to 30th April, 2023
Dredger name: Banga Sitalakhya
Number of swings is 2 (two)
Chainage: Ch0+850 to Ch0+600
Total Length: 250m
Width: 65m

Disposal Area: Disposal area R16-D1 used up-to 30th April 2023.

16-D1: Area is 17,633 sqm, Height is 1.88m (approx.) and estimated capacity containing 33,150 cum spoils.

Figure 9: Photo of dredge material disposal area R16-D1

3.3.2.3 Route 09 (Bancharampur-Homna**):**

Bancharampur-Homna route 09 is located on Titas River (upper Titas) and its length about 58km (Ch0+000 to Ch58+000)

Currently dredging work alignment situated on Titas River and dredging Chainage from Ch0+000 to Ch8+860.

In Bancharampur-Homna route 09 dredging work done by two CSD dredgers named Karnophuly-03(18") and Karnophuly-07(18").

Karnophuly-07 (18") mobilization at Solimgonj site on 25.01.2023

Karnophuly -03 (18") mobilized at Solimgonj on 12.02.2023.

Bancharampur-Homna route 09 is class III type and current progress dredging depth is avg.1.277m

Starting chainage from Ch2+770 located on Titas river near Solimgonj bridge, union Tejkhali under Bancharampur upozilla in Brahmanbaria district.

Survey works up to 30th April:

- Topographic survey/Pre-work:
    - Location: Solimgonj-Homna Route 09
    - Chainage: K0+000 to K8+860
    - Survey done on dated: 16.01.2023 to 27.01.2023
- Bathymetric survey/Pre-work:
    - Location: Solimgonj -Homna Route 09
    - Chainage: K0+000 to K8+860
    - Survey done on dated: 16.01.2023 to 22.01.2023

- **Dredging work upto April 2023:**

Location: Solimgonj -Homna Route 09

- Date: From 23thMarch, 2023 to 30th April, 2023
- Dredger name: Kornophuly-07
- Number of swings is 1 (one)
- Chainage: K2+770 to K2+970
- Total Length: 200m
- Width: 30m

Location: Solimgonj -Homna Route 09

- Date: From 23thMarch, 2023 to 30th April, 2023
- Dredger name: Kornophuly-03
- Number of swings is 1 (one)
- Chainage: K3+845 to K4+055
- Total Length: 210m
- Width: 30m

Disposal Area: Solimgonj-Homna Route 09**,** Disposal area R09-D2, R09-D5& R09-D6 used up-to 30th April 2023.

(1) R09-D2: Area is 17,493 sqm; Height is 3.0m and estimated capacity containing 52,479cum spoils.

(2) R09-D5: Area is 5,888 sqm, Height is 3.0m and estimated capacity containing 17,664cum spoils.

(3) R09-D6: Area is 5707 sqm; Height is 2.5 m and Estimated capacity containing 14,267cum spoils.

Figure10: Photo of dredge material disposal area R 9-D6

Figure 11: Photo of dredge material disposal area R09-D5

Figure 12: Photo of dredge material disposal area R09-D2

3.3.3 Status on Navigation Aids Management:

Safety of river traffic during and after dredging work is the most important issue of the project. During this time period Navigational Aids Expert observed the navigation condition of the currently finished dredging operation area of Laharhat-Bheduria, Route 21. He suggested few actions to be implemented for safe navigation.

The contractor (Lot3) has already finished with dredging operations and post survey works. Completed dredging length measured 2.1 kilometers, width 65 meters and draft 2.8 meters.

It has been reported on 20 April 2023 that the installation with buoys as per IALA Marine Buoyage system for dredged route 21(Bheduria-Laharhat, Lot 03) in the river Tentulia are in progress by the contractor DHART-BANGA-JOINT VENTURE which was recommended by JPZ-DEMAS-JCL expert earlier.

It may also be noted that the concern parties are engaged to attend the raised issue of underwater live high voltage cable along dredged route16 (Mehendigong-Bheduria, Lot 03) in the river Meghna, Tentulia with necessary buoys/markers.

To mark the dredging area, special markings are essential to be installed for safe & trouble-free maneuvering/navigation for ferry ship. As per IALA (International Association of Marine Aids and Lighthouse Authorities) Buoyage system, all the River Route to be covered by required yellow buoys with yellow light flashing at night in every km of dredged distance.

Figure 13: Yellow Buoy

Yellow buoys indicate special markings such as traffic separations, dredging areas, fish net area, etc. IALA encourages its members to work together to utilize all the aids to navigation and to ensure the movements of vessels are safe.

CHAPTER 04:
PROJECT MANAGEMENT AND PROGRAMME SUPPORT ACTIVITIES

To monitor dredging operation progress, resolve Environmental Health and Safety (EHS) concerns, and discuss other pertinent subjects as needed, monthly progress meetings were usually held at Lot 2 and Lot3 field offices. Other than the meetings with the contractors, several meetings with PIU were held throughout the reporting period to assess progress and discuss the EHS-related issues. These team sessions enable efficient and safe job development by fostering teamwork and good communication.

4.1 Progress Meetings with PIU:

Several meetings were held with the PIU members on the progress of the project. In addition, meeting was also held with the contractor's representatives as a part of monthly and quarterly progress meetings. On 3rd April 2023 a consultation meeting was held safeguard issues. The meeting was on the S1A and other consultants' responsibilities regarding safeguard issues. Also, the discussion related to the contract and dredging were given importance.

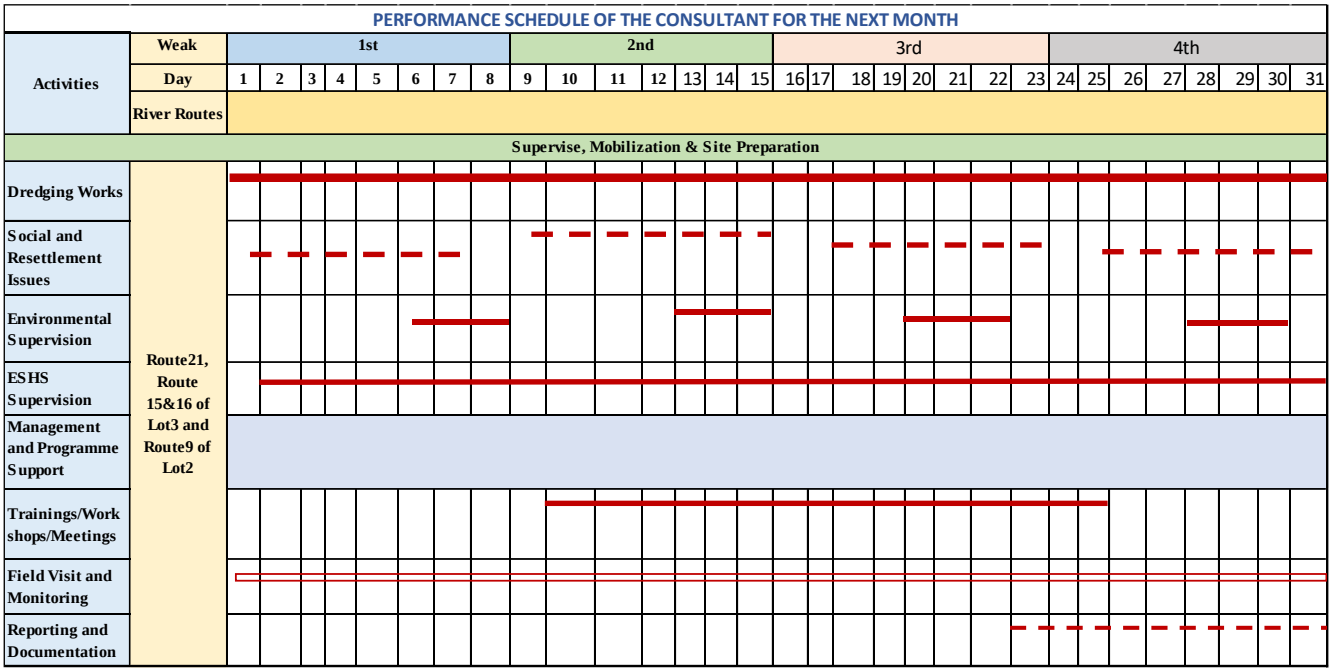
Figure 14: Several Meetings held with PIU members

4.2 Performance Schedule of the Consultant for the Next Month:

A tentative monitoring and supervision plan for the next month is shown in the table below. The contractor did not provide any plans in their reports. So, it is very difficult to make a monitoring plan without information.

The schedule for the next month is organized based on last month's work as well as considering the activities going on at the field level. This plan will be updated or changed depending on the pace of field activities and immediate needs.

Table 20: Performance Schedule of the Consultant for the Next Month



CHAPTER 05:
OPPORTUNITIES, ISSUES AND SOLUTIONS

5.1 Convenience

The project is a team work between PIU, Consultant (S1A) and Contractor (Lot 2 & Lot 3) which is noticeable from the beginning. Employer is always cooperating with necessary instructions. Their constant support has created great opportunities for the smooth implementation of this project. Easy coordination among all concerned parties has simplified the implementation of project activities. All relevant parties are sincere in discussing and assisting each other to find ways to improve and solve out the outstanding clauses.

5.2 Difficulties

Overall, the project implementation is well, but the dredging progress of Gulf Cobla-Karnaphuli JV at Solimganj, Brahmanbaria is very little. Within time period they completed only one dyke (full), other two are 70% at present. Most of the time their “Dredger” does not work. In Bheduria (Barisal), Dharti-Bango JV has not dumped dredged material properly on dykes. In Brahmanbaria, some influential people have created influence on the local people to provide their land for good faith agreement. The land lease and good faith agreement activities are going slow due to lack of budget.

Major difficulties faced during the monitoring and supervision of this Month (April 2023) are listed down as following:

- Difficult to implement EMP as prescribed because the absence of required technical staff.
- Contractor do not provide any work plan or notification before starting any new work.
- Contractor's site engineer never follows the design and specifications for dyke/disposal area construction.
- Contractor's site engineer does not provide daily progress report to the consultant supervision team.
- Contractor is not concerned about leakage and/or spillage from the pipelines.
- Contractor does not maintain record properly of all sand or sediment extraction.
- Contractor not concerned to identify the channel using navigation aids such as buoys, beacon, lights signal and sign board, etc.
- It is observed that sometimes contractor disposes dredge material outside of disposal area or on shore.

- The bunds or the dykes are not well maintained for examination/assessment after disposal of dredged material.
- Health and safety issue such as PPE, vest, helmet, hand gloves, safety shoes and life savings equipment are not maintained/utilized properly.
- The contractor is not controlling the discharge of site runoff including excess dredge water by the installation and correct use of containment walls, bunds and weirs.
- Lack of proper drainage for rain water/liquid waste and solid waste management system.
- Contractor environmental action plan (CEAP) is not followed properly.
- Environmental monitoring activities and quality measurement is not maintained regularly.
- Internal monitoring of the contractors needs improvement.

5.3 Solving out Difficulty

- The contractor should mobilize all qualified professionals to the project site and take necessary measures in order to solve the above-mentioned issues.
- The Contractors Manager must be a person with enough experience, who can lead the team to carry out the work comprehensively.
- To pay attention to perform the works according to the contract standards and specifications.
- Prior information and permission from S1A to commence any major activities is necessary.

CHAPTER 06:
CONCLUSION AND/OR RECOMMENDATIONS

This is the monthly report for the month of April 2023. At this stage of the project, the pace of dredging work is increasing gradually. However, S1A Consultants are not able to speed up the supervision work due to poor financial flow. This makes it difficult to take necessary mitigation measures at the field level on time. Significant progress has been made in office setup, recruitment etc. and regular efforts are being made to manage the project smoothly.

With few exceptions, most of the S1A professionals are on board and they give effort to speed up the information collection process, especially field data collection equipment such as environmental sampling equipment, speed boats, survey boats, and survey instruments that have not yet been collected. Field offices should be set up with necessary facilities so that field level manpower, especially non-key surveyors and environmental workers can work actively and diligently.

Dialogue and consultation with contractors and PIUs are important for the implementation of project activities. Documentation of meetings held with contractors or PIU members, in-house, or with any other stakeholders should be properly documented and circulated among stakeholders/participants. S1A is already maintaining these activities in a structured process. The S1A team is preparing a regular meeting schedule with contractors and other stakeholders that will be publicized and adhered to.

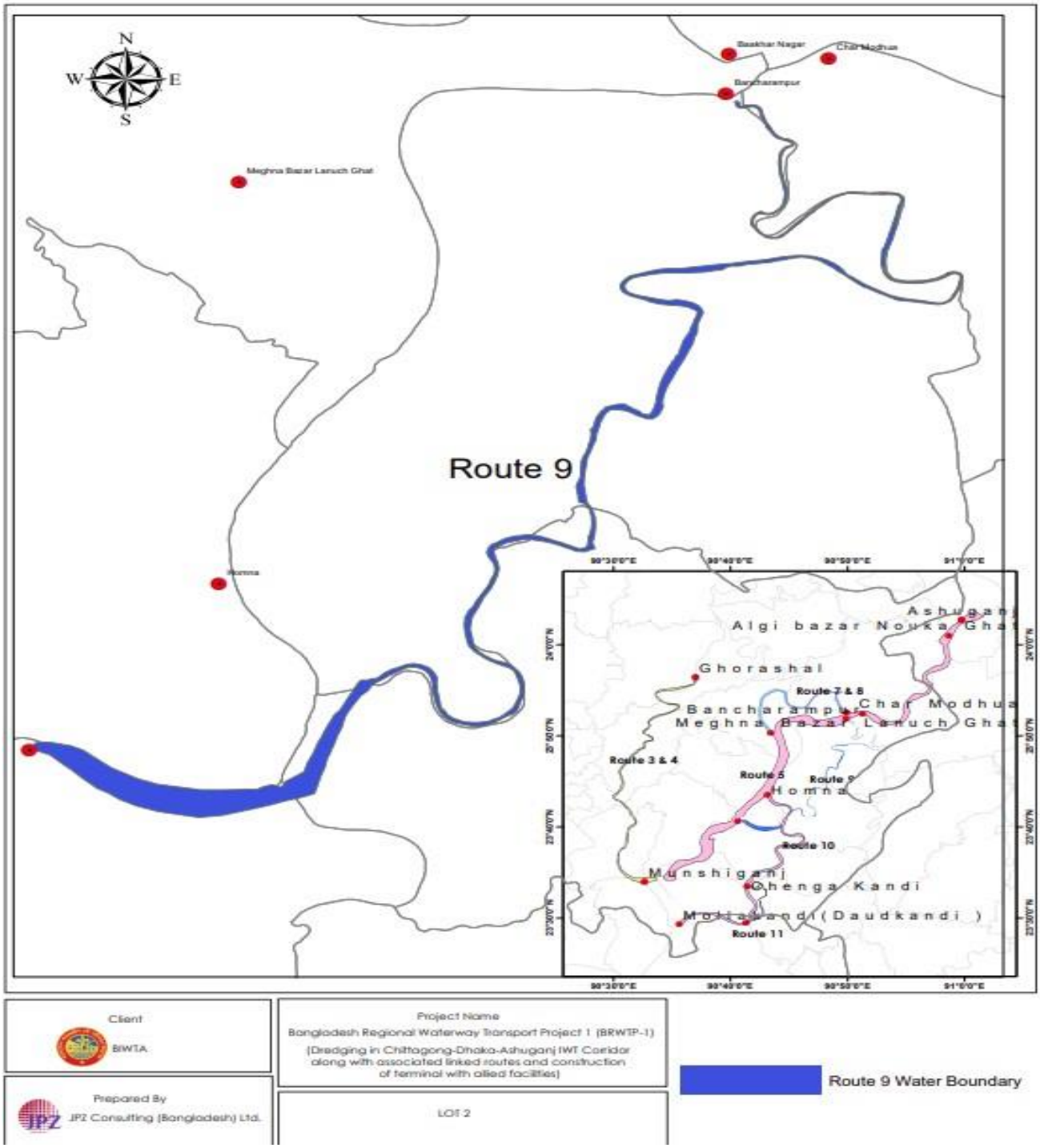
Overdue inception workshops and other necessary training programs will be held by S1A shortly. Further, the field enumerators as well as the contractor's staff will be briefed at regular intervals about the progress and defects, if any. Field workers should be convinced that discussions/conversations with local people (not just local elites) should be extended in determining the location for disposal of dredged materials.

Attendance of regular meetings at upazila and district level with representatives of contractors will be determined by S1A. Any non-compliance of contractors should be discussed with the contractor and should be reported to the client - PIU.

A brochure, to be produced by S1A, details project activities for awareness and communication with stakeholders. Field inspections along the total length of the river between Lot 2 and Lot 3 will be organized by S1A.

CHAPTER 07: ANNEXURE

7.1: Route 9 River Boundary



7.2: Route 21 River Water Boundary