National Port Strategy 2026

Part I: Seaports

Part II: River Ports

Part III: Land Ports

Ministry of Shipping

Government of the People's Republic of Bangladesh

October, 2026

Supported by :

Abbreviations

Abbreviation	Description
AIS	Automated Identification System
BBIN MVA	Bangladesh, Bhutan, India and Nepal Motor Vehicles Agreement
BCAA	Bangladesh Civil Aviation Authority
BCG	Bangladesh Coast Guard
BCP (1)	Border Crossing Point
BCP (2)	Business Continuity Plan
BG	Broad Guage (railway)
BGB	Border Guard Bangladesh
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
BIWTA	Bangladesh Inland Water Transport Authority
BLPA	Bangladesh Land Port Authority
BNBC	Bangladesh National Building Code
BNPS	Bangladesh National Port Strategy
BOR	Berth Occupancy Ratio
BOT	Build-Operate-Transfer
BPC	Bangladesh Petroleum Corporation
BR	Bangladesh Railway
BRTA	Bangladesh Road Transport Authority
CAPEX	Capital Expenditure
CBU	Completely Built-Up (vehicle)
CCEA	Cabinet Committee on Economic Affairs
CCT	Chittagong Container Terminal
CDL	Chart Datum Level
CFS	Container Freight Station
CHE	Cargo Handling Equipment
CIQ	Customs, Immigration, Quarantine
CKD	Complete Knock Down
COO	Chief Operating Officer
CP	Counterpart
CPA	Chittagong Port Authority
CPGCBL	Coal Power Generation Company Bangladesh Limited
CSD	Cutter Suction Dredger

CT	Container Terminal
CTMS	Container Terminal Management System
CTT	Coal Transshipment Terminal
CY	Container Yard
DA	Designated Authority in ISPS Code
DG	Dual Gauge (railway)
DOE	Department of Environment
DOS	Department of Shipping
DPP	Development Project Proposal
DSCR	Debt Service Coverage Ratio
DWT	Deadweight Tonnage
DX	Digital Transformation
EBPM	Evidence-Based Policy Making
ECA	Bangladesh Environmental Conservation Act (1995/2010)
ECC	Environmental Clearance Certificate
ECNEC	Executive Committee of the National Economic Council
ECR	Environmental Conservation Regulations (1997/2023)
EDI	Electronic Data Interchange
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EOJ	Embassy of Japan
EPR	The Environmental Protection Rules (2023)
EPZ	Export Processing Zone
ERD	Economic Relations Division
FDI	Foreign Direct Investment
FTZ	Free Trade Zone
GCB	General Cargo Berths in Chittagong Port
GDP	Gross Domestic Product
GISIS	Global Integrated Information System of IMO
GOB	Government of Bangladesh
GOJ	Government of Japan
GT	Gross Tonnage
ICD	Inland Container Depot
ICT	Inland Container Terminal
IEE	Initial Environmental Examination
ILO	International Labor Organization
IMDG	International Maritime Dangerous Goods (code)

IMO	International Maritime Organization
IMY	Intermodal Modal Yard
IRR	Internal Rate of Return
ISPS	International Ship and Port Facility Security Code
IT	Information Technology
IWM	Institute of Water Modeling
JCC	Joint Coordination Committee
JCM	Joint Crediting Mechanism
JICA	Japan International Cooperation Agency
KPI (1)	Key Performance Indicator
KPI (2)	Key Point Installation
LAD	Least Available Depth
LCS	Land Customs Station
LCT	Laldia Container Terminal in Chittagong Port
LNG	Liquefied Natural Gas
LOA	Length Overall
LPG	Liquefied Petroleum Gas
LPZ	Local Processing Zone
MARPOL	International Convention for the Prevention of Pollution from Ships
MCE	Maximum Considered Earthquake
MG	Meter Gauge (railway)
MIDA	Moheshkhali Integrated Development Authority
MIDI	Moheshkhali-Matarbari Integrated Infrastructure Development Initiative
MOS	Ministry of Shipping
MOU	Memorandum of Understanding
MPA	Mongla Port Authority
MPEMR	Ministry of Power, Energy and Mineral Resources
MSW	Maritime Single Window
MU	Marketing Unit
MUSCCPP	Matarbari Ultra Super Critical Coal-Fired Power Project
MVA	BBIN Moter Vehicles Agreement
NBR	National Board of Revenue
NCT	New-Mooring Container Terminal in Chittagong Port
NPV	Net Present Value
NOC	No Objection Certificate
OCDI	Overseas Coastal Area Development Institute of Japan

OD	Origin and Destination
ODA	Official Development Assistance
OHS	Occupational Health and Safety
OPEX	Operating Expenditure
PCS	Port Community System
PCT	Patenga Container Terminal in Chittagong Port
PDM	Project Design Matrix
PFSO	Port Facility Security Officer in ISPS Code
PFSP	Port Facility Security Plan in ISPS Code
PIU	Project Implementation Unit
PO	Plan of Operations
PPA	Payra Port Authority
PPP	Public Private Partnership
QGC	Quayside Gantry Crane
QGIS	Quantum Geographic Information System
R/D	Record of Discussions
RHD	Roads and Highways Department
RMG	Ready-Made Garment
ROI	Return on Investment
RPGCL	Rupantarita Prakritik Gas Company Limited
RTG	Rubber Tired Gantry Crane
SEA	Strategic Environmental Assessment
SOLAS	International Convention for the Safety of Life at Sea
SOP	Standard Operating Procedure
SOT	Supply-Operate-Transfer
STS (1)	Ship to Shore
STS (2)	Ship to Ship
SWOT	Strengths, Weaknesses, Opportunities, Threats (analysis)
TDE	Training, Drills and Exercises
TEU	Twenty-feet Equivalent Unit
TF	Task Force
TOR	Terms of Reference
TOS	Terminal Operation System
TSHD	Trailer Suction Hopper Dredger
UNCTAD	United Nations Conference on Trade and Development
VTMS	Vessel Traffic Management System

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Volume I: Seaports

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0. Executive Summary

0.1 Introduction

- Bangladesh's seaports are expected to continue playing a vital role in supporting import and export activities across various sectors, thereby contributing to national economic growth. In addition to their logistics gateway function, seaports with waterfront-type industries benefit from minimal logistics cost between jetties and factories.
- As the total port cargo handling capacity will soon be exceeded, increasing the capacity of infrastructure and the efficiency of operations are vital.
- To secure port capacity more efficiently, it is necessary to take into account the characteristics, natural conditions, historical role and function of each port, trends in maritime transport, cargo owner's distribution and hinterland connectivity, efficient investment, efficient and resilient port operation, security and safety, disaster prevention as well as environmental and social considerations in a holistic and harmonious manner within the overall national seaport system.
- This strategy addresses key domestic challenges to enhance port capacity more efficiently, in response to the rapidly growing demand for import-export cargo. While acknowledging that there are global issues which require international cooperation, this strategy prioritizes domestic challenges that Bangladesh can address independently. International aspects are discussed in the relevant thematic sections.
- In this strategy, the current situation and development plans of seaport system including river ICTs, rail ICDs, private Off-Docks and hinterland connectivity are first reviewed. Next, the guiding principles of seaports from a comprehensive perspective are discussed. Demand forecast and triggers for major development projects follow. Recommendations, way forward and conclusion are presented in the last section.

0.2 Strategic Objectives

- The objectives of this strategy are to define the roles and functions of each port based on their specific characteristics, forecast future cargo demand, and present guiding principles for consistent, nationwide port development, along with improvements in port management and operations.

0.3 Analysis of Current Situation and Issues to be Addressed

0.3.1 Natural Conditions

- Nautical charts indicate that the most suitable location for deep sea port is south of Kutubdia Island. Otherwise, significant capital and maintenance dredging would be required as evidenced by data on the maximum permissible draft in the Rabnabad Channel at Payra Port.

- Sediment amounting to as much as 0.5 - 2.4 billion tons per year from major river runoff causes significant sedimentation in the navigation channels and port basins of Bangladesh.
- Since cyclones and storm surges sometimes affect coastal areas, the crest level of land must be sufficiently high. Otherwise, port cargo could be at risk of flooding.

0.3.2 Chittagong Port

- Chittagong Port handles 89% of the total cargo throughput (139 million tons in 2024) and 99% of the total container throughput (3.0 million TEU in 2024).
- Vessel size to enter Karnaphuli River is limited; maximum draft is 10m and maximum length is 200m.
- Mixture of city traffic and port traffic results in traffic congestion.
- In-yard delivery for import containers, long staying containers, and direct loading of export containers to a vessel from outside trailers are issues that need to be addressed.
- The introduction of PPP with the participation of international terminal operators to port terminals has recently started.
- There are mega projects which need a substantial loan and heavy repayment in the future.
- Obsolete facilities in General Cargo Berth will need to be dismantled; it will be necessary to convert this area to another use.
- Hinterland connectivity needs to be enhanced in response to the increase in cargo demand.
- The capacity of outer anchorage for ship-to-ship lightering operation may have to be expanded to cope with the increase in bulk cargo demand.

0.3.3 Mongla Port

- Low utilization of MPA jetties (BOR [1] = 8%) even since the opening of Padma Bridge is observed.
- The construction work in the PPP terminal project has been suspended.
- Railway connection has been completed but service frequency is still low.
- Container vessels currently call Mongla Port only after calling at Chittagong.
- Navigation up and down the river to/from MPA jetties takes about 10 hours.
- Long-term financial soundness needs to be examined if MPA obtains a loan.

0.3.4 Payra Port

- Huge sedimentation occurred after dredging was carried out. The deeper the channel is dredged below the original depth, the greater the amount of sedimentation.

[1] BOR stands for Berth Occupancy Ratio, which refers to the annual ratio of berth occupancy by vessel docking. For Mongla jetties, the maximum BOR value recommended by UNCTAD is 65%.

- As for coal import in Payra Port, additional annual costs without maintenance dredging is roughly estimated at USD 40 million for 8 million tons of coal import. This amount is regarded as a benchmark in considering maintenance dredging in the coming years.
- Rail connection plan which would cost BDT 280 billion and thus it is not expected to be implemented in the near future.
- Acquired land of 5,391 acres should be used as early as possible.

0.3.5 Matarbari Port

- Distance to Dhaka from Matarbari is 120 km further than that from Chittagong. International terminal operators are more interested in Chittagong Port as of 2025.
- Establishment of an operation framework and acquiring sufficient manpower is necessary prior to opening of the port. Port support function such as CIQ (except limited function for coal import) and off-docks are not available as of 2025. Removing the location restriction for off-docks is necessary to encourage investment by private sector. Accommodations and other amenities for workers are not available as of 2025.
- Maintenance dredging should be periodically conducted. To ensure long-term financial soundness, fair cost sharing with stakeholders is necessary.

0.4 Guiding Principles for Port Development and Operation as Strategic Framework

0.4.1 Ensuring Sufficient Cargo Handling Capacity for Foreign Trade

- The main role of ports is to support external trades and thereby contribute to the national economic activities and growth. Therefore, seaports must not become a bottleneck in foreign trade; otherwise, industrial activities will be severely disrupted.
- For this reason, it is necessary for the government to ensure sufficient cargo handling capacity with a certain degree of redundancy.

0.4.2 Defining the Roles and Functions of Each Port

- Defining roles and functions of each port is beneficial for the effective use of resources.
- Taking into account challenges, core issues, advantages and sales points of each port, roles and functions of each port are defined in Table 0-1.

Table 0-1 Defined Roles and Functions of Each Port

Port	Roles and Functions
Chittagong	● Main container port for Dhaka and Chattogram ● Main ship-to-ship lightering operation port for bulker ● Industry and logistics functions are concentrated here
Mongla	● Ocean gateway for Khulna and west part of Bangladesh ● Ship-to-ship lightering operation port for bulker ● Support for Mongla EPZ, Ishwardi EPZ and regional industries
Payra	● Ocean gateway for Barishal Division, etc. ● Potentials to serve as bases for the vessels which don't have deep draft such as CBU car base, LPG base, construction material base (stone, etc.) ● Promotion of renewable energy and regional industry including fishery
Matarbari	● Deep sea port for container, energy and bulk for Bangladesh ● Support for industries in EPZs, LPZs, FTZs [2] in MIDA area ● Ship-to-ship lightering operations for deep draft bulker
(Common *)	● Regional transit gateway for neighboring countries for the future

Note *: To realize above, not only the development of infrastructure but also the advancement of dialogue with neighboring countries, such as BBIN MVA and Coastal Protocol with Myanmar Government are required.

0.4.3 Efficient Investment

- There are different criteria for evaluating port development projects depending on whether investment is by the public sector or by private investors. Public sector places importance on generating benefits for the national economy, while private investors will focus on return on investment.
- An economic analysis is conducted to confirm whether the expected benefits of a project exceed the costs.
- Economic analysis and financial analysis should be based on actual data, not fabricated data. All organizations should take responsibility to ensure that all assumptions made are valid.

0.4.4 Efficient and Resilient Port Operation

- The following themes are discussed for efficient and resilient port operation:
  - Efficient port management utilizing KPI (Key Performance Indicator),
  - Container handling workflow compliant with international standards including the elimination of in-yard delivery for import containers and direct loading of export containers to a vessel from outside trailers,
  - Elimination of long-term staying cargoes / containers including expediting auction procedure, establishment of dedicated supreme court benches and formation of specialized commercial courts,

[2] EPZ: Export Processing Zone, LPZ: Local Processing Zone, FTZ: Free Trade Zone.

- Consideration for Business Continuity Plan (BCP) [3] of the Port including alternative ports and facilities,
- Alleviating traffic congestion,
- Implementation of Digital Transformation (DX) and paperless port procedures

0.4.5 Hinterland Connectivity and Modal Share

- To accommodate future road traffic demand from Dhaka to major ports, development of expressway and six-laning or four-laning of exiting national highway is necessary.
- Dhirasram ICD and Chakaria Intermodal Yard should be realized by 2029.
- New ICTs serving for cargo owners located in the north of Dhaka are necessary.

0.4.6 Framework for Port Administration and Operation

- With the increase in cargo and terminals for the future as well as the introduction of International Terminal Operators (ITOs), the management structure of CPA needs to be rearranged.
- Cooperation among port authorities is necessary to optimize the national economic benefit of ports even as terminals compete with each other. It should be understood that ITOs focus on return on investment and prioritize maximizing profits. The operational activities of all port authorities must be coordinated.
- Strategic port tariff (port charge) structure to decrease long stay containers/cargo should be introduced. Port tariff should be reviewed regularly and revised as and when required.
- Port authority acts can be combined into a single act in order to align their roles, functions and responsibilities and to clarify the differences between them. Provisions enabling PPA to form new companies and/or be a shareholder of such companies should be included.
- A conference/committee where relevant ministries, agencies, and port-related parties gather to discuss and make recommendations on development plans and action programs for each major port will play an important role in realizing a sound port system in Bangladesh.

0.4.7 Security and Safety

(Undisclosed)

0.4.8 Disaster Prevention

- It is necessary to prepare for key disaster risks including cyclones and storm surges, floods, earthquakes and tsunamis.

[3] Ensuring the continuity of port operations in the face of disruptions - whether natural, technical, or institutional - is a critical component of operational readiness. This includes contingency planning, emergency protocols, adaptive management systems, and continuity of operations, collectively referred to in international practice as Business Continuity Planning (BCP).

0.4.9 Decarbonization Initiatives

- It is essential to promote the development of Carbon Neutral Port (CNP) in responding to the needs of shipper companies working to decarbonize their supply chains and supporting the energy transitions of CO2-intensive industries.

0.4.10 Environmental and Social Consideration

- It is necessary to comply with related laws and regulations related to the environment and the social considerations.

0.5 Implementation Plan

0.5.1 Demand Forecast

(1) Containers

- Results of demand forecast of containers in Bangladesh (GDP: Base case, Elasticity: Base case) are as shown in Table 0-2.

Table 0-2 Demand Forecast of Containers

(million TEU)

Year	2030	2035	2040	2045	2050
Bangladesh Total	4.7	6.6	8.7	10.9	13.1

- Forecasted container allocations to each port are determined based on: (1) the distribution of cargo origins and destinations, (2) the preferences of cargo owners and shipping lines, and (3) the total trucking cost from Dhaka to the ports.
- The container volumes for each port in 2045 are as follows: Chittagong Port - 7.5 million TEUs, Mongla port - 0.3 million TEUs, Payra Port - 0.2 million TEUs, and Matarbari Port - 2.9 million TEUs.

(2) Non-Container Cargo

- Results of demand forecast of non-container cargo in Bangladesh are as shown in Table 0-3.

Table 0-3 Demand Forecast of Non-Container Cargo

(million tons)

Year	2030	2035	2040	2045	2050
Dry Bulk	155	201	251	302	346
Liquid Bulk	29	42	56	66	77
Bangladesh Total	184	243	307	368	424

- The non-container cargo volumes for each port in 2045 are as follows: Chittagong Port - 254 million tons, Mongla Port - 28 million tons, Payra Port - 13 million tons, and Matarbari Port - 73 million tons.

0.5.2 Major Development Projects

- Major development projects of Chittagong Port include LCT and Bay Terminal. Bay Terminal consists of the marine infrastructure development project, CT-1 and CT-2 (PPP) and multi-purpose terminal.
- Major development projects of Mongla Port include construction of 2 jetties (PPP), upgrading of Mongla Port (LOC), expansion and modernization of Mongla Port facilities (G2G China), dredging of Inner Bar area, maintenance dredging of Passur Channel, and the purchase of dredgers. It should be noted that the container handling capacity of Mongla Port significantly exceeds the forecast demand.
- Major development projects of Payra Port include GOB multi-purpose 1st terminal with 6-lane road and 4-lane bridge, Container Terminal 1 (PPP), maintenance dredging of Rabnabad Channel and purchase of dredgers. It should be noted that the container handling capacity of Payra Port significantly exceeds the forecast demand. In addition, maintenance dredging of Rabnabad Channel at the scale of the capital and maintenance dredging already completed is not economically viable for the time being.
- Major development projects of Matarbari Port include Matarbari Phase-1 and Phase-2 of Stage I, Matarbari Stage II and purchase of dredgers.

Table 0-4 Timelines for Major Development Projects

Port	Major Project	Capacity/ Specification	Project Cost	Finance	Completion/Opening	Remarks
Chittagong	LCT	0.9 mil. TEU	USD 800 mil.	BOT by APMT	2029, 2030 full capacity	CCEA approval in principle in Nov. 2023
Chittagong	Bay Terminalthe Marine Infrastructure Development Project	NA	BDT 135.25 bil.	WB Loan (BDT 93.33 bil.) GOB/CPA (BDT 41.92 bil.)	2031	ECNEC approval in Apr. 2025 for breakwater and dredging
Chittagong	Bay Terminal CT-1, CT-2 (PPP)	3.6 mil. TEU	USD 1,218 mil.	BOT by PSA Int'l BOT by DP World	2031, 2039 full capacity	CCEA approval in principle in Jul. 2019
Chittagong	Bay Terminal MPT	NA	USD 755 mil.	GOB/CPA	NA	
Chittagong	Bay Terminal Energy Terminal	NA	NA	NA	NA	
Mongla	Construction of 2 Jetties under PPP framework	0.2 mil. TEU	BDT 18.08 bil.	BOT by Saif Powertech	NA	Construction started in 2018, but suspended since 2024
Mongla	Upgrading of Mongla Port (LOC)	0.4 mil. TEU	BDT 60.15 bil.	LOC (BDT 44.59 bil.) GOB (BDT 15.55 bil.)	NA	ECNEC approval in Feb. 2020
Mongla	Expansion and Modernization of Mongla Port Facilities (G2G China)	0.4 mil. TEU	BDT 40.68 bil.	China Loan (BDT 35.92 bil.) GOB (BDT 4.75 bil.)	2028	ECNEC approval in Feb. 2025
Mongla	Dredging of Inner Bar Area	NA	BDT 9.92 bil.	GOB/MPA	2026	ECNEC approval in Jan. 2020
Mongla	Maintenance Dredging of Passur Channel	NA	BDT 15.38 bil.	GOB/MPA	2029	ECNEC approval in Jan. 2025
Mongla	Purchase of Dredgers	3500m3 TSHD 2@28-inch CSD	BDT 14.00 bil.	NA	NA	MPA requesting
Payra	GOB Multi-Purpose 1st Terminal with 6-lane Road and 4-lane Bridge	0.8 mil. TEU 1.0 mil. ton bulk	BDT 45.2 bil.	GOB	Jul. 2026	
Payra	PPP Container Terminal 1	2.0 mil. TEU	NA	PPP	NA	CCEA approval in principle in Sep. 2014 and in Mar. 2024
Payra	Maintenance Dredging of Rabnabad Channel	CL-10.5m	NA	NA	NA	PEC Jun. 2025, revised DPP submitted to PC Oct. 2025
Payra	Purchase of Dredgers	NA	NA	NA	NA	PEC Jun. 2025, revised DPP submitted to PC Oct. 2025
Matarbari	Matarbari Phase-1 /Stage I	0.8 mil. TEU	BDT 243.81 bil.	CPA with JICA Loan	2029, 2031 full capacity	ECNEC approval in Oct. 2024
Matarbari	Matarbari Phase-2 /Stage I	2.1 mil. TEU	NA	NA	2026, 2042 full capacity	under F/S
Matarbari	Matarbari Stage II	4.0 mil. TEU	NA	NA	2041, 2050 full capacity	draft MIDI-MP
Matarbari	Purchase of Dredgers	TSHD	NA	NA	NA	CPA under consideration

Note: Container handling capacities of Mongla Port and Payra Port are significantly exceeding the forecast demand.
Note: Maintenance dredging of Rabnabad Channel cannot be economically justified at least for the time being.
Note: Project cost of Matarbari Phase-1 includes brealwater, channel, port access road in addition to the terminal.
Source: OCDI based on data and information from MOS, CPA, MPA and PPA as well as various news sources.

0.5.3 Major Action Programs

The following action programs should be carried out.

Table 0-5 Desired Major Action Programs

Desired action program	Main Stakeholder	Target Year
Promotion of inter-seaport container feeder services	NBR	Urgent
Protocol with Myanmar on bilateral coastal trade	Myanmar Gov., MOFA	Urgent
Introduction of Maritime Single Window (MSW) for vessel entry/exit procedure for seaports	DOS, Port Authorities, NBR, CIQ, MoE, MoI	As early as possible
Rationalization of 65-item restriction of cargo delivery in off-dock facilities	NBR	As early as possible
Countermeasures to prevent long-staying cargoes in ports	NBR	As early as possible
Establishment of dedicated Supreme Court benches	MoLaw/Courts	As early as possible
Formation of specialized commercial courts	MoLaw/Courts	As early as possible
Setting up Custom House in Matarbari with container scanners	NBR	by 2029
Installation of container scanners at LCT and Bay Terminal	NBR	by 2029, by 2031
Easing the restriction on location of Off-Docks	NBR	As early as possible
Establishment of operational framework and securing manpower for Matarbari	CPA	by 2029
Securing dedicated berth at seaports for domestic container feeder service	Port Authorities, Terminal operators	As early as possible
Building of Dhirasram ICD in Dhaka area	BR/CPA	by 2029
Building of Chakaria Intermodal Yard (IMY)	BR/CPA	by 2029
Procuring sufficient number of locomotives and freight wagons, and the necessary operational staffs	BR	by 2029
Building of expressway between Dhaka and Chattogram	RHD	by mid 2030s
Widening N1 to 6-lanes between Dhaka and Chattogram	RHD	by mid 2030s
Widening N1 to 4-lane between Chattogram and Cox's bazar	RHD	by early 2030s
Widening N805-N7 to 4-lane	RHD	by 2030s

0.6 Risk Assessment and Mitigation

- As changes in both international and domestic circumstances can be happen hereafter, periodical review of the Bangladesh National Port Strategy will be necessary in response to these changes.
- In particular, the demand forecast of cargoes is the most important factor for defining the future course of action as the required capacity of ports is based on demand.
- Therefore, it is recommended to review the demand forecast and timelines for major development plans and action programs every three years, while the guiding principles should be reviewed every five years to adapt to changes in the external situation.

0.7 Recommendations, Way Forward, and Conclusion

0.7.1 Recommendations

- Major development projects and action programs should be implemented according to defined timelines and aligned with the established guiding principles (see Table 0-4 and Table 0-5).
- The philosophies and common implementation considerations are outlined in the "Way Forward" section.

0.7.2 Way Forward

- This strategy is guided by the core philosophy: "*The right facilities should be developed in the right place at the right time.*" This philosophy is based on lessons learned from past experience. Port development should not be approached on a project-by-project basis; instead, a more comprehensive approach should be taken, guided by the established guiding principles. For example, to prevent overinvestment, it is important to conduct accurate demand forecasting and assess how cargo will be allocated to each port.
- To promote Evidence-Based Policy Making (EBPM) [4], it is essential to utilize data such as ship call statistics, cargo volumes, and other reliable information that are crucial for measuring policy effectiveness. This enhances policy efficacy and helps build public trust in administration. While reconciling diverse stakeholder views remains important, the foundation of any policy dialogue must be robust data, statistics, and analytical insights.
- To ensure that port development is conducted effectively and in a timely manner, coordination with developments in other fields of infrastructure such as road, railway, inland waterway or industries is important. It is also recommended that inter-ministerial coordination be made on each major development plan in view of the maximization of the effect of the investment and realization of the return from it in a short period. It is particularly

[4] Evidence-Based Policy Making (EBPM) means basing policy planning on rational evidence rather than relying on a one-time episode or inspiration, after clearly defining policy objectives.

important for the relevant ministries and authorities to strengthen coordination in order to promote multimodal hinterland connectivity, given the current excessive dependence on road transport. In addition, among port authorities, it is recommended to conduct exchange programs of their officers regularly.

- This strategy adopts the philosophy that "*Ports aren't built in a day; rather, they gradually evolve*." It is not a matter of which came first - the chicken (cargo volume) or the egg (port facilities). Constructing port facilities does not guarantee immediate cargo flow. Just as a chick gradually grows into a chicken, ports and their activities must be nurtured and developed over time. It is essential to increase cargo volume and invest proactively, before reaching saturation. This is because a port comprises not only physical infrastructure, but also the operations of port authorities and CIQ agencies, private sector activities (production and logistics), vessel berthing, and cargo movement. Among these, in order to promote foreign trade and enhance port activities, it is especially important for Customs to provide flexible and timely accommodation to the needs of port users.
- The demand forecast and timelines for major development plans and action programs should be reviewed every three years, while the guiding principles should be reassessed every five years to adapt to changes in external conditions.

0.7.3 Conclusion

- Bangladesh's seaports are expected to continue playing a vital role in supporting import and export activities across various sectors, thereby contributing to national economic growth.
- The import and export cargo demand is projected to increase more than threefold over the next 20 years, reaching 11 million TEUs and 370 million tons by 2045 (see Table 0-2 and Table 0-3).
- In response to this rapidly growing demand, this strategy defines the roles and functions of each port based on their specific characteristics and presents guiding principles - consisting of 10 pillars - for consistent, nationwide port development, along with improvements in port management and operations.
- Major development projects and action programs should be implemented according to defined timelines and aligned with the established guiding principles (see Table 0-4 and Table 0-5).

1. Introduction

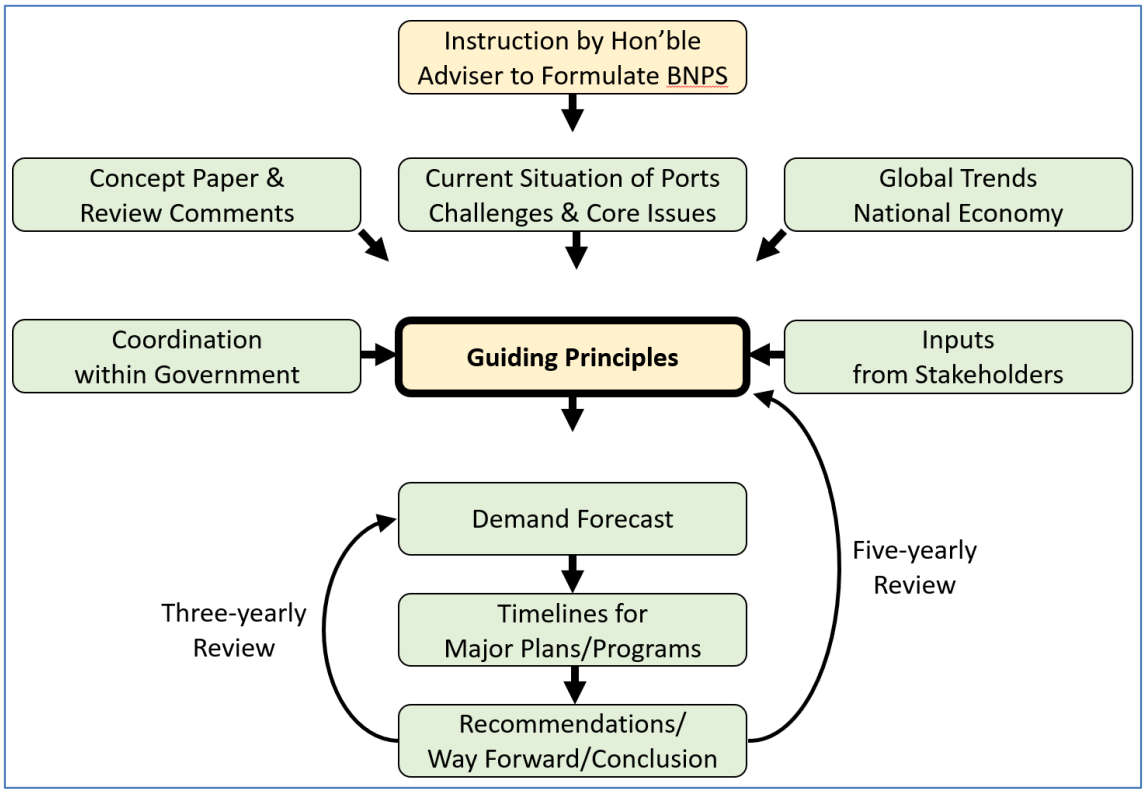
Bangladesh's seaports are expected to continue playing a vital role in supporting import and export activities across various sectors, thereby contributing to national economic growth. In addition to their logistics gateway function, seaports with waterfront-type industries benefit from minimal logistics cost between jetties and factories.

As the total port cargo handling capacity will soon be exceeded, increasing the capacity of infrastructure and the efficiency of operations are vital.

To secure port capacity more efficiently, it is necessary to tak into account the characteristics, natural conditions, historical role and function of each port, trends in maritime transport, cargo owner's distribution and hinterland connectivity, efficient investment, efficient and resilient port operation, security and safety, disaster prevention as well as environmental and social considerations in a holistic and harmonious manner within the overall national seaport system.

This strategy addresses key domestic challenges to enhance port capacity more efficiently, in response to the rapidly growing demand for import-export cargo. While acknowledging that there are global issues which require international cooperation, this strategy prioritizes domestic challenges that Bangladesh can address independently. International aspects are discussed in the relevant thematic sections.

In this strategy, the current situation and development plans of seaport system including river ICTs, rail ICDs, private Off-Docks and hinterland connectivity are first reviewed. Next, the guiding principles of seaports from a comprehensive perspective are discussed. Demand forecast and triggers for major development projects follow. Recommendations, way forward and conclusion are presented in the last section.



Source: OCDI

Figure 1-1 Flowchart of Formulating Bangladesh National Port Strategy

2. Strategic objectives

The objectives of this strategy are to define the roles and functions of each port based on their specific characteristics, forecast future cargo demand, and present guiding principles for consistent, nationwide port development, along with improvements in port management and operations.

3. Analysis of Current Situation and Issues to be Addressed

3.1 Overview

3.1.1 Cargo and container throughputs of seaports in Bangladesh

In Bangladesh, there are 3 seaports, namely, Chittagong Port, Mongla Port and Payra Port. In addition, new Matarbari Port is operated under Chittagong Port and within its port limit.

Cargo throughput and container throughput of Chittagong Port, Mongla Port and Payra Port are shown in Table 3-1 and Table 3-2 respectively. Chittagong Port handles 89% of the total cargo throughput (139 million tons in 2024) and 99% of the total container throughput (3.0 million TEU in 2024).

Current status and future development plans of each port are described in the following sections.

Table 3-1 Cargo Throughput of Chittagong Port, Mongla Port and Payra Port

(Unit: 1,000 tons)

Port		2017 (2016-17)	2018 (2017-18)	2019 (2018-19)	2020 (2019-20)	2021 (2020-21)	2022 (2021-22)	2023 (2022-23)	2024 (2023-24)
Chittagong	Import	71,296	80,621	87,944	88,303	98,900	111,835	112,826	116,164
	Export	6,913	6,975	6,953	6,576	7,832	7,831	7,405	7,819
	Chittagong Total	78,209	87,596	94,896	94,879	106,732	119,666	120,230	123,983
	Share	91.0%	89.8%	89.1%	89.0%	88.5%	90.0%	90.5%	89.3%
Mongla	Import	7,428	9,570	11,180	10,895	11,824	11,266	9,826	10,786
	Export	86	147	135	142	120	127	79	82
	Mongla Total	7,513	9,717	11,315	11,037	11,945	11,392	9,905	10,868
	Share	8.7%	10.0%	10.6%	10.4%	9.9%	8.6%	7.5%	7.8%
Payra	Import	222	193	324	655	1,882	1,937	2,727	3,959
	Export	0	0	0	0	0	0	14	0
	Payra Total	222	193	324	655	1,882	1,937	2,742	3,959
	Share	0.3%	0.2%	0.3%	0.6%	1.6%	1.5%	2.1%	2.9%
Total	Import	78,946	90,384	99,447	99,853	112,606	125,038	125,379	130,909
	Export	6,998	7,122	7,088	6,718	7,952	7,957	7,498	7,901
	Grand Total	85,944	97,506	106,535	106,571	120,558	132,995	132,877	138,810

Note: Year of Chittagong Port is calender year, while years of Mongla Port and Payra Port are fiscal year.
Note: Commodities in containers are included.
Source: Compiled by OCDI based on data from CPA, MPA and PPA.

Table 3-2 Container Throughput of Chittagong Port, Mongla Port and Payra Port

(Unit: TEU)

Port		2017 (2016-17)	2018 (2017-18)	2019 (2018-19)	2020 (2019-20)	2021 (2020-21)	2022 (2021-22)	2023 (2022-23)	2024 (2023-24)
Chattogram	Import Laden	1,267,883	1,371,675	1,396,572	1,255,596	1,441,184	1,346,441	1,242,698	1,389,855
	Import Empty	21,153	36,286	54,230	33,681	27,889	71,777	94,915	78,964
	Export Laden	631,776	675,563	700,228	642,089	781,775	827,077	730,446	795,177
	Export Empty	645,785	714,005	739,377	655,885	681,669	591,298	584,891	666,257
	Chittagong Total	2,566,597	2,797,529	2,890,407	2,587,251	2,932,517	2,836,593	2,652,950	2,930,253
	Share	99.0%	98.5%	98.0%	97.8%	98.5%	98.9%	99.0%	99.0%
Mongla	Import Laden	10,285	15,998	23,414	25,959	17,797	12,759	11,281	11,339
	Import Empty	3,868	5,735	5,249	4,154	3,652	3,295	2,654	2,714
	Export Laden	7,031	11,537	10,617	11,300	9,821	6,479	5,528	6,516
	Export Empty	5,774	9,692	18,451	18,063	12,689	9,736	7,122	8,132
	Mongla Total	26,958	42,962	57,731	59,476	43,959	32,269	26,585	28,701
	Share	1.0%	1.5%	2.0%	2.2%	1.5%	1.1%	1.0%	1.0%
Payra	Import Laden	0	0	37	64	27	77	42	5
	Import Empty	0	0	0	0	0	0	0	0
	Export Laden	0	0	0	0	0	0	83	0
	Export Empty	0	0	0	0	0	0	0	14
	Payra Total	0	0	37	64	27	77	125	19
	Share	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	Import Laden	1,278,168	1,387,673	1,420,023	1,281,619	1,459,008	1,359,277	1,254,021	1,401,199
	Import Empty	25,021	42,021	59,479	37,835	31,541	75,072	97,569	81,678
	Export Laden	638,807	687,100	710,845	653,389	791,596	833,556	736,057	801,693
	Export Empty	651,559	723,697	757,828	673,948	694,358	601,034	592,013	674,403
	Grand Total	2,593,555	2,840,491	2,948,175	2,646,791	2,976,503	2,868,939	2,679,660	2,958,973

Note: Year of Chattogram Port is calender year, while years of Mongla Port and Payra Port are fiscal year.
Source: CPA, MPA and PPA. Compiled by OCDI.

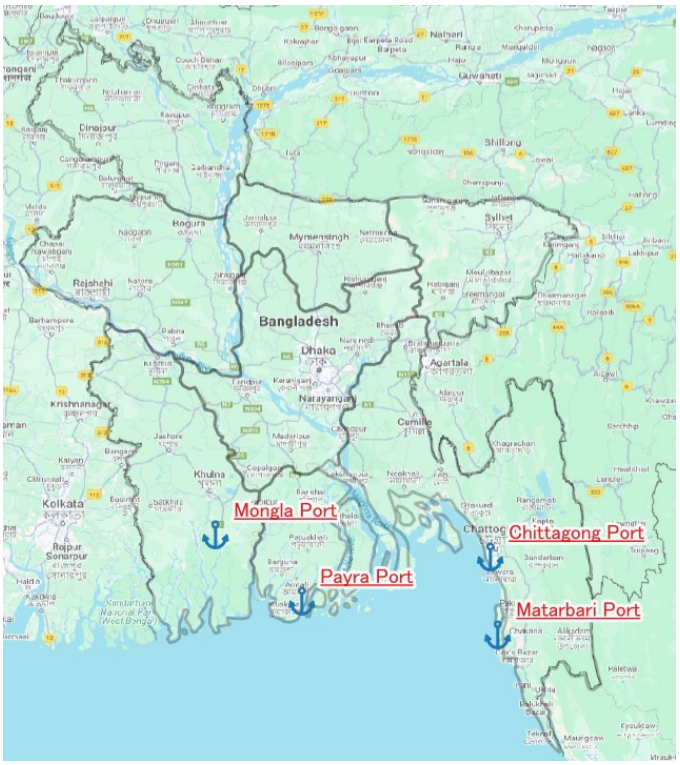
3.1.2 Maximum vessel size for each seaport

Sediment as much as 0.5 - 2.4 billion tons per year [5] (due to run-off mainly from the Himalayas) causes sedimentation in navigation channels and basins of ports in Bangladesh, while expanding not only national land areas but also water areas shallower than CDL-10m. The maximum draft of a vessel sailing in waters shallower than CDL-10m is less than 8.7m when not using tides, if the minimum under keel clearance is assumed at 15% of a vessel draft outside a port.

The water depth of the Bay of Bengal as shown in Figure 3-2 indicates that Matarbari Port is the northern limit of a suitable location for a deep sea port in Bangladesh. Therefore, minimum depth

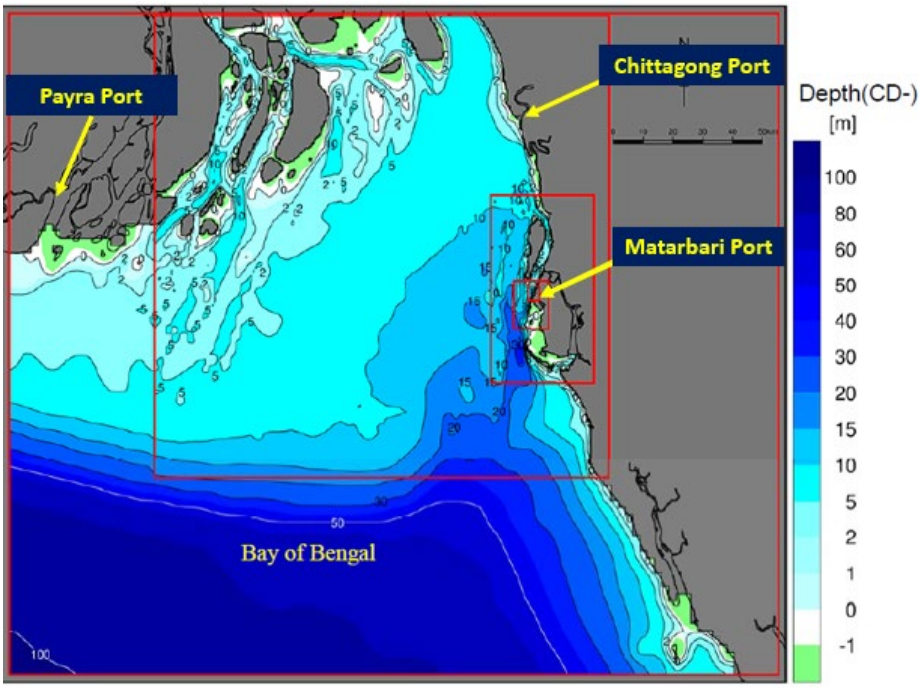
[5] Source: "Research on Sediment Distribution and Management in South-West Region of Bangladesh", Inception Report, July 2019, WAPRO and IWFM, BUET.

of channel and maximum vessel draft and length of Matarbari Port stand out from other ports as shown in Table 3-3.



Source: OCDI-QGIS

Figure 3-1 Locations of Seaports



Source: OCDI

Figure 3-2 Water Depth of the Bay of Bengal

Table 3-3 Minimum Depth of Channel and Maximum Vessel Draft & Length of Ports

Port	Minimum Depth of Channel (CDL)	Maximum Vessel Draft	Maximum Vessel Length (LOA)	Vessel Type & Size	Waiting Tide
Chittagong (Terminals in Karnaphuli River)	9-10m (approach from Kutubdia) 8-9m (estuary)	7.8-8.7m 24H[*1] (approach from Kutubdia) 10.0m with tide	200m	2000TEU Containership 2800TEU (partial loaded)	Yes
Chittagong (Bay Terminal)	9-10m (approach from Kutubdia) 14.0m[*2] (basin)	7.8-8.7m 24H[*1] (approach from Kutubdia) 11.5m[*2] with tide	300m	2000TEU Containership 4800TEU (partial loaded)	Yes
Mongla	about 6m	6.0-9.5m[*3] with tide	225m	1000TEU Containership 2800TEU (partial loaded)	Yes
Payra	max 10.5m (as of Apr. 2024)	5.7-6.3m[*4] with tide (as of Jun. 2025)	225m	20,000DWT Bulk Carrier 60,000DWT (partial loaded)	Yes
Matarbari (Phase-1)	16.0m (DPP)	14.5m 24H	350m	8000TEU Containership 70,000DWT Bulk Carrier	No
Matarbari (Phase-2)	16.0m (under F/S)	14.5m 24H	350m	8000TEU Containership 260,000m3 LNG Carrier 50,000DWT Refrigerated LPG Carrier	No
Matarbari (Stage-II)	16.0m + (MIDI Plan)	14.5m + 24H	350m +	8000TEU + Containership, etc.	No

Note *1: The minimum under keel clearance outside a port is assumed at 15% of a vessel draft.
Note *2: Information from CPA.
Note *3: Navigational information from MPA website.
Note *4: Permissible draft as of June 2025 from PPA website.
Source: OCDI

Table 3-4 Standard Values of Principal Dimensions of Container Ships

Deadweight tonnage DWT (ton)	Length overall L_{oa} (m)	Length between perpendiculars L_{pp} (m)	Molded breadth B (m)	Full load draft d (m)	Reference: Container carrying capacity (TEU)[Note]
10,000	138	130	22.2	7.9	900 (50–1,345)
20,000	175	165	27.0	10.2	1,700 (648–1,808)
23,000	184	173	28.1	10.8	1,700 (1,400–2,259)
27,000	194	183	29.4	11.9	1,800 (1,356–2,268)
30,000	201	190	30.3	11.9	2,500 (1,728–3,535)
40,000	228	215	31.8	11.9	2,800 (1,700–4,370)
50,000	269	255	32.3	12.8	4,300 (2,496–5,752)
60,000	285	272	35.5	13.5	4,700 (2,815–7,030)
100,000	338	322	45.3	14.6	8,500 (5,541–10,622)
140,000	367	353	48.5	15.8	13,100 (6,600–15,000)
165,000	378	360	52.0	16.2	14,000 (11,000–15,550)
185,000	400	382	59.4	16.2	17,700 (15,908–19,200)
200,000	400	382	59.4	16.2	19,200 (17,608–21,413)

Note: The reference values for the container carrying capacity of each DWT class are median (approximate), minimum, and maximum values.

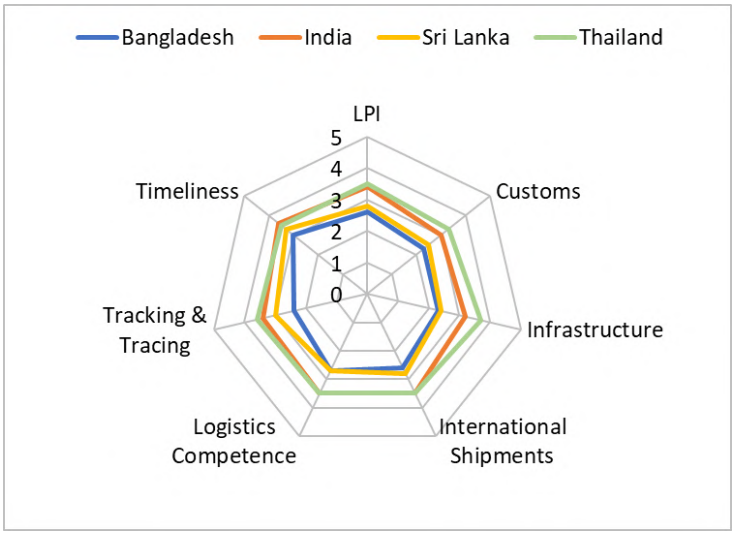
Source: Technical Standards and Commentaries for Port and Habor Facilities in Japan (2020, OCDI)

3.1.3 Logistics Performance Index (LPI) by World Bank

The logistics performance (LPI) is the weighted average of a country's scores in six key areas:

1) Efficiency of the clearance process (i.e., speed, simplicity and predictability of formalities) by border control agencies, including customs;
2) Quality of trade and transport related infrastructure (e.g., ports, railroads, roads, information technology);
3) Ease of arranging competitively priced shipments;
4) Competence and quality of logistics services (e.g., transport operators, customs brokers);
5) Ability to track and trace consignments;
6) Timeliness of shipments in reaching destination within the scheduled or expected delivery time.

The scorecards demonstrates comparative performance of all countries, regional groups and income groups. Bangladesh's LPI ranking was 73rd in 2023, with tracking & tracing receiving a particularly low score as shown in Figure 3-3.



Source: Depicted by OCDI based on WB Logistics Performance Index (https://lpi.worldbank.org/).

Figure 3-3 LPI of Bangladesh and Nearby Countries (2023)

3.2 Contribution of seaports to foreign trade and the national economy

3.2.1 Importance of foreign trade (import and export) to the national economy

Asian Development Bank (ADB) compiles Input-Output (I-O) table that provide insights on the economic relationships among sectors and enable the derivation of relevant production, trade and value chains statistics. I-O table is composed of three matrices representing; 1) inter-industry transactions, 2) output purchases of final consumers such as households and government, and 3) payments to primary factors of production as well as net taxes. These are structured in such a way that the market-clearing condition of quantity demanded being equal to quantity supplied holds for each industry. Bangladesh Input-Output Table (35 sectors) 2022 is attached in Chapter 3 of Appendix.

Bangladesh Input-Output Table 2022 (simplified version: aggregate of sectors) is shown in Table 3-5. The following can be read from this table:

- Total production of Bangladesh accounts for USD 645 billion which consists of intermediate input (aggregate of sectors) 214, intermediate input (imports) 72, net taxes 7 and value added 352. The share of imports of the total production accounts for 11%. The share of the "Textiles and Textile Products" sector in imports for intermediate demand accounts for 27%.
- The share of exports of the final demand accounts for 11%. The share of "Textiles and Textile Products" sector in exports accounts for 75%.

In this way, foreign trade (import and export) is indispensable for the national economy.

Table 3-5 Bangladesh Input-Output Table 2022 (Simplified Version; Aggregate of Sectors)

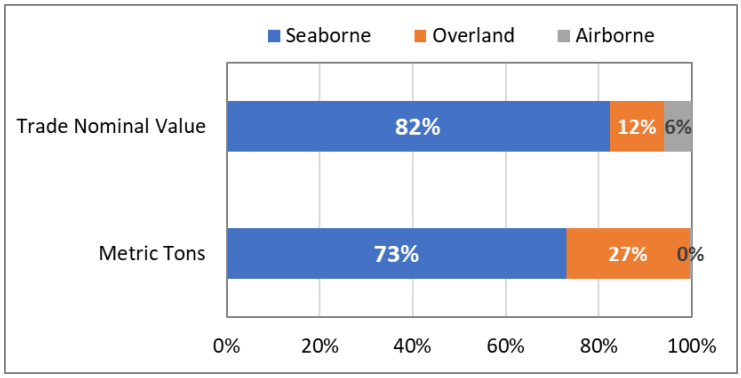
(Unit: million USD)

	Intermediate Demand (aggregate of sectors)	Final Demand (Household/ Government/ Capital Formation)	Final Demand (Exports)	Total
Intermediate Input (aggregate of sectors)	214,352 (45,373)	377,745	53,107 (39,942)	645,204
Intermediate Input (Imports)	72,037 (19,572)	27,979		100,015
Net Taxes	6,918 (427)	10,340		17,258
Value Added	351,898 (24,884)			351,898
Total	645,204 (90,255)	416,064	53,107	1,114,375

Note: The bracketed values in blue are the sectorial values of the textiles and textile products.
Source: Simplified by OCDI based on Asian Development Bank Multiregional Input–Output Database (Bangladesh, 2022)

3.2.2 Contribution of seaports to foreign trade and the national economy

The seaborne share of external trade accounts for 82% in nominal value base and 73% in metric ton base as shown in Figure 3-4. Seaports, in particular, contribute to the foreign trade and national economy by offering a gateway for import and export activities. Therefore, the gateway function of seaports should be secured in terms of both capacity and quality. Otherwise, seaports would become a bottleneck in economic activities of Bangladesh.



Note: Averages from 2020 to 2024 of Import and Export.
Source: Prepared by OCDI based on data S&P Global GTAS Forecasting database.

Figure 3-4 Shares of Bangladesh Trade by Transport Mode

3.3 Chittagong Port

3.3.1 Outline

Chittagong Port is the largest port in Bangladesh in terms of cargo handling. The volume of dry bulk cargo reached 76.8 million tons (76.6 million tons of import cargo and 0.2 million tons of export cargo) in 2024. Main item of dry bulk cargo is import cement clinker (35.1 million tons) which is usually transshipped from a bulk carrier to lighter vessels at the Outer Anchorage. Other dry bulk cargo consists of import coal, import grains, import scrap, import stone/crusher run, import sugar, import steel products, import fertilizer, import salt and other imports.

The volume of container reached 30.6 million tons (23.0 million tons of import cargo and 7.6 million tons of export cargo) in 2024. Main item of container is export ready-made garment (RMG) (3.8 million tons). There are very few international transshipment containers and international transit containers at present.

The volume of liquid bulk cargo reached 16.6 million tons (16.5 million tons of import cargo and 0.04 million tons of export cargo) in 2024. Main item of liquid bulk cargo is import petroleum products (8.7 million tons). Other liquid bulk cargo consists of import LNG, import edible oil, import LPG and export ammonia.

Table 3-6 General and Dry Bulk Cargo of Chittagong Port

(Unit: 1,000 tons)

	Commodity	2017	2018	2019	2020	2021	2022	2023	2024
Total		43,776	50,822	58,265	61,979	68,370	77,387	76,199	76,788
Import	Food Grain	5,996	5,765	6,312	6,768	5,063	3,465	5,478	6,682
	Cement	0	0		0	0	0	0	0
	Clinker, etc.	19,592	24,011	25,681	26,529	34,922	35,298	34,138	35,060
	Fertilizer	1,624	1,815	1,646	1,406	1,656	2,311	1,335	1,057
	Coal	1,514	1,993	3,983	4,068	3,043	3,752	6,532	7,611
	Salt	758	393	427	347	422	462	491	572
	Sugar	2,486	2,129	2,199	2,423	2,229	2,486	1,986	1,576
	Steel Product	1,620	1,566	1,760	1,493	1,424	1,645	1,355	1,562
	Scrap	1,043	1,084	1,767	2,375	2,571	3,758	3,199	3,607
	Stone/CR.Stone	3,646	5,710	6,762	7,859	7,888	6,533	7,154	3,261
	Others	5,415	6,216	7,549	8,510	8,849	17,501	14,376	15,636
	Sub-total	43,693	50,682	58,085	61,778	68,066	77,211	76,043	76,623
Export	Urea	0	0	0	0	20	0	0	0
	Others	82	140	180	201	285	177	156	165
	Sub-total	82	140	180	201	304	177	156	165

Note: Commodities in containers are excluded.
Note: Clinker, etc. includes materials for cement production such as Gypsum, Slag, Fly-ash and Limestone.
Source: CPA

Table 3-7 Container of Chittagong Port

(Unit: 1,000 tons)

	Commodity	2017	2018	2019	2020	2021	2022	2023	2024
Total		25,427	25,870	26,366	23,911	27,351	28,905	28,773	30,635
Import	sub-total	18,520	19,092	19,666	17,600	19,974	21,279	21,558	23,001
Export	Jute	228	159	170	186	145	124	135	115
	Jute Goods	804	643	538	473	427	441	500	451
	Leather	32	33	35	23	29	26	37	27
	Tea	0	0	0	0	0	2	7	4
	R. Garments	3,210	3,593	3,320	2,973	3,735	4,084	3,518	3,778
	Frozen Goods	134	104	105	115	157	144	83	83
	Ueara/Fert.	0	0	0	0	0	0	3	8
	Others	2,499	2,246	2,531	2,542	2,884	2,805	2,931	3,168
	Sub-total	6,906	6,777	6,700	6,312	7,377	7,625	7,214	7,634

Source: CPA

Table 3-8 Liquid Bulk Cargo of Chittagong Port

(Unit: 1,000 tons)

	Commodity	2017	2018	2019	2020	2021	2022	2023	2024
Total		9,440	10,904	10,265	8,989	11,011	6,894	15,259	16,578
Import	Edible Oil	2,274	2,835	2,570	2,557	2,328	1,364	2,149	2,063
	Petroleum Products	6,952	7,152	3,529	1,902	3,307	959	7,685	8,675
	LPG	134	184	180	249	349	364	427	502
	LNG		675	3,913	4,217	4,876	4,200	4,964	5,300
	Sub-total	9,360	10,847	10,193	8,925	10,860	6,888	15,225	16,541
Export	Naptha/Furnace Oil/G.Oil	38	15	18	0	19	0	0	0
	Ammonia	42	42	55	63	132	7	34	38
	Others	0	0	0	0	0	0	0	0
	Sub-total	79	57	73	63	151	7	34	38

Note: Commodities in containers are excluded.
Source: CPA, BPC for LPG, RPGCL for LNG

Main public mooring facilities of Chittagong Port are General Cargo Berths (GCB), Chittagong Container Terminal (CCT) and New Mooring Container Terminal (NCT) as well as Patenga Container Terminal (PCT) which are located on the right bank of the Karnaphuli River.

- GCB: 13 berths, total quay length of 2,100 m, constructed in 1954. Berths No. 1 to No. 6 were rehabilitated from 1976 - 1979.
- CCT: dedicated container berths equipped with 4 QGCs, total quay length of 450 m
- NCT: dedicated container berths equipped with 14 QGCs, total quay length of 1,000 m
- PCT: dedicated container berths, total quay length of 583 m.

Along with the increase of cargo throughput at Chittagong Port, the berth occupancy ratio has become excessively high, forcing vessels to wait for berthing as the current cargo handling

capacity lags behind demand. As a result, shipping lines are finding it difficult to maintain schedules. If this situation continues, there is a concern that international trade could stagnate which would jeopardize the economic growth of Bangladesh. Accordingly, enhancing the cargo handling capacity is an urgent issue.

3.3.2 Development plans

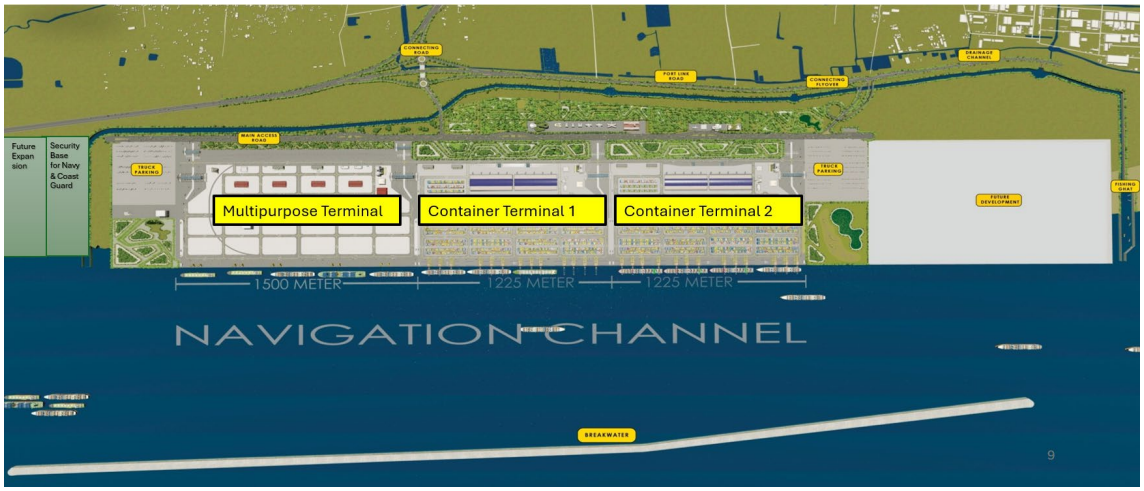
GCB re-construction plan was conceived to demolish part of the aged GCB and construct a new container terminal. However, since GCB is currently highly utilized, implementing this project seems to be difficult for the time being.

Patenga Container Terminal (PCT) with a total quay length of 583 m and 32 acres of land was constructed in 2022 at Patenga on the right bank, 7 km upstream from the estuary of the Karnaphuli River. In December 2023, the Red Sea Gateway Terminal International (RSGTI) and CPA signed a 22-year concession agreement for the operation of PCT on an Equip-Operate-Transfer basis. The operation of the terminal started in June 2024 on a limited basis. The terminal will be fully operational once QGCs and RTGs are installed.

APM Terminal has proposed the development of a new container terminal (Laldia Container Terminal (LCT) project) under a PPP scheme, 4 km upstream from the estuary of the Karnaphuli River. The total quay length is expected to be 450 m. In June 2024, PPP Authority appointed the International Finance Corporation (IFC) as a transaction advisor for this project.

In the Bay Terminal project, two container terminals (CT-1 and CT-2) and one multi-purpose terminal will be developed at Ananda Bazaar on the west coast of Chittagong or 10 km north from the estuary of the Karnaphuli River. The total quay length of each container terminal will be 1,225 m while that of the multi-purpose berth will be 1,500 m. Water depth is ISLWL (Indian Spring Low Water Level = CDL) -11.5 m. The maximum-sized vessels have to wait for the tide to enter Bay Terminal since the depth of the approach channel is ISLWL (=CDL) -10 m or less, although the draft limitation of vessels will be relaxed compared with terminals in the Karnaphuli River. Construction of a 6 km breakwater and the dredging of the channel and basin are also included in this project. In June 2024, the World Bank's Board of Executive Directors approved $650 million in funding for this breakwater and the dredging works. The multi-purpose terminal will be constructed by CPA. CT-1 and CT-2 will reportedly be constructed on a PPP basis by PSA International and DP World.

Future container throughput capacity of Chittagong Port is estimated at 7.5 million TEU if all the above projects are completed.



Source: CPA

Figure 3-5 Layout of Bay Terminal

Table 3-9 Future Container Throughput Capacity of Chittagong Port

Terminal	Container Throughput Capacity (million TEU)
GCB/CCT/NCT	(3.5 -) 2.5
PCT	0.5
LCT	0.9
Bay Terminal	3.6
Total	7.5

Note: The capacity of GCB/CCT/NCT will gradually decrease due to the relative obsolescence of the facilities.
Source: Prepared by OCDI based on information from CPA

3.3.3 Challenges and Core Issues

Challenges and core issues of Chittagong Port are as follows:

- Vessel size to enter Karnaphuli River is limited; maximum draft is 10m and maximum length is 200m.
- Mixture of city traffic and port traffic results in traffic congestion.
- In-yard delivery for import containers, long staying containers, and direct loading of export containers to a vessel from outside trailers are issues that need to be addressed.
- The introduction of PPP with the participation of international terminal operators to port terminals has recently started.
- There are mega projects which need a substantial loan and heavy repayment in the future.
- Obsolete facilities in General Cargo Berth will need to be dismantled; it will be necessary to convert this area to another use. Option A is to construct a new cargo berth while option B is to gradually convert to an attractive waterfront area.

- Hinterland connectivity needs to be enhanced in response to the increase in cargo demand. In addition, measures to shift modal share need to be addressed.
- The capacity of outer anchorage for ship-to-ship lightering operation may have to be expanded to cope with the increase in bulk cargo demand.
- Close coordination with stakeholders such as CIQ (including Customs' scanner), business society are indispensable.

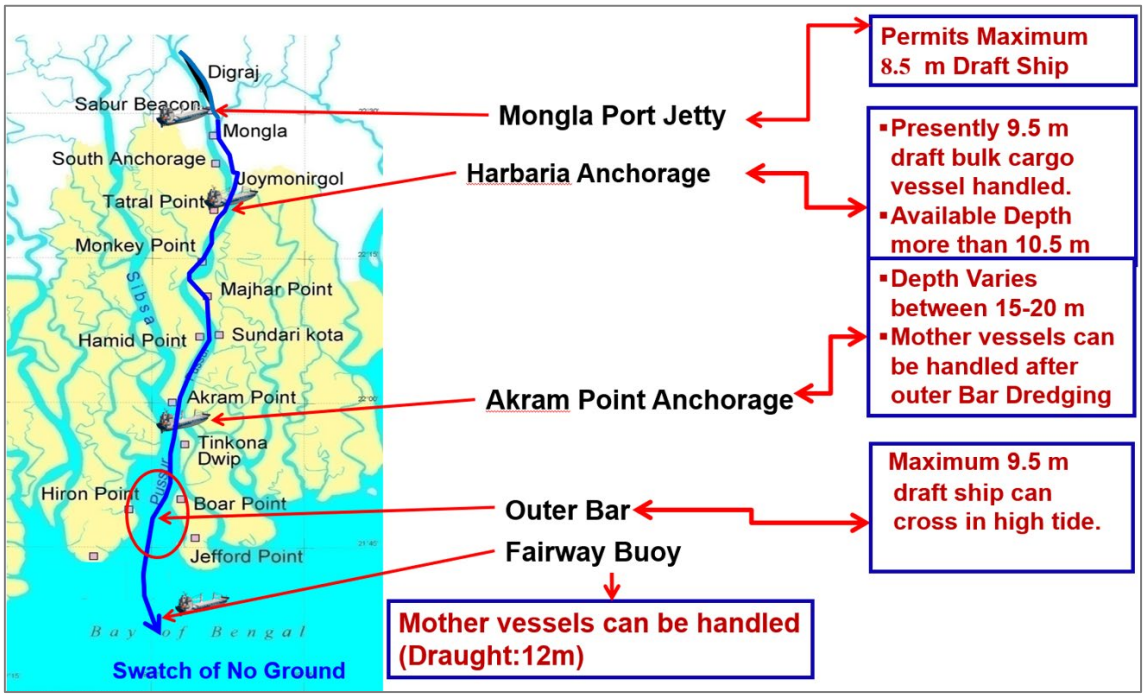
In particular, the current main terminals NCT/CCT/GCB are operating at over capacity, and there is an urgent need to increase handling capacity of the port. For example, due to a shortage of CY space, the CY cut procedure for export containers and efficient yard planning cannot be implemented. In addition, these terminals are located within rivers and subject to access restrictions for vessels such as waiting tides and vessel size restrictions.

3.4 Mongla Port

3.4.1 Outline

Mongla Port is managed by Mongla Port Authority (MPA) and located on the east bank of the Pashur River, 90 km upstream from the Bay of Bengal, Bagerhat District, Khulna Division, western Bangladesh. The minimum depth and the length of the access channel to this port are 6.1 m and 70 nautical miles (131 km), respectively. Maximum length of vessel which can enter the port is restricted to 225 m. By making use of the tidal range of 1.5 m to 4.0 m, vessels up to 8.0 - 8.5 m draft can enter to jetties. As for jetties constructed in 1975, there are 5 berths of 186 m in length where vessels of 20,000 DWT (carrying capacity of 1,500 TEUs in case of a container ship) can secure alongside jetties. Although Padma Bridge was constructed in June 2022, there has been no increase in port cargo so far.

Main import commodities are coal, fertilizer, clinker, etc. and LPG. Most of dry bulk cargoes are handled through the STS lightering operation at Fairway Buoy, Hiron Point, Akram Point, Sundari Kota Anchorage and Harbaria Anchorage. Main export commodities in container are local products such as jute goods and frozen fish.



Source: MPA

Figure 3-6 Locations of Facilities of Mongla Port

Table 3-10 General and Dry Bulk Cargo of Mongla Port

(Unit: 1,000 tons)

	Commodity	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Total		6,842	8,696	10,044	9,609	10,512	10,147	8,646	9,548
Import	Food Grain	441	896	131	169	273	515	432	420
	Clinker, etc.	3,202	3,703	4,235	4,192	4,684	3,890	2,337	2,394
	Fertilizer	1,466	1,813	2,107	1,855	1,953	2,632	3,117	2,974
	Coal	1,264	1,768	2,724	2,549	2,715	2,133	2,379	3,357
	Salt	19	15	0	0	0	0	0	0
	Steel Product	27	1	0	0	4	32	15	47
	Stone	0	0	0	0	547	367	128	255
	Others	424	500	847	845	335	528	223	101
	Sub-total	6,842	8,696	10,044	9,609	10,511	10,097	8,632	9,548
Export	Sub-total	0	0	0	0	1	50	14	0

Note: Commodities in containers are excluded.
Note: Clinker, etc. includes materials for cement production such as Gypsum, Slag, Fly-ash and Limestone.
Source: MPA

Table 3-11 Container of Mongla Port

(Unit: 1,000 tons)

	Commodity	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Total		310	518	617	654	509	312	317	374
Import	sub-total	139	224	347	371	271	159	188	209
Export	Jute	26	50	31	30	14	5	2	1
	Jute Goods	20	54	58	67	61	30	18	30
	Fish	31	33	35	34	33	31	23	12
	Clay Tiles, Betel Nut	5	6	6	4	5	3	6	5
	Others	4	4	5	6	6	8	16	35
	Sub-total	86	147	135	142	119	77	65	82

Source: MPA

Table 3-12 Liquid Bulk Cargo of Mongla Port

(Unit: 1,000 tons)

	Commodity	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Total		447	650	789	916	1,043	1,010	1,006	1,029
Import	Petroleum	138	114	97	66	55	77	83	79
	LP Gas	309	536	692	850	988	932	923	950
	Sub-total	447	650	789	916	1,043	1,010	1,006	1,029
Export	Sub-total	0	0	0	0	0	0	0	0

Source: MPA

3.4.2 Development Plans

(1) Upgrading of Mongla Port (LOC)

Upgradation of Mongla Port financed by Indian 3rd Line of Credit was approved by ECNEC on 18 February, 2020. Total project cost is BDT 60.15 billion of which BDT 15.55 billion will come from the government of Bangladesh and BDT 44.59 billion will come from India's Exim Bank. The consultant for the engineering services has already been procured, but the procurement of the contractor has not yet begun. The project was initially expected to be completed by June 2024 and will increase container handling capacity by 0.4 million TEU. The project calls for the construction of 2 container terminals (berths No.1 & 2, 2 x 200m), service vessel jetty, shed and office, extension of port building, construction of MPA tower, port residential complex with community facilities, mechanical workshop, equipment yard, and marine workshop complex.

(2) Dredging of Inner Bar area

Dredging of Inner Bar area of Mongla Port Channel was approved by ECNEC on 29 January, 2020. Total project cost is BDT 9.922 billion. The main objective of the project is to ensure necessary depth for ships having 9.5 to 10 meter draft up to the jetty of the port (the total length of dredging area of 23.4 km). The project includes 23.7 million m^3 of dredging as well as the construction of dykes.

(3) Expansion and Modernization of Mongla Port Facilities (G2G China)

Bangladesh and China signed a MOU in 2016 to develop container handling facilities (berths No. 10 & 11, total length of 368m, container handling yard etc.). This project (G2G China) with a total cost of BDT 40.68 billion was approved by the ECNEC in February 2025 and passed CCGP in March 2025. Chinese company CCECC has already been appointed as the contractor. The project is expected to be completed at the end of 2028.

(4) Construction of 2 Jetties under PPP framework

In 2018, Saif Power Tech started the construction of jetties (berths No.3 & 4), yard, etc. for container handling on a PPP basis with an estimated cost of 18.08 billion BDT, but the construction work has been suspended after pile driving since 2024.

(5) Others

Maintenance dredging in the Pashur Channel with a total cost of 15.38 billion BDT was approved by ECNEC in 2025. The project is expected to be completed in June 2029.

MPA is requesting MOS for the feasibility study of river bank control of the Pashur River with the cost of 0.295 billion BDT as well as the acquisition of 3 dredgers (1 unit of 3,500 m3 trailing suction hopper dredger and 2 units of 28-inch cutter suction dredger) with the cost of 13.99 billion BDT.



Source: OCDI on Google Map

Figure 3-7 Jetty Development Projects of Mongla Port

3.4.3 Challenges and Core Issues

Challenges and core issues of Mongla Port are as follows:

- Low utilization of MPA jetties (BOR = 8% << 65%) even since the opening of Padma Bridge is observed.
- Construction work in the PPP terminal project has been suspended.
- Railway connection has been completed but service frequency is still low. Efforts to increase service frequency are desirable.
- Container vessels currently call Mongla Port only after calling at Chittagong.
- Navigation up and down the river to/from MPA jetties takes about 10 hours.
- Long-term financial soundness needs to be examined if MPA obtain a loan.
- Lack of dredged material dumping site.
- Lack of air connectivity near Mongla Port and greater Khulna area.

Table 3-13 Berth Occupancy Ratio by AIS Equipped Vessels of MPA Jetties (2024)

Vessel Type	No. of Call	Total Berth Occupancy (day)	Berth Occupancy Ratio (5 berths)
fully cellular containership	56	50	
general cargo with container capacity	21	34	
general cargo	16	33	
Liquefied Petroleum Gas Carrier	24	8	
Combined chemical and oil tanker	2	3	
vehicle carrier	21	15	
Total	140	143	8%

Note: It is assumed that one vessel occupies one berth.
Note: Small vessels such as tugs are omitted.
Note: Advisable BOR by UNCTAD is less than 65% for continuous 5 berths.
Source: OCDI

The reasons that MPA jetties remain underutilized even after Padma Bridge opened are as follows:

- The preference of importers and exporters in Dhaka in selecting a container port seems to be Chittagong Port. The reasons are:
  - Importers prefer the first calling port in Bangladesh in order to ensure the earliest possible delivery. Chittagong Port is currently the first calling port. However, Matarbari Port has the potential to become a first port of call in future because it can accommodate large vessels.
  - Most exporters are RMG buyers who carry out container consolidation at private off-docks around Chittagong Port.
  - Importers and exporters prefer high service frequency of ships which is currently only offered by Chittagong Port.

- Vessel operators prefer Chittagong Port (and perhaps Matarbari Port in future) for the following reasons:
  - Vessel operators prefer more profitable route/port taking into account container volume and freight rate, as well as additional costs including deviation cost.
  - Deep sea port provides vessel operators with flexibility in deploying container ships of various sizes.
- Direct cost of covered van to ports from Dhaka consists of freight and bridge tolls. In addition, cargo owners are sensitive to time cost. Although Mongla Port is the nearest from Dhaka, Chittagong Port is the cheapest in terms of generalized cost which includes time cost.

Table 3-14 Costs of Covered Van to Ports from Dhaka

Port	Road Distance (km)	Travel Time (hr)	Bridge Tolls (BDT)	Generalized Cost (1) (USD/CV)	Additional Time (hr)	Generalized Cost (2) (USD/CV)
Mongla	234	4.5	3,500	299	84	341
Payra	289	6.6	4,585	352	84	394
Chittagong	260	5.4	800	297	0	297
Matarbari	383	8.5	800	397	0	397

Note: Road distances and travel times are extracted by using Google Route Search (average of 5 week days in April 2025).
Note: Covered van freight is assumed to be = 80 USD + 0.8 USD * Dist (km)
Note: Generalized cost is assumed to be = Covered van freight + 0.5 USD/hr * Time (hr)
Note: Additional times of Mongla and Payra compared with Chittagong are set taking into account low service frequency of ships.
Note: As for Matarbari, potential savings in temporary storage at a transship hub ports are not taken into account.
Note: Exchange Rate USD 1 = 120.4 BDT (JICA monthly exchange rate in Feb. 2025)
Source: OCDI

To increase container demand, the following tasks should be conducted.

- Examine why the container volume has not increased after Padma Bridge opened.
  - (Import) Disadvantage of being the last calling port,
  - (Export) Lack of RMG buyer's consolidation function,
  - (Common) Low service frequency, long navigation time
  - (Action of MPA) Survey of cargo owners' intention located in Khulna Div. first
- Make efforts to increase the service frequency of containership.
  - (Hop-Step-Jump method) 1 call per week ⇒ 2 calls ⇒ daily
  - (Action of MPA) Marketing and collaboration with industry promotion to increase local container from/to Khulna Div. first.
- If a new service route which Mongla Port becomes the first calling port emerges, an increase in import containers to Dhaka would be expected. Examine the possibility of realizing this new service route.

- Make efforts to induce RMG buyers' consolidation function including direct solicitation to buyers as well as consolidators in Bangladesh. This would result in an increase in export containers.

It should be noted that a private company recently tried to launch an inter-seaport container feeder service in Bangladesh such as Chittagong-Mongla-Chittagong but unfortunately abandoned its efforts due to strict requirement from Customs, which made the service commercially infeasible as shown in Table 3-15.

Table 3-15 Required Documents and Days for Inter-Seaport Container Feeder Service

	Export (Laden): Mongla-Chittagong		**Export (Laden): Pangaon-Chittagong**	
	Required document/procedure	Relevant authority	Required document/procedure	Relevant authority
Feeder Vessel Operator	1. General Segment (=EGM) 2. Final Entry 3. Port NOC (No Objection Certificate) 4. Tax NOC (No Objection Certificate) 5. Custom Port Clearance **Total 2-3 days**	Customs Customs Port Local Tax Office Customs	1. Loading Permission From (POL, ie Pangaon) 2. Discharge permission at (POD, ie Chittagong) **Total 1 day**	Port Port
MLO	1. Transshipment Clearance **Total 10-14 days (After Discahrge at Transshipment Port, ie Chittagong)**	Customs & Port	1. Normal Customs Clearance **Total days 5-7 Days Max. (after loading at POL, ie Pangaon)**	Customs & Port

	Import (Laden): Chittagong-Mongla		**Import (Laden): Chittagong-Pangaon**	
	required document/procedure	relevant authority	required document/procedure	relevant authority
Feeder Vessel Operator	1. General Segment (=IGM) 2. Final Entry 3. Port NOC (No Objection Certificate) 4. MMD NOC 5. Shipping Office NOC 6. Light Dues 7. Tax NOC (No Objection Certificate) 8. Custom Port Clearance **Total 3 days**	Customs Customs Port Mercentile Marine Office Shipping Office Customs Local Tax Office Customs	1. Loading Permission From (POL, ie Chittagong) 2. Discharge permission at (POD, ie Pangaon) **Total 1 day**	Port Port
MLO	1. Trans Shipment Clearnace **Total 10-14 days (After Discahrge at Transshipment Port, ie Chittagong)**	Customs & Port	1. Normal Customs Clearance **Total 4-5 days (after loading at POL, ie foreign port MLO' vsl comes from)**	Customs & Port

Source: OCDI base on hearing from a local feeder service company as of Oct. 2025.

However, by encouraging this type of inter-seaport container feeder service with high frequency, a port can attract nearby port users who are transporting their cargo via roads over long distances and at high cost to Chittagong because frequent ocean-going shipping services are not currently available. The concept of inter-seaport feeder service by waterway will contribute to the promotion of container operations not only at Mongla but also at other seaports in Bangladesh, like Payra and Matarbari.

3.5 Payra Port

3.5.1 Outline

Payra Port, located on the west bank of the Rabnabad channel in Patuakhali district, is managed by Payra Port Authority based on the Payra Port Authority Act 2013. Payra Port started operation in 2016 with ship-to-ship lightering operation on a limited scale. Until September 2025 a total of 4,778 domestic and foreign international ships have been handled safely. As of 2022, vessels with a draft of 7.5 m can enter this port. Main challenges of this port are securing and maintaining the

depth of the access channel which stretches 38 nautical miles (70 km) to the outer anchorage. In 2022 a development scheme was launched including dredging of the navigation channel as shown in Table 3-16.

Till Now and before the starting of Andharmanik Bridge and PPFT Terminal in July 2026, the main import commodity tends to remain is coal for power plants.

The capital dredging volume of the channel (Length: 75 km, Depth: 10.5 m, Width: 100 - 125 m for 225 m length vessel) was 64 million m3 while the maintenance dredging volume for 14 months was 54 million m3 and it was completed in December 2024. By that means, vessels with a capacity of 40,000-45,000 DWT were able to enter/exit the channel. Change in the maximum permissible draft of Rabnabad Channel in Payra Port is shown in Figure 3-9. After the dredging by Jan De Nul was completed, the maximum permissible draft rapidly became shallower. This implies that a considerable maintenance dredging would be required to maintain the minimum depth of the channel.

Table 3-16 Development Schemes Launched in October 2022

Facility	Investment Cost	Construction
Navigation Channel (Length: 75 km, Depth: 10.5 m, Width: 100 - 125 m for 225 m length vessel)	60.45 billion BDT including VAT & TAX (capital dredging 39.80 billion BDT, maintenance dredging 20.65 billion BDT until 2024), financed through Bangladesh Infrastructure Fund.	2022 - 2024 (by Jan De Nur)
Multi-purpose Terminal	12.23 billion BDT	
Six-lane Road (L = 6.35 km)	6.74 billion BDT	2022 - 2026 (by Spectra Engineers Ltd)
Four-lane Bridge (L = 1.18 km)	10.88 billion BDT	2022 - 2026
Ten Ships	3.84 billion BDT	
Total	94.14 billion BDT	

Source: PPA

Table 3-17 General and Dry Bulk Cargo of Payra Port

(Unit: 1,000 tons)

	Commodity	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Total		222	193	324	655	1,882	1,937	2,742	3,959
Import	Cement Clinker	13							166
	Coal				564	1,851	1,897	2,496	3,509
	Stone Chips	156	186	301	91	31	39	145	239
	Plant Machinery	53	7	23			1	87	45
	Others								
	Sub-total	222	193	324	655	1,882	1,937	2,727	3,959
Domestic	Sub-total				0	39	335	1,143	1,026
Re-Export	Sub-total	0	0	0	0	0	0	14	0

Note: Domestic means throughputs by inland vessels which transport imported coal, etc. from Chittagong port and some local cargoes.
Source: PPA

3.5.2 Development Plans

(1) Mid-term and long-term plans

Under the mid-term plan, according to PPA, the Government will operate Performance-based maintenance dredging, formation of an own dredging fleet (consisting of 4 dredgers), Construction of 2 container terminals (each 1400 meters) and 1 multipurpose terminal (1200 meters) under the PPP (Public- Private Partnership) model, allocation of plots on 1220 acres of land for the establishment of port- centric industrial factories, implement the 'Green Port' initiative, leasing of 1200 acres of land for renewable power generation within the port area, Establishment of LNG/LPG/liquid bulk terminals (under consideration), Construction of ship repair and maintenance facilities on 100 acres of land, Implementation of a development project for acquiring Payra Port's own marine vessels and equipment, establishing a marine workshop, and developing ancillary works including berthing facilities.

Other associated facilities such as EZ, airport. port city, dockyard/shipyard, as well as eco-tourist attractions etc. will also be established. However, as mentioned in the previous section, considerable maintenance dredging would be required to maintain the minimum depth of the channel which is one of the most serious issues facing Payra Port.

(2) PPP Coal/Bulk Terminal Project

In line with the directives of the Ministry, the discussed project has been implemented under alternative financing instead of the PPP model. According to the agreement between RNPL and the Payra Port Authority, RNPL has completed the construction of the 340 meters long Coal Handling Jetty. Beside RNPL Jetty there is another 575 meters long Coal Handling Jetty which is located in BCPCL are also situated in port limited area. At present, the jetty is being operated

under BCPCL. However, an NOC has been issued in response to the proposal for handing over the jetty to Payra Port Authority after a specified period.

(3) PPP Container Terminal Project

For the implementation of the two projects under the PPP modality, Container Terminal No. 1 was approved by the CCEA on 20 March 2024, and Container Terminal No. 2 was approved on 14 March 2024. To implement these projects, a Project Assessment Committee and a Project Delivery Team have already been formed in accordance with the PPP Policy and Guidelines 2018. In addition, Terms of Reference (TOR) for the appointment of a Transaction Advisor have been prepared. These two TORs will be submitted to the PPP Authority on 28 August 2025 and 26 September 2025, respectively.

(4) Potential capacity

Potential capacity of different terminals of Payra Port are shown in Table 3-18.

Table 3-18 Potential Capacity of Payra Port

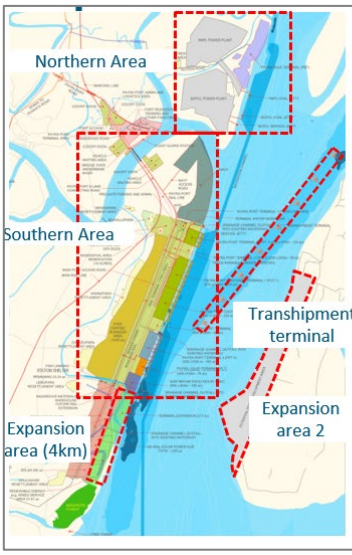
Terminal	Quay Length	Estimated Handling Capacity
Payra Port Terminal 1	650m	0.8m TEU and 1m MT Bulk
Payra Port Terminal 2	600m	0.5m TEU and 1m MT Bulk
Payra Container Terminal 1	1,400m	2.0m TEU
Payra Container Terminal 2	1,400m	1.8m TEU
Payra Port Terminal 3	600m	0.7m TEU
Payra Port Terminal 4	1,200m	1.7m TEU and 2m MT Bulk
Payra Port Terminal 5 Phase 1	1400m	1.8m TEU
Payra Port Terminal 5 Phase 2	500m	0.5m TEU
Payra Liquid Bulk Terminal	700m	POL and LNG/LPG (as per tank capacity)
Terminal Expansion Area (beyond 2045)	2,200m	3.3m TEU and 4m MT Bulk
BCPCL and RNPL Coal Jetty	900m	9m MT Coal
Ship Repair	1200m	
Ship Building	800m	
Total	12,350 m	13 m TEU, 8m MT Bulk and 9m MT Coal (plus LNG/LPG/POL as required)

Source: PPA

(5) Others

An agreement was signed on February 14, 2019 between PPA and Bureau of Research, Testing and Consultation (BRTC) - Bangladesh University of Engineering and Technology (BUET) associated with Royal HaskoningDHV for the preparation of Payra Port Master Plan. The final Master Plan was handed over to PPA through a Master Plan Seminar on 20 July 2025.

Another agreement was signed on April 23, 2019 between PPA and Kunhwa Engineering and Consulting Company Limited for consultancy services related to the construction of the first terminal of Payra Port, connecting road, bridge over Andharmanik River and related facilities. The PPFT Terminal and the Andharmanik Bridge is scheduled to be completed by July 2026.



Terminal	Commodities	Berths
Paya Port Terminal 1	Containers, Steel, Fertilizers, Vehicles, Grain	3 berths (650m)
Payra Port Container Terminal 1	Containers	6 berths (1,400m)
Payra Port Container Terminal 2	Containers	6 berths (1,400m)
Payra Port Terminal 4	Containers	5 berths (1,200m)
Payra Port Liquid Terminal	Edible oils LPG/Petroleum products	1 edible oil berth (235m) 2 LPG/Petroleum berths (470m)
Payra Bulk Terminal	Construction materials	1 berth (235m)
Transshipment Terminal	Competitive coal Construction materials	10 transshipment locations

7 Terminals with 24 berths and 5,590 m of waterfront.
4 km of waterfront available for expansion.

Source: Seminar material on 20 July 2025, Royal HaskoningDHV

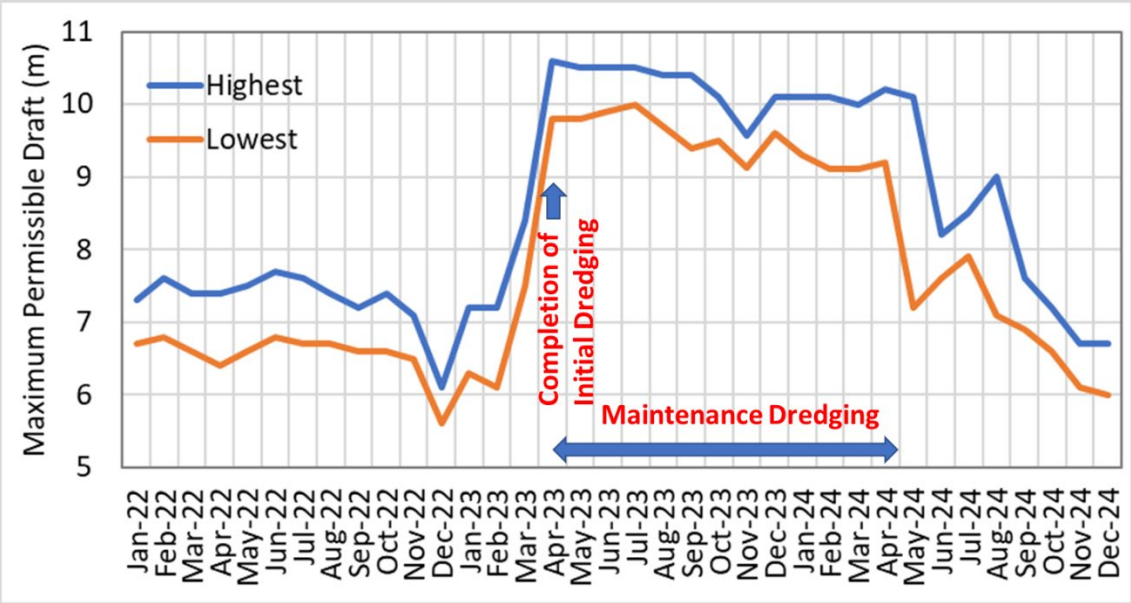
Figure 3-8 Proposed Master Plan of Payra Port (full development)

3.5.3 Challenges and Core Issues

Challenges and core issues of Payra Port are as follows:

- Huge sedimentation occurred after dredging was carried out in Parya Port as shown in Figure 3-9. The deeper the channel is dredged below the original depth, the greater the amount of sedimentation.
- As for coal import in Payra Port, additional annual cost without maintenance dredging is roughly estimated at USD 40 million for 8 million tons of coal import as shown in Table 3-19. This amount is regarded as a benchmark in considering maintenance dredging in the coming years. On the other hand, additional annual cost without maintenance dredging estimated by PPA is USD 62 million instead of USD 40 million, although the breakdown and its justification have not been disclosed.

- Rail connection plan which would cost BDT 280 billion to realize is not expected to be implemented in the near future. However necessary measures to be taken for constructing the Bhanga–Payra rail link to enable the full- fledged operation of Payra Port after the completion of Andharmanik Bridge and PPFT terminal by July 2026, on condition that the economic analysis justifies the project. Besides, considering tourism in Kuakata and establishment of Patuakhali EPZ and Economic Zone of Payra Port, future demand will be increased for rail connection.
- Acquired land of 5,391 acres should be used as early as possible.
- To commence maintenance dredging activities on condition that the economic analysis justifies the project.
- To take initiatives for establishing industrial enterprises within the port area and consider proposals from interested investors.
- Lease land within the port area for renewable energy generation in line with the implementation of the "Green Port" initiative.
- Upgrade the Bhanga - Kuakata highway (connected to the port) to at least four lanes before the traffic congestion happens.



Note: Permissible draft is calculated based on tidal range at KAUAR CHAR and all incoming/outgoing vessels need to cross KAUAR CHAR following the chart.
Source: Prepared by MPCT based on the data from PPA website, https://ppa.gov.bd/site/page/890309ef-831d-4d54-9baa-7f5cdd5112f4 (access: Dec. 2024)

Figure 3-9 Maximum Permissible Draft of Rabnabad Channel in Payra Port

Table 3-19 Additional Costs without Maintenance Dredging in Payra Port

1. Barge Transport Costs without Maintenance Dredging

Coal Import (ton/year)	Barge Share	Unit Cost of Barge Transport (BDT/ton)	Unit Cost of Barge Transport (USD/ton)	Barge Costs (USD/year)
8,250,000	50%	1,066	9.0	37,208,000

Note: Capacity of coal-fired power plant: 1320MW for BCPCL (1st Phase) and 1320MW for RPCL.
Note: Coal volume is assumed to be 7.5 million ton for 2400 MW coal-fired power plant.
Note: Barge share or STS share is assumed to be 50%.
Note: Unit cost of barge transport is 929+62 BDT/ton based on BWTCC rate as of 4 Nov 2024 from Chittagong Outer Anchorage to Payra. STS stevedorage of 75 BDT/ton is added.
Note: Exchange rate 118 BDT/USD as of Jan 2025

2. Mother Vessel Demurrage Cost without Maintenance Dredging

Daily Costs (USD/day)	Additional Days (day)	Additional Costs (USD/year)
15,000	206	3,093,000

Note: Daily costs is assumed refering Clarksons Panamax average earnings.
Note: Barge share or STS share is assumed to be 50%.
Note: STS discharge rate is assumed to be 10,000 tons per day.
Note: Discharge rate at the jetty in Payra is assumed to be 20,000 ton per day.

3. Total Additional Costs without Maintenance Dredging

40,301,000	USD/year

Note: In the future, as freight volumes increase, total additional costs will also increase.

Source: OCDI

On the other hand, advantages / sales points of Payra Port are as follows:

- It is the only seaport in Barisal Division.
- Land of 6,329 acres to be reclaimed is available for port, industry and renewable energy.
- It offers the shortest (132 NM) inland waterway to Dhaka and it is also deep (IW class 1).
- It has a wide and calm inner anchorage (for 15 ships).
- Design crest level of the jetty and land (CDL +9.5 m) is sufficient to withstand storm surges.

Taking into account the above, the potential of Payra Port is summarised as follows:

- It can be developed as an ocean gateway for Barisal Division, etc.
- Potential exists in the following functions taking into account the above advantages:
  - CBU import base for medium size car carrier (note: need to assess the compatibility of a PCC ramp with the high crest level of the jetty)
  - LPG base for 5,000 DWT class LPG carrier (note: need to check the market strategy of LPG suppliers)

- Construction material base such as stone
- Food, fertilizer, chemicals, jute and jute products, and fruits can be handled through this port including with inter-seaports feeder services.
- Other suitable function within the constraints of water depth

- Available land should be used as early as possible including allowing temporary use for renewable energy, etc. in order to generate the national economic benefit.
- Payra Port has the potential to meet the country's growing commercial demand in the long term. However, further development is subject to the water depth of the channel and the inducement of industries and investment from the private sector. The efficiency of future investments and maintenance should be considered without obsessing with past investment.
- Payra Port has the potential to serve as one of alternative ports to Chittagong Port in emergencies within the scope of the government's fiscal capacity.

3.6 Matarbari Port

3.6.1 Outline

Matarbari Port or Matarbari Deep Sea Terminal (DST) in other word, located in Moheshkhali Union of Cox's Bazar District, is managed by Chittagong Port Authority based on Chittagong Port Authority Act 2022.

Since Matarbari Port is the only deep sea port in Bangladesh, a coal jetty, navigation channel and breakwaters for the Matarbari Ultra Super Critical Coal-Fired Power Project have been constructed and is currently in operation. Two FSRUs for import LNG and the SPM for import crude oil have also been constructed and is currently in operation. These facilities were incorporated into the extended port limit of Chittagong Port in 2019.

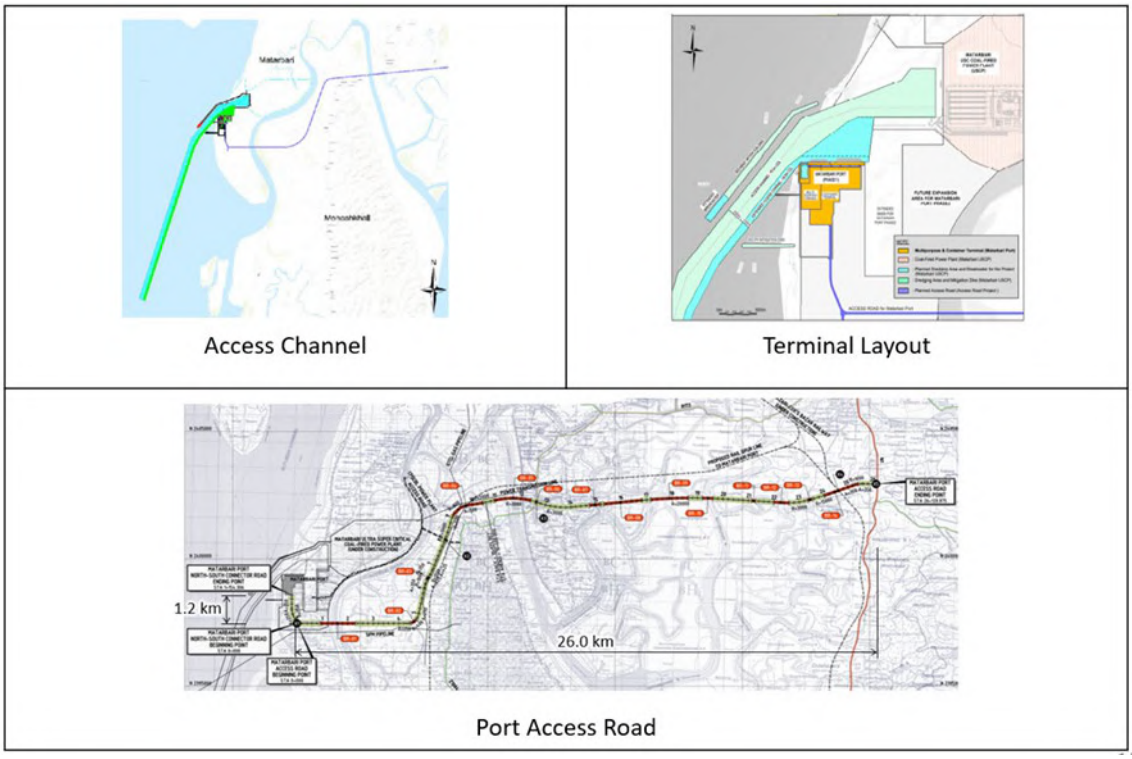
In Bangladesh, the cargo demand of foreign trade has been strong and the annual GDP growth rate has exceeded 6% over the past 10 years. The container handled at Chittagong Port, which handles 98% of the container in Bangladesh, increased from 1.34 million TEU in 2010 to 2.02 million TEU in 2015, 2.89 million TEU in 2019 and 2.93 million TEU in 2021. The recent container levels are exceeding the handling capacity of the container terminals in the port resulting in ships constantly waiting to berth. On the other hand, main public facilities of Chittagong Port are located on the right bank at 10 km to 15 km upstream of the Karnaphuli River. The maximum draft of vessels entering the port is limited to 9.5m - 10.0m while the maximum length over all of vessels is limited to 190m. For this reason, the loading capacity of vessels entering the port is 1,800 TEU on average (2,700 TEU at the maximum when draft adjustment within 9.5m is carried out). In order to meet the future cargo demand and taking into account the global trend toward deploying larger vessels, it is urgently necessary to develop a new port with a sufficient water depth that can accommodate larger vessels. Based on this situation, the Japanese ODA loan project "Matarbari Port Development Project" was planned to meet the increasing cargo demand,

accommodate larger vessels and thereby contribute to the promotion of international trade of Bangladesh.

3.6.2 Development Plan

(1) Matarbari Port Phase-1 / Stage I

Matarbari Port Development Project Phase-1/ Stage I consists of a multipurpose terminal and a container terminal with the capacity of 0.8 million TEUs. The jetty will have a depth of 16 m below Chart Datum and a total length of 760 m. Construction of the Port Access Road which will stretch 27 km to NH-1 from the port is ongoing and expected to be completed in 2029. Total budget in DPP approved by ECNEC in 2024 is BDT 243.81 billion.

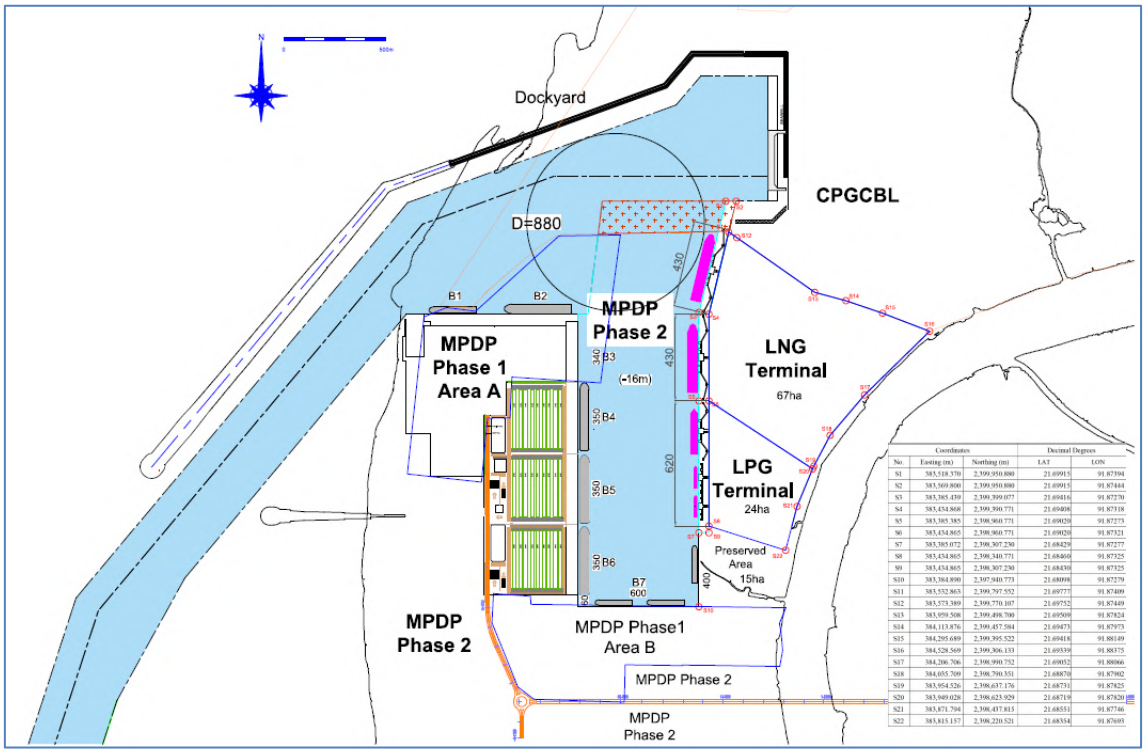


Source: Matarbari Port Development Project F/S, 2018 JICA

Figure 3-10 Matarbari Port Phase-1 Layout Map

(2) Matarbari Port Phase-2 / Stage I

Matarbari Port Phase-2 / Stage I consists of a LNG terminal and a LPG terminal in addition to container terminals with the capacity of 2.1 million TEU. Feasibility study for the Phase-2 project is undertaken by CPA. Chakaria Intermodal Yard (IMY), multipurpose terminal, private off-docks are also planned in the Phase-2.

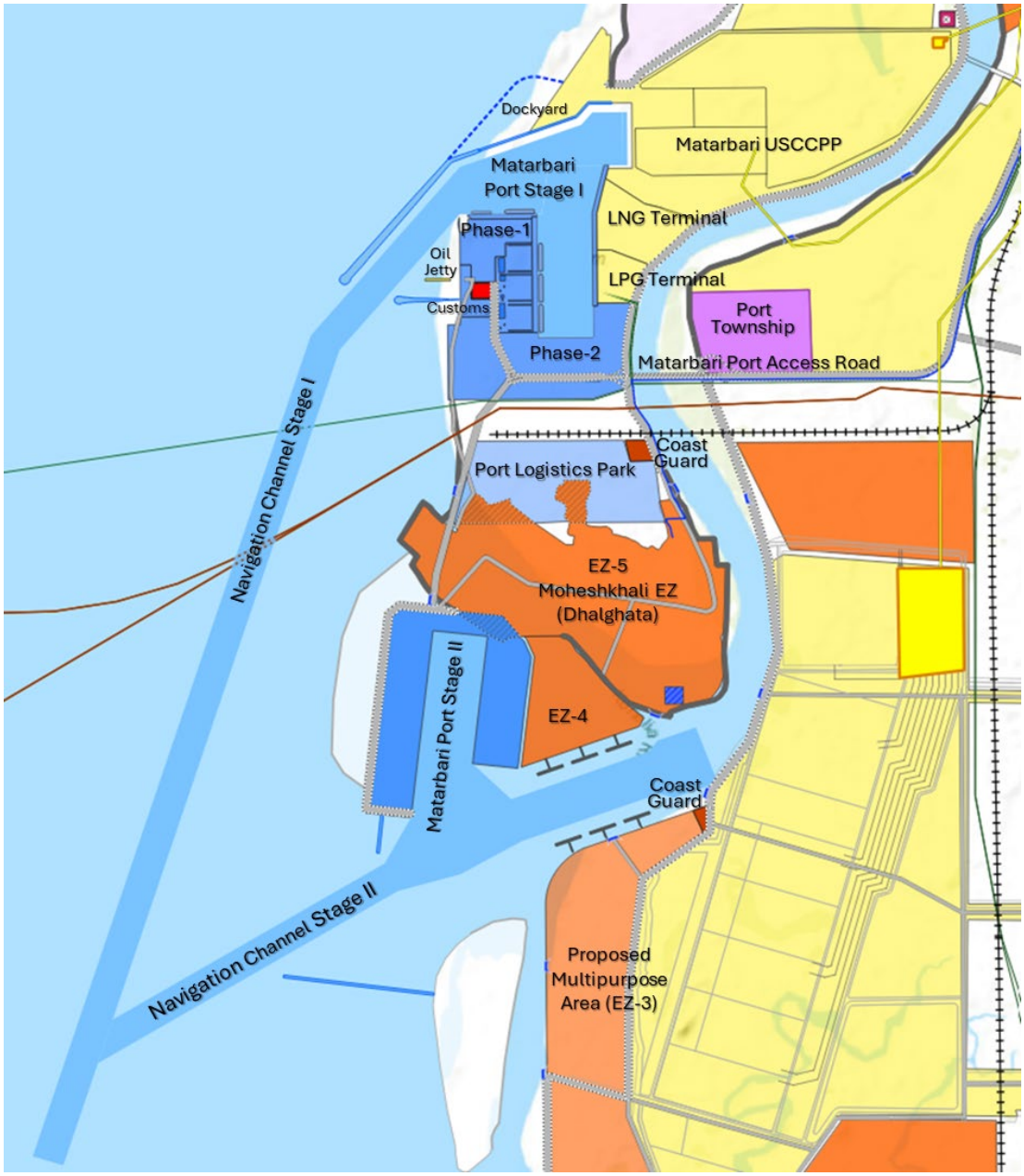


Source: JICA MIDI-MP team

Figure 3-11 Matarbari Port Phase-2 / Stage I Layout

(3) Matarbari Port Stage II

Total container handling capacity of Matarbari Port Phase-1 and Phase-2 is 2.9 million TEU. Containers exceeding this amount will be handled at Matarbari Port Stage II located at the estuary of the Kohelia River. Bulk terminal, private dedicated terminal, port logistics park, etc. are also planned in Stage II as shown in Figure 3-11 and Table 3-20.



Source: JICA MIDI-MP team

Figure 3-12 Matarbari Port Stage I & II Layout (proposal from JICA team)

Table 3-20 Port and Logistics Project List of MIDI-M/P (proposal from JICA team)

Stage/Phase	Facility/Project	Specification	Current Situation as of 2025	Implementor	Source of Fund	Start of Operation				
						2030	mid 2030s	2040	mid 2040s	2050
Phase-1 of Stage I	Breakwater, Access Channel & Basin	CDL-16m	Existing	CPGCBL-PD CPA-MOS	Public					
	Container & Multi-Purpose Terminal (MPDP CPA Components)	berth length 760 m	under construction	CPGCBL-PD CPA-MOS	Public	●2029				
	Port Access Road to N1 (MPDP RHD Components)	length 27km	under construction	RHD	Public	●2029				
Phase-2 of Stage I	Basin	CDL-16m	under F/S	CPA-MOS	Public		●			
	LNG Terminal	berth length 860 m	under F/S	Petrobangla-EMRD	PPP		●			
	LPG Terminal	berth length 620 m	under F/S	BPC-EMRD	PPP		●			
	Container Terminal	berth length 1,350 m	under F/S	CPA-MOS	Public/PPP		●			
	Multi-Purpose Terminal	berth length 1,000 m	under F/S	CPA-MOS	Public/PPP		On-demand after mid-2035s step by step			
	Chakria Intermodal Yard	2.1 ha (Net excluding rail track, slope, etc.)	Pre F/S completed	CPA/BR/RHD/ NBR	Public	●				
	Off-Dock, etc.		Hopeful Plan	Private	Private	On-demand step by step				
Stage II	Breakwater, Access Channel & Basin	CDL-16m or more	Hopeful Plan based on container demand forecast	CPA-MOS	Public			●	step by step	
	Container Terminal	berth length 2,200 m	Hopeful Plan based on container demand forecast	CPA-MOS	Public/PPP			●	step by step	
	Bulk Terminal	berth length 1,500 m	Hopeful Plan	CPA-MOS	Public/PPP			On-demand after 2040		
	Private Dedicated Terminal	berth length 2,000 m +	Hopeful Plan	Private	Private			On-demand after 2040		
	Port Logistics Park (Off-dock, etc.)		Hopeful Plan	Private	Private					
Others	Oil Jetty		Approved in principle by CPA	Private	Private	●				
	Customs House Yard		Hopeful Plan	NBR	Public	●	need to avoid becoming a bottleneck for port activities			
	Coast Guard Base & Outpost	Base: 25 acre	Request by Coast Guard	Coast Guard	Public	On-demand step by step				
	Dockyard for Ship Repair		Request by a private company	Private	Private	On-demand step by step				
	Shipbuilding Yard		Hopefil Plan proposed by CPA	Private	Private					
	Port Township		Hopefil Plan proposed by CPA	CPA,etc.	Public/PPP	On-demand step by step				

Note: The revised DPP of Matarbari Port Development Project worth TK 24,381 crore was approved by ECNEC in October 2024.

Source: JICA MIDI-M/P team

3.6.3 Challenges and core issues

Challenges and core issues of Matarbari Port are as follows:

- Regarding location and utilization:

- The distance to Dhaka from Matarbari is 120 km further than that from Chittagong.
- ITOs are more interested in Chittagong Port as of 2025.

➢ Regarding preparation for opening:
- Establishment of an operation framework and acquiring sufficient manpower is necessary prior to opening of the port.
- Port support function such as CIQ (except limited function for coal import) and off-docks are not available as of 2025.
- Removing the location restriction for off-docks is necessary to encourage investment by private sector.
- Accommodations and other amenities for workers are not available as of 2025.

➢ Regarding maintenance:
- Maintenance dredging should be periodically conducted.
- To ensure long-term financial soundness, fair cost sharing with stakeholders is necessary.

3.7 ICT, ICD and Private Off-Dock

3.7.1 River Port ICTs

Location map of river port ICTs is shown in Figure 3-13. Inland waterway container transport is conducted between NCT-1 berth of Chittagong Port and river port ICTs (Inland Container Terminal). Pangaon ICT (CPA, capacity: 0.116 million TEUs/year) and SAPL ICT (Summit Alliance Port Ltd., capacity: 0.1 million TEUs/year) are currently in operation. Rupayan ICT (Rupayan Port & Logistics Services Ltd., capacity: 0.3 million TEUs/year) was near completion but construction has stalled. Furthermore, construction of AK Khan ICT (capacity: 0.25 million TEUs/year), Kumudini ICT (capacity: 0.15 million TEUs/year) and Ananda ICT (capacity: 0.4 million TEUs/year) are planned but there seems to be no progress. Mawa ICT is being studied by BIWTA.

Throughput of Pangaon ICT is 0.030 million TEUs in 2023 of which laden container ratio of unloaded and loaded cargo are 99.9% and 11.0% respectively. Throughput of SAPL ICT is 0.011 million TEUs in 2019 of which laden container ratio of unload and load are 27% and 73% respectively. Thirteen (13) coastal container vessels of 7 shipping companies are deployed on this route as of 2020. Currently, however, full service of these coastal container vessels has not been introduced mainly because of the lack of the berth window at Chittagong Port. It seems that vessel operators have a practice of not leaving jetty until about 100 TEUs have been loaded.



Source: OCDI-QGIS

Figure 3-13 River Port ICTs around Dhaka

3.7.2 Railway ICDs

Location map of railway ICDs are shown in Figure 3-14. Railway container transport is conducted between Chittagong Port and Dhaka ICD Kamalapur (capacity: 0.13 million TEUs/year). Throughput of Dhaka ICD Kamalapur is 0.093 million TEUs in 2023 of which laden container ratio of import and export cargo are 88.6% and 53.1% respectively. Currently, cargo train service of this route is 85 round trips a month and transport capacity is 360 TEUs/day. In order to increase railway transport capacity, development of Dhirasram ICD (capacity: 0.354 million TEUs/year for the 1st phase, 0.86 million TEUs/year for the final phase) to be funded by ADB is planned. The double track railway development project funded by ADB between Dhaka and Chittagong is ongoing.



Note: In operation: Kamalapur ICD;
Planned: Dhirasram ICD
Source: OCDI-QGIS

Figure 3-14 Railway ICDs around Dhaka

3.7.3 Private Off-Dock

The first private ICD was established in 1985 and first ICD policy was promulgated in 1998. Currently, there are nineteen (19) private ICDs or Off-Docks located in Chittagong over a total area is 142 ha in 2023 which employ 5,200 persons (in 2016) and play an important role in complementing the logistics function of Chittagong Port (see Table 3-21).

According to the statistics in 2020 of the Bangladesh Inland Container Depot Association (BICDA), 88% of laden export containers of Chittagong Port were brought into the port after vanning at private ICDs. In addition, 75% of the empty container handling in the port were handled at private ICDs. The standard procedure for export container involves:

- Shippers deliver cargo to ICDs via covered vans or trucks.
- Customs officers conduct appraise/inspection and clearance on-site.
- Cargo is stuffed into empty containers stored at the ICD and locked.
- Containers are transported from ICDs to Chittagong Port for loading.

In addition, private ICDs are offering facilities to the buyer's consolidators who conducts many important roles in exporting goods manufactured in Bangladesh representing by RMG. According to the instructions from the buyers, they are conducting the following roles in ICDs:

- to receive and store goods from shippers carried by covered vans
- to sort goods in line with purchase orders and destinations instructed
- to select adequate kind of containers to van goods into
- to select and book feeder vessels to load and mother vessels to connect in line with instructed date of arrival
- to arrange vanning operation
- to arrange haulage of containers to the CY in line with the schedule of vessel booked
- to make various documentation work according to the requests form the buyers

This system is efficient in terms of container supply and recovery, customs handling, and port congestion mitigation. Some large exporters perform FCL stuffing and custom clearance at their own factories and send containers directly to the port. While this method offers high transport efficiency, its use remains limited due to the following logistical and regulatory constraints:

- Infrastructures to store and handle containers equipped for customs inspection are necessary.
- Responsibility for container supply and recovery.
- Prior approval from customs authorities.

For import containers, most delivery to consignees occurs either within CY or at private off-docks around the port of which shares are estimated at 48% and 19% respectively in 2023 according to CPA . The rest 33% were carried to the consignees' premises on road, railway, or inland waterways. Direct on-chassis delivery of intact container to consignee's premises on road is permitted only under special conditions. While factory-based clearance and devanning are possible, strict approval conditions such as 38 items restriction [6] by NBR, lower container recovery efficiency, and the absence of on-site customs officers make this option less favorable.

As prescribed above, it is not allowed to get custom clearance in those ICDs for the cargoes other than 38 items designated, which are generally low-valued and of low custom duty. While this restriction has been gradually loosened by adding permissible items to have custom clearance in ICDs, it is regarded as one of the reasons behind devanning and cargo delivery of import cargo in port still predominates, which hinders flexibility of port operations.

[6] On 17th July 2025, it is reported that NBR issued the directive to expand the total number of items to 65 eligible for delivery in ICDs. it is also reported that the expansion comes with some conditions including that the commissioner of Chattogram Customs House will retain the discretion to allow dual delivery – either from the port or ICDs – in special circumstances.

Private ICDs offer several advantages:

- On-site customs officers are readily available for inspection and clearance. (Cargo owners premises need special arrangements for custom inspection and clearance.)
- Port congestion is avoided, reducing storage fees and delay risks.
- Empty containers can be cleaned, repaired, and stored at ICDs for reuse.
- FCL direct delivery by trailer is constrained by road regulations and high cost for trailer and chassis, making devanning at ICDs and redistribution via smaller covered van the dominant practice.

The other reasons that private ICDs play an important role are that there is no platform or other dedicated facilities for vanning and devanning containers efficiently at many shippers/ consignees premises in Bangladesh, and that covered van type trucks are overwhelmingly more popular than container trailers as the land transport mode in Bangladesh. This situation is not expected to change in the near future.

Table 3-21 Private ICDs around Chittagong Port

No.	NAME OF OFF-DOCK	Distance from port (km)	Total Area (ha)	Shed Area		Employees
				Export (sq.m)	Import (sq.m)	
1	SAPL (East & West)	8.0	14.6	52,955	2,471	810
2	SAPL (North)	6.5	6.1	14,864	1,115	210
3	ISATL	7.5	6.1	27,313	1,486	164
4	Portlink	14.0	17.2	21,688	557	250
5	Vertex	6.5	4.5	8,826	1,672	351
6	Incontrade	8.0	9.2	27,871	2,062	250
7	Nemsan	26.0	6.9	8,361	6,968	300
8	QNS	2.0	3.0	4,645	2,323	250
9	KDS Logistics	22.0	13.4	37,276	1,719	342
10	Haji Saber	14.0	4.6	4,645	929	338
11	Golden	7.5	4.5	14,400	2,323	650
12	BM	21.0	9.7	18,581	1,579	419
13	Esack Brothers	0.7	9.3	25,084	1,301	480
14	K&T Logistics	1.5	3.4	7,897	650	176
15	CCTCL (Unit 1&2)	1.5	4.9	4,200	8,826	75
16	Shafi Motors	7.5	3.1	10,684	929	100
17	Eastern Logistics	6.0	3.3	883	813	NA
18	Baylink Containers Ltd.	41.1	8.9	Under Construction	Under Construction	NA
19	Anchorage Container Depot Ltd.	7.4	9.7	Under Construction	Under Construction	NA
	Total		142.3	290,173	37,723	5,165

Note: Total number of private ICDs is 21 if one counts SAPL (East & West) and KDS Ligistics as two each.
Source: Bangladesh Inland Container Depots Association (BICDA), updated December 2023 (Employees 2016)



Source: OCDI-QGIS

Figure 3-15 Private ICDs around Chittagong Port

3.8 Hinterland connection

3.8.1 Road transport

(1) Overview of road network in Bangladesh and outline of the subsection

Bangladesh's road network plays a crucial role in supporting its rapidly growing economy. Particularly in logistics, there's a high dependency on road transport. According to the Final Report for the Project on the Revision and Updating of the Strategic Transport Plan for Dhaka(JICA, 2016), truck transport accounted for approximately 90% of freight movement between Dhaka and Chattogram in 2004, an overwhelming proportion compared to other modes like rail (3.7%) and waterway (6.5%).

Bangladesh's National Highways are structured radially, centering on Dhaka, with a total length of approximately 4,000 km. Recently, road conditions have been actively improved. The paving rate of roads managed by the Roads and Highways Department (RHD) significantly increased from 61% in 1991 to 93% in 2023. The International Roughness Index (IRI) *[7] values also show an improving trend, indicating an overall enhancement in the quality of the road network.

[7] The International Roughness Index (IRI) is a worldwide standard used by highway professionals to measure and quantify the smoothness of a road surface by analyzing its longitudinal profile.

Furthermore, the four-laning of major national highways has been actively progressing in recent years.

This subsection assessed the current and future road conditions of logistics routes connecting four major ports; Chittagong, Matarbari, Payra and Mongla to Dhaka. Thoroughly examining these vital transportation arteries, the objective is to identify existing and potential problems within the road infrastructure that could impact logistics efficiency.

Table 3-22 Objective Routes

Section	Route	
Dhaka - Chattogram - Chakaria - Matarbari	N1	
Dhaka - Bhanga - Payra	N8-R880	
Dhaka - Bhanga - Mongla	N8-N805-N7	

Source: OCDI

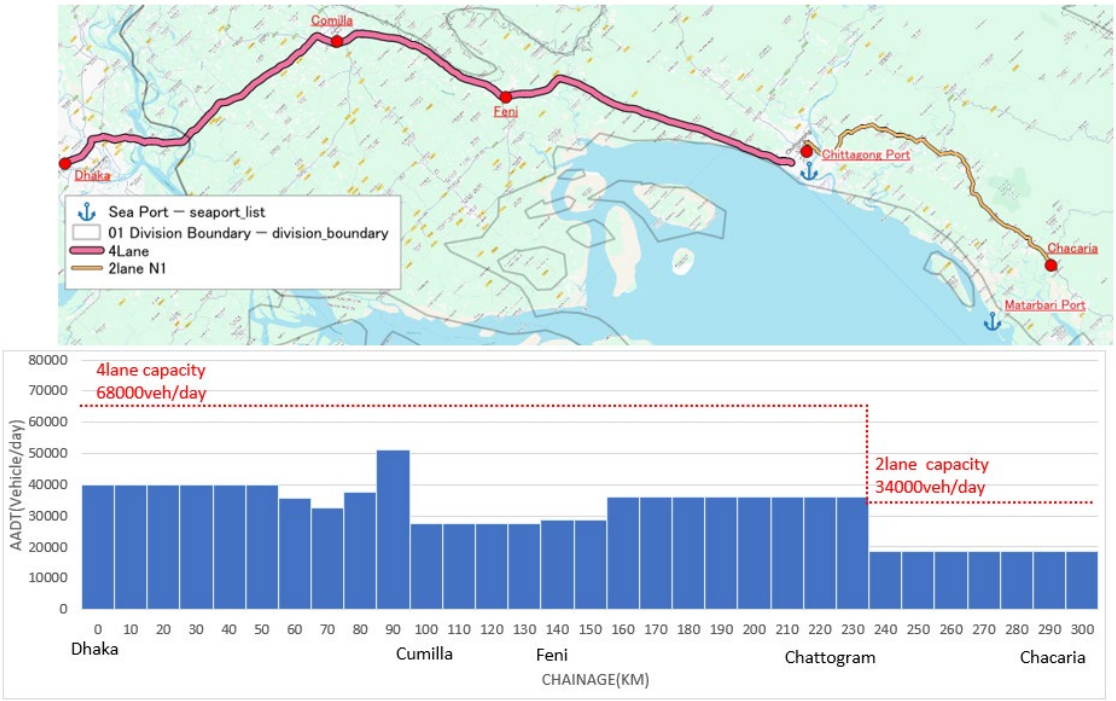
(2) Dhaka - Chattogram - Chakaria - Matarbari

(a) Existing road conditions

The figure below illustrates the route and traffic volumes along the Dhaka - Chattogram - Chakaria. This route primarily uses National Highway 1 (N1). The entire Dhaka - Chattogram section has already been successfully four-laned, significantly improving its capacity. However, the Chattogram - Chakaria section still remain two-lane roads. The Chakaria - Matarbari section is under construction by RHD under the Matarbari Port Development Project.

The Dhaka - Chattogram section experiences exceptionally heavy traffic, with daily volumes ranging from 38,000 to 52,000 vehicles. Despite this high demand, significant congestion is currently infrequent, primarily due to the successful four-laning of the entire section, which effectively accommodates the heavy traffic flow.

In contrast, the Chattogram - Chakaria section currently handles approximately 22,000 vehicles per day. This segment is a two-lane road yet, it has not yet reached its full traffic capacity.



Note: AADT refers to the "Maintenance and Rehabilitation Needs Report 2023-24" and the "ADT Data Map" published online by the Roads and Highways Department (RHD).
Note: Traffic capacity was set at 17,000 vehicles per day per lane. This reference figure was calculated based on the Highway Capacity Manual (HCM). The derivation utilized a capacity of 2,000 PCU per hour, applying an 8% peak hour factor and a conversion factor of 1.5 from PCU per day to vehicles per day (the latter estimated from traffic survey results).
Source: OCDI

Figure 3-16 Existing Road Condition on Dhaka - Chattogram - Chakaria Section

However, localized congestion does occur, particularly at major intersections along the Chattogram - Chakaria section, where bottlenecks exist. These bottlenecks are being improved through the Chattogram - Cox's Bazar Road Improvement Project, funded by JICA. The planned improvements include road widening, the development of flyovers, or the construction of bypass routes to alleviate these congested areas.





Source: Final Report of Preparatory Study on Chattogram-Cox's Bazar Highway Improvement Project

Figure 3-17 Bottleneck Points on the Chattogram - Chakaria Section

(b) Future road network

The latest version of the Road Master Plan, developed by the Roads and Highways Department (RHD), was formulated in 2009. As 16 years have passed since its inception, many of the prioritized development projects recommended in this master plan are either already completed or currently under construction. RHD is presently conducting a revision of the Road Master Plan with support from the Asian Development Bank (ADB). Completion of the revised master plan, anticipated in March 2023, is now indefinitely postponed.

Given this situation, there is currently no formally endorsed future road plan by the Government of Bangladesh. Therefore, the future road network is presented based on a long list compiled during the 2024 JICA study, "Data Collection Survey for Roads and Bridges Sector in the People's Republic of Bangladesh". This is considered the closest representation of the future road network available in current documentation because this list combines both unexecuted projects from the 2009 Road Master Plan and priority projects put forth by key counterparts, such as RHD, the Bangladesh Bridge Authority (BBA), and the Chittagong Port Authority (CPA).

The figure below illustrates the development plan for the Dhaka - Chattogram - Chakaria - Matarbari section. The four-lane/ six-lane project and the expressway project are being proposed for the Dhaka - Cox's Bazar corridor [8].

[8] Besides, it is reported that the government has revised its plan to upgrade the existing 4-lane Dhaka-Chattogram Highway to 10 lanes. https://www.tbsnews.net/bangladesh/govt-plans-upgrading-dhaka-ctg-highway-10-lane-june-1043416



Source: Final Report of Data Collection Survey for Roads and Bridges Sector in the People's Republic of Bangladesh (JICA, 2023), Final Report of Preparatory Survey on Matarbari Port Development Project in the People's Republic of Bangladesh (JICA, 2018), Final Report of Chattogram - Cox's Bazar Highway Improvement Project (JICA,2023), Final Report of Consultancy Services for Conducting of Feasibility Study and Preliminary Design (Road, Bridges, Culverts etc.) for the Proposed Mirsharai (Jorarganj) - Sitakunda - Chattogram - Cox's Bazar 4-Lane Marine Drive Expressway Project (Approximate Length 170 km) along with Coastal Protection under Chattogram Road Division (RHD,2022)

Figure 3-18 Development Plan of Dhaka - Chattogram - Chakaria (Matarbari) section

Table 3-23 Development Plan of Dhaka - Chattogram - Chakaria - Matarbari section

R-1. Matarbari Port Access Road	
Project Summary The Matarbari Port Access Road is a 25.8 km, four-lane road built as part of the Matarbari Port Development Project. It connects the new Matarbari Port with the National Highway (N-1).	
Road Length:	About 26 km
Number of Lanes:	4 lanes
Project Location:	Cox's Bazar District
Implementation Agency:	Roads and Highways Department (RHD)
Project Status:	The project is being implemented in two phases. Phase 1 involves the construction of the first two lanes. Of the three contract packages for this

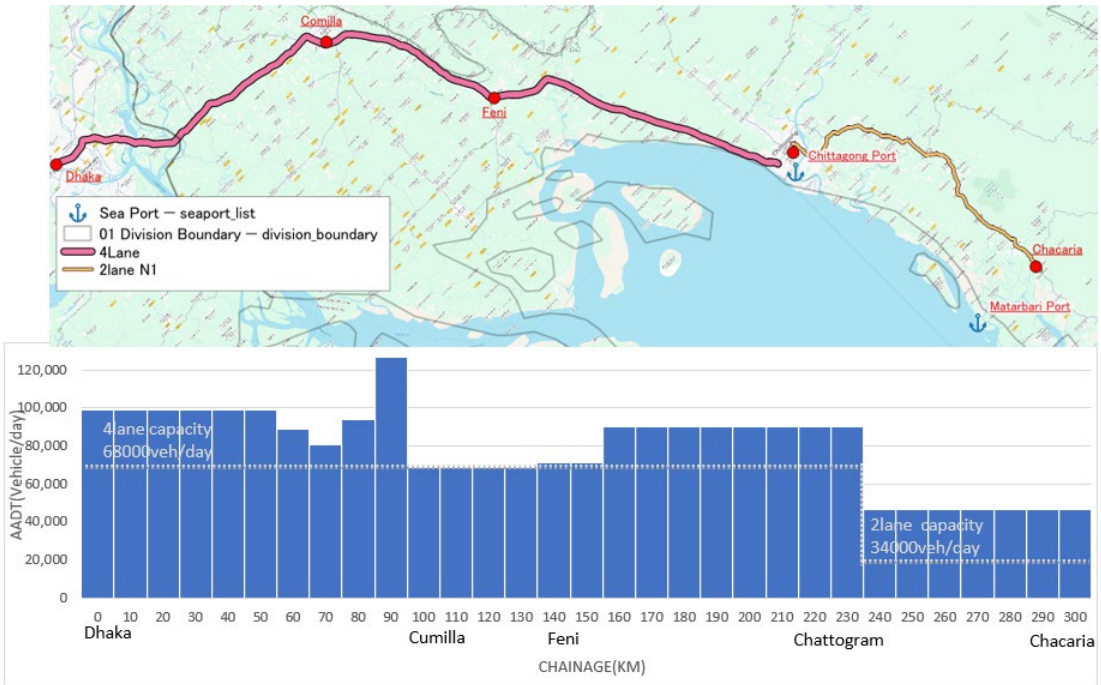
	phase, construction has already commenced for two. The third package is currently under the tender process. Phase 2 which will focus on the construction of the remaining two lanes to complete the four-lane road, is not scheduled.
R-2. Chattogram - Cox's Bazar Highway Improvement Project (Phase 1)	
Project Summary This project is implemented to construct four-lane bypasses and six-lane flyover in five bottleneck areas on the N1 between Chattogram-Cox's Bazar,	
Road Length:	About 24km in total
Number of Lanes:	4 land for bypass route and 6 lane for flyover
Project Location:	Chattogram District and Cox's Bazar District
Implementation Agency:	Roads and Highways Department (RHD)
Project Status:	Feasibility study (F/S) was conducted by JICA in 2023. Procurement of Detailed design/ Construction supervision consultant is ongoing.
R-3. Chattogram - Cox's Bazar Highway Improvement Project (Phase 2)	
Project Summary This project is implemented to The Chattogram (Chittagong)-Cox's Bazar Highway is being improved under a Public-Private Partnership (PPP), involving widening the existing two-lane road to a four-lane road and service road.	
Road Length:	About 85 km(Chattogram – Chakaria section.) About 47 km(Chakaria – Cox's Bazar section)
Number of Lanes:	4 lanes for both direction and service roads
Project Location:	Chattogram District and Cox's Bazar District
Implementation Agency:	Roads and Highways Department (RHD)
Project Status:	JICA Preparatory Survey is ongoing.
R-4. Dhaka-Chattogram Widening to 6-lane	
Project Summary This project widen National Road No1 from existing 4-lane to 6-lane. This road is access-controlled road with service lanes on both sides. Additionally elevated structure is applied for urban areas and major intersections.	
Road Length:	Study is on going
Number of Lanes:	6 lanes for both direction
Project Location:	Dhaka District, Narayanganj District, Munshiganj District, Cumilla District, Feni District and Chattogram District
Implementation Agency:	Roads and Highways Department (RHD)
Project Status:	Feasibility study (F/S) and detailed design (D/D) is ongoing by ADB.
E-1. 4-Lane Marine Drive Expressway	
Project Summary This project is implemented to construct a new road 4-Lane Marine Drive Expressway passing through Mirsharai (Jorarganj) - Sitakunda - Chattogram - Cox's Bazar.	
Road Length:	About 170km
Number of Lanes:	4 lanes for both direction
Project Location:	Jashore, Kuruna and Mongla District
Implementation Agency:	Roads and Highways Department (RHD)
Project Status:	Feasibility Study and Preliminary Design was completed in 2021.
B-1. Cox's Bazar – Moheshkhali Bridge/Tunnel	
Project Summary This project is implemented to construct a new bridge or tunnel across Moheshkhali Channel to directly connect Moheshkhali and Cox's Bazar.	
Road Length:	About 3 km
Number of Lanes:	4 lanes for both direction
Project Location:	Cox's Bazar District
Implementation Agency:	Bangladesh Bridge Authority (BBA)
Project Status:	Brief study was conducted for this project in Land Use and Development Planning Survey of Moheshkhali and Matarbari Area in Matarbari Port Development Project However, F/S level study has not been conducted.
B-2. Karnaphuli Bridge (Barrik Building - Proposed Second Town	

Project Summary	
This project is implemented to construct a new bridge across Karnaphuli River to connect Barrik Building and proposed second town.	
Road Length:	About 1.3 km
Number of Lanes:	4 lanes for both direction
Project Location:	Chattogram District
Implementation Agency:	Chattogram Development Authority (CDA)
Project Status:	No study or design has been conducted for this project.

Note: Although the "Chattogram - Cox's Bazar Expressway" and "Dhaka - Chattogram Expressway" were initially identified as priority projects in the Data Collection Survey for Roads and Bridges Sector in the People's Republic of Bangladesh, they have been excluded from this list in accordance with the guidance from the RHD.
Source: Final Report of Data Collection Survey for Roads and Bridges Sector in the People's Republic of Bangladesh (JICA, 2023), Final Report of Preparatory Survey on Matarbari Port Development Project in the People's Republic of Bangladesh (JICA, 2018), Final Report of Chattogram - Cox's Bazar Highway Improvement Project (JICA,2023), Expressway Traffic Forecasting, Alignment Planning, Geometric Design and Performance Evaluation (BUET,2022), Final Report of Consultancy Services for Conducting of Feasibility Study and Preliminary Design (Road, Bridges, Culverts etc.) for the Proposed Mirsharai (Jorarganj) - Sitakunda - Chattogram - Cox's Bazar 4-Lane Marine Drive Expressway Project (Approximate Length 170 km) along with Coastal Protection under Chattogram Road Division (RHD,2022)

(c) Prediction on future road conditions

The figure below illustrates the projected traffic volume for the Dhaka - Chattogram - Chakaria section in 2050. All sections are expected to exceed the current road capacity, leading to significant congestion. To accommodate future traffic demand, the development of planned expressways and the widening project are highly needed.



Note: Future traffic volumes were estimated by applying the growth rate derived from the elasticity between vehicle owner registration numbers and GDP, which is developed by the preparatory survey for the Chattogram-Cox's Bazar Road Improvement Project.
Source: OCDI

Figure 3-19 Future Road Condition on Dhaka - Chattogram - Chakaria Section

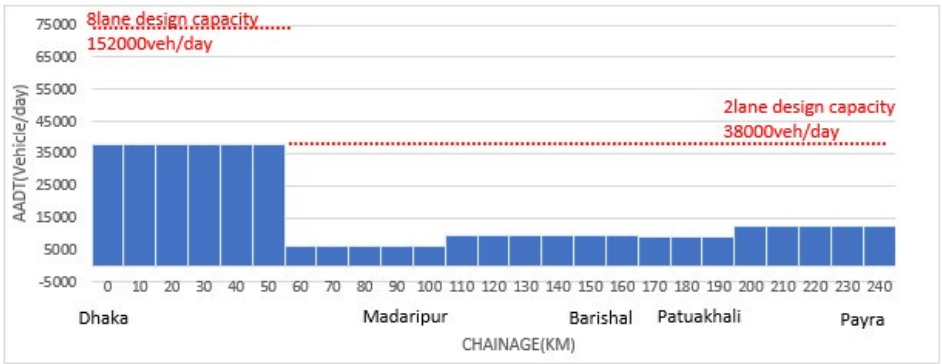
(3) Dhaka - Bhanga - Payra

(a) Existing road conditions

The figure below illustrates the route and traffic volumes along the Dhaka - Bhanga - Payra. This route primarily uses National Highway No.8 (N8). The section from Barishal to Payra is connected by Regional Road 880. The Dhaka - Bhanga section has an expressway, with the parallel national highway also being four-laned. However, the section from Bhanga to Payra remains a two-lane road.

The traffic volume on the Dhaka - Bhanga section observes a daily traffic volume of 38,000 vehicles. This segment has expressway, and the parallel National Highway No.5 is also being upgraded to four lanes. With these sufficient road improvements, the section is well-equipped to handle the current traffic demand. On the other hand, the Bhanga - Payra section sees traffic volumes ranging from 6,000 to 12,000 vehicles per day. This section is a two-lane road, but it has not yet exceeded its traffic capacity.





Note: AADT refers to the "Maintenance and Rehabilitation Needs Report 2023-24" and the "ADT Data Map" published online by the Roads and Highways Department (RHD).
Note: Traffic capacity was set at 19,000 vehicles per day per lane. This reference figure was calculated based on the Highway Capacity Manual (HCM). The derivation utilized a capacity of 2,000 PCU per hour, applying an 8% peak hour factor and a conversion factor of 1.5 from PCU per day to vehicles per day (the latter estimated from traffic survey

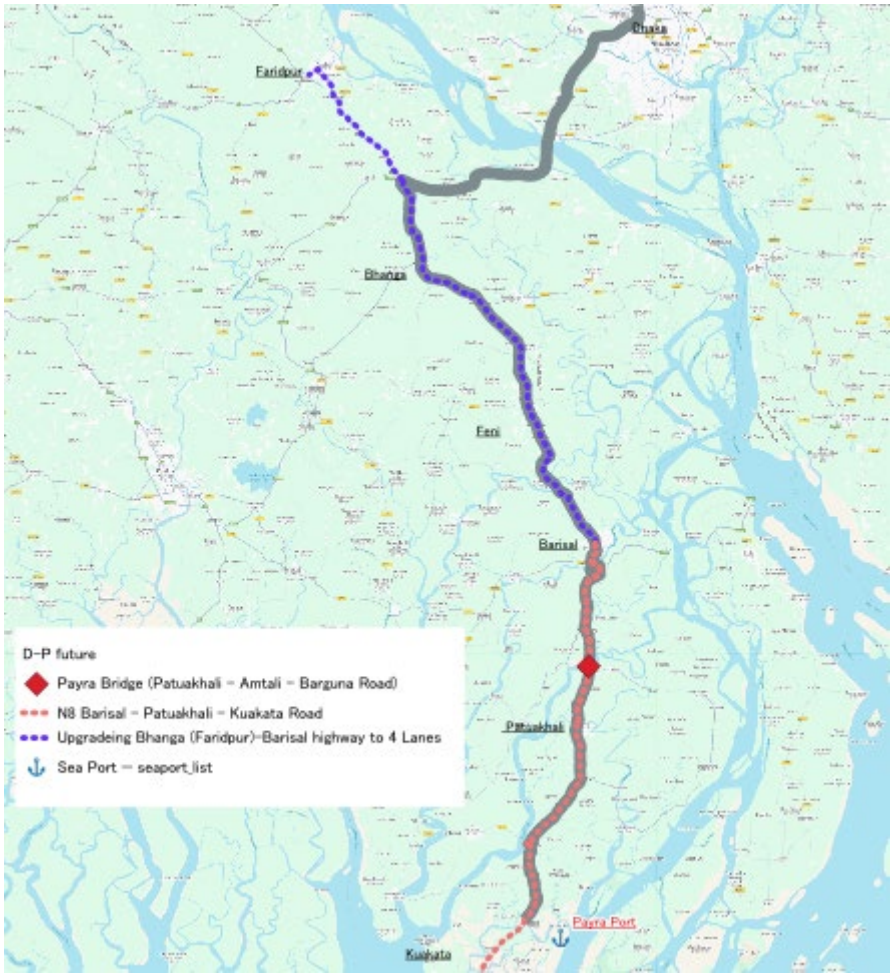
results).
Source: OCDI

Figure 3-20 Existing Road Condition on the Dhaka - Bhanga - Payra Section

(b) Future road network

The future road network for the Dhaka - Bhanga - Payra section will be developed based on the long list of JICA survey "Data Collection Survey for Roads and Bridges Sector in the People's Republic of Bangladesh".

The figure below illustrates the development plan for the Dhaka - Bhanga - Payra section. The four-laning of the two-lane section from Bhanga is currently planned.



Source: Final Report of Data Collection Survey for Roads and Bridges Sector in the People's Republic of Bangladesh (JICA, 2023), Bangladesh Country Paper (RHD, 2022), Feasibility Study for Construction of Bridge on Patuakhali - Amtali - Barguna - Kakchira Road over Paira River

Figure 3-21 Development Plan of the Dhaka - Bhanga - Payra Section

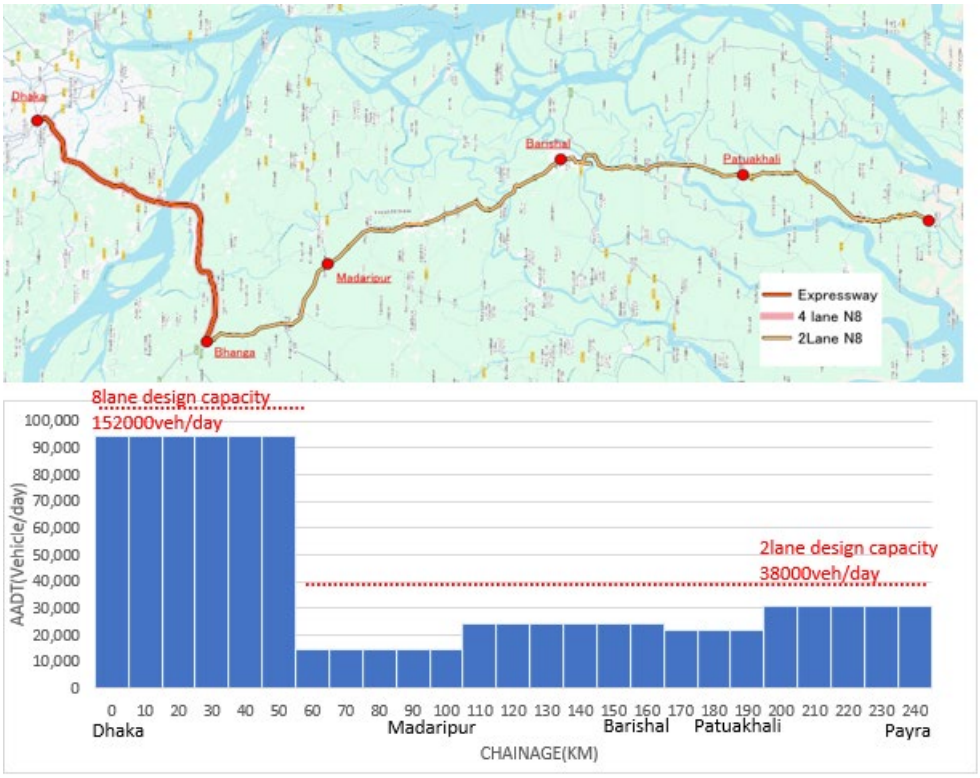
Table 3-24 Development Plan of the Dhaka - Bhanga - Payra Section

R-4. Upgradation of Bhanga (Faridpur)-Barisal highway, Separate Service Lanes and Main Carriageway to 4 Lanes	
Project Summary	
This project is implemented to widen 2 lanes of National Road No.8 to 4lanes	
Road Length:	About 121km
Number of Lanes:	4 lanes for both direction
Project Location:	Faridpur , Gopalganj and Barisal District
Implementation Agency:	Roads and Highways Department (RHD)
Project Status:	Land acquisition is ongoing.
R-5. N8 Barisal - Patuakhali - Kuakata Road	
Project Summary	
This project is implemented to widen 2 lanes of National Road No.8 to 4lanes	
Road Length:	About 112km
Number of Lanes:	4 lanes for both direction
Project Location:	Barisal, Patuakhali and Kuakata District
Implementation Agency:	Roads and Highways Department (RHD)
Project Status:	Feasibility study was completed.
B-3. Payra Bridge (Patuakhali - Amtali - Barguna Road)	
Project Summary	
This project is implemented to construct a 4 lane bridge across Payra River at Amtali on the Patuakhali - Amtali - Barguna - Kakchira (R-880) road	
Road Length:	About 3km
Number of Lanes:	4 lanes for both direction
Project Location:	Amtail District
Implementation Agency:	Bangladesh Bridge Authority (BBA)
Project Status:	Feasibility study was completed.

Source: Final Report of Data Collection Survey for Roads and Bridges Sector in the People's Republic of Bangladesh (JICA, 2023), Bangladesh Country Paper (RHD, 2022), Feasibility Study for Construction of Bridge on Patuakhali - Amtali - Barguna - Kakchira Road over Paira River

(c) Prediction on future road conditions

The figure below illustrates the projected traffic volume for the Dhaka - Bhanga - Payra section in 2050. Although no exceedance of capacity is observed for the overall section, the Patuakhali - Payra segment is projected to be near saturation. To accommodate future traffic demand, the planned four-lane of existing two-lane sections is desired.



Note: Future traffic volumes were estimated by applying the growth rate derived from the elasticity between vehicle owner registration numbers and GDP, which is developed by the preparatory survey for the Chattogram-Cox's Bazar Road Improvement Project,.
Source: OCDI

Figure 3-22 Future Road Condition on Dhaka - Bhanga - Payra Section

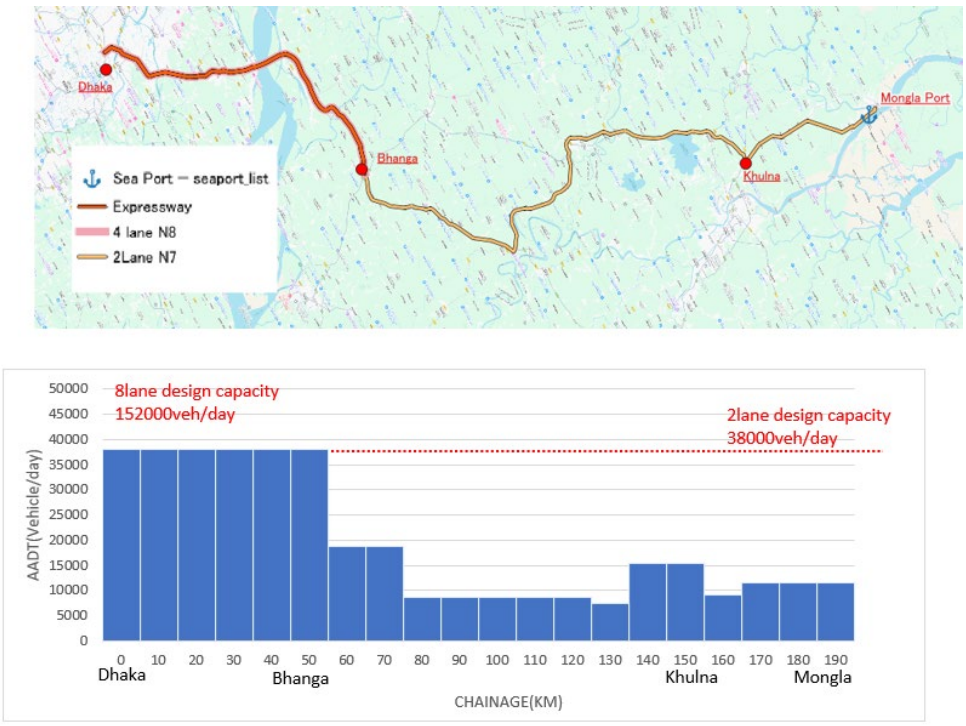
(4) Dhaka - Bhanga - Mongla

(a) Existing road conditions

The figure below illustrates the route and traffic volumes along the Dhaka - Bhanga - Mongla. This route primarily uses National Highway No.8 (N8), N805, and N7. The Dhaka - Bhanga section has an expressway, with the parallel national highway also being four-laned. However, the section from Bhanga to Mongla remains a two-lane road.

The Dhaka - Bhanga section observes a daily traffic volume of 38,000 vehicles. This segment has expressway, and the parallel National Highway No.5 is also being upgraded to four lanes. With these sufficient road improvements, the section is well-equipped to handle the current traffic demand.

On the other hand, the Bhanga - Mongla section experiences traffic volumes ranging from 6,000 to 12,000 vehicles per day.



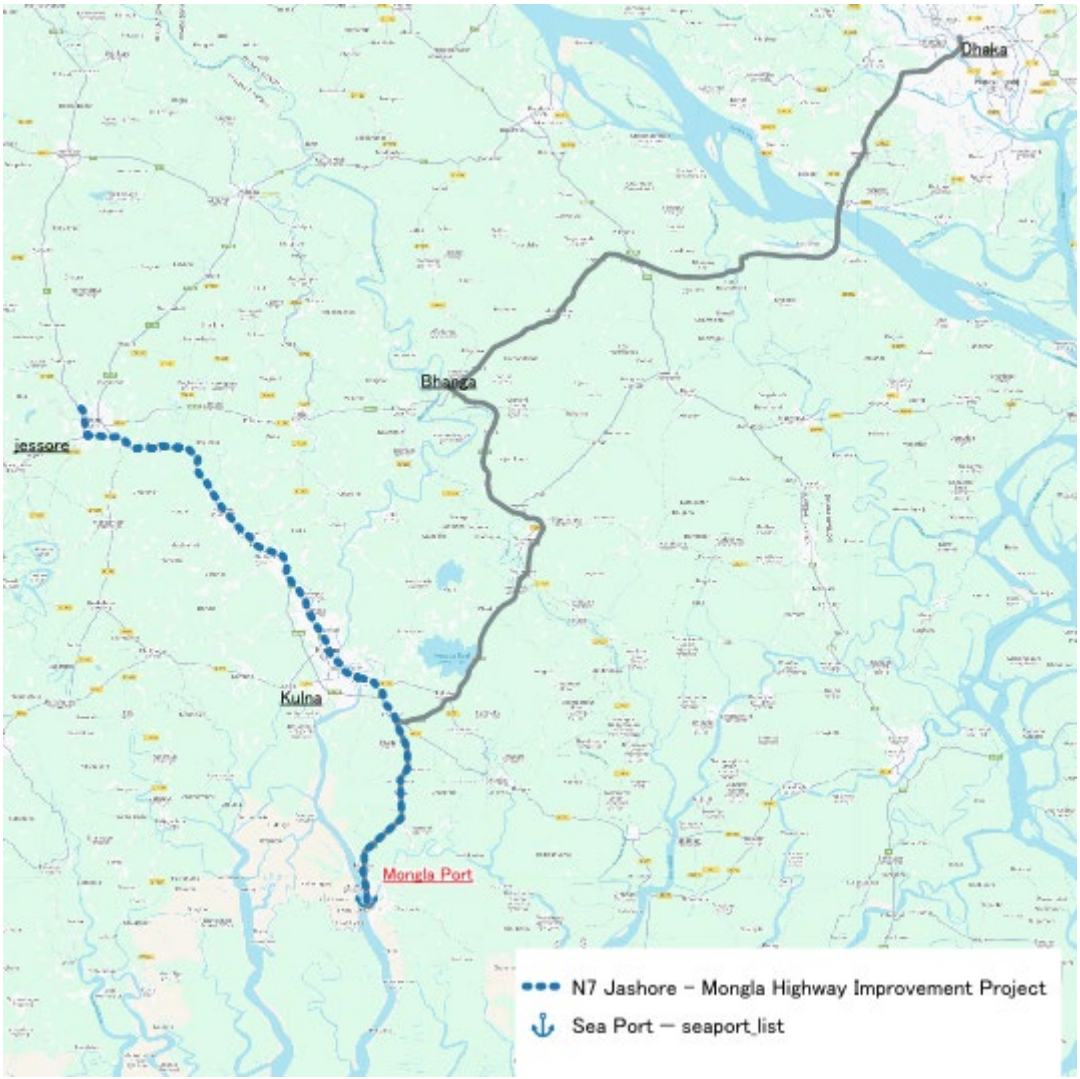
Note: AADT refers to the "Maintenance and Rehabilitation Needs Report 2023-24" and the "ADT Data Map" published online by the Roads and Highways Department (RHD).
Note: Traffic capacity was set at 19,000 vehicles per day per lane. This reference figure was calculated based on the Highway Capacity Manual (HCM). The derivation utilized a capacity of 2,000 PCU per hour, applying an 8% peak hour factor and a conversion factor of 1.5 from PCU per day to vehicles per day (the latter estimated from traffic survey results).
Source: OCDI

Figure 3-23 Existing Road Condition on Dhaka - Bhanga - Mongla Section

(b) Future road network

The future road network for the Dhaka - Bhanga - Mongla section will be developed based on the long list of JICA survey "Data Collection Survey for Roads and Bridges Sector in the People's Republic of Bangladesh".

The figure below illustrates the development plan for the Dhaka - Bhanga - Mongla section. The four-laning of the two-lane section from Jessore to Port is currently planned. However, widening N805 was not added in the priority list although feasibility study is ongoing.



Source: Final Report of Data Collection Survey for Roads and Bridges Sector in the People's Republic of Bangladesh (JICA, 2023), Preliminary Development Project Proposal of Jashore - Khulna - Mongla (N7) Highway Improvement Project

Figure 3-24 Development Plan of Dhaka - Mongla Section

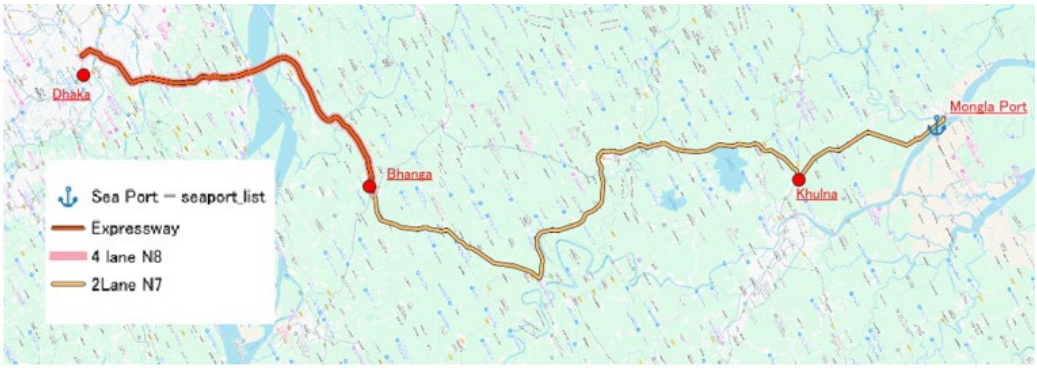
Table 3-25 Development Plan of Dhaka - Bhanga - Mongla Section

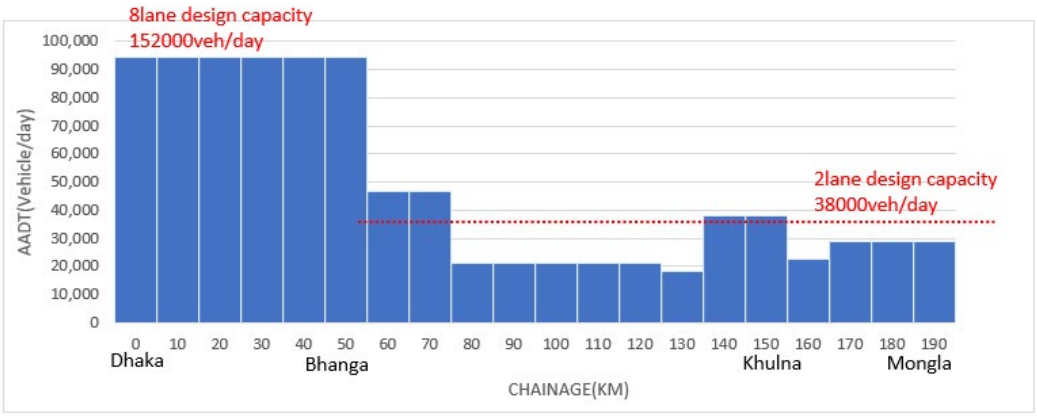
R-6. N7 Jashore - Mongla Highway Improvement Project	
Project Summary	
The upgrading of National Road No.7 between Jashore to Mongla to 4 lane Highway	
Road Length:	About 98.5 km
Number of Lanes:	4 lanes for both direction
Project Location:	Jashore, Kuruna and Mongla District
Implementation Agency:	Roads and Highways Department (RHD)
Project Status:	Preliminary Development Project Proposal was issued in 2022.

Source: Final Report of Data Collection Survey for Roads and Bridges Sector in the People's Republic of Bangladesh (JICA, 2023), Preliminary Development Project Proposal of Jashore - Khulna - Mongla (N7) Highway Improvement Project

(c) Prediction on future road conditions

The figure below illustrates the projected traffic volume for the Dhaka - Bhanga - Mongla section in 2050. Traffic capacity exceeded in some sections of the Bhanga - Khulna route. To accommodate future traffic demand, the planned four-laning of existing two-lane sections is highly desired.





Note: Future traffic volumes were estimated by applying the growth rate derived from the elasticity between vehicle owner registration numbers and GDP, which is developed by the preparatory survey for the Chattogram-Cox's Bazar Road Improvement Project,.
Source: OCDI

Figure 3-25 Future Road Condition on Dhaka - Bhanga - Mongla Section

(5) Challenges

Currently, there are no severe traffic congestion in the main sections from the Ports to Dhaka. However, to accommodate future increases in traffic demand, improvement and widening of existing road must be proceed. Specifically, the, six-laning of the Dhaka - Chattogram route, four-lane of the Chattogram - Cox's Bazar route, and four-laning of N7/N805 is essential.

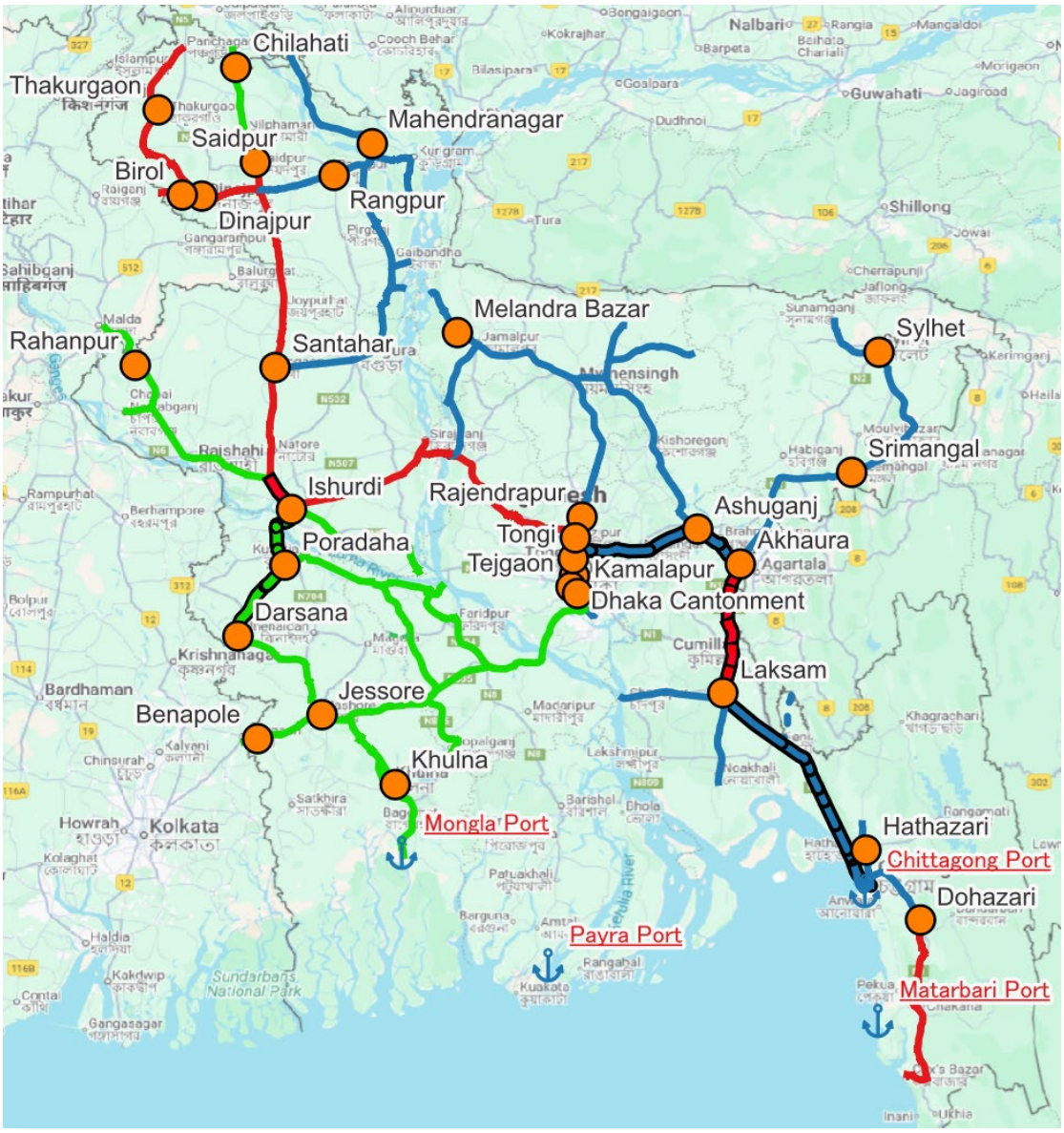
3.8.2 Rail transport

(1) Current situation of railway freight service in Bangladesh

(a) Railway network in Bangladesh

Bangladesh Railway (BR) is a government-owned and government-managed railway transportation agency. It covered a length of 3,093 route kilometers and is operated by a workforce of 25,733 regular staff as of 2021. Only BR provides railway freight service in Bangladesh.

The railway network of BR covers all over Bangladesh and is connected to India at some points. In the network, BR has two different gauges: 1,000 mm (meter gauge: MG) and 1,676 mm (broad gauge: BG). Rolling stock cannot go directly on different gauges. Therefore, it is not practical to provide freight service between different gauge sections. At present, only MG service is available at Chittagong Port area. Freight trains from the port can go only to the eastern and the northern areas of Bangladesh. On the other hand, since only BG service is available at Mongla Port, freight trains from the port can go only to the western and northern areas of Bangladesh and Dhaka. To eliminate this inconvenience, dual gauge (DG) project between Chittagong Port and Tongi will soon be completed.



Source: OCDI-QGIS based on BR Network 2024

Figure 3-26 Bangladesh Railway Network (2024)



Source: OCDI-QGIS based on BR Network 2024

Figure 3-27 Bangladesh Railway Network (2024) Kamalapur - Laksam

(b) Railway freight service

Freight trains are only operated on a fixed schedule for containers between Chittagong Port and Dhaka ICD Kamalapur. The other freight trains are operated when there are enough loaded wagons for particular destinations. In the early 1970s, freight wagons would wait at each station until they were loaded with a sufficient volume of cargo, after which they would be coupled as a train and commence transporting their cargo to various destinations. But today, as trucks have come to assume such functions, many freight trains run for special demand of specific shippers. As a result, cargo is limited to marble & stone, oil, food grain, fertilizer, etc. as shown in Table 3-26.

Traffic density or average number of freight trains per day on each line in 2020-21 is shown in Table 3-27. This shows that many freight trains run only on the section between Chittagong Port and Dhaka as well as Khulna and Ishurdi. Some freight trains come from India via boarder gates at Darsana, Rahanpur, Birol, Benapole and Chilahati. Only these functions are remained for freight service of BR.

Table 3-26 Principal Commodities Carried by BR

(Figures in Thousand)

SL	Commodities	1969-1970		2019-2020		2020-2021	
		Tonnes	Percent	Tonnes	Percent	Tonnes	Percent
1.	Cement	292	5.98%		-		-
2.	Coal	138	2.83%		-		-
3.	Cotton raw	34	0.70%		-		-
4.	Fire wood and other fuel	22	0.45%		-		-
5.	Fertilizer	213	4.37%	16.88	0.53%	83.21	1.52%
6.	Fodder	6	0.12%		-		-
7.	Fuel for the railway	-	-		-		-
8.	Gram & pulses	54	1.11%		-		-
9.	Iron & steel	187	3.83%	-	-	-	-
10.	Jute raw	664	13.61%		-		-
11.	Jute Manufactured	47	0.96%		-		-
12.	Kerosene oil	194	3.98%		-		-
13.	Live stock	1	0.02%		-		-
14.	Marble & Stone	139	2.85%	1,184.22	37.24%	1,293.59	23.66%
15.	Military traffic	16	0.33%	0.77	0.02%	1.62	0.03%
16.	Molasses	24	0.49%		-		-
17.	Oil fuel	155	3.18%	731.25	23.00%	847.40	15.50%
18.	Oil seeds	18	0.37%		-		-
19.	Other Grains	-	-		-		-
20.	Provision	56	1.15%		-		-
21.	Petrol	19	0.39%		-		-
22.	Paddy	72	1.48%		-		-
23.	Rice	459	9.41%		-		-
24.	Railway Stores and materials	369	7.56%	9.72	0.31%	20.90	0.38%
25.	Salt	101	2.07%		-		-
26.	Sugar Cane	246	5.04%		-		-
27.	Sugar	86	1.76%		-		-
28.	Tea	44	0.90%	-	-	-	-
29.	Tobacco	20	0.41%		-		-
30.	Vegetable Oil	12	0.25%		-		-
31.	Wheat/Food Grain	623	12.77%	84.52	2.66%	214.89	3.93%
32.	Wood unwrought	56	1.15%		-		-
33.	Container	-	-	700.06	22.02%	704.03	12.88%
34.	All other commodities	512	10.49%	452.27	14.22%	2,301.09	42.09%
	Total	4,879	100%	3,179.68	100%	5,466.72	100%

Source: Information Book 2021, Table 30, BR

Table 3-27 Traffic Density of Main Sections

Zone	Section	Freight Trains per day
East	Chattogram - Akhaura	8.31
East	Akhaura - Tongi - Dhaka	5.08 - 6.08
West	Khulna - Jessore - Darsana - Poradaha - Ishurdi	2.06 - 3.17

Note: Sections of less than 2 freight trains per day are omitted.
Source: Summarized by OCDI based on Information Book 2021, Table 61, BR

(c) Freight Station

BR has no special freight station except Kamalapur ICD and some special facilities for oil and food grain. All container trains run between the ICD and Chittagong Port. The ICD is planned to be relocated to Dhirasram ICD and urban redevelopment is planned at the site.

In Chittagong Port Area and in some inland area, there are special facilities/equipment for handling oil and food grain. These facilities/equipment were built by cargo owner such as Petrobangla. Other cargo is loaded and unloaded in the space available at BR stations by hand or with small equipment.

(d) Rolling stock

A freight train consists of a diesel locomotive and freight wagons. Number of freight wagons of each type is shown in Table 3-28. Container Wagons and Tank Wagons are for special purpose. Covered Wagons and Low Flat Wagons are for various use.

The number of freight wagons has rapidly decreased as shown in Table 3-29. Although many freight wagons have been scrapped due to aging, new freight wagons have not been introduced. The decrease of rolling stock has resulted in a situation where requests for transport of cargo by train cannot be accepted.

Table 3-28 Type-wise Freight Wagons

WAGONS	BG		MG	
	Unit	Four-Wheelers	Unit	Four-Wheelers
COVERED WAGONS:				
Four-Wheeled (C, CJ, XC, MCG)	16	16	122	122
Bogie (BC, BSC, BCFG)	452	904	464	928
Bogie Covered Fertilizer (BCF, BCFR)	-	-	46	92
Total	468	920	632	1,142
SPECIAL TYPE WAGONS:				
Open Wagons-High Sided-				
Four-Wheeled (KC)	14	14	18	36
Bogie (BKC, SCT)	-	-	259	518
Open Wagons-Low Sided-				
Four-Wheeled (KL, KM)	24	24	45	85
Bogie (BKL)	-	-	39	78
Flat Wagons-				
Bogie (BFR,BXFT,BKU,BFU,BFW,IBT,MBFR,BFT)	27	57	186	417
Four-Wheeled (FCT)	-	-	-	-
Bogie (BFCT Container)	-	-	450	900
Other Wagons				
Petrol Tank Wagons-				
Bogie (BTP, WD BTK, TW)	-	-	296	592
Oil Tank Wagons-				
Bogie (BTK,BTL,BTO,BXTK,BTPR,BTPA)	308	616	288	576
Molasses Tank Wagons-				
Four-Wheeled (TM, BTM, TL)	-	-	-	-
Bogie (BTM)	83	158	25	50
Departmental Wagons-				
Four- wheeled (KH,KN,TW,FD,BVG,ERL XVH,VH,BBV)	20	26	94	167
Bogie (BKH) F.G.	49	98	310	620
BXWL	1	2	-	-
MBW	-	-	2	6
Total	526	995	2,012	4,045
Grand Total	994	1,915	2,644	5,187

Source: Information Book 2021, Table 13, BR

Table 3-29 Evolution of Number of Freight Wagons

Year	BG (unit)	MG (unit)	Total (unit)
2012-13	2,087	7,792	9,879
2016-17	1,706	6,448	8,154
2020-21	1,915	5,187	3,638

Source: Extracted by OCDI based on Information Book 2021, Table 12, BR

(e) Feeder transportation from/to ports

At present, railway tracks reach Chittagong Port and Mongla Port. Although a new line to Mongla Port was inaugurated in 2024, few trains on this line have run so far. At this moment, only feeder transportation from/to Chittagong Port is available. Number of freight trains departing from Chittagong Port is shown in Table 3-30.

The main cargo is containers. Container service by BR started in 1986-87. At present, 4 trains/day/one way are scheduled to operate between Chittagong Port and Kamalapur ICD. But some trains are cancelled due to delays in loading and other reasons. As a result, around 75 trains per month ran in 2023.

Another main cargo is oil. Tank trains are running from Chittagong Port to the following destinations; Sylhet, Dohazari, Hathazari, Srimangal, Rangpur and Dhaka. These trains are operated according to the request of Petrobangla.

Other cargo such as food grain and fertilizer are transported by normal freight trains coupled with various wagons or mixed trains coupled with wagons and passenger coaches. These goods are carried on covered wagons or open wagons. Destinations of food grain are Tejgaon, Dinajpur, Thakurgaon, Santahar and Ashuganj. Destinations of fertilizer are Molandaha Bazar, Thakurgaon, Santahar, Ashuganj and Mahendra Nagar. Destinations of other commodities are Rajendrapur, Dhaka, Laksam, Saidpur, Akhaura, Sylhet and Tejgaon.

Table 3-30 Number of Freight Trains Departing from Chittagong Port (2023)

(trains/month)

Cargo / Destination Sta.	Container	Oil	Others
Dohazari		18	
Hathazari		18	
Srimangal		10	
Sylhet		20	
Ashuganj			3
Dhaka Cantonment		5	
Tejgaon			3
Kamalapur	75		
Rangpur		8	1
Dinajpur			1

Source: BR

Table 3-31 Oil Transport from Chittagong Port by Train

(metric tons)

Destination	2018	2019	2020	2021	2022	2023
Sylhet	154,992	108,912	148,644	138,024	170,616	167,184
Srimangal	93,000	65,376	89,186	82,814	102,360	100,320
Dhaka	61,992	43,584	59,458	55,210	68,232	66,888
Rangpur	61,992	43,584	59,458	55,210	68,232	66,888
Hathazari	123,894	87,168	118,915	110,419	136,464	133,776
Dohazari	123,894	87,168	118,915	110,419	136,464	133,736
Total	619,944	435,792	594,576	552,096	682,368	668,832

Note: Some volumes to different destinations are same because connected number of wagons decides volume.
Source: BR

Table 3-32 Other Cargo except Container and Oil from Chittagong Port by Train

(metric tons)

Cargo	2018	2019	2020	2021	2022	2023
Food Grain	98,289	114,235	176,277	128,506	113,297	93,934
Fertilizer	0	22,244	20,636	38,726	14,405	6,298
Others	176,736	98,400	140,448	103,104	83,424	65,976
Total	275,025	234,879	337,361	270,336	211,126	166,208

Source: BR

(2) Challenges

For feeder transportation of containers, the following improvements are necessary for BR:

- Construction of Dhirasram IDC should be urgently carried out.
- Construction of Chakaria Intermodal Yard (IMY) is essential for the hinterland connection of Matarbari Port.
- New locomotives and freight wagons and related train operation staffs (drivers, conductors, etc.) are essential to increase the number of trains.
- If the dual gauge project between Chittagong and Tongi are completed, the area that can be transported from each port will increase and operational flexibility will also be improved.

For feeder transportation of bulk cargo, the following improvements are necessary;

- Loading/unloading facilities/equipment and special freight wagons are necessary. Shippers should be permitted to invest in such facilities.
- If Jamuna bridge renovation and dual gauge project between Chittagong and Tongi are completed, the area that can be transported from each port will increase and operational flexibility will also be improved.

3.8.3 Inland water transport

(1) Current situation of IWT

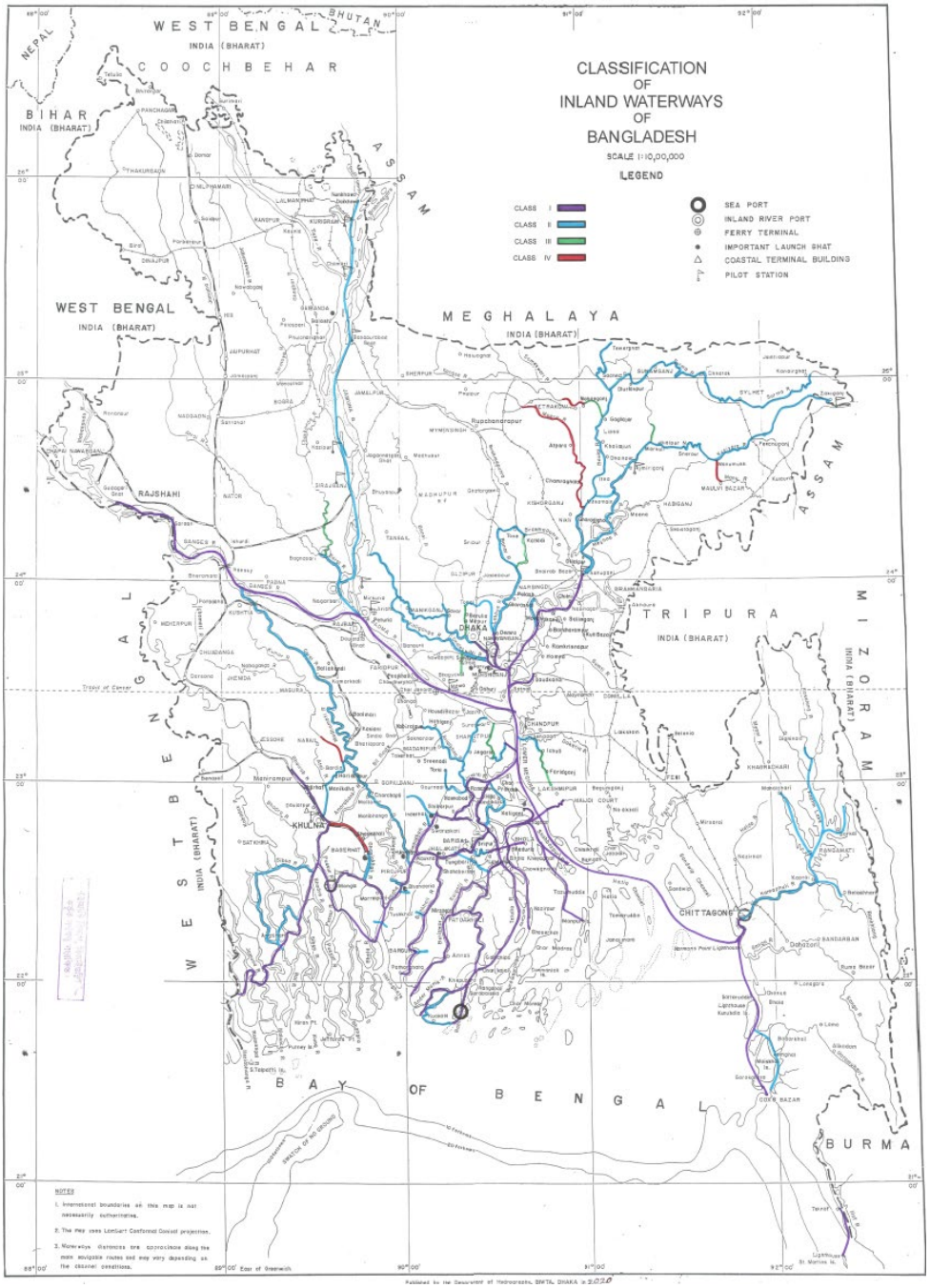
(a) Inland water network in Bangladesh

All seaports in Bangladesh, i.e. Chittagong, Mongla, Payra, and Matarbari are connected via inland waterways to the points in inland where various imported cargo are stored or consumed and goods for export are produced. Under the jurisdiction and control of BIWTA (Bangladesh Inland Water Transport Authority), those waterways are classified in five classes (class I, II, III, IV and V) mainly by permissible draft with which a ship can ply over the rivers, as shown in Figure 3-28.

As for imports of bulk cargo which move in large volume, because of restrictions of water depth and handling capacity in the seaports, majority of cargo are now unloaded from ocean-going vessels to inland waterway ships or barges by ship-to-ship (STS) lightering operation off the seaports, mainly Chittagong and inland waterway ships are carrying cargo to the points in inland via inland waterways. Bangladesh has a lot of cement factories across the country, and many of them are located on class I (permissible draft 4m) or class II (draft 3.5m) waterways as shown in Figure 3-29. This location of factories can make larger inland water ships can directly carry cement materials like coal, clinkers, and fly ashes to the factories from the seaports in an economical way. Same applies to the other major bulk cargo including grains and LPG. Many grain silos and LPG storage facilities are located on class I & II waterways to enjoy most economical transportation.

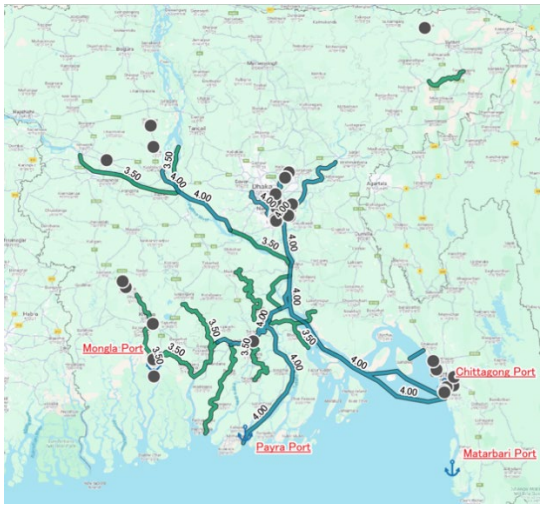
In case of container trade, as of now Bangladesh has limited number of Inland Container Terminals (ICT) on the waterways near Dhaka to relay container to and from the seaport. Locations of those ICTs are shown in Figure 3-13. Among them, as a matter of fact, Pangaon ICT is only one facility in operation though of which handling volume has stayed much smaller level than its planned capacity since its opening of operation in 2013 as shown in Table 3-33.

Bangladesh has another category of waterways for international trade called as Protocol Route. In accordance with the Bangladesh-India Trade Agreement, a protocol was signed and renewed by both governments to set waterways for commerce between two countries and for passage of goods between two places in one country and to third countries through the territory of the other. Currently, 10 routes are prescribed as the waterways to which this protocol applies as shown in Figure 3-30. Using these routes Bangladesh is importing bulk cargoes in large volumes led by fly ashes as one of main materials of cement which are directly carried to many cement factories located on class I or class II waterways.

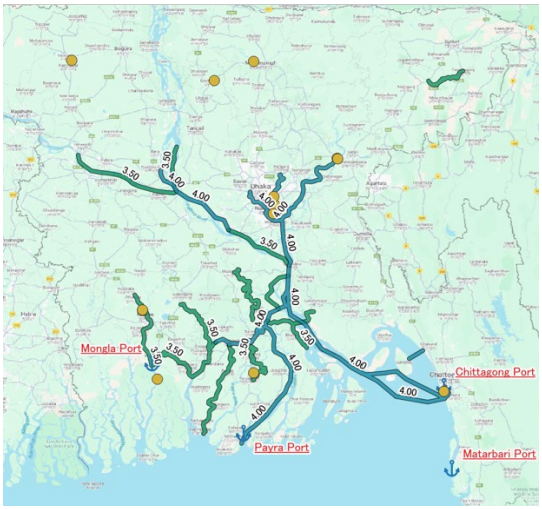


Source: BIWTA

Figure 3-28 Classification of Inland Waterways of Bangladesh



Cement Factories



Grain Silos

Source: OCDI-QGIS

Figure 3-29 Location of Cement Factories and Grain Silos

Table 3-33 Handling Volume of Pangaon ICT

	Pangaon Incoming (TEU)	Pangaon Outgoing (TEU)	Pangaon Total (TEU)	Chittagong Port (TEU)	Pangaon Share (%)
2013	76	18	94	1,541,517	0.01
2014	433	485	918	1,731,219	0.05
2015	652	597	1,249	2,024,207	0.06
2016	2,466	2,142	4,608	2,346,909	0.20
2017	13,182	12,537	25,719	2,566,597	1.00
2018	11,232	11,275	22,507	2,797,529	0.80
2019	14,073	13,404	27,477	2,965,338	0.93
2020	10,063	10,437	20,500	2,740,040	0.75
2021	13,877	13,601	27,478	3,090,109	0.89
2022	13,023	13,036	26,059	3,015,040	0.86
2023	14,934	14,996	29,930	2,927,562	1.02
2024	1,217	1,694	2,911	3,192,701	0.09

Source: Prepared by OCDI based on the statistics of CPA



Source: OCDI-QGIS

Figure 3-30 Bangladesh-India Protocol Routes

(b) Inland waterways' share in transportation

According to the Perspective Plan of Bangladesh (2021-41), in 2018 waterways accounted for 16% of the transportation of goods, while roadways and railways accounted for 77% and 6% respectively in total freight movement in Bangladesh (tones kilometers basis). From the viewpoint of resilience, diversification, economy, and environmental sustainability, it will be required to enhance the share of inland waterways more, as it is the most environmentally friendly mode as well as economical, and Bangladesh has the advantage having waterways extending well deep into the land of the country.

As for the transportation of imported bulk cargo, Bangladesh seems to take this advantage well as many major bulk cargoes are carried by inland waterway ships from seaports to the sites on the waterways directly. As for the carriage of container, however, the share of inland waterway has rarely exceeded even 1% in total imported/exported volume handled in Chittagong Port as shown in the column of Patenga share in Table 3-33. The reasons behind this low share are considered as follows:

- Location of ICT is far from northern Dhaka area where many RMG factories are located;
- Daytime truck ban in Dhaka city hinders the transportation from/to ICT;
- Inland waterway transport does not offer frequent, economical, or reliable enough service to attract shippers and ocean-going vessel operators.

(2) Challenges

(a) Demand from international trade

Results of the demand forecast of international container and non-container cargo indicate that Bangladesh will have tremendous increase of cargoes in coming 25 years. Summary of the forecast is shown in Chapter 4.

Because of several restrictions such as draft, length, and height of a ship to keep navigability on waterways, size or loadable capacity of a ship will have little room to be enlarged in the future. Therefore, to accommodate the increase of demand in accordance with increase of international trade volume, numbers or traffic of ships plying over waterways will have to proportionally increase. Inland waterways must be maintained well enough to bear burden from increased traffic. Maintenance will be necessary not only in keeping depth of waterways but also in other aspects to secure safe navigation including keeping width of navigable passage and height under the bridges throughout the passage, setting adequate navigational aids, and proper control of traffic in congested or dangerous areas.

(b) Demand from container transport

As for containers, it is also needed to raise the share of transportation by inland waterway from current less than 1% level to 5 to 10% for more resilience, and efficient economy of hinterland connectivity, and to accommodate increasing requirement for environmentally friendly mode of transportation from buyers and end users abroad. To increase the share in rapidly increasing volume of containers to/from the seaports, new ICTs are necessary to be built. In view of the reasons behind Pangaon ICT is suffering low performance, location of new ICTs should be determined after deliberate evaluation on the following points:

- To have deep permissible draft of ship, ideally on class I waterway (4m)
- To have higher clearance under the bridges over the throughout passage
- No traffic restrictions on roads including daytime truck ban or high tolls from/to centers of production of export goods

(c) Others

Imports of vehicles are also forecasted to increase rapidly in accordance with growth in people's income. It is expected that inland waterway service by RO/RO type ships will be used sometime in the future from the seaport where vehicles are unloaded from ocean-going vessels to the points where end users are living, most probably in Dhaka area. To accommodate this type of shipment, it will be required to build new terminals near Dhaka which have adequate parking space for storing imported vehicles.

3.8.4 Modal share in the hinterland connection

(1) Introduction

The modal share of domestic freight transport varies across countries depending on geographical characteristics, the development of logistics-related infrastructure, and the maturity of the logistics service business environment. Ensuring sustainable growth for the logistics industry - which serves as the backbone of each transport mode - is a critical prerequisite. Missing links of highways and railways, bottlenecks of inland waterways and road networks, and procedural inefficiencies in logistics services must be addressed. Government regulations concerning technical standards and safety must be responsive and designed to maintain a fair competitive environment. Furthermore, policy guidance aimed at reducing social costs - such as traffic congestion, greenhouse gas emissions, and energy inefficiency in transport - is essential.

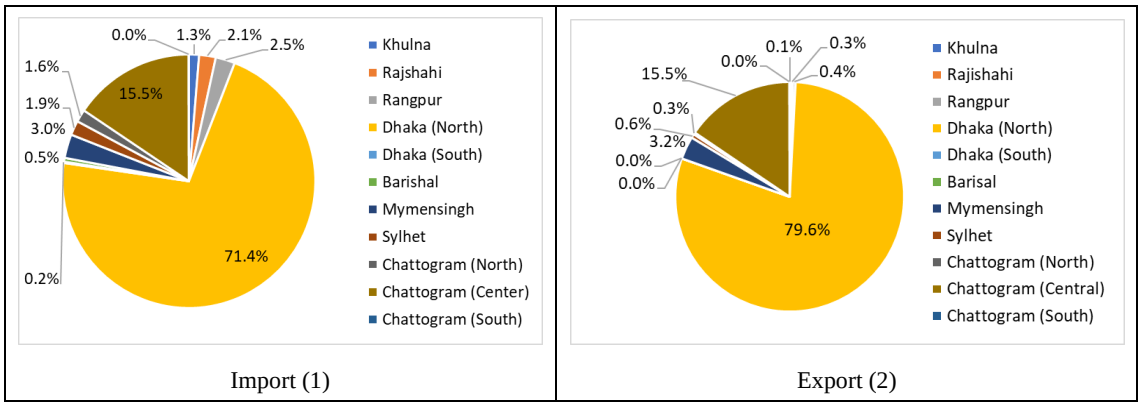
The National Logistics Policy 2024 references the Bangladesh Perspective Plan (2021–2041) to present the ton-km base modal share of domestic freight transport in 2018: road transport accounted for 77%, inland waterways (IWT) for 16%, railways for 6%, and other modes for 1%. The target modal shares are set at 60% for road, 25% for IWT, 14% for rail, and 1% for other

modes. Through the development of a diversified multimodal transport system and the effective implementation of action plans promoting modal shift, it is considered feasible to further reduce road freight to 50%, while increasing IWT to 28%, rail to 20%, and other modes to 2%.

In the context of the Bangladesh National Port Strategy (BNPS), this strategy narrows its focus from the ton-km base modal share of general domestic freight to the volume base modal share of container/bulk cargo between seaports and their hinterlands. While the development status and challenges of road, IWT, and rail networks are discussed in the previous sections, this section analyzes the current modal share and connectivity issues in hinterland transport, categorized into container and bulk cargo.

(2) Container

Distribution of cargo owners (shippers and consignees) of containers is shown in Figure 3-31. Dhaka (North) is the largest consumption and production area with a 71% share for import and a 80% share for export followed by Chattogram (Central) with 16% shares for import and export.



Note: Dhaka Division was divided into two zones by Padma River.
Note: As for Export, shares are the averages of No. of Employee's share and No. of Machine's share of factories.
Source (1): Prepared by OCDI based on IGM data (FCL data of 9 vessels in 2022) provided by CPA.
Source (2): Prepared by OCDI based on the member data of the Bangladesh Garment Manufacturers and Exporters Association (BGMEA), https://www.bgmea.com.bd/page/member-list.

Figure 3-31 Location of Cargo Owners of Containers

Currently, the vast majority of Bangladesh's import and export container is handled through Chittagong Port. Approximately 95% - 97% of hinterland container transport is conducted by road, with rail accounting for around 3% - 4%, and IWT accounting for 0% - 1%. Compared to the government's stated policy direction - aimed at shifting freight from road to rail and IWT - the current modal share for container transport remains significantly misaligned.

Table 3-34 Modal Share (TEU base) of Containers of Chittagong Port

	Road	Rail	IWT
2024	97.2%	2.7%	0.1%
2023	95.4%	3.5%	1.1%
2022	95.5%	3.6%	0.9%

Note: Shares of rail and IWT are calculated by dividing each transport volume (TEU) by throughput (TEU) of Chittagong Port. Share of road is the rest.
Source: Prepared by OCDI based on CPA statistics.

In Dhaka, rail-based Kamalapur ICD and river port ICTs are capable of handling container supply and customs clearance on a par with port-area ICDs. In addition, 38 items restriction [9] of customs clearance is not applied to Kamalapur ICD and river port ICTs. From a social cost perspective, rail offers superior energy efficiency and lower environmental impact. However, challenges remain, including insufficient train frequency and limited availability of transport wagons. For IWT, despite latent demand, regular shipping schedules are lacking. A fixed tariff system introduced in 2022 (now repealed), customs delays, and reliability concerns - exacerbated by the accident of Pangaon Express in July 2023 - have hindered modal share expansion.

As a result, hinterland container transport between Chittagong and Dhaka remains dominated by road. If this trend continues, container volume growth projected under the BNPS will place increasing pressure on road infrastructure. In addition to steady implementation of road development plans, a coordinated government effort is needed to expand the modal share of rail and IWT, thereby reducing road congestion, environmental impact, and overall social costs.

(3) Non-container Cargo

(a) Dry Bulk Cargo

Dry bulk imports including clinker, coal, food grain, fertilizer, etc. are handled by Chittagong Port (85%), Mongla Port (10%) and Payra Port (4%) in 2024.

Jetties in Karnaphuli River in Chittagong Port offer a maximum vessel draft of 9.5 m - 10.0 m to berth. As maximum vessel drafts of these jetties are not sufficient for full laden dry bulkers of popular 50,000 DWT - 80,000 DWT type, STS lightering operations from large ships to smaller ones are conducted at Outer Anchorage. Therefore, the vast majority of such imported dry cargo is transported to the hinterlands via small domestic ships.

[9] On 17th July 2025, it is reported that NBR issued the directive to expand the total number of items to 65 eligible for delivery in ICDs. it is also reported that the expansion comes with some conditions including that the commissioner of Chattogram Customs House will retain the discretion to allow dual delivery – either from the port or ICDs – in special circumstances.

Waterways in Dhaka, Narayanganj and Meghna Ghat river ports qualify as Class-I navigable waters. Along these waterways, many private facilities such as cement mills and grain silos are located and unload dry bulk cargo.

In Karnaphuli River, half loaded bulkers can dock at dedicated bulk berths equipped with hoppers and belt conveyors allowing direct truck loading. Road transport is used for small-lot deliveries to urban areas and industrial zones. Rail transport remains limited, being used only for select commodities (food grain and fertilizer).

To meet projected demand increases outlined in this strategy, it is essential to secure inland waterway (IWT) capacity for bulk cargo transport destined for hinterland industries, particularly in the Dhaka region. This requires maintenance dredging, navigational safety management, and support infrastructure development. Additionally, improving access road networks around river ports and private facilities, along with congestion mitigation measures, is also important.

In Mongla Port, jetties in Passur River offer a maximum vessel draft of 8.5 m to berth. As maximum vessel drafts of these jetties are not sufficient for full laden dry bulkers of popular 50,000 DWT - 80,000 DWT type, STS lightering operations from large ships to smaller ones are conducted at Harbaria Anchorage. Therefore, the vast majority of import dry bulk cargo is transported to the hinterlands, mainly southwestern Bangladesh, via small domestic ships.

Although a new railway line to Mongla Port connecting the port to the western railway network was inaugurated in 2024, few trains on this line have run so far.

(b) Liquid bulk cargo

The vast majority of petroleum products (except LPG and LNG) pass through Chittagong Port.

Including refined products from refineries, hinterland distribution from Chittagong Port is predominantly conducted by road using tank lorries. While safety management for hazardous cargo is strictly enforced, nationwide distribution is carried out under the supervision of the Bangladesh Petroleum Corporation (BPC) through state-owned marketing companies, supported by a well-established transport network.

In August 2025, a petroleum pipeline between Chittagong and Dhaka was scheduled to commence operations, initially handling 3 million tons per year, with future expansion to 5 million tons. It is expected to contribute to reducing transport costs and environmental impact.

LPG imports, while overseen by EMRD, are permitted for direct importation by private companies. Import LPG is handled at Mongla Port (65%) and Chittagong Port (35%) in 2024.

Hinterland transport of LPG is conducted via small domestic LPG tankers from Mongla Port to dedicated private jetties in Dhaka and Narayanganj river ports, and by road using tank lorries to other places.

LNG is imported at Matarbari port where it is regasified.

(c) Other Cargo

Passenger vehicles are imported by RoRo vessels through Chittagong Port and Mongla Port. Since the storage fee of the latter is lower, passenger vehicle imports have been shifting from Chittagong Port to Mongla Port. Imports of construction machinery and heavy equipment are also transported via RoRo vessels. Chittagong Port handles construction machinery, while Mongla Port specializes in heavy equipment and cargo related to ODA projects.

To improve domestic transport efficiency, the introduction of specialized small vehicle carriers is effective once transport volume increases. This also opens up the possibility of utilizing less congested Payra Port for storage and pre-delivery inspection, which could be strategically beneficial.

4. Guiding principles of seaports in Bangladesh

4.1 Expected future role of seaports in Bangladesh

Seaports of Bangladesh are expected to continue to play an important role by supporting import and export activities of various sectors, thereby contributing to the growth of the national economy. In particular, containers and bulk cargo such as energy (coal, LNG, LPG and other petroleum products), food grain, cement materials, construction materials will increase along with the growth of GDP and population. As the total port cargo handling capacity will soon be exceeded, increasing the capacity of infrastructure and the efficiency of operations is vital. In enhancing the capacity of ports, it is necessary to taking into account the characteristics, natural conditions, historical role and function of each port, trends in maritime transport, cargo owner's distribution and hinterland connectivity, efficient investment, efficient and resilient port operation, security and safety, disaster prevention as well as environmental and social considerations in a holistic and harmonious manner within the overall national seaport system.

In addition to the logistics gateway function of seaports, waterfront-type industries in seaports can enjoy the least logistics cost between a jetty and a factory. Therefore, seaports have the potential to attract new industrial locations including Foreign Direct Investment (FDI).

Furthermore, obsolete facilities can gradually be converted into an attractive waterfront, including a cruise terminal, after larger facilities are built at deeper locations.

As a whole, seaports are expected to be important logistics and industrial bases that support diverse industrial activities and people's lives, as well as forming part of an attractive waterfront.

4.2 Guiding principles of seaports

4.2.1 Ensuring sufficient cargo handling capacity for foreign trade

The main role of ports is to support external trades and thereby contribute to the national economic activities and growth. Therefore, seaports must not become a bottleneck in foreign trade; otherwise, industrial activities will be severely disrupted. For this reason, it is necessary for the government to ensure sufficient cargo handling capacity with a certain degree of redundancy.

4.2.2 Defining roles and functions of each port

Defining roles and functions of each port is beneficial for the effective use of resources. Taking into account challenges, core issues, advantages and sales points of each port, roles and functions of each port are defined as shown in Table 4-1.

As for Payra Port, available land should be used as early as possible including allowing temporary use for renewable energy, etc. in order to generate the national economic benefit. Further development is subject to the water depth of the channel and the inducement of industries and investment from private sector. The efficiency of future investments should be pursued without obsessing with past investments (sunk cost in economics).

Regional transit gateway for neighboring countries is a common role and function. To realize this, not only the development of infrastructure but also the advancement of dialogue with neighboring countries on BBIN MVA and Coastal Protocol with Myanmar Government are necessary.

Table 4-1 Defined Roles and Functions of Each Port

Port	Roles and Functions
Chittagong	● Main container port for Dhaka and Chattogram ● Main ship-to-ship lightering operation port for bulker ● Industry and logistics functions are concentrated here
Mongla	● Ocean gateway for Khulna and west part of Bangladesh ● Ship-to-ship lightering operation port for bulker ● Support for Mongla EPZ, Ishwardi EPZ and regional industries
Payra	● Ocean gateway for Barishal Division, etc. ● Potentials to serve as bases for the vessels which don't have deep draft such as CBU car base, LPG base, construction material base (stone, etc.) ● Promotion of renewable energy and regional industry including fishery
Matarbari	● Deep sea port for container, energy and bulk for Bangladesh ● Support for industries in EPZs, LPZs, FTZs [10] in MIDA area ● Ship-to-ship lightering operations for deep draft bulker
(Common *)	● Regional transit gateway for neighboring countries for the future

Note *: To realize above, not only the development of infrastructure but also the advancement of dialogue with neighboring countries, such as BBIN MVA and Coastal Protocol with Myanmar Government are required.

4.2.3 Efficient investment

(1) Project evaluation

Port development usually requires a large investment and has a large impact on the socio-economy of the country. Therefore the government requests a port authority to submit its development plan for approval.

If a port development plan is important to the government, it may subsidize the development and encourage early completion. If a port development plan is profitable, a private investor may be

[10] EPZ: Export Processing Zone, LPZ: Local Processing Zone, FTZ: Free Trade Zone.

interested in investing. If it is not profitable but would contribute to national economic growth, public sector should invest in it.

There are different criteria for evaluating port development projects depending on whether investment is by the public sector or by private investors. Public sector places importance on generating benefits for the national economy, while private investors will focus on return on investment. There are two types of project evaluations:

- Economic Analysis: to check national economic benefit against the project cost
- Financial Analysis: to check earnings against the project cost

The purpose of the economic analysis is to appraise the feasibility of the project. The result of the economic analysis is utilized to judge whether the project is worth implementing from the national economic viewpoint. For this reason, economic analysis is more important for the public sector like the government than the private sector.

The feasibility of a project can be measured by Net Present Value (NPV) or Internal Rate of Return (IRR) value. IRR in the economic analysis is called "EIRR (Economic Internal Rate of Return)". Social capital like ports can affect national economy in various terms/sectors and the ultimate effect of operation of newly developed social capital would be the contribution to the national economic growth. But it is difficult to evaluate the extent to which the new social capital affects national economic growth in monetary value. Therefore, it is recommended to evaluate only direct effects generated by the project such as reduction of transportation cost and reduction of waiting time without considering economic spillover effects or overall economic effects.

The economic analysis is conducted to confirm whether the expected benefits of a project exceed the costs, and if so, by how much. Since the service life of port infrastructure is several decades, the economic benefits and costs over the service life are converted to present value for comparison in NPV method. Or an interest rate which balance them is calculated in IRR method. However, in the case of investments that are effective within only one year such as maintenance dredging at Rabnabad Channel, the benefits and costs for that one year should be compared.

Economic analysis and financial analysis should be based on actual data, not fabricated data. All organizations should take responsibility in this regard to ensure that all assumptions made are valid.

(2) Relation between Demand and Supply

As for the relation between cargo demand and supply of port facilities, the following points should be taken into account:

- Number of stored containers in CY is preferable to be less than 70% of yard stacking capacity for smooth terminal operation.
- Total container throughput of Bangladesh is preferable to be less than 90% of the total container throughput capacity for smooth and redundant port service required for the national economy.
- Staggered opening of new terminals are preferable to avoid excessive demand competition
- Upper limits for annual increases at each terminal, for example 0.4 million TEU, are preferable to set taking into account the introduction of cargo handling equipment, capacity enhancement of private off-docks, etc.

(3) Consideration of sedimentation

Sediment as much as 0.5 - 2.4 billion tons per year [11] (due to run-off mainly from the Himalayas) causes sedimentation in navigation channels and basins of ports in Bangladesh, while expanding not only national land areas but also water areas shallower than CDL-10m.

We should understand that the nature is truly powerful, and recognize that the characteristics of sedimentation vary depending on factors such as grain size of sediment, current, tides and waves. Th following article presents lessons learned from foreign ports.

(Lessons Learned from Foreign Ports)

Dynamic Equilibrium

A state of dynamic equilibrium generally exists in coastal waters and represents the balance between water flow and sedimentary conditions. The natural bathymetry that existed in coastal waters prior to any anthropogenic deepening of channels for navigation purposes often represents the dynamic equilibrium. When a channel in dynamic equilibrium is deepened there is often an inherent tendency for the channel to shoal until it returns to its equilibrium condition. Dynamic equilibrium is also analogous to the classical "regime theory" developed for river engineering although strictly speaking regime theory is not applicable to muddy sediments.

From 1909 the inner tidal Thames channel to the historic Port of London was deepened from its natural state, thereby creating a controlling depth 8.25 m below Chart Datum. The greater part of this deepened channel proved to be self-maintaining, but two zones were subject to high rates of siltation. Between 1928/9 & 1955/6 maintenance dredging need rose from modest values to 1.55-2.4 M m^3/yr and showed a rising trend. Inglis & Allen applied concepts of regime

[11] Source: "Research on Sediment Distribution and Management in South-West Region of Bangladesh", Inception Report, July 2019, WAPRO and IWFM, BUET.

theory to demonstrate that the deepening had disturbed the estuary from its equilibrium. Permitting the bed to shoal by as little as 0.4-0.8 m returned the channel closer to its equilibrium condition with an attendant reduction in maintenance dredging, down to 77,000 m^3 by 1955/6. Today, the system requires maintenance dredging of 50,000-150,000 m^3/yr, coupled with an additional 120,000-150,000 m^3/yr dispersed by water injection dredging. These were achieved for the modest penalty of slight reductions in vessel entry and departure windows.

Flow Training

Flow training is a means for re-establishing a dynamic equilibrium between flow conditions and channel depths in order to minimise sedimentation. Conventional earth/rubble mound dikes are a form of training structure. Dikes are commonly placed along the sides of a dredged channel where the natural waterway is wider than the channel itself. The purpose of the dike is to reduce the effective hydraulic width for an idealised rectangular flow area. Confining flows within a narrower channel increases velocities, thereby reducing sedimentation. Provision of a dike along the banks of the dredged channel can, depending on the geometry of the construction of the dike, return the velocity to its pre-dredged, or equilibrium, conditions with an attendant reduction in sedimentation in the channel.

A number of major European estuaries have been greatly altered by anthropological changes during the last century - for example in the Elbe and Weser in Germany, the Scheldt estuary in Flanders and The Netherlands, and the Loire in France. The estuaries have been modified by training walls, reclamation works, and by capital fairway deepening with a view to permitting access by deep-drafted vessels. Tidal range has typically increased up-estuary, as has siltation, and the zone of saline intrusion has migrated upriver. Together these have resulted in a degradation of natural attributes, recognised by all users of these estuaries. A scientific understanding is now available of the requirements for integrated and long term sustainable estuary and sediment management.

Flow training structures can also impact salinity intrusion, estuarial circulation and water quality. The potential impacts of the flow training works are generally proportional to the extent of the works. Isolated works tend to have isolated impacts; lengthy works, larger impacts. In many cases, estuarial impacts of additional training works of limited extent will be small in comparison to historical impacts. An example would be a limited training structure in the vicinity of a lock or harbour opening. On the other hand, works comprised of long dikes training a narrow channel could have significant impacts. Accordingly, a thorough analysis of all of the potential impacts of flow training works is mandatory to assure safe and responsible design with protection to valuable estuarial ecosystems. Fortunately, most regions of the world have environmental management systems whose purpose it is to vet proposals for actions such as

estuarial training works. Finally, it is important to evaluate the financial feasibility of flow training works. It is not uncommon to find such works more expensive than dredging options.

Several addition points can be drawn from the long-term experience with training walls. First, such systems may take prolonged periods to reach a new equilibrium. Initial success (e.g., self-scouring channel) may be followed by the need to extend the works. In the past such need may have been unexpected, however, judicious use of the sedimentation analyses technology recommended in the present report should limit such unintended consequences. One comment arising from expensive works is that if they do not perform as anticipated, especially in the longer timescale where predictive capability is limited, it can be very expensive to remove the works at a later date. Capital dredging works which can be permitted to backfill naturally or re-aligned if they create undesirable side effects are likely to be preferable where viable.

Source: PIANC, "Minimizing Harbour Siltation", Report No. 102-2008

4.2.4 Efficient and resilient port operation

(1) Efficient port operation utilizing KPIs

It is essential for efficient port operations to monitor Key Performance Indicators (KPIs) that show the daily status of port activities. General KPIs related to port operations include vessel dwell time in port, berth occupancy rate, and berth productivity. These values reflect the basic operational status of the port.[12] With regard to containers in particular, other important KPIs include Container Dwell Time (the number of days containers remain in the port), Trailer Turnaround Time (the time trailers remain in the port), and the availability of cargo handling equipment, etc. Furthermore, if there are items that need to be monitored individually for each port, these should also be added as KPI items. The following is a list of KPI items set for Matarbari Port as an example.

[12] Container and cargo handling volumes, which are direct indicators of port operations, are compiled for all ports and are therefore not included in this KPI.

Table 4-2 KPI items planned for Matarbari Port

No.	KPI	Definition	Unit	Source
1	Ship Turnaround Time	Monthly Average of (Ship Departure Time – Ship Arrival Time)	Hours	TOS
2	Berth Occupancy Ratio	Monthly (Total Berthing Time in hr.) / (Days of the Month * 24hr.)	%	TOS
3	Berth Productivity	Monthly (Total Number of Moves) / (Total Operation Hours) by Vessel and QGC	Moves /Hour	TOS
4	Container Dwell Time	Monthly Average of Container Dwell Time in the Yard for each Export, Import, and Empty	Days	TOS
5	Trailer Turnaround Time	Monthly Average of A: (Gate Out Time – Gate In Time) by Import/Export B: (Gate Out Time – Cont. Pick Time) for Import Only	Hours	Security System, TOS
6	Availability of CHE by QGC, RTG, RS	Monthly (Total Operation time – Total Break down Time) / (Total Operation Time)	%	Maint. Report
7	Yard Stacking Density	Monthly Average of (Number of Containers Stacked in the Yard in TEU) / (Container Stacking Capacity)	%	TOS
8	Number of Container Handlings in the Yard per Stay	Monthly (Total Number of Container Moves in the Yard) / (Total Number of Containers Discharged/Loaded/Received/Delivered)	Times	TOS
9	Containers Staying over 3 Months	Number of Containers that have been in port for more than Three Months	TEU	TOS

Source: OCDI

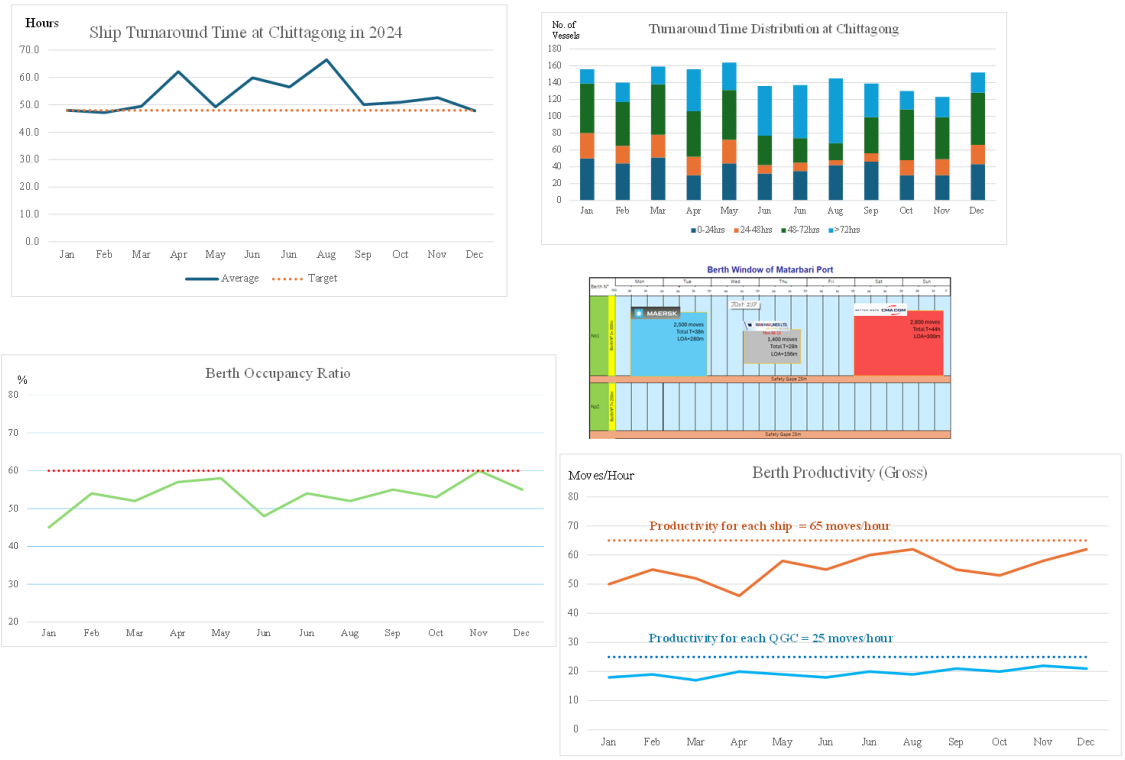
When monitoring these items, it is necessary to set target values for each item and sequentially consider measures to achieve those target values in order to ensure the efficient operation of the port. Examples of KPI target values set for Matarbari Port and KPI monitoring charts are shown below.

Table 4-3 Target Values of KPI for Matarbari Port

Condition: no. of QGC=3 units, annual throughput=600,000 TEU/Year,
average moves per vessel=2, 800 moves/vessel

No.	KPI	Target Value	Remarks
1	Ship Turnaround Time	<= 48 hours	Handling = 2,800/65* = 43 hrs. (* see No.3) Preparations before and after handling= 5 hrs.
2	Berth Occupancy Ratio	<= 60%	Lower value than CPA (70-80%) as the port is just after the opening.
3	Berth Productivity	>= 25mv./hr./QGC >= 65mv./hr./vessel	Standard productivity for QGC in Asia region (3 QGCs/Vessel) x (25/QGC) – α
4	Container Dwell Time	Import: <= 10 days Export: <= 5 days	Values picked up from current CPA record.
5	Trailer Turnaround Time	A: Import: <= 160 min Export: <= 40 min B:Import: <= 120 min	40m : Ave. time from In-Gate to yard move. 120m: Max time for Custom procedure, etc. for avowing trailer congestion in the yard.
6	Availability of CHE by QGC, RTG, RS	> = 90% for all types of Equipment	
7	Yard Stacking Density	<= 70%	When it exceeds 70%, unnecessary container movements (shuffle moves/pickup) increases.
8	Number of Container Handlings in the Yard per Stay	Import: <= 3 Export: = 2	Discharge x 1, Delivery x 1, Shuffle/Customs x 1 Receive x 1, Load x 1
9	Containers Staying over 3 Months	= 0	

Source: OCDI



Source: OCDI

Figure 4-1 Example of KPI Monitoring Charts

KPI information is used in the following ways.

1) All KPI information is compiled monthly and shared in a visually accessible format using graphs and other tools to highlight monthly changes. A port monitors changes and trends on a monthly, seasonal, and annual basis.
2) If the target value is not achieved or a change from past value is recognized, the port will investigate the cause, examine counter measures, and implement them as necessary. These measures will be reviewed and implemented using the PDCA (Pan – Do – Check – Action) cycle.
3) KPI information must be shared not only among port officials but also with stakeholders. This is because the cooperation of port stakeholders is essential for implementing measures, and stakeholders can also propose and implement more effective measures.

(2) Container handling workflow compliant with international standards

The container handling workflow in container terminals should comply with International Standards to achieve the efficient Port operation. By doing so, the following work practices would be eliminated.

(a) In-yard delivery for import containers

All import FCL (Full Container Load) containers should be transported outside the container yard as containers. In-yard delivery operations require significant additional space, increase the number of container movements, hinder the smooth flow of containers, and increase the risk of accidents. In order to eliminate this work practice, NBR's regulation on 38-item (low duty import item) restriction [13] of cargo delivery in off-dock facilities should be rationalized.

(b) Direct loading of export containers to a vessel from outside trailers

All export containers should be stacked in the yard before loading them to a vessel. Direct loading operation reduces the efficiency of the vessel loading operation and increases the risk of accidents at the quay.

(3) Long-term staying cargoes / containers

There are many long-term staying cargoes and containers in warehouses and container yards in ports in Bangladesh. In Chittagong Port, about 20% of the container yard is occupied by long stay containers, and the situation is similar for long stay cargoes in warehouse and CFS. These cargoes and containers significantly hinder the efficiency of port operations, so it is necessary to pay close attention to their movements on a daily basis and take appropriate measures promptly when necessary. Specifically, it is necessary to conduct regular monitoring of these cargoes and containers using KPIs (refer to (1) above). Based on this, it is important to share information closely with Customs and shipping lines and take the necessary steps with them to reduce the long-term staying cargoes and containers.

To ensure the effective implementation of the strategy and to enhance the overall efficiency of port operations, customs processes, and trade facilitation, it is essential to strengthen the legal and judicial framework dealing with port- and trade-related disputes. At present, the limited number of courts and judges in Bangladesh results in significant delays in the disposal of commercial, customs, import, and export-related writs/cases. This delay adversely affects not only the efficiency of customs and port operations but also the confidence and interests of the business community. Therefore, it is recommended to implement the following proposals:

[13] On 17th July 2025, it is reported that NBR issued the directive to expand the total number of items to 65 eligible for delivery in ICDs. it is also reported that the expansion comes with some conditions including that the commissioner of Chattogram Customs House will retain the discretion to allow dual delivery – either from the port or ICDs – in special circumstances.

(a) Establishment of Dedicated Supreme Court Benches:

Adequate number of specialized benches within the Supreme Court of Bangladesh should be established to exclusively deal with customs, import, export, and port-related writs and cases. This will ensure faster and more consistent adjudication of port and trade-related disputes.

(b) Formation of Specialized Commercial Courts:

Sufficient number of dedicated commercial courts should be established to try customs, import, export, and port-related civil and commercial disputes efficiently. Such specialized courts will expedite case disposal, reduce procedural delays, and promote a more business-friendly environment. It should be mentioned that Hon'ble Supreme Court of Bangladesh led by Hon'ble Chief Justice of Bangladesh has prepared a draft of Commercial Court Ordinance 2025 and forwarded the proposal to the Govt. of Bangladesh. The Govt. of Bangladesh should take effective steps to promulgate the Ordinance as soon as it can.

These judicial reforms will play a pivotal role in ensuring smooth, efficient, and transparent port operations, thereby reinforcing Bangladesh's position as a competitive maritime and trade hub in the region.

(4) Consideration for Business Continuity Plan (BCP)[14] of the Port

Bangladesh's ports are, in principle, designed to withstand the natural disasters that have occurred in the past. However, this does not eliminate the risk of being struck by disasters beyond past experience. Furthermore, cybersecurity incidents, serious accidents, and other events could halt port operations for extended periods. Therefore, it is necessary to formulate Business Continuity Plans (BCPs) that account for the occurrence of such disasters and emergencies.

Specifically, at the national level, it is necessary to consider the concept of alternative/backup ports within the scope of the government's fiscal capacity. This concept also covers policy measures to encourage the distribution of cargo, such as government-involved cargo, among the ports even during normal times. At the same time, each port must prepare for such situations by securing alternative facilities for emergencies, clarifying operational procedures for business continuity according to the scale of damage, and establishing emergency decision-making systems. Furthermore, as part of advance preparations, it is also necessary to conduct periodic drills simulating emergency response procedures, as well as decision-making exercises on the selection of alternative operational procedures.

[14] Ensuring the continuity of port operations in the face of disruptions - whether natural, technical, or institutional - is a critical component of operational readiness. This includes contingency planning, emergency protocols, adaptive management systems, and continuity of operations, collectively referred to in international practice as Business Continuity Planning (BCP).

(5) Alleviating traffic congestion

Large numbers of trucks enter and exit ports to deliver or pick up containers and cargoes. In addition, each port and container terminal have gates for access control, and trucks must follow the prescribed procedures when entering and leaving. As a result, traffic congestion often occurs around the gates of ports and container terminals. Traffic congestion caused by trucks not only affects the flow of cargo (lead time) but also has a significant impact on general traffic flow, which in turn has a major impact on local residents and the environment. Furthermore, traffic congestion within the port significantly reduces port efficiency. Therefore, port authorities must check daily traffic congestion, determine the cause of congestion if it occurs, and implement measures to alleviate the congestion. Accordingly, port authorities should perform the following activities on a daily basis.

- Regular review of KPIs to identify various changes in cargo flow
- Identification of issues through regular (daily, weekly, monthly, etc.) on-site observations
- Analysis of traffic flow, traffic volume, and processing time at the check points (Gate, X-Ray Inspection, preparing documents, and the payment), etc.
- Information sharing with stakeholders, including state government, traffic police, road authorities, etc. through information exchange meetings

Congestion often occurs due to multiple causes, which vary depending on the conditions at each port. The main factors contributing to traffic congestion are related to traffic volume, container yard operations, traffic flow along the gate road, and the behavior of drivers. These issues require comprehensive measures and the involvement of many organizations. A port must play a central role in resolving these issues.

Common countermeasures for traffic congestion caused by container trailers are shown below.

Table 4-4 Major Countermeasures for Traffic Congestion by Container Trailer

Major Causes of Congestion		Typical Countermeasures	Concerned Organization
Volume of Trucks	Increase of handling volume	Modal Shift	PA[1)], Government, Railway Company
	Traffic Concentration at specific time of the day	Truck Appointment System	PA, Terminal Operator, Truck Company
		Providing Information via Web	PA, Terminal Operator
		Revision of Delivery Plan	Tuck Company, Forwarder
		Set up Truck Waiting Area	PA, Terminal Operator
Container Yard	Container Handling Capacity in the Container Yard	Increase of Yard Cranes	Terminal Operator
Gate	Gate Capacity	Expanding Gate Lanes	PA, Terminal Operator
	Gate Procedure	Simplification of Gate Procedure	Terminal Operator, Customs, Security Authority, etc.
Road	Road Capacity	Road Improvement Lane Separation for Trucks	Government (Central/Local)
	Traffic Concentration on Specific Roads	Traffic Control	PA Traffic Police
		Revision of Traffic Route	
Truck Drivers	Failure of Drivers to Carry Proper Documents	Pre-checking of documents	Customs, Shippers, Consignee, Forwarder, Trucking Company, Drivers, Terminal Operator
		Pre-Gate System	
	Traffic Rule Compliance	Discipline of Drivers	Traffic Police, Truck Company, Drivers

Note: 1) 'PA' stands for Port Authority
Source: OCDI

Of the measures listed in Table 4-4, the introduction of a truck appointment system is considered an effective measure to alleviate traffic congestion caused by container trucks, as it allows the number of trucks entering ports and terminals to be limited. The following two types of appointment systems are typically introduced.

1) Appointments are only required for users who request quick processing
   This system is used by CONPAS (Container Fast Pass) in Japan. Users who want to pick up or deliver a container in a short period of time make an appointment to a specific time slot. Trucks with appointments should proceed to the appointment-only gate lane, where the line is short, allowing them to quickly pick up or unload containers.
2) Appointments are required for all users
   In Indonesia, the United States, and other countries, all users are required to make an appointment for container receiving/delivery. However, in Sydney, Australia, after about 10 years of operation, the service was discontinued due to frequent rule violations by drivers (such as double bookings, no-shows, etc.). Therefore, the system must be designed carefully to prevent such rule violations.

In both cases, the port or terminal shall set a predetermined appointment quota (number of vehicles per hour) in advance and allow reservations within that quota. Appointments require the

registration of necessary documents, which will be checked in advance, and only those that are approved will be allowed to make an appointment.

Truck operations vary depending on factors such as transport distances and business types at each port. Therefore, when introducing an appointment system, it is necessary to comprehensively design the optimum system, including parking areas inside and outside the port, the computer system, entry and exit routes, and other facilities, before implementation.

Another method to alleviate traffic congestion is to develop ICDs in areas other than Chittagong. Currently, 19 ICDs are located around the port area of Chittagong, and no other region has an ICD, except for the Kamalapur ICD at Dhaka Railway Station. This excessive concentration of ICDs not only causes severe traffic congestion around the port area but also along the route between Chittagong and Dhaka, as most cargo is transported by covered vans, which have lower capacity than container trailers.

Establishing ICDs in other regions - particularly in the Dhaka area - would encourage the use of container trailers and help reduce traffic congestion both along the Chittagong - Dhaka corridor and within the city and port areas of Chittagong. Almost all ICDs are operated by the private sector, which has accumulated expertise and long-standing partnerships with shippers and consignees. To promote the development of ICDs in areas beyond Chittagong, facilitation by relevant ministries or authorities is essential to incentivize private sector investment in new ICDs.

(6) Implementation of Digital Transformation (DX) and paperless port procedures

The expansion of DX utilization is essential for efficient port operations. It is particularly important to actively promote the introduction of the following measures.

1) Single Window System at Ports (Maritime Single Window (MSW), Trade Single Window (TSW) or Customs Management System (ASYCUDE), and Port Community Systems).
2) Expansion of EDI for data exchange for port operations involving many organizations, including shipping lines.
3) Introduction of computer systems for port operations (Terminal Operation System, General Cargo System, CFS System, etc.)
4) Introduction of an online payment system that issues invoices using a billing accounting system and links to the bank's system.
5) Each port should have the functionality of Port Community System (PCS) to share information among stakeholders.

4.2.5 Hinterland connection and modal share

(1) Containers

As mentioned in the previous section, approximately 95% - 97% of hinterland container transport is conducted by road. Currently, no major issue exists in the main sections of the river channel from the Ports to Dhaka. However, to accommodate future increases in traffic demand, highway development and four-laning must proceed. Specifically, the following construction/ improvements are necessary for RHD [15]:

- Dhaka-Chattogram widening to 6 lane
- Four-laning of the Chattogram - Cox's Bazar route,
- Four-laning of N7/N805

As for rail transport, the following improvements are necessary for BR:

- Construction of Dhirasram IDC should be urgently carried out.
- Construction of Chakaria Intermodal Yard (IMY) is essential for the hinterland connection of Matarbari Port.
- New locomotives and freight wagons and related train operation staff (drivers, conductors, etc.) are essential to increase the number of trains.

As for IWT, it is also needed to raise the share of transportation by inland waterway from current less than 1% level to, for example, 5% to 10% for more resilience, and efficient economy of hinterland connectivity, and to accommodate increasing requirement for environmentally friendly mode of transportation from buyers and end users abroad. To increase the share in rapidly increasing volume of containers to/from the seaports, new ICTs are necessary to be built. In view of the reasons behind Pangaon ICT is suffering low performance, location of new ICTs should be determined after deliberate evaluation on the following points:

- To have deep permissible draft of ship, ideally on class I waterway (4m)
- To have higher clearance under the bridges over the throughout passage
- No traffic restrictions on roads including daytime truck ban or high tolls from/to centers of production of export goods

In collaboration with BIWTA, the authority responsible for river port licensing, CPA is expected to play an active role in the development and operation of river port ICTs, such as Pangaon ICT. CPA has adopted a "public ownership, private operation" model, owning vessels and entrusting

[15] Besides, it is reported that the government has revised its plan to upgrade the existing 4-lane Dhaka-Chattogram Highway to 10 lanes. https://www.tbsnews.net/bangladesh/govt-plans-upgrading-dhaka-ctg-highway-10-lane-june-1043416

operations to private operators. This model has contributed to increased utilization of Pangaon ICT and the development of a pilot framework for IWT-based multimodal transport.

As river port ICTs expand, transshipment facilities at Chittagong Port and Matarbari Port, linking mother vessels to inland feeder vessels, will become increasingly necessary.

(2) Non-containers

As for road transport of non-container cargo, as with the preceding section, highway development and four-laning must proceed to accommodate future increases in traffic demand.

As for rail transport of bulk cargo, the following improvements are necessary:

- Loading/unloading facilities/equipment and special freight wagons are necessary. Shippers should be permitted to invest in such facilities.
- If Jamuna bridge renovation and dual gauge project between Chittagong and Tongi are completed, the area that can be transported from each port will increase and operational flexibility will also be improved.

As for IWT, to accommodate the increase of demand projected later in this strategy, numbers or traffic of ships plying over waterways will have to proportionally increase. Inland waterways must be maintained well enough to bear burden from increased traffic. Maintenance will be necessary not only in keeping depth of waterways but also in other aspects to secure safe navigation including keeping width of navigable passage and height under the bridges throughout the passage, setting adequate navigational aids, and proper control of traffic in congested or dangerous areas.

(3) Stakeholder coordination

To accommodate future increases in traffic demand and to achieve the strategic modal share targets for road, rail and IWT, the government must prioritize the planning, construction, development, and operation of key transport corridors that connect seaports to their hinterlands, particularly the Chittagong - Dhaka corridor, which is directly linked to global supply chains.

MOS, as the lead agency, must proactively coordinate with its affiliated department and authorities, as well as all relevant ministries, economic operators, and stakeholder organizations. Timely and effective consultation and coordination among these stakeholders is essential to resolving cross-sectoral challenges and ensuring policy coherence.

4.2.6 Framework of port management and operation

(1) Port Administration, Management and Operation

(a) Transition to a Landlord Port

Ports in Bangladesh have been classified as “Service Ports” until now but they are currently undergoing a transition to "Landlord Ports". In 2000, the Ministry of Shipping formulated the National Shipping Policy, and encouraged the participation of the private sector in port development, management, operation and maintenance.

Based on this policy, CPA appointed berth operators for the general cargo berths and terminal operators for the container terminals, i.e. CCT and NCT. In 2023, CPA granted an operation concession of the Patenga container terminal to the Red Sea Gateway Terminal for 22 years under the PPP Act.

In this way, CPA intends to gradually change to a landlord port authority. Payra and Mongla port authorities are inviting private investment for port expansion and SEZ projects under PPP schemes, however, those projects are not progressing as smoothly as expected. Public works projects are expected to continue for a while longer but eventually PPA and MPA seem to keep their way to change to landlord port authorities.

Since the privatization of port authorities started in the United Kingdom in early 1980’s, many port authorities in the world have introduced private operators and changed to a system of outsourcing their service activities. In many countries, port authorities once categorized as “Service Ports” changed to “Landlord Ports” or in some cases they changed to “Private Ports”.

In the course of the transition of port authorities in Bangladesh to “Landlord Ports” and the entity responsible for planning, coordinating and regulating development and operation, in order to maximize the efficiency and capacity of Bangladesh ports, it will be imperative to realize the following:

- With the increase in cargo and terminals expected in future as well as the introduction of ITOs, revising the management structure of CPA needs to be rearranged. For example, the introduction of area-wise COO as well as the enhancement of functions related to legal aspects, marketing and statistics, business analysis, ICT strategy and logistics in addition to the adjustment of manpower need to be discussed.
- Cooperation among port authorities is necessary to optimize the national economic benefit of ports even as terminals compete with each other. It should be understood that International Terminal Operators (ITOs) focus on return on investment and prioritize maximizing profits. The operational activities of all port authorities must be coordinated.

In addition, "Port Reform Toolkit (3rd Edition, 2025, World Bank)" recommends as shown in Table 4-5.

Table 4-5 Recommendations of Port Reform Toolkit Module 3 Port Governance

The module provides an analysis of port governance, focusing on the evolving role of port authorities in a dynamic global environment. A crucial responsibility of port authorities today is reconciling the diverse interests of stakeholders around a strategic vision that enhances the port's performance. While the original rationale behind the traditional landlord model remains relevant, port authorities can no longer limit themselves to simply managing port assets. Instead, port authorities are increasingly expected to take on more proactive roles as trusted port developers and community builders. A critical aspect here is the balance of power with other government entities, which directly impacts the legal and regulatory framework, financial capacity, and flexibility to nurture a dynamic management culture within the port authority. The era of sweeping port reform may be subsiding. Yet, incremental, or targeted adjustments to port governance can still be highly beneficial, if these adjustments ultimately strengthen port competitiveness. Adopting governance that properly responds to the specific legislative setting of the country and cultivating a proactive management culture often proves more effective than a major reform focused solely on implementing the landlord model or altering the legal status of port authorities. For this approach to succeed, it is essential to monitor and evaluate the impact of governance changes on the performance of the port authority and the port's overall competitiveness and draw conclusions for further adjustments. Key Recommendations 1. Take on proactive roles as developers and community builders, uniting both business and societal stakeholders, to enhance competitiveness and sustainability. This shift calls for re-evaluating port authorities' current business models - often built on the traditional landlord model - and for moving port authorities into more entrepreneurial roles, embracing both extensive horizontal (that is other port authorities) and vertical (for example, inland ports or dry ports) collaboration. 2. Clearly define the nature of the relationship between port authorities and governments, identifying institutional constraints that may have impacted reform outcomes. By considering the broader socio-economic, political, and administrative context, this approach helps tailor reform strategies to each unique case. 3. Create a comprehensive set of port performance indicators (ideally within their realm of influence), collect data to assess the impact of governance changes on port performance, and utilize these indicators to ensure effective post-reform governance.

Source: Port Reform Toolkit (3rd Edition), Module 3, 2025, World Bank

(b) Legal Framework for Port Administration

Seaports in Bangladesh are managed by CPA, MPA and PPA established under respective port acts, i.e. Chittagong Port Authority Act in 2022, Mongla Port Authority Act in 2022 and Payra Port Authority Act in 2013.

Chittagong Port was opened in 1888 under the Port Commissioners Act of 1887. The Ports Act, 1908 (Act No. XV of 1908) was established to control major ports in the Indian subcontinent and applied to India, Pakistan, Bangladesh and Myanmar. The Ports Act was amended and adopted as a law of Bangladesh in 1973 after independence.

The Chittagong Port Authority Ordinance was promulgated as the President Ordinance in 1976 (Ordinance No. LII of 1976), which was amended in 1995. Recently, Chittagong Port Authority Act (Act No. 08 of 2022) was enacted in April 2022, and the Ordinance 1976 was repealed.

Simultaneously, Mongla Port Authority Ordinance (Ordinance No. LIII of 1976) was promulgated in 1976 as the President Ordinance and then replaced by the Mongla Port Authority Act, 2022 (Act No. 07 of 2022).

Payra sea port was planned by the government in the green field, and PPA Act (Act No. 53 of 2013) was enacted in November 2013. The port was officially opened in March 2016.

Matarbari port development Phase 1 will be completed in 2028. As the Matarbari port is located in the port limits of Chittagong Port, CPA is expected to manage the port and operate the terminal. If the establishment of a new port authority for Matarbari is to be discussed, one option would be to combine the existing three port authority acts into a single port authority act, enabling it to administer all seaports in the country under respective port management bodies.
In order to realize effective port administration and management, it will be necessary to consider a legal framework from the following perspectives.

- Port authority acts can be combined into a single act in order to align their roles, functions and responsibilities and to clarify the differences between them. For example, Section 20 of PPA Act stipulates that PPA can form new companies and/or be a shareholder of such companies. However, this is not stipulated in the CPA and MPA Acts. This clause may be necessary for all “landlord ports”.
- Private port facilities outside the port limits of CPA, MPA, and PPA need proper administration of their development, maintenance, operation as well as ship entry/departure. Although the Ports Act 1908 has a provision on new ports, it is difficult to use for such private port facilities outside of the existing ports. Accordingly, a new provision or modification of the Ports Act may be needed.

- A conference/committee where relevant ministries, agencies, and port-related parties gather to discuss and make recommendations on development plans and action programs for each major port will play an important role in realizing a sound port system in Bangladesh.

(2) Terminal Operation and PPP

(a) Introduction of Private Operators and PPP

CPA outsources the operation of general cargo berths to private operators. Berth operation contract is usually awarded to a private company following the public procurement rules. A total of 13 berth operators have been awarded operation contracts. Contracts awarded to berth operators are usually 5 years. CPA also outsources the terminal operation of container terminals, CCT and NCT, to private operators. The term of contracts awarded to terminal operators is usually 5-6 years.

Private berth/terminal operators were introduced in 2007, replacing the stevedoring system launched by CPA in 1985. Under the new system, berth/terminal operators work to load, unload, store and supply goods with their own workforce. Labor classifications such as dock labor, merchant labor or stevedoring staff were abolished, and berth/terminal operators can employ workers on their own.

Recently, Patenga Container Terminal (PCT) was developed by CPA as a PPP project and awarded to an international terminal operator in 2022. New terminal development projects, namely the Bay Terminal and Laldia Container Terminal (LCT), are also being carried out by CPA as PPP projects.

(b) Development Coordination of PPP Projects

If several container terminals are developed by PPP simultaneously without any coordination, it may result in the over capacity of container terminals and less use at some terminals. If they are planned to develop in a predetermined order, the concessionaire of the current PPP project may request the concessioning authority to delay the following similar PPP projects until they have a certain level of container throughput.

In case that several container terminal development projects are carried out simultaneously, namely LCT, Matarbari DST and Bay Terminal, effective coordination is indispensable from the following perspectives to secure harmonized development and usage of each container terminals:

- Competition between the new PPP terminals and Matarbari terminal,
- Handicap of a green field port in Matarbari, and
- Cooperation of CPA in setting port tariff and providing port services.

(3) Pros and cons of introducing an ITO to a port terminal

The advantages of introducing an ITO to a port terminal development and operation are; 1) improving the efficiency of terminal operations, 2) earning Value for Money, 3) strengthening competitiveness for attracting cargo, and 4) securing funds for terminal development. On the other hand, it is important for a port authority to be aware that a private company will 1) prioritize securing profits over contributing to the national economy, 2) possibly have strategies which conflict with the interests of the public sector, 3) have strong legal competencies and experienced negotiating skills, etc.

(a) Pros 1: Improving efficiency of terminal operations

In general, a terminal will be operated more efficiently by an ITO than the public sector. World Bank's Port Reform Toolkit 1) introduces the example of Port of Cartagena (Colombia) whose performance has been significantly improved since the introduction of port concession in 1994. However, the efficiency of terminal operation depends upon various components such as terminal facilities, handling equipment, terminal operation system and other IT systems, labor skills, etc. If the public sector provides and improves these components, the difference in the efficiency between terminal operation by an ITO and that by the public sector would decrease.

(b) Pros 2: Earning a portion of Value for Money

Value for Money depends upon the difference of the efficiency of terminal operation between an ITO and the public sector.

(c) Pros 3: Strengthening competitiveness for attracting cargo

The ability to attract cargo is important for transshipment hub ports (e.g. Singapore, Tanjung Pelapas, Colombo) or ports handling cross-border cargo from inland countries which face a tough competitive environment (e.g. Antwerp, Rotterdam, Hamburg).

(d) Pros 4: Securing funds for terminal development

Private financial resources especially in BOT modality are attractive to the public sector when adequate port development funds are not available in a timely manner. However, World Bank's Port Reform Toolkit 1) raises an important point that concession agreements (especially in BOT modality) do have a price, most particularly the surrender by the government of full and complete control over port development. In order to avoid this adverse effect, it is recommended that the terminal infrastructure be developed by a port authority as much as possible with its own funds and bank loans including ODA, and then lease terminal facilities to an ITO.

(e) Cons 1: Prioritizing securing profits over contributing to the national economy

Private companies prioritize securing profits over contributing to the national economy. For example, a concessionaire often demands a Competing Facility Clause in a concession agreement, even though investment in additional facilities is necessary to meet the rapidly increasing cargo demand of a country or necessary for national welfare.

(Example of Competing Facility Clause)

> The Conceding Authority shall not operationalize any additional facility within port limits (or within a ** km radius) for handling containers either on its own or through any other person until the earlier of ** years from the scheduled project completion date or .....

(f) Cons 2: Strategies which may conflict with the interests of the public sector

An ITO has its own strategy when entering the market and that strategy may conflict with the interests of the public sector. Therefore, it is recommended for a port authority to have a firm grasp of an ITO's strategy.

(g) Cons 3: Having strong legal competencies and experienced negotiating skills

ITOs are proficient in financial simulation and contract negotiation. ITOs are skilled in accurate financial simulating, including assessing the certainty of cargo demand and devising ways to improve certainty, setting optimal tariffs, identifying risk, and translating risk into financial value, and have experience negotiating concession contracts around the world. In a word, private operators will bring to the negotiation table very strong legal competencies and experienced negotiating skills. This may result in an unfavorable contract for the conceding authority.

(h) Cons 4: Potential conflicts of interest

Further, it is said to be risky for a port authority to be a shareholder of its terminal operator. A port authority puts itself in a situation of potential multiple conflicts of interest in strategic development, tariff policy and customer claims. However, there are some examples in Asian ports where a port authority is a shareholder of its terminal operator. This may avoid negative effect of uncontrollable monopolistic situation by a concession agreement.

(i) Cons 5: Loss of control over port development

Lastly, concession agreements (especially in BOT modality) do have a price, most particularly the surrender by the government of full and complete control over port development. In order to avoid this adverse effect, it is recommended that the terminal infrastructure be developed by a port authority as much as possible with its own funds and bank loans including ODA, and then lease the terminal facilities to an ITO.

(4) Port tariff (Port charges)

Port authorities of Chittagong, Mongla and Payra may impose river dues on all goods landed from or shipped into any seagoing vessel in the limit of the ports, and may collect tolls, dues, fees, rents, or charges from users who receive, ship or move their cargo in the limit of the ports as prescribed by the port authority acts of each port. On the other hand, those port authority acts require each port authority to acquire approval of the government before establishing and revising those tariffs and dues.

Historically, the process for the approval has been strict reflecting various stakeholders' opinions. For example, in case of Chittagong, since 1984 when the current tariff structure was formulated, only a few items (tug charges, water supply, wharf rent, storage charges of container, and staffing/un-staffing charges) of tariff were revised in 2007-2008 and only a tariff schedule for Pangaon ICT was newly established in 2013, despite several initiatives of CPA appointing various consultants for revisions.

In the beginning of 2025, with the assist of M/S IDOM Consulting, Engineering & Architecture of Spain, CPA proposed revision of the tariff schedule to the government (Ministry of Shipping). Revised tariff schedule of CPA has been promulgated by the Government of Bangladesh and it was effective from 15 October 2025.

Main contents of the revision are, increase of level of the tariffs, simplification of structure, and unification of rates into US dollars, taking competition with the ports in neighboring countries into account. Among them, it is worth noting that only a small increase is made in the rate of storage which will be charged on the containers stored in the port exceeding prescribed free period.

Considering the large number of long-staying containers which account for close to one fifth of total storage capacity of Chittagong port, and the fact that it hinders smooth operation and negatively impacts the revenue of the port, it is worth examining the introduction of a storage rate that accelerating increases together with the period of storage to solve this longstanding problem. This approach is worth considering in other ports in Bangladesh too, as the issue of long-staying cargo might be a common problem in other ports considering prevailing commercial practices in Bangladesh. Port tariff (port charges) should be reviewed regularly and revised as and when required.

(5) Cooperation with CIQ

International ports require CIQ (Customs, Immigration, Quarantine) functions to effectively control goods, people, animals and plants transferring across the border to protect sovereignty, security and revenue of the nation as well as the safety and health of the people.

On the other hand, from the perspective of enhancing the handling capacity of ports and the national economy, the requirements related to those functions should be simplified to facilitate the activities of the private sector in international trade from/to Bangladesh, as far as they are permissible in accordance with relevant laws and purpose of legislation thereof.

Through discussion among relevant stakeholders, National Logistics Policy 2024 identified 45 proposals for policy reform and process simplification to ensure positive changes in the logistics sector, of which summary is attached in Chapter 7 of Appendix. Out of the 45 proposals, as many as 34 are issues related to Customs. It is recommended to follow-up on these proposals until a favorable conclusion is reached.

Cooperation with CIQ is also necessary from the viewpoint of establishing a strategic approach to problem-solving. For example, in Chittagong, recently coordination between CPA and Custom House, Chattogram to expedite the process for auctioning dwelling cargo has succeeded to some extent in reducing the number of long-staying containers. This is important because such long-staying containers can occupy as much as 20% of the port's total storage capacity, severely hindering port operations.

Similar cooperation from Customs nationwide will be essential for strategic initiatives of both the public and private sector to succeed. For example, a private company recently tried to launch an inter-seaport container feeder service in Bangladesh but abandoned its plans due to strict requirements from Customs. If this type of inter-seaport container feeder service with high frequency can be introduced, a port can attract port users nearby who are transporting their cargo on road for long distances and at high cost to Chittagong as frequent direct ocean-going shipping services are not currently available.

4.2.7 Security and safety

(1) Port security

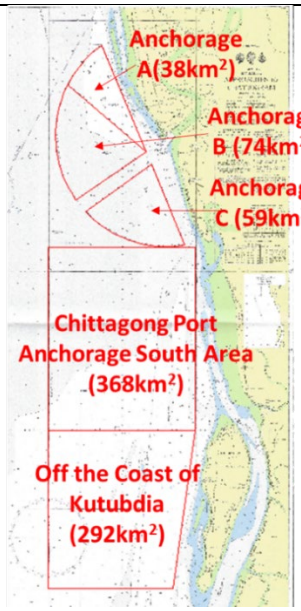
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(2) Navigation safety

(a) Current challenges in navigational safety in Chittagong Port

While there are no notable concerns regarding navigational safety at Chittagong Port due to the well-established VTMIS and pilot services, as well as the availability of sufficient navigation aids, attention must be directed toward anchorage capacity.

Given the anticipated increase in cargo volume at Anchorage A, there is a growing risk that its capacity may be exceeded. To mitigate this risk, it is essential to proactively identify and secure alternative anchorages for lightering operations, including areas located to the south of the Chittagong Port anchorage and offshore Kutubdia.



Utilization Status of Each Anchorage Area

Anchorage(Area)	A	B	C	CPA※5 South	Kutubdia
1. Total number of lightering vessels※1	1,461	-	327	179	856
2. Average time at anchor	155.25 h	39.82 h	105.41 h	90.88 h	96.47 h
3. Capacity of Anchorage	31 vessels	60 vessels※2	48 vessels※2	300 vessels※2	238 vessels※2
4. Annual capacity of Anchorage※3	271,560 h×vessels	-	429,240 h×vessels	2,628,000 h×vessels	2,084,880 h×vessels
5. Annual utilization rate※4	226,820 h×vessels (83.5%)	-	34,469 h×vessels (8.0%)	16,267 h×vessels (0.6%)	82,578 h×vessels (3.9%)

※1 Assumed that vessels anchored for more than 36 hours were lightering vessels.

※2 Calculated based on the area ratio of Anchorage A.

※3 Capacity of Anchorage×8,760h (1year)

※4 Total number of lightering vessels × Average time at anchor

※5 Chittagong Port Anchorage

Note: AIS data for the anchorage areas of Chittagong Port, covering the period from Jan. 1 to Dec. 31, 2024 was analyzed using Seasearcher by Lloyd's List Intelligence.
Source: OCDI

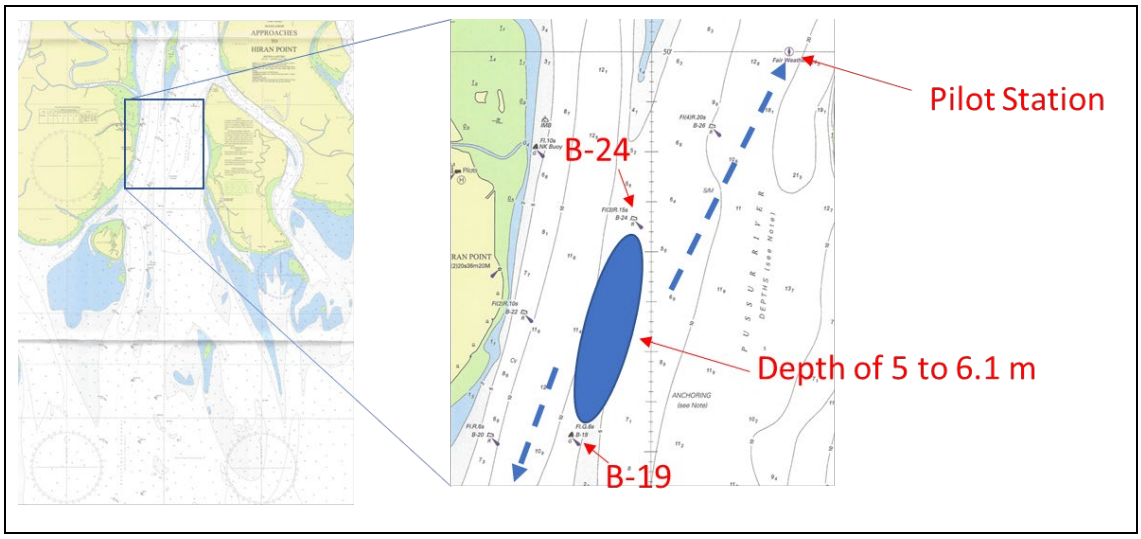
Figure 4-2 Anchorage Areas of Chittagong Port

(b) Issues of anchorage utilization in Mongla Port

According to the hearing with the MPA at Mongla Port, lightering operations are conducted at Harbaria Anchorage, the nearest anchorage to the MPA jetties. An additional anchorage has been established near Sundarikota, located further south, and is used when Harbaria is at full capacity. During the site inspection, lightering activities were observed at Harbaria Anchorage, while no vessels were anchored at Sundarikota on that day.

Regular maintenance dredging is conducted in the Zulfiquar Channel, particularly in the section between buoys B-19 and B-24 near the port entrance (Outer Bar), enabling vessels with drafts up to 9.5 meters to navigate during high tide. As the charted depth in this area ranges from 5 to 6.1 meters, depth management, prior notification to relevant parties, and continuous monitoring are essential to ensure safe navigation.

Although anchoring positions at Harbaria and Sundarikota Anchorages are designated by the MPA, they are not indicated on nautical charts.



Source: OCDI

Figure 4-3 Locations of Outer Bar (Buoys B-19 and B-24)

(c) Treatment of pilots

The duties of a pilot require specialized knowledge, skills, and experience, and are often carried out under hazardous or harsh working conditions. Globally, pilots are frequently affiliated with private companies or self-employed, and their income is often equal to or greater than that of captains of ocean-going vessels. Even in cases where the public servant system is maintained, it is considered necessary to raise the salary level appropriately - such as by providing sufficient job allowances - in order to make the profession more attractive and to ensure the effectiveness and sustainability of pilot services.

(3) Operation safety

Ensuring safe cargo handling operations in ports requires a comprehensive approach, including establishing and coordinating a safety management system, improving the work environment, implementing safety measures for cargo handling machinery, and formulating detailed work plans. Adhering to these measures prevent labor accidents such as falls, cargo collapse, and machinery-related incidents, enabling safe and efficient operations. Moreover, securing safe cargo handling fosters a culture of safety within the port, significantly enhances operational efficiency, and contributes to sustainable port management.

(a) Establishment and coordination of safety management system

- A robust safety management system must comply with international safety regulations and guidelines established by organizations such as the International Labor Organization (ILO) and the International Maritime Organization (IMO). Examples include the ILO Code of Practice on Safety and Health in Ports and the International Maritime Dangerous Goods

Code (IMDG Code). Stakeholders within the port should collaboratively develop, document, and share safety regulations and work manuals based on these standards. This approach ensures that port cargo handling safety meets international levels and forms the foundation for promoting safe operations.

- Appointing safety managers and responsible personnel with clearly defined roles and responsibilities is essential. These individuals must systematically provide safety education to workers, including initial training upon employment, periodic refresher courses, and practical skill development. Also, clear communication of work procedures, proper use of protective equipment, and emergency response protocols are vital. Such education directly reduces accidents and occupational hazards, fostering a safety culture and balancing operational efficiency with safety.

(b) Improvement of work environment

- Adequate workspace and safe passageways must be secured. Attention should be given to surface conditions, lighting, ventilation, and the organization of tools and equipment. Work areas and hazardous zones should be clearly marked, with strict enforcement of entry restrictions and evacuation instructions. Installing caution signs and marking stop lines on the ground help raise awareness and prevent accidents.

(c) Safety measures for cargo handling operations

- Machinery should undergo regular inspection and maintenance to detect and prevent faults early.
- Before work begins, the site must be inspected and organized.
- Fall prevention measures, such as avoiding work on unstable cargo, should be strengthened.
- Weather conditions, including wind speed and adverse weather, must be continuously monitored, with work suspended promptly if safety cannot be ensured.
- Appropriate protective equipment must be always worn, including:

Table 4-6 Safety Gear and its Purpose

SAFETY GEAR	PURPOSE
Safety Helmet	To protect against falling objects and impacts
Safety Shoes with slip resistance and steel toes	To protect the feet and prevent slips
Gloves	For hand protection
Fall Arrest Equipment (Safety Harness)	For fall prevention during high work
Respiratory Protective Equipment	Respiratory protection against harmful gases, dust, and smoke
Safety Goggles	Eye protection from hazards such as dust and chemicals

Source: OCDI

(d) Work plan formulation

- A detailed work plan must be prepared in advance to ensure safety and efficiency. It should outline the sequence of operations, work areas, types of machinery and equipment used, and worker allocation and roles. For high-risk tasks, necessary safety measures, emergency communication systems, rescue arrangements, and evacuation routes should be included. Regular training ensures readiness for prompt and appropriate responses in emergencies.

(4) Coast Guard

（Undisclosed)

4.2.8 Disaster prevention

(1) Overview of natural disasters in Bangladesh

Due to its geographical and climatic conditions, Bangladesh faces multiple disaster risks, including earthquakes, cyclones, and floods. These disasters have repeatedly caused severe damage throughout the country's history.

Table 4-7 Overview of Natural Disasters in Bangladesh affecting Ports

Natural Disaster	Major Characteristics	Typical Frequency or Return Period	Affected Coastal Areas	Main Impacts on Port Infrastructure
Cyclone (Tropical Storms)	Strong winds, heavy rainfall, and storm surges causing widespread damage	Moderate: 1 - 3 cases per year Severe: approximately every 3 years	Entire coastal region, especially southwestern and southeastern areas	Damage to piers and warehouses, vessel destruction, port closures
Storm Surge	Sea water intrusion during cyclones or high tides, flooding inland areas	Multiple times annually during monsoon (June–September)	Entire coastal region, especially estuarine areas affected by	Inundation of port facilities, road flooding, cargo damage

			upstream surges	
Flood	River overflow and heavy rainfall	Minor: annually Major: every 10–30 years	Nationwide, especially along major rivers and low-lying coastal areas	Disruption of port access roads, delays in logistics
Earthquake	Bangladesh lies in a seismic zone; risk of urban infrastructure damage	Moderate: every few decades Major: every 100+ years (estimated)	Southeastern (Chittagong, Cox's Bazar)	Structural damage to port facilities, seismic vulnerability
Tsunami	Caused by undersea earthquakes; rare but potentially catastrophic	Estimated >10% chance in 50 years Historical event: 1762 tsunami from Arakan Subduction Zone	Southeastern coast (Chittagong, Cox's Bazar)	Sudden inundation, destruction of port infrastructure, disruption of utilities and access

Source: OCDI

In Bangladesh and its surrounding regions, earthquakes exceeding magnitude 6 have occurred frequently, including the 1897 Great Indian (Assam) earthquake, which is said to have caused the most severe damage in recorded history. In addition to this event, other significant earthquakes have occurred repeatedly, resulting in structural damage such as the collapse of buildings and other infrastructure.

Furthermore, Bangladesh is located in the downstream region of three major transboundary rivers: the Padma (Ganges), the Jamuna (Brahmaputra), and the Meghna. Approximately 80% of the country's land area consists of floodplains, and about half of these floodplains lie in low-lying areas with elevations below 5 meters. Consequently, during the monsoon season (April to October), which accounts for roughly 80% of the annual rainfall, the country frequently suffers from extensive inundation and flood-related damage.

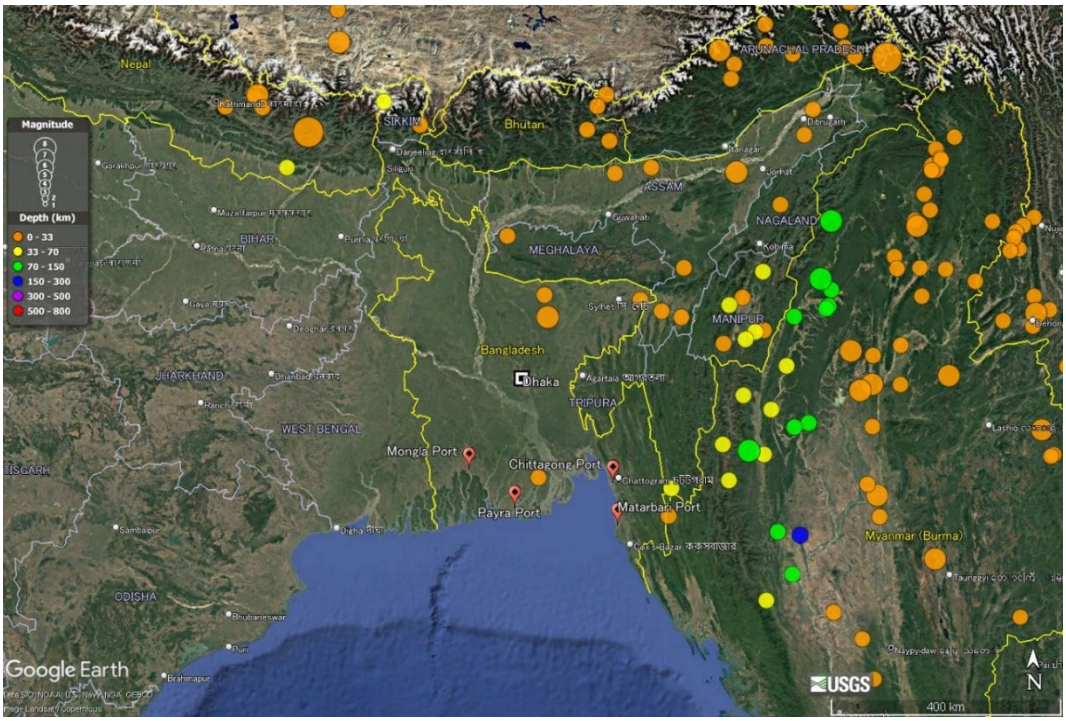
The low-lying areas of Bangladesh are highly vulnerable to storm surges and high waves caused by cyclones. The 1970 Bhola Cyclone caused the worst disaster in the history of the Bay of Bengal, resulting in the deaths of up to 300,000 people in Bangladesh. In addition to the massive loss of life, it inflicted devastating economic damage, particularly to the fishing and agricultural sectors. Furthermore, the 1991 cyclone severely affected vast coastal areas with strong winds and storm surges, leading to approximately 130,000 fatalities.

Bangladesh is widely recognized as being highly vulnerable to climate change. It faces the likelihood of frequent high waves and storm surges due to rising sea levels and intensifying cyclones, as well as recurrent flood damage caused by heavy rainfall. Bangladesh has been ranked as the 7th most affected in the world according to the Climate Risk Index, with substantial damage

already documented. In recent years, investments in disaster prevention have led to a reduction in the impact of such events, but significant climate-related risks still remain.

(2) Earthquake

Bangladesh is located in a seismically active region where the Indian, Eurasian, and Burmese plates intersect, and large earthquakes frequently occur near Bangladesh. **Figure 4-4** shows the large earthquake records (Magnitude > 6.0) around Bangladesh. The figure indicates that major earthquakes have occurred not only in inland areas near the Himalayas, but also in locations close to Payra Port and Matarbari Port. Some experts warn that active faults along the India-Burma subduction zone (e.g., the Sagaing Fault and the Dauki Fault) have the potential to trigger major earthquakes with large magnitudes.

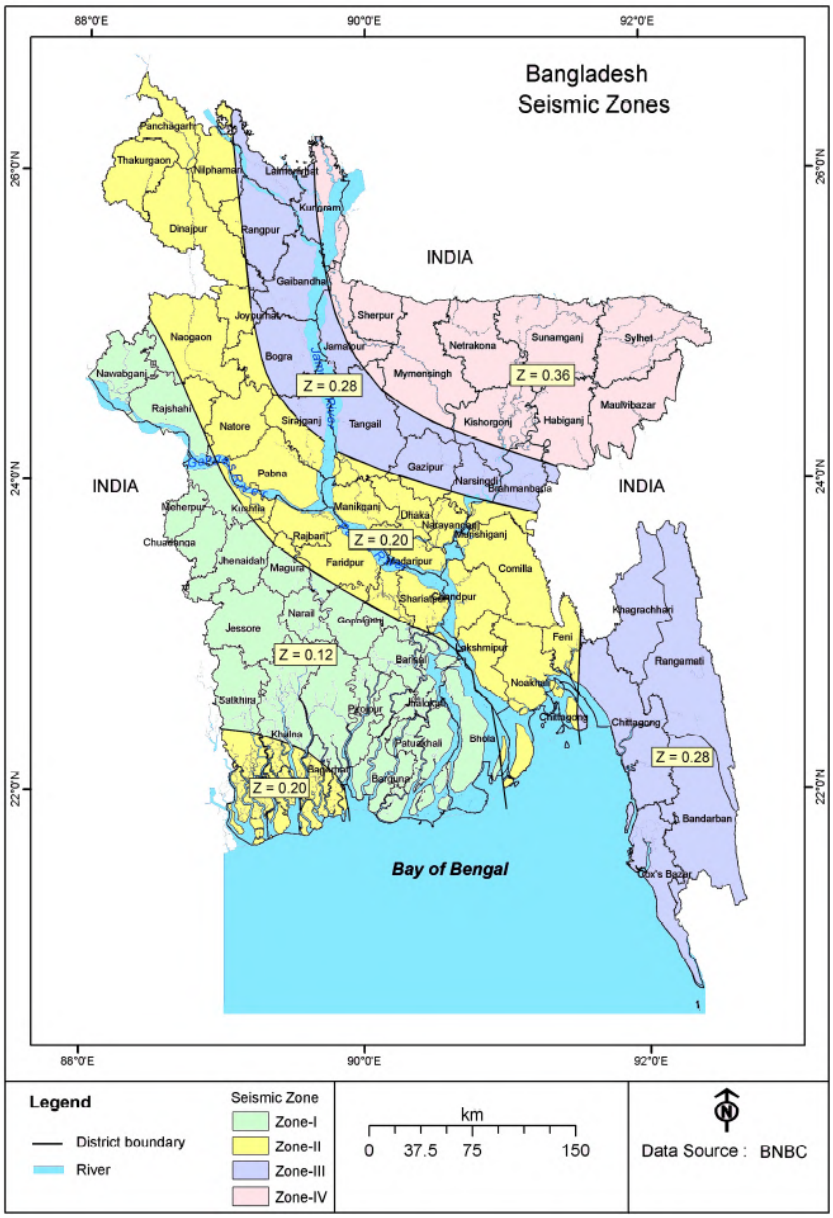


Source: Prepared by OCDI based on UCGS, Google Earth

Figure 4-4 Earthquake Records (Magnitude > 6.0) in Bangladesh, 1900–2025

In Bangladesh, the Bangladesh National Building Code (BNBC) has been established as the national standard for building construction. As shown in **Figure 4-5**, BNBC includes a seismic zoning map developed from the perspective of seismic design. This map is based on the Maximum Considered Earthquake (MCE), corresponding to an earthquake with a 2% probability of exceedance in 50 years (equivalent to a return period of 2,475 years). According to the BNBC seismic zoning map, regions are classified into Zones I to IV based on seismic coefficients of z = 0.12, 0.20, 0.28, and 0.36, respectively. Influenced by the Dawki Fault in the northeast and the Sunda Trench along the Bay of Bengal, Sylhet and Chittagong are designated as Zone IV and

Zone III respectively. Although there are no specific design standards for port and harbor structures in Bangladesh, general structures are designed in accordance with BNBC. Therefore, it is considered that a quay wall designed in compliance with BNBC would demonstrate sufficient seismic resilience.



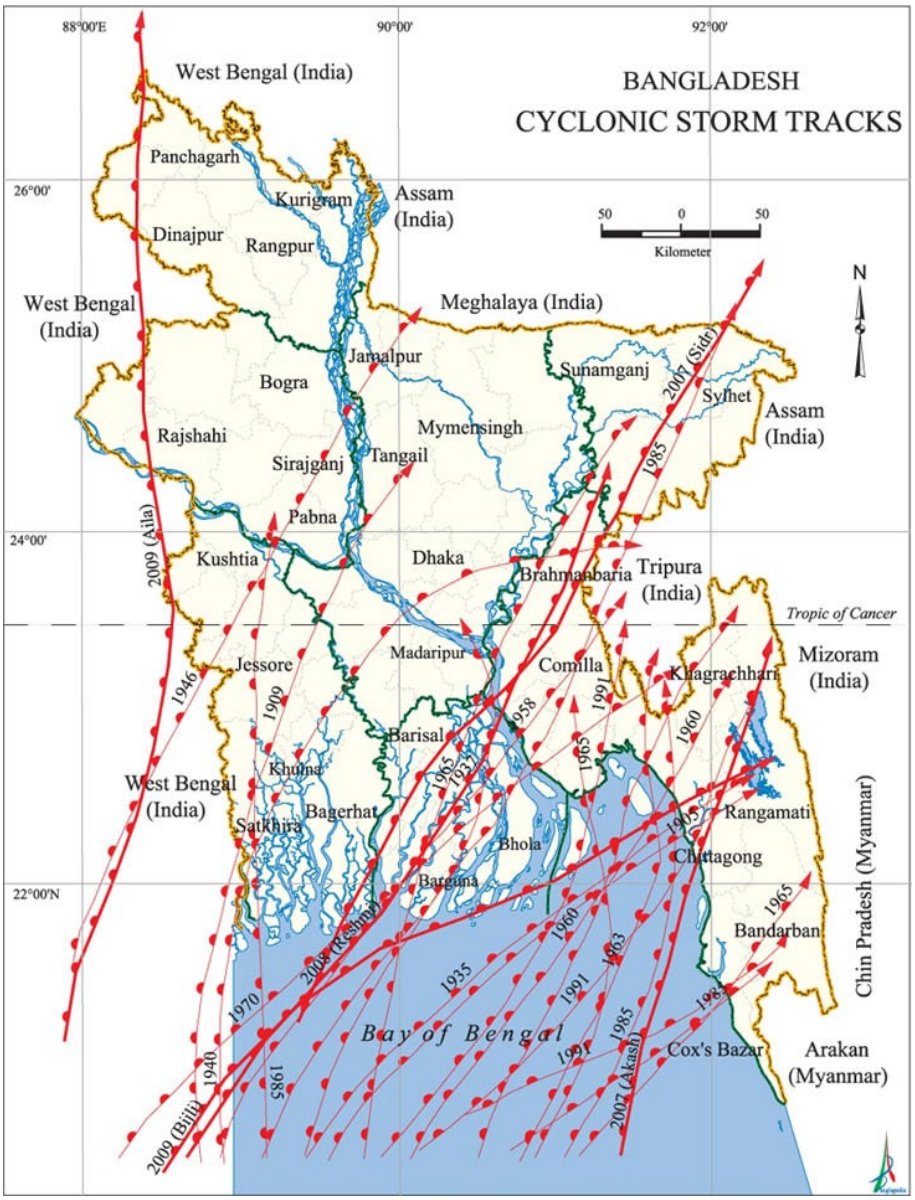
Source: BNBC 2020

Figure 4-5 Seismic zoning map of Bangladesh in BNBC 2020

(3) Cyclone and storm surges

Several cyclones occur annually in the Bay of Bengal, where Bangladesh is located. Figure 4-6 shows the tracks of major cyclones since 1900. Although cyclones are not highly frequent in the Bay of Bengal, Bangladesh's predominantly low-lying terrain makes the country particularly

vulnerable to severe damage when cyclones do strike. Notable examples include the Bhola Cyclone in 1970 and the cyclone of 1991, as previously described.



Source: Banglapedia

Figure 4-6 Cyclone Tracks in the Bay of Bengal, 1900–2025

(4) Disaster risk in each port

(a) Chittagong Port

Chittagong Port is the largest port in Bangladesh, handling over 90% of the country's imports and exports. Therefore, if the port were to become non-operational due to disasters such as cyclone, earthquake and so on, it would likely have a severe impact on the national economy. The elevation

of the existing CPA jetties in Karnaphuli River is set at CDL+7.5 m which is lower than recent designed jetties in major seaports. Therefore, it is imperative that Chittagong Port be equipped with robust disaster prevention and resilience measures to ensure the continuity of its operations.

According to the ADB master plan (Strategic Master Plan for Chittagong Port, ADB, 2015), Chittagong has experienced heavy rainfall on multiple occasions in the past, resulting in significant damage, including the traffic disruptions in the urban area of Chittagong. Although no significant damage from earthquakes or cyclones is mentioned in the Master Plan, it is mentioned that disaster risk is highly elevated. As for earthquakes, as mentioned in the previous section, Chittagong port is close to Myanmar, which is a fault zone, and multiple earthquakes have been recorded in the vicinity in the past. The BNBC seismic zoning map also shows that the risk of earthquakes is high, classifying Chittagong Port as Zone-III.

Chittagong Bay Terminal, the newest terminal in the Chittagong Port development plan, will be designed with robust disaster prevention measures. The terminal elevation is set at CDL+12.50 m, taking into account the projected high tide level associated with a 100-year return period. Additionally, the design applies the seismic intensity standards specified in the Bangladesh National Building Code (BNBC), ensuring adequate resilience against potential earthquakes.

(b) Mongla Port

Mongla Port is located in the southwestern part of the country, approximately 71 nautical miles upstream from the Bay of Bengal, at the confluence of the Pussur River and the Mongla Nullah River. The elevation of the existing MPA jetties is set at CDL+6.2 m. Due to its inland location, the port is less exposed to storm surges caused by cyclones compared to other sea ports. However, the area remains vulnerable to severe cyclones and river flooding. Therefore, it is essential to ensure that the terminal is constructed at a sufficient elevation to maintain safe and continuous operations.

Regarding seismic risk, Mongla Port is classified as Zone-1 under the Bangladesh National Building Code (BNBC), which corresponds to the lowest earthquake coefficient. Consequently, its earthquake risk is lower than that of Chittagong Port and Matarbari Port.

(c) Payra Port

Payra Port is situated along the Rabnabad Channel near the Bay of Bengal, placing it at high risk of cyclone-related disasters, similar to Chittagong Port and Matarbari Port. However, the terminal elevation is set at CDL+9.5 m, which is considered sufficient to withstand high tides. An elevation that can withstand high tides is also regarded as adequate for mitigating flood damage unless they occur simultaneously.

In terms of seismic risk, Payra Port, like Mongla Port, is classified as Zone-1 under the Bangladesh National Building Code (BNBC), which corresponds to the lowest seismic coefficient. Therefore, the risk of earthquakes at Payra Port is also considered low.

(d) Matarbari Port

Matarbari Port will be the only deep-sea port in Bangladesh. Given that there would be no alternative port available in the event of disruption caused by a disaster, a high level of disaster resilience is essential. Its uninterrupted functionality is critical to national logistics and maritime operations, making robust disaster prevention measures a top priority in its design and construction. Matarbari Port is scheduled to be constructed with assistance from Japan, and its design incorporates disaster prevention measures. The terminal elevation is set at CDL+10.0 m taking into account the high water level (HWL) of CDL+4.88 m, the potential storm surge (4.5 m) from a cyclone with a 50-year return period and an additional safety margin.

Matarbari Port is considered to be at high seismic risk, similar to Chittagong Port, due to its proximity to a fault zone near the Myanmar border. It is located in Zone-III on the Bangladesh National Building Code (BNBC) seismic zone map. To address this risk, the quay wall of Matarbari Port has been designed in accordance with Japanese Port Design Standards, incorporating earthquake-resistant features (seismic dynamic analysis) that are deemed sufficient to ensure structural integrity during seismic events. Additionally, at Matarbari Port, gantry cranes with seismic isolation functions will have been installed to further strengthen the earthquake resistance of the wharf.

(5) Disaster mitigation recommendation

As mentioned above, while Bangladesh’s ports are, in principle, designed to be resistant to disasters such as cyclones, storm surges, and earthquakes, many surrounding hinterland areas, including access roads, remain vulnerable to natural disasters. Therefore, in order to further enhance the disaster prevention capabilities of the ports, it is essential to either improve the disaster prevention capabilities of these important access routes themselves (raising the ground level, etc.) or to develop a Business Continuity Plan (BCP) that incorporates disaster mitigation measures for these critical access routes. BPC includes the idea of alternative/backup port. In addition, while sufficient yard elevation has been ensured to safeguard against storm surges, further consideration is needed regarding protection from storm-induced high waves, particularly through the implementation of breakwaters.

4.2.9 Decarbonization initiatives

The Paris Agreement[16], adopted at COP21 in 2015, pledged to "Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial level" and "Achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity". The agreement also states that to achieve this, each country has set a Nationally Determined Contribution (NDC). To achieve these targets, fundamental reform of each industry is essential, and each country's port sector is also expected to contribute to help achieve the individual national targets.

Ports are critical hubs for international supply chains and host industries that emit significant amounts of CO2. Therefore, they play a vital role in responding to the needs of shipper companies working to decarbonize their supply chains and supporting the energy transitions of CO2-intensive industries. Therefore, it is essential to promote the development of Carbon Neutral Port (CNP), focusing on enhancing port functions while considering decarbonization efforts as well as preparing environments to accommodate alternative energy sources, such as hydrogen and ammonia for the future. The following measures can be introduced taking into account the situation of each port and the economic efficiency of a measure:

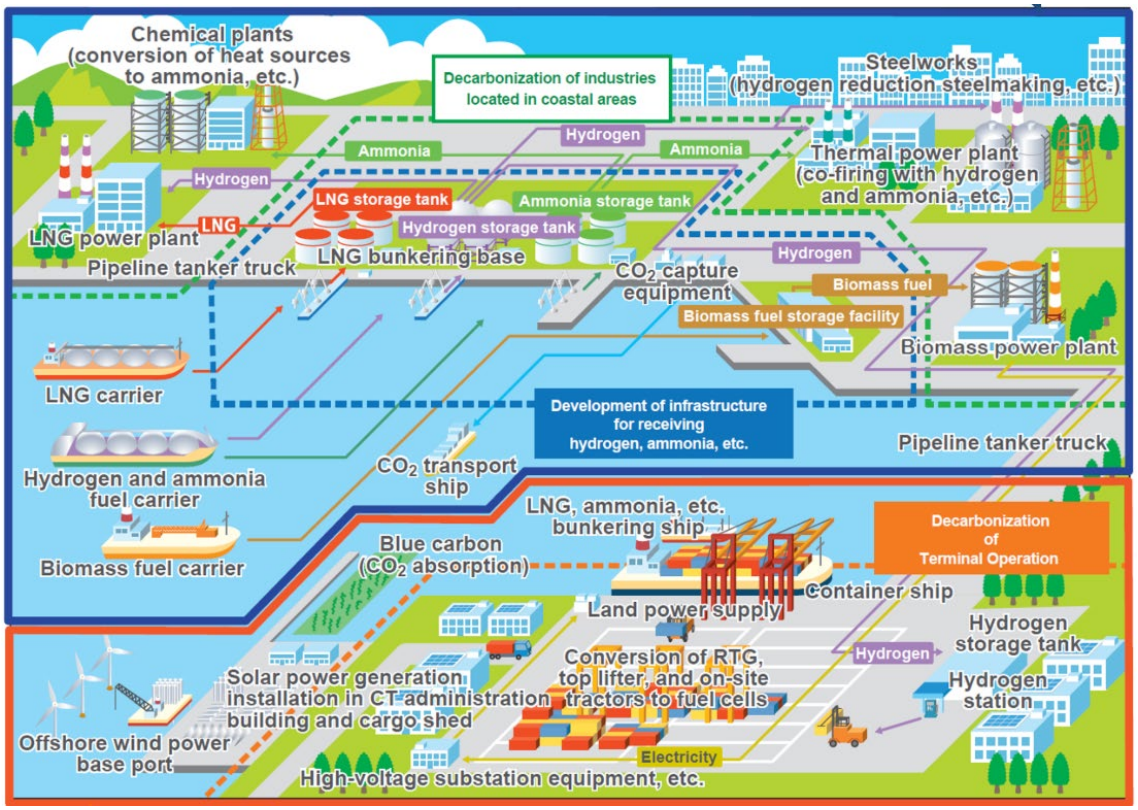
- Conversion of lighting to LED
- Introduction of solar power generation
- Other energy saving measures
- Introduction of renewable energy sources
- Promotion of modal shift from road to rail and inland waterway
- Decarbonization through Blue Carbon Ecosystems
- Introduction of low/decarbonized cargo handling equipment
- Onshore power supply
- Supply of low carbon or non-fossil fuels to ships
- Introduction of incentives for low/decarbonized fuel vessels
- Introduction of Carbon Capture, Utilization and Storage (CCUS)
- Development of hydrogen/ammonia receiving and storage facilities

In order to promote CNP, it is recommended to formulate a Port Decarbonization Promotion Plan and to establish a Port Decarbonization Promotion Council [17] consisting of relevant stakeholders.

[16] UN Climate Change website, https://unfccc.int/process-and-meetings/the-paris-agreement, (Access: Jul. 2025)

[17] The Port Decarbonization Promotion Council provides a forum for a port authority to discuss how to prepare and implement the Port Decarbonization Promotion Plan. The Council serves several key functions: a) A forum for consultation among the parties involved in the preparation of the said plan, b) A forum for consultation among relevant parties when implementing projects, etc. based on the plan, c) A place to check the progress of the plan and evaluate the status of achievement, etc.

The scope of the Port Decarbonization Promotion Plan includes not only measures at port terminals but also measures related to logistics activities conducted via terminals. It also encompasses measures related to activities of businesses that use ports for production and power generation, and measures for sinks using blue carbon ecosystems, etc. With regard to the scope of the estimation of greenhouse gas emissions and the potential reduction amount, the scope covers emission from ports, ships, trucks and industries in the port and its surrounding areas.



Source: MLIT website, https://www.mlit.go.jp/en/kowan/kowan_fr4_000011.html, (Access: Jul. 2025)

Figure 4-7 Schematic Image of Carbon Neutral Port

4.2.10 Environmental and social considerations

The expansive nature of seaport development brings with it a range of environmental and social impacts, including disruption of sensitive ecosystems, displacement of communities, and increased pressure on coastal biodiversity. To address these challenges comprehensively, it is essential to integrate targeted strategies across key areas of concern. This includes:

- ensuring compliance with safeguarding policies and international conventions;
- protecting ecologically critical zones such as the Sundarban Mangrove Forest;
- and improving environmental and safety standards in the ship recycling industry.

In line with global best practices, both the government and investors should adhere to national and international regulations and incorporate the principles of Avoid, Minimize, and Compensate. These principles involve avoiding development in ecologically sensitive areas whenever possible, minimizing environmental degradation through sustainable design and construction, and compensating for unavoidable impacts through habitat restoration or community support programs. Adhering to these integrated approaches will not only enhance the sustainability of port projects but also strengthen public trust and international cooperation in Bangladesh's maritime growth.

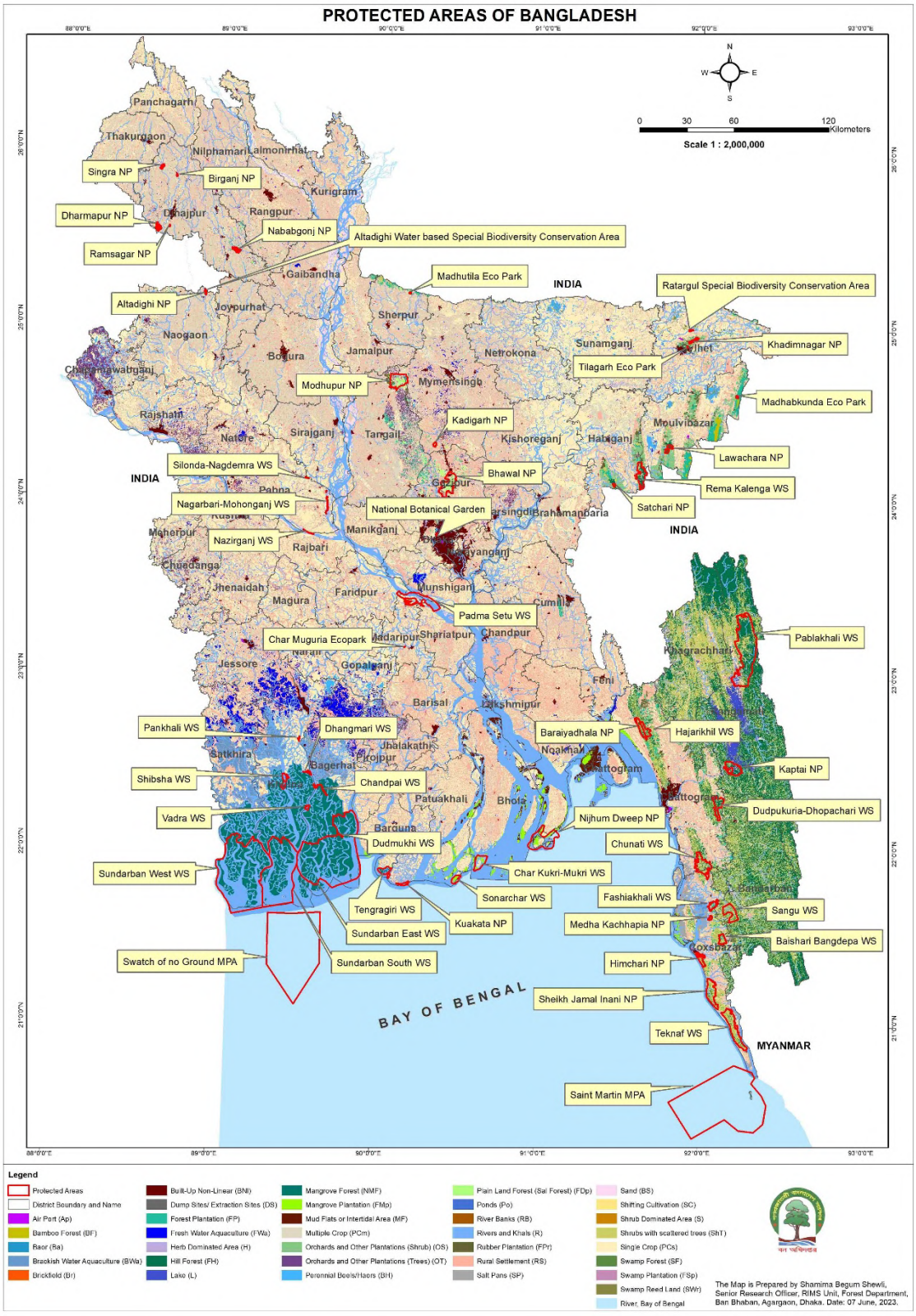
To make these recommendations, JICA expert team reviewed regulatory frameworks related to environmental and social considerations (see Section 13.1 in the Annex) as well as the environmental review of port development projects in Chittagong, Mongla, Payra and Matarbari (see Sections 13.2 in the Annex). in addition, green port initiatives, carbon credit scheme for seaport development, environmental checklist for seaport development are described in Sections 13.3, 13.4 and 13.5 in the Annex.

(1) Compliance with safeguarding policies and international conventions

JICA expert team proposes that the Government of Bangladesh and all relevant stakeholders give due consideration to the national and international regulations. Additionally, JICA expert team encourages all parties to take into account the findings of Environmental Impact Assessments (EIA), including the associated Environmental Management Plans (EMP), when planning and implementing development activities. To further reduce environmental and climate-related impacts, JICA expert team suggests adopting technical interventions with minimal ecological footprint. For example, future construction involving hard rock excavation should avoid underwater blasting to minimize disturbance and prevent damage to aquatic habitats. This approach also includes the integration of renewable energy sources - such as rooftop solar photovoltaic systems and wind power - the use of vessels that comply with the MARPOL Convention, and the provision of alternative fuels and refueling infrastructure to support cleaner maritime operations.

(2) Protecting Sundarban Mangrove Forest and its ecosystems

Seaport development in Bangladesh is concentrated primarily along the southern coastline facing the Bay of Bengal. The country's four major ports play critical roles in supporting trade, industry, and regional connectivity. However, Mongla Port, in particular, is located near environmentally sensitive zones, including the Sundarbans mangrove forest and aquatic ecosystems that are home to endangered and endemic fish species.



Source: Ministry of Environment, Forest and Climate Change, Forest Department

Figure 4-8 Protected Areas of Bangladesh

The Sundarban Mangrove Forest, a globally significant ecological zone, is increasingly threatened by industrial expansion, marine traffic, and environmental degradation. Strategic assessments by UNESCAP and UNESCO have underscored the region's vulnerability and the urgent need for comprehensive protection measures.

Bangladesh has implemented a robust legal framework to safeguard the Sundarbans, including the Environment Conservation Act, Wildlife Protection laws, and the designation of Ecologically Critical Areas (ECAs) and Marine Protected Areas (MPAs). These instruments aim to regulate development, pollution, and resource extraction while preserving biodiversity. Key environmental challenges include:

- Pollution (air, water, soil, plastic, oil)
- Sedimentation and dredging impacts
- Salinity intrusion
- Noise pollution affecting wildlife
- Habitat fragmentation and riverbank erosion
- Climate change and greenhouse gas emissions
- Health risks such as arsenic contamination

The establishment of the Swatch of No Ground Marine Protected Area (SoNG MPA) and its associated management plan reflects a commitment to protecting marine biodiversity and regulating vessel traffic and industrial activities. Therefore, future port development must place the protection of the Sundarban Mangrove Forest and its ecosystems at the forefront of planning and decision-making. This includes:

- Scientifically delineated buffer zones based on ecological connectivity
- Strengthened Environmental Impact Assessments (EIAs) that consider functional relationships, not just proximity
- Strict regulation of vessel operations, dredging, and resource exploration within protected zones
- Enhanced monitoring systems and enforcement mechanisms using modern technology

Balancing sustainable development with ecological preservation is essential to ensure the long-term integrity of the Sundarbans and the well-being of communities that depend on its resources.

(3) Environmental and safety challenges in ship recycling industry

The shipping industry, particularly shipbreaking in Chittagong, plays a vital role in Bangladesh's economy, supporting the steel and manufacturing sectors and employing over 200,000 people

directly and indirectly. However, the industry faces serious environmental and safety challenges. Key Issues are:

- The widespread use of the beaching method for dismantling ships causes significant pollution, releasing hazardous substances like lead, mercury, asbestos, and oil into the marine environment.
- These pollutants harm biodiversity, fisheries, and water quality, affecting local communities.
- Worker safety is a major concern due to inadequate protective equipment, poor training, and exposure to toxic materials, leading to frequent injuries and chronic health problems.
- The industry contributes to greenhouse gas emissions through fossil fuel use and poor waste management.

Recommendations for sustainable practices are:

- Adoption of advanced technologies and cleaner fuels.
- Strict enforcement of existing regulations and alignment with international conventions, such as:
  - Hong Kong Convention (2009) - Safe and environmentally sound ship recycling.
  - Basel Convention (1989) - Control of hazardous waste movement.
  - ILO Guidelines (2004) - Worker safety standards.
  - EU Ship Recycling Regulation (2013) - Environmental and safety compliance for EU-flagged ships.
  - Rotterdam and Stockholm Conventions - Management of hazardous and persistent organic pollutants.

To ensure long-term sustainability, Bangladesh must invest in safer shipbreaking practices, improve worker protections, and align with global environmental standards. This will not only mitigate environmental and health risks but also enhance the industry's global credibility and economic resilience.

5. Demand forecasts and their allotments to each port

5.1 Containers

5.1.1 Method of demand forecasting

Method of demand forecasting of container is basically the GDP-TEU Elasticity method. Detailed calculation procedures and deployed parameters are provided in Chapter 11 of Appendix.

5.1.2 Result of demand forecast

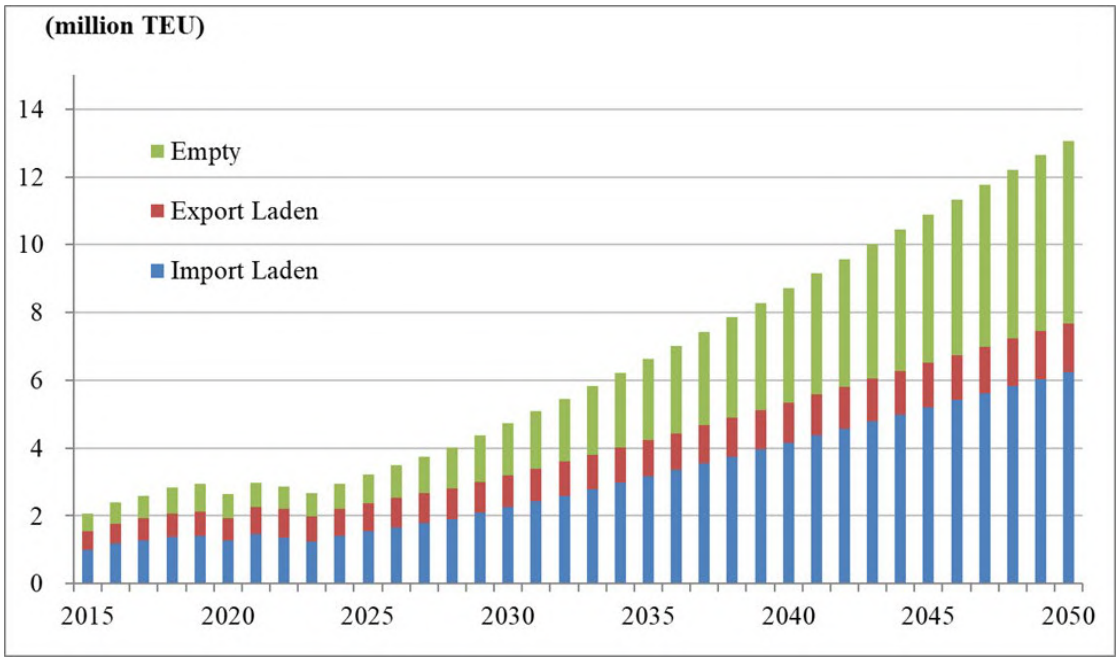
Results of demand forecast of containers in Bangladesh (GDP: Base case, Elasticity: Base case) are as shown in Table 5-1 and Figure 5-1.

Table 5-1 Demand Forecast of Containers in Bangladesh

(million TEU)

Year	2030	2035	2040	2045	2050
Bangladesh Total	4.7	6.6	8.7	10.9	13.1

Source: OCDI



Source: OCDI

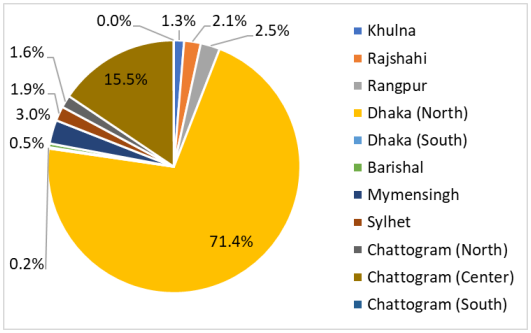
Figure 5-1 Demand Forecast of Containers in Bangladesh

5.1.3 Allotments of containers to each port

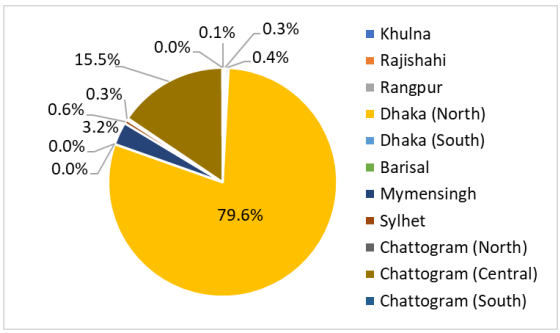
(1) Distribution of cargo owners (shippers and consignees)

Distribution of cargo owners (shippers and consignees) of containers is shown in Figure 5-2. Dhaka (North) is the largest consumption and production area with a 71% share for import and a 80% share for export followed by Chattogram (Central) with 16% shares for import and export.

Locations of EPZs and selected EZs are concentrated in the Dhaka division and the Chattogram division as shown in Figure 5-3.



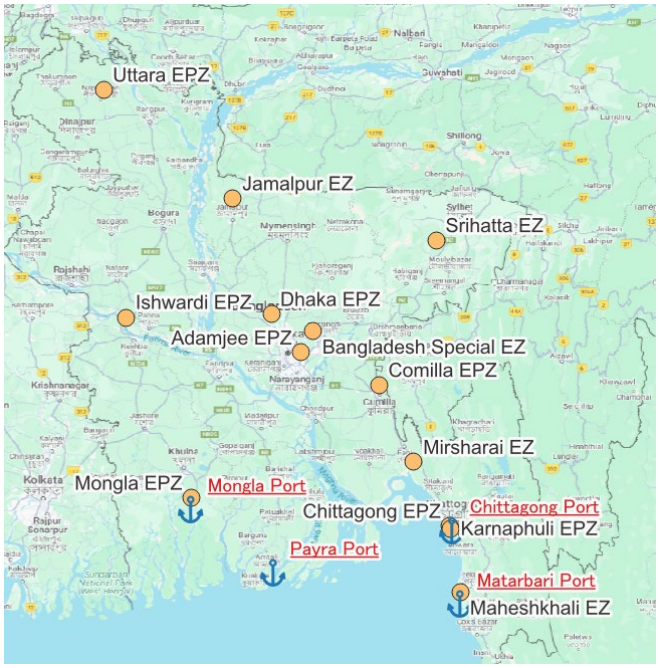
Import (1)



Export (2)

Note: Dhaka Division was divided into two zones by Padma River.
Note: As for Export, shares are the averages of No. of Employee's share and No. of Machine's share of factories.
Source (1): Prepared by OCDI based on IGM data (FCL data of 9 vessels in 2022) provided by CPA.
Source (2): Prepared by OCDI based on the member data of the Bangladesh Garment Manufacturers and Exporters Association (BGMEA), https://www.bgmea.com.bd/page/member-list.

Figure 5-2 Location of Cargo Owners of Containers



Note: Eight EPZs are in operation.
Note: Five EZs out of hundred planned EZs were selected by BEZA in March 2025 to to ensure they reach the original goals.
Source: OCDI-QGIS

Figure 5-3 EPZ and Selected EZ

(2) Preference of cargo owners and shipping lines

In order to allot future container demand to each port, it is necessary to understand the following preference of cargo owners (shippers and consignees) and vessel operators/shipping lines.

- Import and export cargo owners prefer lower transport costs and shorter transit time. Transport costs mainly include truck freight, tolls for toll roads and bridges. ICD cost, port cost and ocean freight are also recognized by some cargo owners. Transit time is measured from/to cargo owners' premises to/from a port in Bangladesh or a foreign final destination port.
- Importers prefer the first calling port in Bangladesh in order for cargo to be delivered as early as possible. The current first calling port is Chittagong Port. However, Matarbari Port has that potential to become the first port of call in future because it has sufficient water depth to accommodate large vessels.
- Most exporters are RMG buyers who carry out container consolidation at private off-docks around Chittagong Port.
- Importers and exporters prefer high service frequency which is currently only offered at Chittagong Port.
- Vessel operators prefer more profitable route/port taking into account container volume and freight rate, as well as additional costs including deviation cost.

- Deep sea port provides vessel operators with flexibility in deploying container ships of various sizes.
- Shipping lines would deploy larger vessels as container volume increases.

(3) Allotment of containers to each port

The utility in using each port reflects the degree of satisfaction for users; for example, lower transport costs or shorter transit times can evaluation indicators for users. Here, the utility is simply defined as negative of the generalized cost consisting of transport cost and transit time. Generalized costs of covered van between Dhaka and each port are shown in Table 5-2.

Table 5-2 Generalized Costs of Covered Van to Ports from Dhaka

Port	Road Distance (km)	Travel Time (hr)	Bridge Tolls (BDT)	Generalized Cost (1) (USD/CV)	Additional Time (hr)	Generalized Cost (2) (USD/CV)
Mongla	234	4.5	3,500	299	84	341
Payra	289	6.6	4,585	352	84	394
Chittagong	260	5.4	800	297	0	297
Matarbari	383	8.5	800	397	0	397

Note: Road distances and travel times are extracted by using Google Route Search (average of 5 week days in April 2025).
Note: Covered van freight is assumed to be = 80 USD + 0.8 USD * Dist (km)
Note: Generalized cost is assumed to be = Covered van freight + 0.5 USD/hr * Time (hr)
Note: Additional times of Mongla and Payra compared with Chittagong are set taking into account low service frequency of ships.
Note: As for Matarbari, potential savings in temporary storage at a transship hub ports are not taken into account.
Note: Exchange Rate USD 1 = 120.4 BDT (JICA monthly exchange rate in Feb. 2025)
Source: OCDI

Chittagong Port is the cheapest in terms of generalized costs. In addition, Chittagong port is the first calling port and RMG buyers are located around this port, therefore many cargo owners in Dhaka will continue to select this port. The team assumes that the container volume of Chittagong Port will increase at a rate of 0.4 million TEUs per year taking into account measures necessary to increase the handling capacity of not only container terminals but also private off-docks.

Mongla Port is expected to handle containers of Khulna and nearby divisions including Mongla EPZ and Ishwardi EPZ. MPA is expected to conduct marketing and ensure that local products such as shrimp and jute products are collected, referring "preference of cargo owners and vessel operators/shipping lines" mentioned in the former section. As a base case in 20 years, container volume of Mongla Port would be about four times greater, assuming the same growth of containers nationwide. Further increases can be expected depending on marketing efforts of MPA, local forwarders, etc.

Payra Port is expected to handle containers of Barishal division for the future. In 20 years, container volume of Payra Port would not exceed that of Mongla Port since there is no sign of progress in the location of industries that import and export containers behind the port.

Matarbari Port is the only deep sea port in Bangladesh, and therefore will be eligible to become a first port of call. Along with the increase of container demand in Bangladesh, the role of Matarbari Port will increase. In particular, Matarbari Port will become the only port to receive overflow containers after Chittagong Port (including Bay Terminal) becomes saturated.

In 20 years, the container volume of each port is considered as shown in Table 5-3. Demand - Supply simulation of container is shown in Table 5-4. This simulation was conducted based on the following assumptions:

- The capacities of terminals of Chittagong Port, namely, GCB+CCT+NCT, PCT, LCT, Bay Terminal, are set based on information from CPA as an optimistic case.
- As for new terminals, maximum annual capacity increment is set at 0.4 million TEU taking into account the preparation of cargo handling equipment and manpower as well as capacity enhancement of private off-docks.
- As for Mongla Port and Payra Port, aforementioned projected container throughputs are deployed instead of the capacities.
- Target Demand/Supply value is preferable to be about 80% - 90% for smooth and redundant port service required for the national economy.
- As Bay Terminal pessimistic case, opening 3 year delay is assumed as Matarbari Port delayed after the first DPP was approved by ECNEC from 2026 to 2029.

Table 5-3 Container Volume of Each Port in 2045

(million TEU)

Port	Container Volume
Chittagong	- 7.5
Mongla	- 0.3
Payra	- 0.2
Matarbari	2.9 -
Total	10.9

Source: OCDI

Table 5-4 Demand-Supply Simulation of Container

(1) Optimistic case: Opening On-Schedule Case

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Demand	4.7	5.1	5.4	5.8	6.2	6.6	7.0	7.4	7.9	8.3	8.7	9.1	9.6	10.0	10.5	10.9
Supply (Throughput)	5.5	6.3	6.7	7.1	7.5	7.4	8.3	9.1	9.7	10.3	10.3	10.7	11.2	11.6	12.1	12.5
GCB+CCT+NCT	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	2.5	2.5	2.5	2.5	2.5	2.5
PCT	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
LCT	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Bay Terminal		0.4	0.8	1.2	1.6	2.0	2.4	2.8	3.2	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Mongla	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
Payra	0.03	0.04	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
Matarbari Phase-1	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Matarbari Phase-2							0.4	0.8	1.0	1.2	1.6	2.0	2.1	2.1	2.1	2.1
Matarbari Stage II													0.4	0.8	1.2	1.6
Demand /Supply	86%	81%	82%	82%	83%	89%	85%	82%	81%	80%	85%	85%	85%	86%	87%	87%

Note: Target Demand /Supply value is preferable to be about 80% - 90% for smooth and redundant port service required for the national economy.

Note: As for Mongla and Payra, throughputs are mentioned instead of the capacities.

(2) Bay terminal Pesimistic Case: Opening 3 year delay as Matarbari delayed from 2026 to 2029

	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Demand	4.7	5.1	5.4	5.8	6.2	6.6	7.0	7.4	7.9	8.3	8.7	9.1	9.6	10.0	10.5	10.9
Supply (Throughput)	5.4	5.9	5.9	5.9	6.3	6.2	7.1	7.9	8.7	9.5	9.9	10.8	11.6	12.0	12.5	12.9
GCB+CCT+NCT	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	2.5	2.5	2.5	2.5	2.5	2.5
PCT	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
LCT	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Bay Terminal					0.4	0.8	1.2	1.6	2.0	2.4	2.8	3.2	3.6	3.6	3.6	3.6
Mongla	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
Payra	0.03	0.04	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
Matarbari Phase-1	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Matarbari Phase-2							0.4	0.8	1.2	1.6	2.0	2.1	2.1	2.1	2.1	2.1
Matarbari Stage II												0.4	0.8	1.2	1.6	2.0
Demand /Supply	87%	87%	93%	99%	98%	106%	99%	94%	90%	87%	88%	85%	82%	83%	84%	84%

Note: Target Demand /Supply value is preferable to be about 80% - 90% for smooth and redundant port service required for the national economy.

Note: As for Mongla and Payra, throughputs are mentioned instead of the capacities.

Source: OCDI

5.2 Non-Containers

5.2.1 Method of demand forecasting

Demand forecasting of non-container is conducted by commodity after analyzing current demand - supply structure and factors contribution to demand changes. Detailed calculation procedures and deployed parameters are provided in Chapter 12 of Appendix.

5.2.2 Result of demand forecast

Results of demand forecast of non-container (import) in Bangladesh are as shown in Table 5-5.

Table 5-5 Demand Forecast of Non-Container (Import)

(Unit: million ton)

Commodity	Historical Data						Forecast Data				
	2019 (2018-19)	2020 (2019-20)	2021 (2020-21)	2022 (2021-22)	2023 (2022-23)	2024 (2023-24)	2030	2035	2040	2045	2050
Food Grain (Wheat)	6.4	6.9	5.3	4.0	5.9	7.1	8.7	11.7	13.4	13.9	14.3
Cement Material (Clinker, etc.)	29.9	30.7	39.6	39.2	36.5	37.6	53.1	72.5	94.0	116.8	133.4
Fertilizer	3.8	3.3	3.6	4.9	4.5	4.0	3.0	3.2	3.5	3.6	3.7
Coal	6.7	7.2	7.6	7.8	11.4	14.5	35.4	37.3	39.1	41.2	43.2
Salt	0.4	0.3	0.4	0.5	0.5	0.6	1.0	1.4	1.9	2.5	3.0
Sugar	2.2	2.4	2.2	2.5	2.0	1.6	2.9	3.8	4.9	5.1	5.2
Scrap	1.8	2.4	2.6	3.8	3.2	3.6	8.6	12.2	16.5	21.4	26.8
Steel Products	1.8	1.5	1.4	1.6	1.4	1.6	2.1	2.6	3.2	3.7	4.1
Stone/CR. Stone	7.1	8.0	8.5	6.9	7.4	3.8	12.9	18.1	23.9	30.0	34.1
Others	8.4	9.4	9.2	18.0	14.7	15.8	27.2	38.1	50.6	64.2	78.5
Dry Bulk Total	68.5	72.1	80.4	89.2	87.5	90.2	154.9	200.9	251.0	302.3	346.3

Note: Year of Chittagong Port is calender year, while years of Mongla Port and Payra Port are fiscal year.

(Unit: million ton)

Commodity	Historical Data						Forecast Data				
	2019 (2018-19)	2020 (2019-20)	2021 (2020-21)	2022 (2021-22)	2023 (2022-23)	2024 (2023-24)	2030	2035	2040	2045	2050
Edible Oil	2.6	2.6	2.3	1.4	2.1	2.1	2.7	2.8	2.9	3.0	3.0
Petroleum Products (-LPG -LNG)	3.6	2.0	3.4	1.0	7.8	8.8	15.0	20.3	25.5	29.3	33.1
LPG	0.9	1.1	1.3	1.3	1.3	1.5	2.5	3.8	5.0	7.5	10.0
LNG	3.9	4.2	4.9	4.2	5.0	5.3	8.4	15.3	22.6	26.1	31.2
Liquid Bulk Total	11.0	9.9	11.9	7.9	16.2	17.7	28.6	42.1	56.0	65.9	77.3

Note: Year of Chittagong Port is calender year, while years of Mongla Port and Payra Port are fiscal year.

(Unit: thousand nos)

Commodity	Historical Data						Forecast Data				
	2019 (2018-19)	2020 (2019-20)	2021 (2020-21)	2022 (2021-22)	2023 (2022-23)	2024 (2023-24)	2030	2035	2040	2045	2050
Transport Equipment (Passenger Vehicle, CBU)	67.5	45.4	62.1	57.5	32.4	34.2	62.9	78.4	102.6	169.3	271.6

Note: Year of Chittagong Port is calender year, while years of Mongla Port and Payra Port are fiscal year.
Source: OCDI

Non-container (export) consisting of Ammonia and Others has been fluctuating between 0.2 and 0.5 million tons in recent years. No significant growth factors are found. Therefore, future non-container (export) is assumed to remain at the current level. Nevertheless, non-container (export) would increase once export-oriented industries are newly located in Bangladesh.

5.2.3 Allotments of non-container cargo to each port

Allotments of non-container cargo to each port are shown in Table 5-6, Table 5-7 and Table 5-8. The allotments are conducted taking into account the follows points:

- Maximum vessel size for each port as shown in Table 3-3;
- Allotment of roles and functions of each port as shown in Table 4-1;
- Production capacities of cement and rice in the hinterland of each port;
- Plans of main importers such as DG Food, BPC are taken into account;
- IPEMP2024 for energy related cargo;
- As for cargo with relatively low volumes and minimal fluctuations, cargo volumes are assumed to remain at current levels.

Table 5-6 Demand Forecast of Non-Container (Port-wise, Import, 1/3)

(Unit: million ton)

Commodity	Forecast Data					Method of Allotment (Assumption)
	2030	2035	2040	2045	2050	
Food Grain (Wheat)	8.7	11.7	13.4	13.9	14.3	DG Food will use Chittagong and Mongla. Private companies will use Chittagong and Matarbari.
Cittagong	4.1	5.5	6.3	6.5	6.7	
Mongla	0.5	0.7	0.8	0.8	0.8	
Payra						
Matarbari	4.1	5.5	6.3	6.5	6.7	
Cement Material (Clinker, etc.)	53.1	72.5	94.0	116.8	133.4	Share of production capacity of cement factories in the hinterland of Chittagong and Mongla.
Cittagong	46.7	63.8	82.7	102.8	117.4	
Mongla	6.4	8.7	11.3	14.0	16.0	
Payra						
Matarbari						
Fertilizer	3.0	3.2	3.5	3.6	3.7	Share of rice production in the hinterland of each port.
Cittagong	0.9	1.0	1.1	1.1	1.1	
Mongla	1.9	2.0	2.2	2.2	2.3	
Payra	0.2	0.3	0.3	0.3	0.3	
Matarbari	0.0	0.0	0.0	0.0	0.0	
Coal	35.4	37.3	39.1	41.2	43.2	Based basically on IPEMP2024. Same share as Cement Material for the demand of Cement Milles. Share of population in the hinterland of each port for the demand of Brick Factory.
Cittagong	7.3	8.0	8.7	9.4	10.1	
Mongla	5.0	5.5	6.0	6.6	7.2	
Payra	10.9	10.9	10.9	10.9	10.9	
Matarbari	12.2	12.8	13.5	14.2	15.0	
Salt	1.0	1.4	1.9	2.5	3.0	Current share.
Cittagong	1.0	1.4	1.9	2.5	3.0	
Mongla						
Payra						
Matarbari						

Table 5-7 Demand Forecast of Non-Container (Port-wise, Import, 2/3)

(Unit: million ton)

Commodity	Forecast Data					Method of Allotment (Assumption)
	2030	2035	2040	2045	2050	
Sugar	2.9	3.8	4.9	5.1	5.2	Current share.
Cittagong	2.9	3.8	4.9	5.1	5.2	
Mongla						
Payra						
Matarbari						
Scrap	8.6	12.2	16.5	21.4	26.8	Current share.
Cittagong	8.6	12.2	16.5	21.4	26.8	
Mongla						
Payra						
Matarbari						
Steel Products	2.1	2.6	3.2	3.7	4.1	Split evenly between Chittagong and Matarbari.
Cittagong	1.0	1.3	1.6	1.8	2.0	
Mongla						
Payra						
Matarbari	1.0	1.3	1.6	1.8	2.0	
Stone/CR. Stone	12.9	18.1	23.9	30.0	34.1	Current share.
Cittagong	12.1	16.9	22.4	28.1	31.9	
Mongla	0.5	0.7	1.0	1.2	1.4	
Payra	0.3	0.4	0.6	0.7	0.8	
Matarbari						
Others	27.2	38.1	50.6	64.2	78.5	Shares of Mongla, Payra and Matarbari are assumed to be all 1% taking into account the current share of Mongla.
Cittagong	26.4	37.0	49.1	62.3	76.1	
Mongla	0.3	0.4	0.5	0.6	0.8	
Payra	0.3	0.4	0.5	0.6	0.8	
Matarbari	0.3	0.4	0.5	0.6	0.8	
Dry Bulk Total	154.9	200.9	251.0	302.3	346.3	

Note: Year of Chittagong Port is calender year, while years of Mongla Port and Payra Port are fiscal year.
Source: OCDI

Table 5-8 Demand Forecast of Non-Container (Port-wise, Import, 3/3)

(Unit: million ton)

Commodity	Forecast Data					Method of Allotment (Assumption)
	2030	2035	2040	2045	2050	
Edible Oil	2.7	2.8	2.9	3.0	3.0	Current share.
Cittagong	2.7	2.8	2.9	3.0	3.0	
Mongla						
Payra						
Matarbari						
Petroleum Products (-LPG -LNG)	15.0	20.3	25.5	29.3	33.1	Current volume for Chittagong.Volume of Mongla will increase with the same pace as whole country. The rest will be handled at Matarbari.
Cittagong	8.7	8.7	8.7	8.7	8.7	
Mongla	0.1	0.2	0.2	0.3	0.3	
Payra						
Matarbari	6.2	11.4	16.6	20.4	24.1	
LPG	2.5	3.8	5.0	7.5	10.0	BPC plans to construct Matarbari Land-based LPG Terminal. As for the rest, current share for Chittagong and share of population in the hinterland for Payra.
Cittagong	0.9	0.6	0.7	1.5	2.4	
Mongla	1.5	1.0	1.2	2.7	4.1	
Payra	0.2	0.1	0.1	0.3	0.5	
Matarbari		2.0	3.0	3.0	3.0	
LNG	8.4	15.3	22.6	26.1	31.2	Only Matarbari.
Cittagong						
Mongla						
Payra						
Matarbari	8.4	15.3	22.6	26.1	31.2	
Liquid Bulk Total	28.6	42.1	56.0	65.9	77.3	

Note: Year of Chittagong Port is calender year, while years of Mongla Port and Payra Port are fiscal year.

(Unit: thousand nos)

Commodity	Forecast Data					Method of Allotment (Assumption)
	2030	2035	2040	2045	2050	
Transport Equipment (Passenger Vehicle, CBU)	62.9	78.4	102.6	169.3	271.6	Current units for Chittagong. As for the rest, split the increase evenly between Mongla and Payra.
Cittagong	18.9	18.9	18.9	18.9	18.9	
Mongla	20.3	30.3	42.4	75.7	126.9	
Payra	4.9	30.3	42.4	75.7	126.9	
Matarbari						
'CKD in container	7.0	19.6	44.0	112.9	271.6	
Total = CBU + CKD	69.9	98.0	146.6	282.2	543.2	

Note: Year of Chittagong Port is calender year, while years of Mongla Port and Payra Port are fiscal year.

Source: OCDI

6. Timelines for major development projects and action programs

6.1 Major Development projects

Based on demand forecasts, timelines for major development projects are summarized as shown in Table 6-1.

Major development projects of Chittagong Port include LCT (Laldia Container Terminal) and Bay Terminal. Bay Terminal consists of the marine infrastructure development project, CT-1 and CT-2 (PPP) and multi-purpose terminal.

Major development projects of Mongla Port include construction of 2 jetties (PPP), upgrading of Mongla Port (LOC), expansion and modernization of Mongla Port facilities (G2G China), dredging of Inner Bar area, maintenance dredging of Passur Channel, and the purchase of dredgers. It should be noted that the container handling capacity of Mongla Port significantly exceeds the forecast demand stated in Chapter 4 (5.1.3).

Major development projects of Payra Port include GOB multi-purpose 1st terminal with 6-lane road and 4-lane bridge, Container Terminal 1 (PPP), maintenance dredging of Rabnabad Channel and purchase of dredgers. It should be noted that the container handling capacity of Payra Port significantly exceeds the forecast demand stated in Chapter 4 (5.1.3). In addition, maintenance dredging of Rabnabad Channel at the scale of the capital and maintenance dredging already completed is not economically viable for the time being, as stated in Chapter 2 (3.5.3).

Major development projects of Matarbari Port include Matarbari Phase-1 and Phase-2 of Stage I, Matarbari Stage II and purchase of dredgers.

Table 6-1 Timelines for Major Development Projects

Port	Major Project	Capacity/ Specification	Project Cost	Finance	Completion/Opening	Remarks
Chittagong	LCT	0.9 mil. TEU	USD 800 mil.	BOT by APMT	2029, 2030 full capacity	CCEA approval in principle in Nov. 2023
Chittagong	Bay Terminalthe Marine Infrastructure Development Project	NA	BDT 135.25 bil.	WB Loan (BDT 93.33 bil.) GOB/CPA (BDT 41.92 bil.)	2031	ECNEC approval in Apr. 2025 for breakwater and dredging
Chittagong	Bay Terminal CT-1, CT-2 (PPP)	3.6 mil. TEU	USD 1,218 mil.	BOT by PSA Int'l BOT by DP World	2031, 2039 full capacity	CCEA approval in principle in Jul. 2019
Chittagong	Bay Terminal MPT	NA	USD 755 mil.	GOB/CPA	NA	
Chittagong	Bay Terminal Energy Terminal	NA	NA	NA	NA	
Mongla	Construction of 2 Jetties under PPP framework	0.2 mil. TEU	BDT 18.08 bil.	BOT by Saif Powertech	NA	Construction started in 2018, but suspended since 2024
Mongla	Upgrading of Mongla Port (LOC)	0.4 mil. TEU	BDT 60.15 bil.	LOC (BDT 44.59 bil.) GOB (BDT 15.55 bil.)	NA	ECNEC approval in Feb. 2020
Mongla	Expansion and Modernization of Mongla Port Facilities (G2G China)	0.4 mil. TEU	BDT 40.68 bil.	China Loan (BDT 35.92 bil.) GOB (BDT 4.75 bil.)	2028	ECNEC approval in Feb. 2025
Mongla	Dredging of Inner Bar Area	NA	BDT 9.92 bil.	GOB/MPA	2026	ECNEC approval in Jan. 2020
Mongla	Maintenance Dredging of Passur Channel	NA	BDT 15.38 bil.	GOB/MPA	2029	ECNEC approval in Jan. 2025
Mongla	Purchase of Dredgers	3500m3 TSHD 2@28-inch CSD	BDT 14.00 bil.	NA	NA	MPA requesting
Payra	GOB Multi-Purpose 1st Terminal with 6-lane Road and 4-lane Bridge	0.8 mil. TEU 1.0 mil. ton bulk	BDT 45.2 bil.	GOB	Jul. 2026	
Payra	PPP Container Terminal 1	2.0 mil. TEU	NA	PPP	NA	CCEA approval in principle in Sep. 2014 and in Mar. 2024
Payra	Maintenance Dredging of Rabnabad Channel	CL-10.5m	NA	NA	NA	PEC Jun. 2025, revised DPP submitted to PC Oct. 2025
Payra	Purchase of Dredgers	NA	NA	NA	NA	PEC Jun. 2025, revised DPP submitted to PC Oct. 2025
Matarbari	Matarbari Phase-1 /Stage I	0.8 mil. TEU	BDT 243.81 bil.	CPA with JICA Loan	2029, 2031 full capacity	ECNEC approval in Oct. 2024
Matarbari	Matarbari Phase-2 /Stage I	2.1 mil. TEU	NA	NA	2026, 2042 full capacity	under F/S
Matarbari	Matarbari Stage II	4.0 mil. TEU	NA	NA	2041, 2050 full capacity	draft MIDI-MP
Matarbari	Purchase of Dredgers	TSHD	NA	NA	NA	CPA under consideration

Note: Container handling capacities of Mongla Port and Payra Port are significantly exceeding the forecast demand.
Note: Maintenance dredging of Rabnabad Channel cannot be economically justified at least for the time being.
Note: Project cost of Matarbari Phase-1 includes breakwater, channel, port access road in addition to the terminal.
Source: OCDI based on data and information from MOS, CPA, MPA and PPA as well as various news sources.

6.2 Major action programs

In addition to major development projects, action programs shown in Table 6-2 are desired to be implemented by MOS with stakeholders.

Table 6-2 Desired Major Action Programs

Desired action program (with Timeline)	Purpose or expected effect	Main Stakeholder	Related Section
Promotion of inter-seaport container feeder services (Urgent)	• To attract users in direct hinterland by offering frequent shipments connecting to ocean-going liner service • To offer cost-effective and environmental-friendly waterway service instead of road transportation for cargo owners • To promote the activities of not only Mongla Port but also all seaports	NBR	3.4.3
Protocol with Myanmar on bilateral coastal trade (Urgent)	• To give opportunities to Bangladeshi carriers to join the bilateral trade • To offer low-cost and shorter direct carriage to the adjacent country instead of long connecting shipment via hub-ports	Myanmar MOFA	4.2.2
Introduction of Maritime Single Window (MSW) for vessel entry/exit procedure for seaports (As early as possible)	• To improve the efficiency for vessel entry/exit procedure for all the stakeholders	DOS, Port Authorities, NBR, CIQ, Ministries of Environment, Industry	4.2.4
Rationalization of 65-item restriction [18] of cargo delivery in off-dock facilities (As early as possible)	• To lessen burden on ports by shifting the function of cargo delivery to the off docks • To promote door-to-door container transportation	NBR	4.2.4
Countermeasures to prevent long-staying	• To make efficient operation of ports by reducing dead space occupied by	NBR	4.2.4

[18] On 17th July 2025, it is reported that NBR issued the directive to expand the total number of items to 65 eligible for delivery in ICDs. it is also reported that the expansion comes with some conditions including that the commissioner of Chattogram Customs House will retain the discretion to allow dual delivery – either from the port or ICDs – in special circumstances.

cargoes in ports (As early as possible)	long-staying containers		
Establishment of dedicated Supreme Court benches (As early as possible)	• Establishment of dedicated Supreme Court benches (As early as possible) • To exclusively deal with customs, import, export, and port related Writs and cases.	MoLaw/ Courts	4.2.4
Formation of specialized commercial courts (As early as possible)	• To try customs, import, export, and port related civil and commercial disputes efficiently.	MoLaw/ Courts	4.2.4
Setting up Custom House in Matarbari with container scanners (by 2029)	• To conduct customs procedure for import and export containers	NBR	3.6.3
Installation of container scanners at LCT and Bay Terminal (by 2029, by 2031)	• To conduct customs procedure for imported goods	NBR	3.3.3
Easing the restriction on location of Off-Docks (As early as possible)	• To encourage setting up new Off-Docks around seaports • To promote export of RMGs • To maximize the handling capacity of seaports	NBR	3.6.3
Establishment of operational framework and securing manpower for Matarbari (by 2029)	• To smoothly start the operation	CPA	2.6.3
Securing dedicated berth at seaports for domestic container feeder service (As early as possible)	• To promote reliable feeder service via waterway connecting to mother vessels	Port Authorities, Terminal operators	3.4.3
Building of Dhirasram ICD in Dhaka area (by 2029)	• To handle increasing number of containers coming from/to seaports via rail • To replace Kamalapur ICD in the center of the city, which will lose room to handle cargo	BR/CPA	3.8.2
Building of Chakaria	• To connect containers from/to	BR/CPA	3.8.2

Intermodal Yard (IMY) (by 2029)	Matarbari Port to/from the railway between Dhaka		
Setting up enough number of locomotives and freight wagons, and operation staffs thereof (by 2029)	• To accommodate current and increasing demand of carriage of containers from/to seaports	BR	3.8.2
Widening N1 to 6-lanes between Dhaka and Chattogram [19]	• To accommodate increasing traffic between Dhaka and Chattogram	RHD	3.8.1
Widening N1 to 4-lane between Chattogram and Cox's bazar (by early 2030s)	• To accommodate increasing traffic after opening of Matarbari port	RHD	3.8.1
Widening N805-N7 to 4-lane (by 2030s)	• To accommodate increasing traffic near Khulna in the future	RHD	3.8.1

Source: OCDI

[19] It is reported that the government has revised its plan to upgrade the existing 4-lane Dhaka-Chattogram Highway to 10 lanes. https://www.tbsnews.net/bangladesh/govt-plans-upgrading-dhaka-ctg-highway-10-lane-june-1043416

7. Recommendations, Way Forward, and Conclusion

7.1 Recommendations

Recommendations of this strategy are as follows:

- Major development projects and action programs should be implemented according to defined timelines and aligned with the established guiding principles.
- The philosophies and common implementation considerations are outlined in the "Way Forward" section.

7.2 Way Forward

- This strategy is guided by the core philosophy: "*The right facilities should be developed in the right place at the right time.*" This philosophy is based on lessons learned from past experience. Port development should not be approached on a project-by-project basis; instead, a more comprehensive approach should be taken, guided by the established guiding principles. For example, to prevent overinvestment, it is important to conduct accurate demand forecasting and assess how cargo will be allocated to each port.
- To promote Evidence-Based Policy Making (EBPM) [20], it is essential to utilize data such as ship call statistics, cargo volumes, and other reliable information that are crucial for measuring policy effectiveness. This enhances policy efficacy and helps build public trust in administration. While reconciling diverse stakeholder views remains important, the foundation of any policy dialogue must be robust data, statistics, and analytical insights.
- To ensure that port development is conducted effectively and in a timely manner, coordination with developments in other fields of infrastructure such as road and railway or industries is important. It is also recommended that inter-ministerial coordination be made on each major development plan in view of the maximization of the effect of the investment and realization of the return from it in a short period. In addition, among port authorities, it is recommended to conduct exchange programs of their officers regularly.
- This strategy adopts the philosophy that "*Ports aren't built in a day; rather, they gradually evolve*." It is not a matter of which came first - the chicken (cargo volume) or the egg (port facilities). Constructing port facilities does not guarantee immediate cargo flow. Just as a chick gradually grows into a chicken, ports and their activities must be nurtured and developed over time. It is essential to increase cargo volume and invest proactively, before reaching saturation. This is because a port comprises not only physical infrastructure, but also the operations of port authorities and CIQ agencies, private sector activities (production and logistics), vessel berthing, and cargo movement.

[20] Evidence-Based Policy Making (EBPM) means basing policy planning on rational evidence rather than relying on a one-time episode or inspiration, after clearly defining policy objectives.

- The demand forecast and timelines for major development plans and action programs should be reviewed every three years, while the guiding principles should be reassessed every five years to adapt to changes in external conditions.

7.3 Conclusion

Conclusion of this strategy is as follows:

- Bangladesh's seaports are expected to continue playing a vital role in supporting import and export activities across various sectors, thereby contributing to national economic growth.
- The import and export cargo demand is projected to increase more than threefold over the next 20 years, reaching 11 million TEUs and 370 million tons by 2045.
- In response to this rapidly growing demand, this strategy defines the roles and functions of each port based on their specific characteristics and presents guiding principles - consisting of 10 pillars - for consistent, nationwide port development, along with improvements in port management and operations.
- Major development projects and action programs should be implemented according to defined timelines and aligned with the established guiding principles.

National Port Strategy 2026

Part II: River Ports

Ministry of Shipping

Government of the People's Republic of Bangladesh

October, 2026

Supported by :

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0. Executive Summary

0.1 Introduction

Inland waterway transport (IWT) is a cost-effective and environmentally friendly mode of transport when cargo lots are large, transport distances are sufficiently long, and last-mile land transport is minimal. In particular, when a factory located along a inland waterway unloads raw materials from vessels and loads finished products onto vessels, the benefits of IWT can be maximized.

It is important to formulate a strategy that corresponds to the changes in the demands and roles of river ports and inland waterways in serving Bangladesh's economy and society—namely import and export cargo transport, domestic cargo transport, passenger transport, and local community transport.

According to the Seaport Strategy, import and export of container/bulk cargo will considerably increase for the future. Therefore, vessel traffic along main inland waterways and container/bulk cargo handled at river ports will also increase.

In this strategy, the current situation and issues of river ports are first reviewed. Next, the guiding principles for river ports from a comprehensive perspective are discussed. Then, action programs, including the preparation of statistics and the formulation of master plans, are proposed. Recommendations, the way forward, and the conclusion are presented in the final section.

0.2 Strategic objectives

- The objectives of this strategy are to establish a framework for quantitatively demonstrating the significance of inland water transport in fulfilling the roles expected by the Government and the public, and to set guiding principles for coherent, nationwide development of inland waterways and river ports, as well as for enhancing their management and operational performance.

0.3 Analysis of Current Situation and Issues to be Addressed

0.3.1 River ports

- In Bangladesh, there are 54 river ports which are managed by Bangladesh Inland Waterway Transport Authority (BIWTA).
- Findings on river port statistics (cargo and passenger) up to 2025 are as follows:
  - As for the cargo data, there is no information by commodity or by loading/unloading separately except protocol route;

- Cargo volumes handled at ghats are not entirely based on actual data but are partially estimated.
- In 2024–25, all river ports handled 153 million tons of cargo and 220 million passengers.
- PIWT&T cargo in 2023–24 amounts to 4 million tons, of which 97% is fly ash.

- Ghats are, in principle, operated by private operators who are granted leases through tender procedures. Structure construction and licenses for use foreshore are provided in favor of various organization such as factories.
- Inland waterway container transport is conducted between Chittagong Port and river port inland container terminals (ICTs).

0.3.2 Inland waterways

- Inland waterways are classified into four classes. The inland waterways from Chittagong Port to Dhaka and Narayanganj River Ports (RPs), to Ashuganj RP, to Rajshahi RP, and from Mongla Port to Dhaka and Narayanganj RPs are designated as first-class waterways.
- The planned maintenance dredging volume for 2024-25 is approximately 20 million m^3. Out of this amount, BIWTA's own dredgers will dredge about 8.3 million m^3.

0.3.3 Vessels transiting on the inland waterways

- Due to navigational restrictions in narrow and winding channels, all vessels have a length overall (LOA) of less than 100 m (predominantly less than 80 m) and operate on waterways with a draft of less than 4 m, in accordance with the applicable draft limitations.

0.3.4 Completed and Ongoing projects

- According to actual expenditures of completed projects of BIWTA since the 1990s, dredging and the purchase of dredgers, etc. account for 79% of the total.
- Fourteen projects are ongoing in 2025-26.

0.3.5 Challenges and Core Issues

- Measures to respond to changing IWT demands, in particular, increasing demand for the transport of import and export cargo through seaports.
- Government policies advocate increasing the modal share of IWT to encourage a modal shift from road to waterways. However, the share of IWT has been historically declining.
- Accurate and reliable statistics on commodity-wise cargo flows, including origin–destination data, are not available except for PIWT&T.
- There is currently no comprehensive master plan for the IWT sector.
- Greater accountability in the implementation of maintenance dredging is required.
- Securing these disposal sites poses a major challenge.

- In busy river ports, well-designed and safe land-side circulation flows for both passengers and cargo are necessary.
- Measures to prevent river encroachment and to strengthen river cleaning activities are required.
- In light of the projected substantial increase in container volumes at seaports, it is necessary to enhance the capacity of river port ICTs.
- As demand for transportation on inland waterways increases, the number of vessels operating on these waterways is expected to rise proportionally. It will be necessary to enhance the transportation capacity of inland waterways.

0.4 Expected future role of river ports in Bangladesh

- River ports and inland waterways contribute to Bangladesh's economy and society through import and export cargo transport, domestic cargo transport, passenger transport, and local community transport.
- The volume of import and export of container and bulk cargo is expected to increase significantly in the future. Consequently, vessel traffic along the main inland waterways and the volume of container and bulk cargo handled at river ports will also increase.
- Several government policies encourage a modal shift from road to waterways. These policy directions imply an expanded and more strategic role for river ports and inland waterways.

0.5 Guiding principles

0.5.1 Mission fulfillment of IWT roles

(1) Import and export cargo transport

- In areas that serve as the main origins and destinations of cargo to and from major importing and exporting seaports, such as Chittagong, river ports and inland waterways must be properly maintained and upgraded to accommodate the projected surge in transport demand, which is forecast to triple as indicated in BNPS Volume I: Seaport Strategy.

(2) Domestic cargo transport

- Major industrial centers in Bangladesh are primarily located in Dhaka and other large cities. Industries that require bulk cargo transport for raw materials, intermediate goods, or finished products are predominantly situated along riverside areas. Many of these industries own and operate dedicated port facilities, such as private jetties.

(3) Passenger transport

- A response is required to address the declining market share of inland water passenger transport due to competition from other modes, particularly in terms of travel time and

transport costs. At the same time, there is potential for the development of new market-oriented, higher value-added passenger services.

(4) Local community transport

- There are numerous small river-crossing ghats consisting of simple steps along riverbanks. These ghats are primarily used for river-crossing services operated by small country boats. They constitute important assets for community-based water transport, supporting local mobility and social connectivity.

0.5.2 Sustainable IWT navigation

- Demand analysis associated with forecasted cargo volumes by type at importing and exporting ports is required.
- Capacity evaluation of existing and proposed inland waterway sections is required. It requires demand and traffic volume analysis based on the maximum navigable vessel size, as well as comprehensive traffic safety analysis.

0.5.3 Efficient investment

(1) Project evaluation

- There are different criteria for evaluating port development projects depending on whether investment is by the public sector or by private investors. Public sector places importance on generating benefits for the national economy, while private investors will focus on return on investment. An economic analysis is conducted to confirm whether the expected benefits of a project exceed the costs.
- Economic analysis and financial analysis should be based on actual data, not fabricated data. All organizations should take responsibility to ensure that all assumptions made are valid.

(2) Consideration of sedimentation

- Sediment of as much as 0.5 - 2.4 billion tons per year causes sedimentation in inland waterways in Bangladesh. We should understand that the nature is truly powerful, and recognize that the characteristics of sedimentation vary depending on various factors.

0.5.4 Efficient and resilient river port operation

- The following themes are discussed for efficient and resilient port operation:
  - Efficient cargo handling operation
  - Consideration for Business Continuity Plan (BCP) of the Port
  - Alleviating traffic congestion
  - Implementation of Digital Transformation (DX) and paperless port procedures

0.5.5 Hinterland connectivity

- Last-mile transport from river port facilities is required. To ensure smooth transportation, it is necessary to develop access roads connecting these facilities to the nearest arterial roads.
- As it is becoming increasingly difficult to find suitable sites along rivers within the Dhaka metropolitan area, it will be necessary to consider investments in locations that offer greater development potential and efficient transport links to both Chittagong Port via waterways and arterial roads.

0.5.6 Framework of port management and operation

- Efforts toward data-driven IWT administration and Evidence-Based Policy Making (EBPM) are expected. These efforts include the preparation of statistics and databases, as well as the formulation of the IW Corridor Master Plan and the River Port Master Plan.
- BIWTA now bears proper spatial management responsibilities as the court-appointed guardian of rivers recognized as legal persons.
- For future PPP projects, it is recommended that private companies be required to ensure integrity in reporting key figures, including cargo volume, tonnage, and the number of passengers handled by the facility.
- There are 21 departments/centers/institute in BIWTA. It is observed that information sharing among departments, the development of statistics, and analytical capacity are insufficient. To address these challenges, the following initiatives are proposed:
  - From a flat organization to a hierarchical organization;
  - Enhance Statistics Section;
  - Establish economic Analysis Section under Planning Dept.

0.5.7 Security and safety

(1) River port security

(Undisclosed)

(2) Navigation safety

- Consideration of safe navigation measures and vessel traffic information services is essential, particularly for river ports where waterways are constrained and traffic comprises vessels of widely varying size and maneuverability.
- In general, key focus areas include: (i) collision risk management in narrow channels and at crossing areas, (ii) securing sufficient navigable width through appropriate control of anchoring and mooring practices, (iii) development and systematic maintenance of aids to

navigation, and (iv) strengthening traffic data and information services to better understand and manage waterway utilization.

(3) Navigational concern in Narayanganj River Port

- In narrow channels, it is extremely difficult for large vessels navigating within the channel to avoid vessels crossing their path. In particular, in the Narayanganj river port area—such as around Tanbazar—amendments to, or clarification of, existing navigation rules should be considered. Furthermore, the introduction of specific regulations requiring crossing vessels or small craft to keep clear of large vessels navigating within designated channels should also be considered.
- On inland waterways, particularly within river port areas, vessels are frequently observed anchoring or mooring stern-to, and in some cases forming double- or triple-banked moorings in very narrow sections. Such practices restrict the available width and may obstruct the safe passage of large inland water transport vessels, including inland container vessels and coastal cargo vessels. In these locations, regulations governing anchoring and mooring practices should be introduced or strengthened to ensure adequate navigable areas and maintain safe vessel traffic flow.
- Regular reviews of the adequacy of aids to navigation, along with the establishment of systematic maintenance procedures to ensure their continued functionality, should be undertaken.
- To better understand traffic patterns on inland waterways connecting river ports, as well as between river ports and seaports or the open sea, consideration should be given to upgrading or improving the operation of the Navigational Clearance Application (BIWTAVHC) system.

(4) Cargo handling operation safety

- Ensuring safe cargo handling operations in ports requires a comprehensive approach, including establishing and coordinating a safety management system, improving the work environment, implementing safety measures for cargo handling machinery, and formulating detailed work plans. Adhering to these measures prevent labor accidents such as falls, cargo collapse, and machinery-related incidents, enabling safe and efficient operations.

0.5.8 Disaster prevention

- Bangladesh faces multiple disaster risks, including earthquakes, cyclones, and floods. River ports are particularly vulnerable to floods and earthquakes.
- BIWTA's role in disaster management centers on infrastructure resilience and navigational recovery, specifically through rapid damage assessment and waterway clearance. Enhancing the organization's functional and operational capacity is essential.

0.5.9 Environmental and social considerations

- River port development may generate environmental and social impacts, including pollution, disruption to natural and social environments, and potential risks of accidents such as oil and chemical spills.
- While compliance with national regulatory frameworks ensures that these impacts are properly assessed and mitigated during planning and construction phases, an additional layer of preparedness is required to address accidental pollution events that occur during operation.
- To address the severe water pollution in the rivers around Dhaka, coordinated action among the relevant agencies is required.

0.6 Major development projects and action programs

0.6.1 Major development projects

- In addition to BIWTA's ongoing project, ICT capacity in the Dhaka area must be strengthened to accommodate the increasing import and export container demand at seaports and to align with government policies promoting a higher modal share of IWT.
- At present, however, the utilization rate of ICTs remains extremely low. Therefore, it is necessary to hear opinions on the location suitability from stakeholders such as importers, exporters, logistics providers, approved ICT operators.
- Preliminary evaluation of locations of existing and candidate ICTs is conducted. While an ideal location without disadvantages cannot be identified, the Sonargaon area seems comparatively appropriate, assuming that land acquisition is possible.

0.6.2 Major action programs

(1) Preparation of statistics

- Accurate and reliable statistics and information are indispensable for reliable demand forecasting, economic analysis, and evaluation of IWT projects.
- Accurate demand forecasting for individual river ports requires cargo statistics disaggregated by commodity. Furthermore, in order to formulate a development plan for public port facilities, it is necessary to categorize port cargo into cargo handled at common-use facilities or ghats and cargo handled at company-owned dedicated jetties or foreshores.
- Survey format for river port cargo statistics as well as survey method and statistics preparation process are recommended.
- To quantitatively explain the contribution of inland waterways to the national economy and to carry out efficient dredging activities, it is effective to estimate the economic benefits derived from the use of inland waterways. To calculate these economic benefits, it is first necessary to identify vessel traffic volumes by vessel type and size. Survey format and survey method are recommended.

(2) Formulation of IW Corridor Master Plan

- IWT has faced a long-term decline in its modal share. Despite government policies highlighting its environmental and energy efficiency, actual growth remains stagnant. A primary factor is the insufficient budget allocation, which does not align with the sector's expected strategic role.
- To justify increased funding to the public and treasury authorities, BIWTA must demonstrate the sector's value through rigorous economic analysis. Evaluating the costs and economic benefits of IWT is essential to prove its impact on the national economy. A comprehensive assessment requires a solid data foundation, including OD cargo volumes data, vessel traffic data, demand forecasting. This evidence-based approach is the starting point for developing the IW Corridor Master Plan, ensuring that every Taka invested delivers maximum economic returns.
- Formulation process and contents of IW Corridor Master Plan are proposed.

(3) Formulation of River Port Master Plan

- In congested river ports like Narayanganj RP, merely accumulating individual responses makes it difficult to sustainably restore order and enhance functionality within the port area.
- Therefore, in inland waterway administration, it is essential to adopt, at the organizational level, a shift from case-by-case administrative responses to a "plan-led administration." Under this approach, future visions and management policies are established in advance, and decisions are made based on them.
- This master plan is intended not only for facility development or individual regulations. Its primary purpose is to establish a common planning framework that serves as the basis for decisions regarding vessel traffic management, mooring/occupancy responses, asset management, and other matters.
- Formulation process and contents of River Port Master Plan are proposed.

0.7 Recommendations, Way forward, and Conclusion

0.7.1 Recommendations

- Major development projects and action programs—including inland container terminal (ICT) development, the preparation of statistics, and the formulation of IW Corridor Master Plans and River Port Master Plans—should be implemented in alignment with the established guiding principles.
- The underlying philosophies and shared implementation considerations are presented in the “Way Forward” section.

0.7.2 Way Forward

- Promoting Evidence-Based Policy Making (EBPM) by utilizing data such as statistics of ship calls and cargo volume as well as other reliable information that are crucial for measuring policy effectiveness enhances policy efficacy and contributes to securing public trust in administration. While reconciling diverse stakeholder views remains essential, the foundation of any policy dialogue must be robust data, statistics, and analytical insights.
- It is recommended to review the demand forecast and timelines for major plans every three years, while the guiding principles should be reviewed every five years to adapt to changes in the external situation.
- To ensure that port development is conducted effectively and in a timely manner, coordination with developments in other fields of infrastructure or industries is important. It is also recommended that inter-ministerial coordination be made on each major development plan in view of the maximization of the effect of the investment and realization of the return from it in a short period.

0.7.3 Conclusion

- River ports and inland waterways contribute to Bangladesh's economy and society through import and export cargo transport, domestic cargo transport, passenger transport, and local community transport.
- According to the Seaport Strategy, the volumes of container and bulk cargo for import and export are expected to increase significantly in the future. In addition, several government policies a modal shift from road to waterways.
- This strategy establishes a framework for quantitatively demonstrating the significance of inland water transport in fulfilling the roles expected by the Government and the public. It also sets guiding principles for the coherent, nationwide development of inland waterways and river ports, as well as for enhancing their management and operational performance.
- Major development projects and action programs should be implemented in alignment with the established guiding principles.

1. Introduction

Inland waterway transport (IWT) is a cost-effective and environmentally friendly mode of transport when cargo lots are large, transport distances are sufficiently long, and last-mile land transport is minimal. In particular, when a factory located along a navigable inland waterway unloads raw materials from vessels and loads finished products onto vessels, the benefits of IWT can be maximized.

It is important to formulate a strategy that corresponds to the changes in the demands and roles of river ports and inland waterways in serving Bangladesh's economy and society—namely import and export cargo transport, domestic cargo transport, passenger transport, and local community transport.

According to the Seaport Strategy, import and export of container/bulk cargo will considerably increase for the future. Therefore, vessel traffic along main inland waterways and container/bulk cargo handled at river ports will also increase.

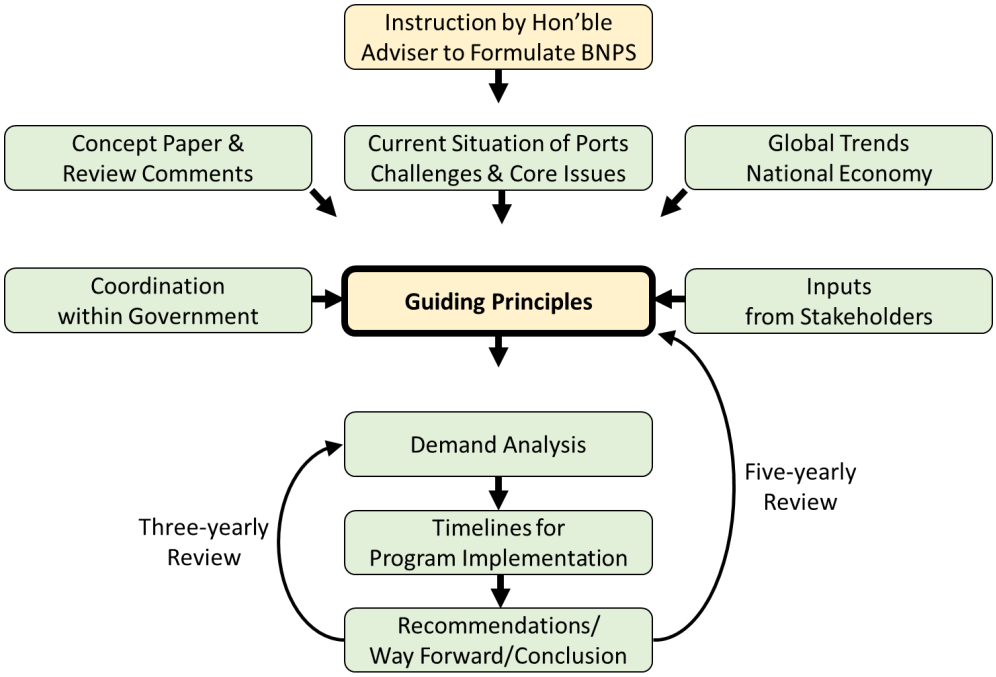
Sustainable and safe IWT get more attention and efficient dredging and navigation services in the busy route sections should be focused area.

River ports should be developed/upgraded considering its location and the physical constraints of the river route for the incoming vessel characteristics.

Evidence-based policy making and the development of the necessary statistics and data for that purpose are essential for BIWTA's administration. Efficient dredging and other investment, framework of port management and operation, security and safety, environmental and social considerations should be discussed as well.

Accordingly, the formulation of the National River Ports Strategy is urgently needed.

In this strategy, the current situation and issues of river ports are first reviewed. Next, the guiding principles for river ports from a comprehensive perspective are discussed. Then, action programs, including the preparation of statistics and the formulation of a master plan, are proposed. Recommendations, the way forward, and the conclusion are presented in the final section.



Source: OCDI

Figure 1-1 Flowchart of Formulating Bangladesh National Port Strategy

2. Strategic Objectives

The objectives of this strategy are to establish a framework for quantitatively demonstrating the significance of inland water transport in fulfilling the roles expected by the Government and the public, and to set guiding principles for coherent, nationwide development of inland waterways and river ports, as well as for enhancing their management and operational performance.

3. Analysis of Current Situation and Issues to be Addressed

3.1 River ports

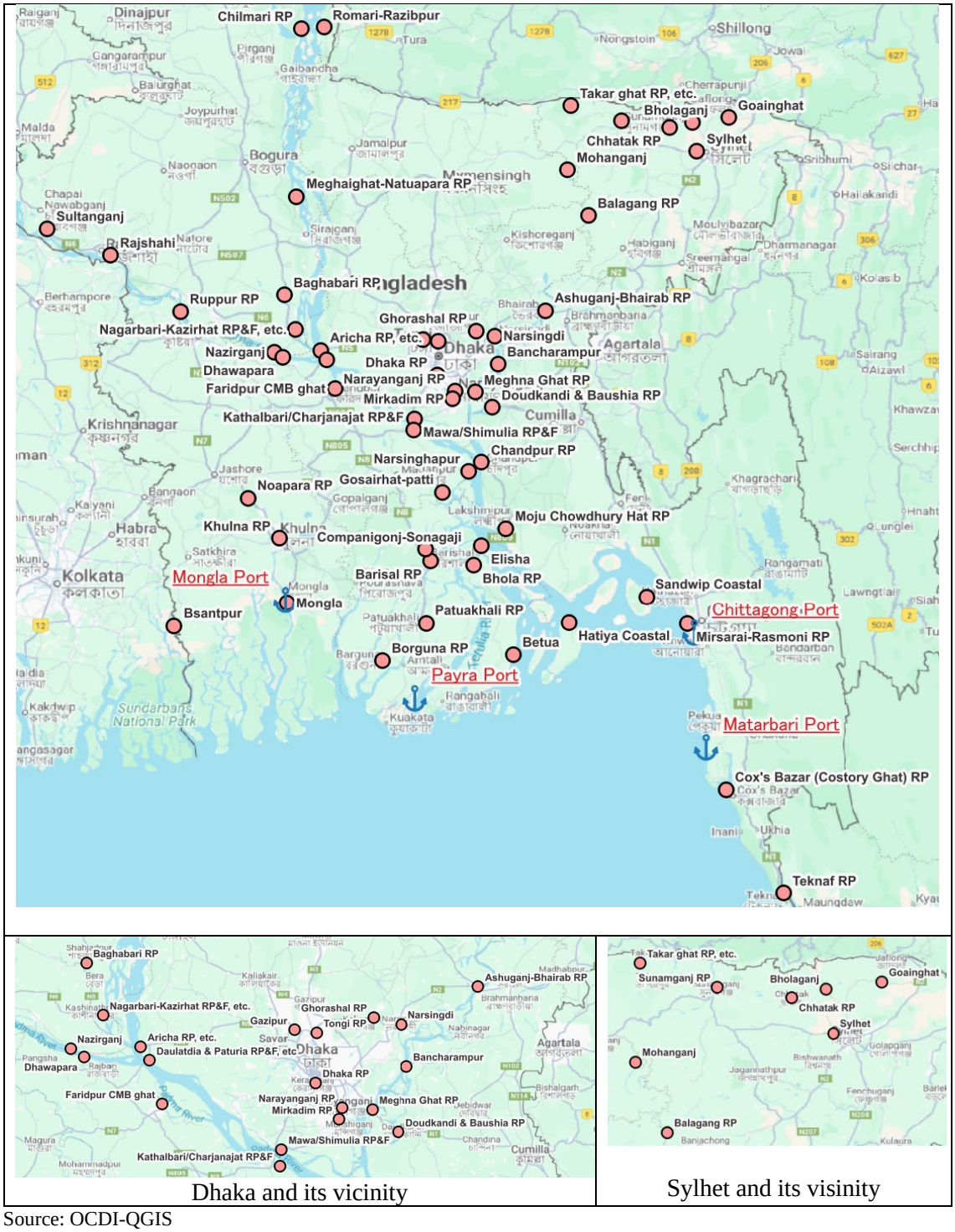
3.1.1 Outlines

In Bangladesh, there are 54 river ports which are managed by Bangladesh Inland Waterway Transport Authority (BIWTA). Locations of these river ports are shown in Figure 3-1. Port limits and databases of these river ports are shown in Appendix-2 and Appendix-3 respectively.

River port statistics (cargo and passenger) is shown in Table 3-1. Data from the Protocol on Inland Water Transit and Trade (PIWT&T) between Bangladesh and India are not included. Cargo and passengers transported by ferry operated by BIWTC and RHD are also not included. The main points of this statistical data up to 2025 are as follows:

- As for the cargo data, there is no information by commodity or by loading/unloading separately except protocol route;
- Cargo volumes handled at ghats are not entirely based on actual data but are partially estimated. Cargo volumes are assumed to be a value extrapolated to an annual basis from only four or seven days of actual data, or the contract amount between BIWTA and the ghat operator divided by the cargo fee per ton. Therefore, it is highly likely that the cargo volume is underestimated.;
- Some ports have shown a sudden surge in cargo or passenger volumes (passengers of Khulna, cargo and passengers of Noapara, etc.), and the reasons for these increases need to be verified;
- Taking the above points into account, all river ports handled 153 million tons of cargo and 220 million passengers in 2024-25.
- Between 2021-22 and 2022-23, the total number of passengers decreased by 54 million. The most significant declines were recorded at Daulatdia & Paturia RP&F (27 million), Dhaka RP (24 million), Mawa/Shimulia RP&F (14 million), Kathalbari/Charjanajat RP&F (13 million), Nagarbari-Kazirhat RP&F (7 million), and Aricha RP (5 million). These reductions are attributable to the opening of the Padma Bridge.
- The top 10 river ports by cargo volume for 2024-25 are: 1) Meghan RP, 2) Chhatak RP, 3) Doudkandi & Baushia RP, 4) Dhaka RP, 5) Noapara RP, 6) Narayanganj RP, 7) Daulatdia & Paturia RP&F, 8) Khulna RP, 9) Ashuganj-Bhairab RP, and 10) Faridpur CMB Ghat.
- The top 10 river ports by passenger volume for 2024-25 are; 1) Dhaka RP, 2) Khulna RP, 3) Barisal RP, 4) Sunamganj RP, 5) Narayanganj RP, 6) Dawlatdia & Paturia RP&F, 7) Ashuganj-Bhairab RP, 8) Noapara RP, 9) Chandpur RP, and 10) Chhatak RP.

Cargo data from the Protocol on Inland Water Transit and Trade (PIWT&T) between Bangladesh and India are shown in Table 3-2. Almost all PIWT&T cargo consists of inter-country cargo, and transit cargo is negligible. PIWT&T cargo in 2023–24 amounts to 4 million tons, of which 97% is fly ash.



Source: OCDI-QGIS

Figure 3-1 Locations of River Ports

Table 3-1 River Port Statistics (Cargo and Passenger)

(unit: million tons) (unit: million PAX)

No. by BIWTA	Name of River Port	Cargo (2020-21)	Cargo (2021-22)	Cargo (2022-23)	Cargo (2023-24)	Cargo (2024-25)	Passenger (2020-21)	Passenger (2021-22)	Passeger (2022-23)	Passenger (2023-24)	Passenger (2024-25)
1	Dhaka RP	6.145	5.377	5.401	5.387	9.586	71.178	74.736	49.988	47.440	44.096
2	Narayanganj RP	5.822	6.113	6.724	7.635	7.521	31.381	32.950	36.245	14.940	14.242
3	Khulna RP	0.594	3.175	3.362	3.186	5.343	1.213	1.390	1.389	9.190	37.074
4	Barisal RP	3.067	5.392	2.507	2.609	2.645	21.730	20.023	21.239	9.580	19.071
5	Chandpur RP	0.307	0.990	0.818	1.284	1.011	3.968	6.450	5.945	4.385	5.545
6	Tongi RP	11.664	11.080	1.827	1.250	1.075	3.560	3.382	3.400	3.450	3.600
7	Patuakhali RP	0.782	0.684	0.608	0.463	0.486	8.334	7.917	4.956	3.184	3.089
8	Baghabari RP	0.190	0.200	0.250	3.107	1.466	0.270	0.280	0.294	0.533	0.517
9	Aricha RP	2.635	2.738	0.750	2.315	2.224	10.480	12.600	7.560	2.405	1.779
10	Daulatdia & Paturia RP&F	12.582	11.866	0.696	7.216	7.129	32.232	34.320	7.080	12.547	12.476
11	Nagarbari-Kazirhat RP&F	3.150	3.005	1.600	1.100	0.825	9.714	9.730	2.500	2.200	1.650
12	Narsingdi RP	0.201	0.211	0.221	1.500	1.660	3.820	3.650	3.832	2.000	2.025
13	Bhola RP	0.800	0.900	0.950	1.000	1.050	2.050	2.300	2.350	2.400	2.450
14	Mirkadim RP	0.644	0.676	0.642	0.160	0.030	5.215	5.475	4.927	1.440	0.728
15	Mawa/Shimulia RP&F	3.020	3.171	0.250	0.190	0.178	14.083	14.787	0.640	0.670	0.662
16	Noapara RP	0.770	0.808	7.281	7.043	7.542	-	-	5.958	6.660	8.856
17	Ashuganj-Bhairab RP	3.478	3.582	3.761	1.464	5.000	4.210	3.810	4.000	15.456	11.654
18	Borguna RP	0.355	0.360	0.180	0.120	0.106	1.545	1.555	0.630	0.525	0.499
19	Kathalbari/Charjanajat RP&F	2.813	2.953	0.250	0.190	0.178	13.700	13.550	0.640	0.670	0.662
20	Chhatak RP	8.710	10.589	12.445	13.159	11.898	0.901	2.764	5.850	6.660	5.868
21	Meghna Ghat RP	16.960	17.808	18.787	17.847	18.739	0.889	0.933	0.997	1.050	1.092
22	Cox's Bazar (Kastory Ghat) RP	0.151	0.900	0.918	1.010	1.050	2.094	2.375	2.422	3.394	2.103
23	Faridpur CMB ghat RP	2.258	2.155	2.219	0.449	4.710	-	-	-	-	-
24	Ghorashal RP	0.550	0.615	0.889	1.066	1.125	-	-	-	-	-
25	Teknaf RP	0.499	0.474	0.450	0.400	-	1.070	1.100	0.455	0.400	-
26	Takerghat RP	4.140	4.130	3.500	1.250	2.160	0.188	1.170	1.170	1.170	5.304
27	Chilmari RP	0.042	0.046	0.020	0.095	0.170	0.722	0.811	0.820	0.861	1.220
28	Moju Chowdhury Hat RP	-	-	-	1.810	1.905	-	-	-	1.499	1.501
29	Sunamganj RP	8.710	9.360	8.640	7.344	3.496	3.905	3.317	3.456	3.385	16.655
30	Doudkandi & Baushia RP	8.634	9.065	9.518	9.137	9.685	2.076	2.179	2.287	2.218	2.328
31	Ruppur RP	-	-	0.181	0.185	0.156	-	-	-	-	-
32	Meghaighat-Natuapara RP	-	-	0.007	0.110	0.115	-	-	0.140	0.147	0.156
33	Mirsarai-Rasmoni RP	-	-	-	1.500	1.600	-	-	-	2.000	2.050
34	Balagang RP	-	0.756	0.743	0.706	0.670	-	1.638	1.500	1.425	1.282
35	Betua RP										
36	Companigonj-Sonagaji RP										
37	Gazipur RP										
38	Bsantpur RP										
39	Gosairhat-patti RP										
40	Mohanganj (Gaglajur) RP										
41	Elisha RP										
42	Romari-Razibpur RP										
43	Nazirganj RP					0.990					0.550
44	Dhawapara RP					0.990					0.550
45	Narsinghapur RP										
46	Bancharampur RP										
47	Sultanganj RP										
48	Mongla RP										
49	Rajshahi RP										
50	Bholaganj RP										
51	Goainghat RP										
52	Sylhet RP										
53	Sandwip Coastal RP										
54	Hatiya Coastal RP										
	Different Ghats under Chittagong office	3.318	11.379	12.208	12.000	12.500	3.002	8.467	8.721	9.025	9.325
	Out side all port	-	-	28.410	31.251	26.080	-	-	28.176	32.900	-
	Total	112.991	130.558	137.013	146.538	153.094	253.530	273.659	219.567	205.809	220.659

Note: Blue-colored cells represent the total values of multiple locations.
Note: Since the orange-colored cells indicate cross-river traffic, the same values are entered.
Note: Data from the Protocol on Inland Water Transit and Trade (PIWTT) between Bangladesh and India area NOT included.
Note: Cargo and passengers transported by Ferry operated by BIWTC and RHD are NOT included.
Source: Prepared by OCDI based on BIWTA data

Table 3-2 PIWT&T Cargo

(unit: million tons)

Cargo type	Cargo (2020-21)	Cargo (2021-22)	Cargo (2022-23)	Cargo (2023-24)
Inter-Country Trade Cargo	3.959	4.738	4.124	4.014
Transit Cargo	0.000	0.003	0.005	0.012
Total	3.960	4.741	4.130	4.026
Fly Ash	*3.812*	*3.869*	*3.898*	*3.894*
Share of Fly Ash	*96%*	*82%*	*94%*	*97%*

Source: Prepared by OCDI based on BIWTA data

3.1.2 Ghats and foreshores

Ghats are, in principle, operated by private operators who are granted leases through tender procedures in accordance with BIWTA's "Ghat-Point Lease/License Issuance Procedure." River port facility/structure under Eng. Dept. of BIWTA is shown in Table 3-3.

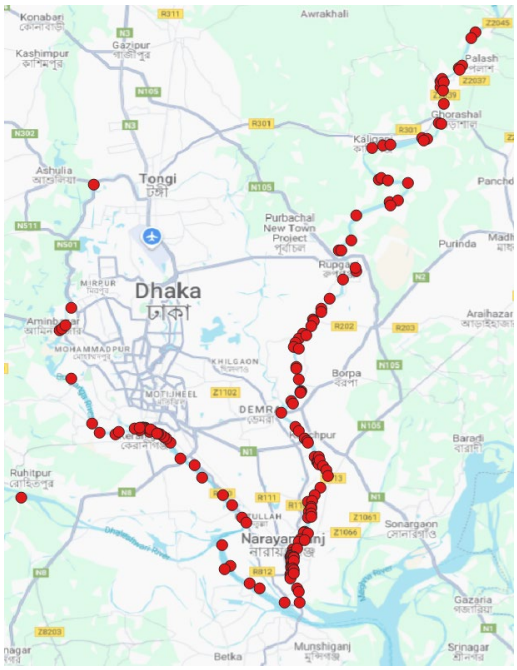
On the other hand, structure construction and licenses for use foreshore are provided in favor of various organization such as factories in accordance with BIWTA's "Renewal policy of offshore and jetty license of river port".

Example of Ghats and Factories in Dhaka RP, Narayanganj RP and Ghorashal RP are shown in Figure 3-2.

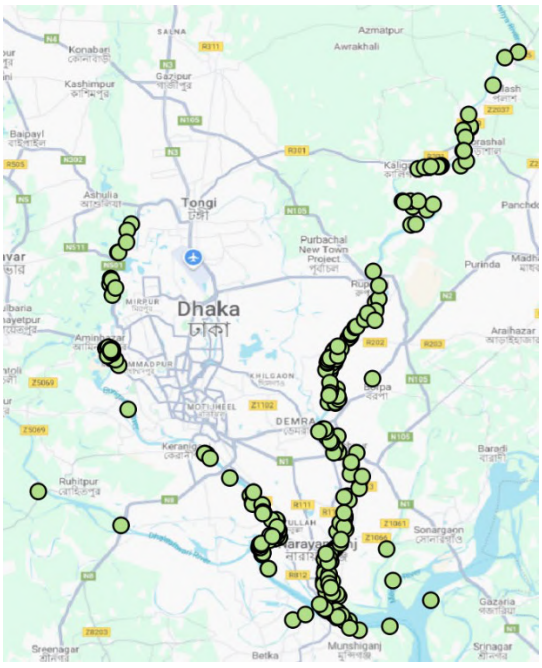
Table 3-3 River Port Facility/Structure under Eng. Dept. of BIWTA

Port Facility/Structure	Number
Launch Ghat	363
Ferry Terminal Passenger Shelter	18
Ferry Terminal Parking Yeard	17
Ferry Ghat Point	51
Terminal Building	21
Launch Ghat Passenger Shelter	42
Gangway	82
Spad	878
Jetty	287
Pilot House	28
Dredger Base Building	5
Other Structure	1,382
Total	3,174

Note: Other structure includes: Building, Toilet Complex, Parking Yeard, Wooden Stairs, Shore Stairs.
Source: Engineering Dept. , BIWTA as of Oct. 2025



Ghats



Factories

Source: OCDI-QGIS

Figure 3-2 Ghats and Factories in Dhaka RP, Narayanganj RP and Ghorashal RP

3.1.3 ICT

Location map of river port ICTs is shown in Figure 3-3. Inland waterway container transport is conducted between NCT-1 berth of Chittagong Port and river port ICTs (Inland Container Terminal). Pangaon ICT (CPA, capacity: 0.116 million TEUs/year) and SAPL ICT (Summit Alliance Port Ltd., capacity: 0.1 million TEUs/year) are currently in operation. Rupayan ICT (Rupayan Port & Logistics Services Ltd., capacity: 0.3 million TEUs/year) was near completion but construction has stalled. Furthermore, construction of AK Khan ICT (capacity: 0.25 million TEUs/year), Kumudini ICT (capacity: 0.15 million TEUs/year) and Ananda ICT (capacity: 0.4 million TEUs/year) are planned but there seems to be no progress. Mawa ICT is being studied by BIWTA.

Throughput of Pangaon ICT is 0.030 million TEUs in 2023 of which laden container ratio of unloaded and loaded cargo are 99.9% and 11.0% respectively. Throughput of SAPL ICT is 0.011 million TEUs in 2019 of which laden container ratio of unload and load are 27% and 73% respectively. Thirteen (13) coastal container vessels of 7 shipping companies are deployed on this route as of 2020. Currently, however, full service of these coastal container vessels has not been introduced mainly because of the lack of the demand.



Source: OCDI-QGIS

Figure 3-3 River Port ICTs around Dhaka

3.2 Inland waterways

3.2.1 Outlines

Inland waterways are classified into four classes, as shown in Table 3-4. The main inland waterways from Chittagong Port to Dhaka and Narayanganj RPs, to Ashuganj RP, to Rajshahi RP, and from Mongla Port to Dhaka and Narayanganj RPs are designated as first-class waterways. BIWTA is now proposing a new inland waterway classification, as shown in Table 3-5, and is waiting for the approval from the Government.

Draft restriction of inland waterways of whole country and of more than 3.5m north of Matarbari Port are shown in Figure 3-4 and Figure 3-5 respectively. Further, PIWT&T Routes are shown in Figure 3-6.

Table 3-4 Inland Waterway Classification (Current)

Class	Minimum Required Depth (m)	Horizontal Distance (m)	Vertical Clearance (m)	Total Length (km)
1st class	3.60 - 3.90	76.22	18.30	683
2nd class	2.10 - 2.40	76.22	12.20	1,000
3rd class	1.50 - 1.80	30.48	7.62	1,885
4th class	Below 1.50	20.00	5.00	2,400
Total				5,968

Note: Total length for each class is according to BIWTA.

Source: "Construction of Structure in Inland Waterways and Shorelines Control Rules, 2010" and its amendment of 2018

Table 3-5 Inland Waterway New Classification (Proposal)

Class	Minimum Required Depth (m)	Horizontal Distance (m)	Vertical Clearance (m)	Total Length (km)
Special	4.5	100	18.5	872
1st class	4.0	100	18.3	2,607
2nd class	2.5	75	12.2	2,541
3rd class	2.0	35	7.62	3,521
4th class	1.5	25	5.0	5,459
5th class	1.0	20	3.5	1,673
Total				16,673

Source: BIWTA



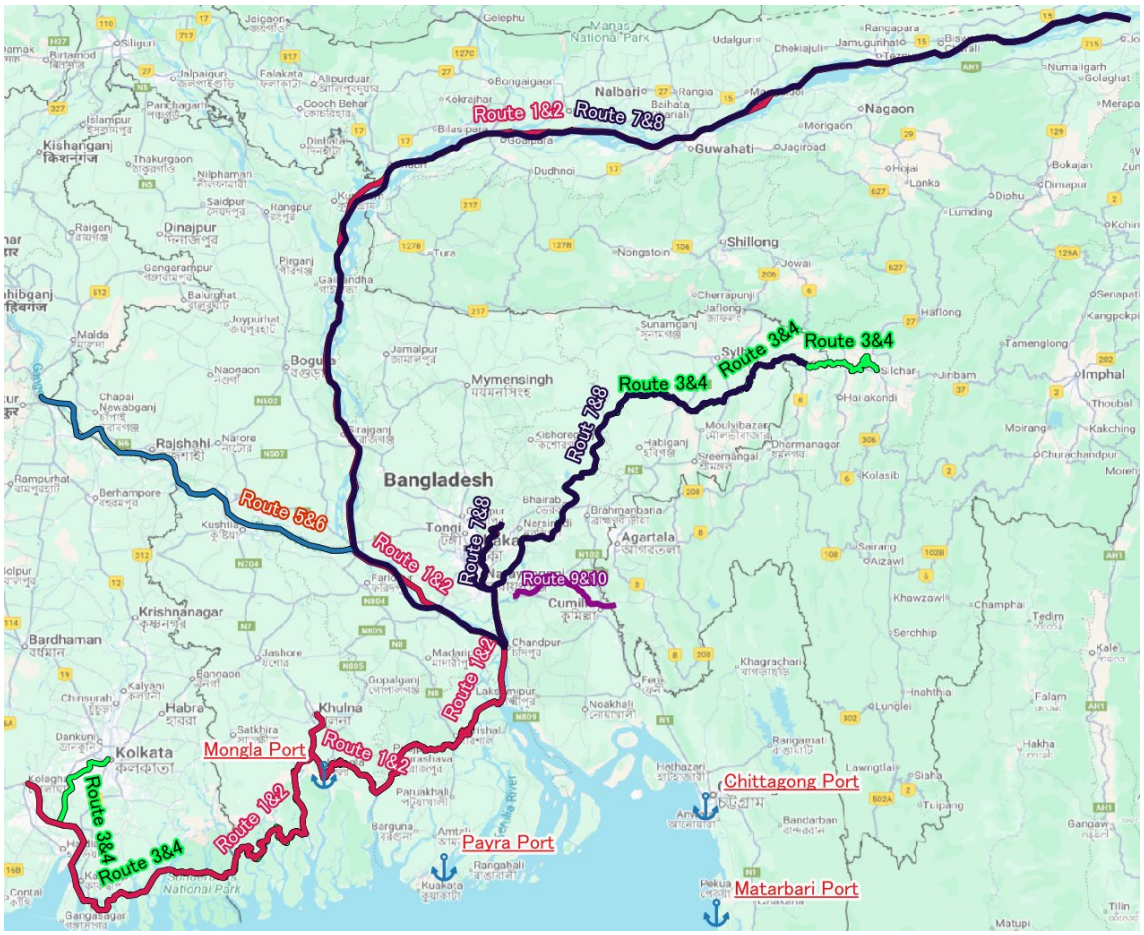
Source: OCDI-QGIS based on BIWTA draft restriction map

Figure 3-4 Draft Restriction of Inland Waterways



Source: OCDI-QGIS based on BIWTA draft restriction map

Figure 3-5 Draft Restriction of Inland Waterways (more than 3.5m, North of Matarbari)



Note: PIWT&T represents the Protocol on Inland Water Transit and Trade
Source: OCDI-QGIS based on BIWTA Protocol Route Map

Figure 3-6 PIWT&T Routes

3.2.2 Dredging activities

(1) Dredging circles, dredgers and dredging bases

Dredging activities are carried out by dividing the entire country into three circles as shown in Table 3-6. The total number of dredging-related personnel of BIWTA is 1,012 (111 engineers, 159 assistants and other staff, and 742 seamen and laborers).

The planned maintenance dredging volume for 2024–25 is approximately 20 million m³. BIWTA's own dredgers will dredge about 8.3 million m³, while subcontractors (Bangladeshi private companies) selected through competitive bidding will dredge the remaining volume. The planned dredging volumes for the three circles in 2024–2025 are 7.2 million m³, 6.8 million m³, and 5.9 million m³, respectively.

Table 3-6 Dredging Circles, Dredgr Bases and Dredgers

Dredging Circle	Dredger Base	Number of Dredgers, etc.
Dhaka (covering NE region)	Narayanganj	14 dredgers and 109 work vessels
Barisal (covering S region)	Khulna	4 CSD (18' - 20' cutter head)
Aricha (covering NE region)	Aricha	15 CSD
Total		49 dredgers (6@26' CSD, 11@20' CSD, 24@18' CSD, 8@others)

Note: CSD stands for cutter suction dredger.
Source: Prepared by OCDI based on interviews with BIWTA

(2) Planning and budgeting

Priority maintenance dredging sites are largely predetermined and are carried out annually or biennially. Priority maintenance dredging sites include major IWT corridors, major ferry routes, and protocol routes. Major IWT corridors such as Dhaka-Chittagong and Dhaka-Barisal serve for regular freight and passenger transport. Ferry routes function to transport trucks, buses, and passenger cars across to the opposite shore. Protocol routes encompass Padma, Jamuna, and Meghna rivers. When determining priorities, decisions are made based on factors such as the selection of high-priority sites already under discussion, requests from IWT users and other stakeholders, and the necessity of securing other critical facilities.

BIWTA prepares an Annual Procurement Plan (APP) for maintenance dredging. While many locations require maintenance dredging, the budget is limited. Therefore, high-urgency and high-importance sites are implemented as 1st Priority, with the remaining budget allocated to 2nd Priority sites.

(3) Implementation

Maintenance dredging operations primarily use cutter suction dredgers, with the dredged material generally disposed of on land. The average transport distance for dredged material is approximately 2,500 to 3,000 feet via floating pipes on the water and via discharge pipes on land. However, during the rainy season, when water levels rise and land disposal sites become submerged, dredged soil may sometimes be dumped into the water. Water levels can rise by more than 10 meters during the rainy season. BIWTA dredgers operate on a two-shift, 16-hour schedule from 6:00 to 22:00.

During the monsoon season, river water levels rise and vessel operations remain relatively stable, so maintenance dredging are not particularly active. Maintenance dredging become more active

after the monsoon season ends. Since it is necessary to remove sediment deposited during the monsoon, especially at river ports, efforts are made to remove this sediment within about three months after the monsoon ends.

Pilots with knowledge of the river bed proactively monitor siltation conditions even before the monsoon season ends, reporting to the Conservancy & Pilot Dept. of BIWTA and striving to facilitate the early implementation of priority selection.

To determine the areas requiring maintenance dredging, preliminary surveys are first conducted using BIWTA survey vessels. Based on these survey results, BIWTA and its consultants determine the locations, shapes, and depths of the dredging required to secure safe navigation. Maintenance dredging differs from capital dredging in that it does not maintain the cross-sectional shape of a prescribed channel. Instead, it assesses post-monsoon sedimentation conditions and determines the new channel alignment, taking into account the need to ensure safe vessel navigation and achieve efficient dredging.

BIWTA and its consultants determine the locations of disposal sites. The consultants plan the disposal method for the dredged material, which is disposed of either in the river or on land. Dredged material (sand, silt, etc.) from large rivers, if of good quality, may be dredged and sold. Dredged material from small rivers is often unwanted. Efforts are made to identify disposal sites close to potential dredging locations. Onshore possibilities include school grounds, hospital premises, and open fields.

As per the "Dredging and Dredged Material Management Policy, 2025," District Administrations establish Dredged Material Management Committees. Responsibilities and functions of the committee are shown in Table 3-7. Dredged material is primarily disposed of through land-based dumping. At designated disposal sites, embankments are constructed, and dredged material is transported into these contained areas using cutter suction dredgers. According to BIWTA, securing disposal sites for dredged material is a significant challenge, and some rivers continuously shift their alignment due to ongoing sediment transport processes. This dynamic behavior often leads to challenges such as land boundary disputes related to disposal sites.

Table 3-7 Responsibilities and Functions of Dredged Material Management Committee

1. The committee will conduct on-site inspections and, based on the aggregated needs of the local population, prioritize requests from relevant institutions for filling/land development of roads, playgrounds of educational or religious institutions, Eidgahs (Eid prayer ground), mosques, temples, cemeteries, crematoriums, sports fields, government khas land, fallow land, and other government/social institutions, and allocate dredged material to these institutions free of charge.
2. If no applications are received, the committee will determine the price of the dredged material extracted as per regulations, manage its sale, and deposit the revenue in the government treasury. To ensure competitive

pricing, the committee may advertise the sale of dredged material in newspapers, with advertisement costs covered by the budget of the concerned agency.

3. The committee will assist in and take measures for the management of dredged material extracted from designated locations, including supervision of dredging operations, monitoring, providing necessary recommendations, and determining storage locations for dredged material.
4. The committee will grant permission to store the extracted dredged material on government khas land, fallow land, or requisitioned land.
5. The committee will resolve any complications that arise during the stacking of dredged material.
6. A representative from the Department of Environment will assess the potential environmental impacts of river dredging and provide recommendations for necessary measures.
7. River dredging will be halted in fish habitats, breeding grounds, sanctuaries, and spawning areas during the breeding season of mother fish.
8. The committee will monitor changes in the river course and review whether riverbank erosion is occurring or if riverside communities are being affected, providing recommendations accordingly.
9. The committee will propose and ensure necessary measures to maintain smooth navigation on waterways.
10. The committee may identify inter-river connection points and take measures to keep them functional through dredging.
11. The committee will monitor whether dredging is causing or has the potential to cause damage to embankments, structures, or infrastructure, and recommend necessary actions.
12. Any technical problems that arise will be forwarded to the Technical Committee for resolution.
13. The committee will provide assistance in the excavation of canals, bills, haors, and baors, as well as in the processing and management of dredged material.
14. The committee will make decisions on other matters of public importance.

Source: Dredging and Dredged Material Management Policy, 2025, Ministry of Water Resources

3.2.3 Vessel traffic volume on the inland waterways

BIWTA conducted vessel traffic volume survey for continuous 7 days/nights at 5 locations as shown in Table 3-8. The noteworthy points are as follows:

- In front of Madanganj Launch Ghat in Narayanganj RP is the busiest waterway in terms of Total vessels and Cargo/Freight Ships.
- At Babubazar Bridge near Sadarghat, Sand Carriers/Bulk Heads, which is relatively small in size, accounts for 96%.
- About 80 Passenger Ships are transiting under Muktarpur Bridge and in front of Madanganj Launch Ghat.
- Relatively large 79 vessels are transiting under Dopdopia Bridge in Barishal. Relatively large 71 vessels are transiting in front of Mongla Ferry Ghat. Many of these vessels are likely to be navigating continuously between these two points and beyond. The

waterway in front of Mongla Ferry Ghat operates as a one-way channel, with the direction reversed on a daily basis.

- Relatively large 77 vessels are transiting in front of Noapara - Shikirhat Ferry Ghat.

Table 3-8 Vessel Traffic Volume Survey Result (daily average number of vessels)

Location	Vessel Type									
	Dumb Barge	Cargo/ Freight Ship	Sand Carrier/ Bulk Head	Tanker	LPG	Passenger ship	Container ship	Others	Total	Total (except Sand Carrier/ Bulk Head and Others)
Babu Bazar Bridge	0	0	438	6	1	1	2	5	454	11
Muktarpur Bridge	0	55	769	16	1	86	1	34	962	158
Kanchan Bridge	0	38	61	2	2	0	0	0	103	42
Madanganj Launch Ghat	2	336	432	37	6	81	2	298	1,195	464
Dopdopia Bridge	4	59	76	6	6	5	0	42	198	79
Mongla Ferry Ghat	0	62	22	5	4	0	0	53	146	71
Noapara - Shikirhat Ferry Ghat	0	77	53	0	0	0	0	3	134	77

Note: Surveys were conducted by BIWTA from 25 Nov. to 1 Dec. 2025 at Babu Bazar Bridge in Dhaka RP, Muktarpur Bridge, Kanchan Bridge on Shitalakshya River, Dopdopia Bridge in Barisal RP, from 21 to 27 Jan. 2026 at Madanganj Launch Ghat in Narayanganj RP, and from 01 to 07 Mar. 2026 at Mongla Ferry Ghat in Mongla RP and Noapara - Shikirhat Ferry Ghat.

Note: The table values represent the daily average number of vessels in both directions.

Source: Prepared by OCDI based on BIWTA survey data.

3.3 Vessels transiting on the inland waterways

On the inland waterways of Bangladesh, various types of vessels are in operation. All such vessels are required to be registered in Bangladesh in accordance with the provisions of the Inland Shipping Ordinance, 1976, or the Bangladesh Merchant Shipping Ordinance, 1983, except for certain Indian vessels that are permitted to navigate in Bangladesh under the Protocol on Inland Water Transit and Trade, 1972.

Their classification, based on the qualifications required for navigation, is shown in Table 3-9. Among these, inland ships have registration numbers beginning with “M”. In contrast, coasting ships and home-trade ships have registration numbers starting with “C” and “HT”, respectively. Registration falls under the jurisdiction of the Director General of the Department of Shipping, in accordance with the Inland Shipping Ordinance, 1976 for inland ships, and the Bangladesh Merchant Shipping Ordinance, 1983 for coasting ships and home-trade ships.

Vessels are also classified according to their purpose and design. Their classification, based on their primary role in mercantile activities, is shown in Table 3-10.

Due to navigational restrictions in narrow and winding channels, all vessels have a length overall (LOA) of less than 100 m (predominantly less than 80 m) and operate on waterways with a draft of less than 4 m, in accordance with the applicable draft limitations.

As navigating speed and maneuverability differ among vessel types—particularly between large mechanized vessels (cargo ships, container ships, oil tankers, LPG tankers, and passenger ships) and smaller vessels (bulk heads, dumb barges, and country boats)— the risk of accidents is already significant and is expected to increase in the future, along with traffic growth on inland waterways driven by expanding international trade. In addition, vessels other than mercantile ones, including military ships and various workboats operated by BIWTA and other authorities, also navigate these waterways, further increasing traffic density.

Proper traffic control, adequate maintenance of waterways, and the installation of appropriate navigational aids in congested or hazardous areas will therefore be necessary to ensure the safety of inland waterway transportation.

In addition to limitations on LOA and draft resulting from channel restrictions, some waterways are subject to air-draft limitations (the vertical distance from the water level to the highest point of a vessel) due to the low clearance of older bridges crossing the waterways. Such limitations impose additional constraints on vessel design and cargo-carrying capacity.

As of January 2026, there is no mandatory requirement for Bangladeshi vessels operating on domestic waterways — including coasting and home-trade ships, which may navigate limited portions of international waters — to use fuel oils with a sulfur content of less than 0.5%, as required under IMO 2020 (MARPOL Annex VI) for vessels engaged in international voyages.

While IMO 2020 allows individual States discretion in regulating vessels operating within their territorial waters, the Government faces the challenge of determining how and when to introduce enforcement measures that are consistent with IMO standards, as well as other international requirements related to pollution prevention.

Vessel registration is conducted by DOS HQs for inland vessels and by Mercantile Marine Office for coastal vessels separately. Registered vessel data are shown in Table 3-11 and Table 3-12.

Table 3-9 Qualification Type of Vessel on Inland Waterways

Qualification Type of Vessel	Gross Tonnage	Qualified Navigable Area	Govering Laws and Ordinances
Inland Ship		Bangladesh Inland Wateways(*)	Inland Shipping Ordinance, 1976
Coasting Ship	not exceeding 1,500GT	Bangladesh-India not beyond Kolkata Bangladesh-Myanmar not beyond Akyab	Bangladesh Merchant Shipping Ordinace, 1983
Home-trade Ship	not exceeding 3,000GT	Bangladesh-India not beyond Visakhapatnam Bangaldesh-Myanmar not beyond Moulmein	Bangladesh Merchant Shipping Ordinace, 1983

Note (*): Inland ships may ply on Indian inland waterways designated under the Protocol on Inland Water Transit and Trade, 1972. They may also navigate to the Bangladeshi ports on Bay of Bengal with prior authorization from the cometent authority.

Source: OCDI

Table 3-10 Vessel Type by Purpose and Size on Inland Waterways

Vessel Type	Main Cargo	Vessel Size	
		LOA	Draft
Cargo Ship	coal, fertilizer, wheat, maize, etc. in bag or in bulk	up to 80m	up to 4.8m (designed)
Container Ship	container, some capable for other cargo	up to 83m	up to 4.3m (designed)
Oil Tanker	oil petroleum or edible	up to 80m	up to 3.5m
LPG Tanker	LPG compressed	up to 90m	up to 3.5m
Passenger Ship (Launch)	passengers	up to 95m	up to 2m
Bulkhead	sand, cement in bag, etc.	up to 30m	up to 2m
Dumb berge (no engine)	sand, long or bulky cargo	up to 42m	up to 2.5m
Country boat	local people	up to 10m	up to 1m

Source: Prepared by OCDI based on the date from DOS and other sources

Table 3-11 Registered Inland Vessels

Vessel Type	Numbers
Passenger Vessel	853
Cargo	3,838
Oil Tanker	425
Sand Carrier	7,933
Dredger and CSD	2,271
Goods Carrier	1,909
Ferry	50
Tourist Launch	32
Barge	646
Boats	2,478
Others	117
	20,552

Note: Boats include Passenger Boat, Tug Boat, Speed Boat, Work Boat, Inspection Boat, House Boat, Water Taxi, Crane Boat and Tourist Boat.
Source: Prepared by OCDI based on DOS data (as of Dec. 2024)

Table 3-12 Vessel Type and Size of Coastal Vessels

Vessel Type	No. of Vessels	GRT			
		Maximum	Minimum	Average	Standard Deviation
Dums Barge	2	917	285	601	447
Dredger	13	934	32	252	255
Pilot Vessel	10	493	24	178	121
Coastal Tanker	205	2,995	199	897	524
Tug	17	493	285	229	133
LPG	21	2,996	282	1,195	937
Passenger	21	6,059	58	677	1,309
Container Ship	23	2,790	850	2,060	607
Total	312				

Source: Prepared by OCDI based on DOS Mercantile Marine Office data (as of May 2025)

3.4 Completed and Ongoing projects

Actual expenditures of completed projects of BIWTA since the 1990s are shown in Table 3-13. Dredging and the purchase of dredgers, etc. account for 79% of the total. The development of river port facilities follows at 14%. A list of completed projects of BIWTA is shown in the Appendix.

Ongoing projects of BIWTA are summarized in Table 3-14.

Table 3-13 Actual Expenditures of Completed Projects of BIWTA since the 1990s

(Unit: BDT in lakh)

	Dredging	Procurement of Dradgers, Boats	Jetty, Landing Facilities, Terminal, Road, etc.	Nav-Aids, Tele-communication	Others	Total
Actual Expenditure	249,714	335,568	104,116	16,029	33,031	738,459
Share	34%	45%	14%	2%	4%	100%

Source: Prepared by OCDI based on BIWTA data

Table 3-14 BIWTA Ongoing Projects (FY 2025-26)

SL. No.	Project name	Implementation Period
1	Improvement of navigability of the waterway from Mongla Port to Pakshi via Chandpur-Mawa-Goaland (1st revised)	Jul. 2017 - Jun. 2026
2	Installation of pillars, bank protection, walkways and jetties and other ancillary infrastructure on the banks of Buriganga, Turag, Shitalakshya and Balu rivers (Phase 2) (Revised 2)	Jul. 2018 - Jun. 2026
3	Development and Restoration of Navigability of Old Brahmaputra, Dharla, Tulai and Punarbhava Rivers (1st Revised)	Sep. 2018 - Jun. 2027
4	Procurement of 35 dredgers and auxiliary vessels, along with ancillary equipment, and construction of necessary infrastructure (1st revised)	Oct. 2018 - Jun. 2027
5	Construction of river embankments in Chilmari area (Ramna, Jorgach, Rajibpur, Roumari, Nayarhat) (1st revised)	Jul. 2021 - Dec. 2027
6	Construction of inland container and bulk terminal at Khanpur, Narayanganj	Jan. 2020 - Jun. 2027
7	Improvement of navigability and restoration of Ghorautra, Bolai-Srigang Rivers in Mithamoin Upazila, Dhanu River, Namakura River in Itna Upazila and Khaleshwari River in Ashtagram Upazila	Jul. 2022 to Jun. 2027
8	Construction of jetties and ancillary facilities in Mirsarai and Sandwip in Chittagong, Sonadia Island and Teknaf (Sabrang and Jaliyar Island) in Cox's Bazar	Jan. 2023 - Dec. 2027
9	Ensuring river flow during the dry season, waterway development and flood management to restore the flow of Jinai, Ghaghat, Banshi, and Nagda rivers	Jul. 2023 - Jun. 2028
10	Bangladesh Regional Inland Water Transport Project-1 (Dredging of Chittagong-Dhaka-Ashuganj and connected waterways and construction of terminal and ancillary facilities (2nd revised)	Jul. 2016 - Jun. 2027
11	Ashuganj Inland Container River port Establishment (1st Revised)	Jul. 2018 - Dec. 2025
12	Sustainable Management of Jamuna River Project-1 (Navigational Channel Development)	Jan. 2024 - Dec. 2027
13	Procurement and installation of polyethylene buoys, PC poles, tower beacons and RCC sinkers for use in inland waterways	Jan. 2024 - Jun. 2026
14	River and waterway survey and awareness raising project	Oct. 2023 - Sep. 2026

Source: BIWTA

3.5 Contribution of river ports and IWT to the national economy and society

3.5.1 Cargo transport

The most significant contribution of river ports and inland water transport (IWT) lies in their role as a primary mode for transporting industrial inputs imported through gateway seaports. As already shown in Figure 3-2, many factories are located along riverbanks and are equipped with their own jetties. Such locations facilitate the efficient unloading of imported raw materials and intermediate products, including bulk cargo as well as heavy and oversized items.

In addition to imported industrial inputs, domestically produced industrial goods—such as cement—are also distributed nationwide via factory-owned jetties and river ports in other regions.

To meet growing domestic construction demand, sand and other construction materials are transported by water to nearby river ports and onward to construction sites or stockyards for final delivery.

Furthermore, several inland container terminals (ICTs) in Dhaka that are already operational or under construction have paved the way for IWT to contribute meaningfully as a multimodal container transport option along the main corridor between Chittagong and Dhaka.

3.5.2 Passenger transport

Bangladesh is geographically characterized by numerous major rivers and their tributaries. As a result, passenger movement in the country has historically relied on inland water transport (IWT), ranging from daily river crossings to long-distance travel between regions.

Despite the growth of private car ownership, the expansion of land transport networks, and the construction of an increasing number of river-crossing bridges, passenger transport by IWT remains an indispensable mode of transport, offering a comparatively easy, convenient, and accessible means of travel. In addition to launch-type passenger vessels, ferry and roll-on/roll-off (Ro-Ro) vessels capable of carrying cars and trucks play a critical role in linking river ports, often providing more direct and efficient connections than detours to the nearest bridge.

Moreover, many small river-crossing ghats, consisting of simple steps along riverbanks within and outside designated river port limits, are widely used for crossing services, primarily by small country boats. These ghats constitute important assets for community-based water transport, supporting local mobility and social connectivity in daily life. While recent bridge construction in major urban areas has improved land transport links for commuting by car and bus, river-crossing services operated by ferries and small country boats continue to provide essential connections between ghats, frequently offering more convenient alternatives to bridge detours.

3.6 Challenges and Core Issues

(General)

- Measures to respond to changing IWT demands, including: (1) increasing demand for the transport of import and export cargo through seaports; (2) the need for competitive domestic long-haul transport of heavy and bulk cargo; (3) declining demand for passenger transport; and (4) the basic transport needs of local communities.
- Several government policies advocate increasing the modal share of inland water transport to encourage a modal shift from road to waterways. However, the share of inland water transport has been historically declining, and achieving the target is expected to involve significant challenges.

Table 3-15 Modal Share of Transport in Bangladesh

Year	Freight				Passenger			
	Total ton-km in billion	Modal Share (%)			Total passenger-km in billion	Modal Share (%)		
		Road	Rail	IWT		Road	Rail	IWT
source-1: 1975	2.6	35	28	37	17	54	30	16
source-1: 1985	4.8	48	17	35	35	64	20	16
source-1: 1997	12.0	65	7	28	90	72	11	17
source-1: 2005	20.0	80	4	16	112	88	4	8
source-1: 2019	31.0	77	16	6	195	87	8	5
Future Target by source-2		60	20	15				
2041 Target by source-3		60	14	25				
2041 Target by source-4		50	20	28				

Source-1: "Mainstreaming inland waterways into national logistics network: national experience of Bangladesh," P3, Working Paper, December 2021, UN ESCAP
Source-2: National Integrated Multimodal Transport Policy (NIMTP 2013)
Source-3: Perspective Plan of Bangladesh (2021-41)
Source-4: National Logistics policy 2024

- Data-driven administration of inland water transport (IWT) is essential. A comprehensive river port database should be maintained as a shared knowledge base and benchmarking tool.
- Accurate and reliable statistics on commodity-wise cargo flows, including origin–destination data, are not available except for PIWT&T. Such data are essential for demand analysis and for evaluating the capacity of river ports and inland waterways.
- There is currently no comprehensive master plan for the IWT sector.
- Greater accountability in the implementation of maintenance dredging is required. The lack of quantitative evidence demonstrating the importance of inland water transport and the necessity of maintenance dredging is considered to be one of the reasons for the limited budget allocation to the sector.
- Securing these disposal sites poses a major challenge.

- Dredged material disposal is primarily conducted through land-based dumping. Embankments are constructed on the secured disposal site land, and dredged material is transported into these embankments using cutter suction dredgers. The districts, as the local authorities, have established Dredged Material Committee (comprising seven members, including representatives from the Water Development Board, the Department of Environment, and local residents) to negotiate and secure land.
- In rare cases, large mid-river sandbars (Char) may be utilized. For landfills, considering potential overflow during the monsoon season, disposal sites should be located at least 500 meters to 1 kilometer away from the riverbank.
- Rivers constantly shift their alignment due to sediment transport, which in turn causes issues such as land boundary disputes.

➢ In busy river ports, well-designed and safe land-side circulation flows for both passengers and cargo are necessary.

➢ Measures to prevent river encroachment and to strengthen river cleaning activities are required.

(Capacity enhancement of ICT)

➢ In light of the projected substantial increase in import and export container volumes at seaports, together with expectations of an expanded modal share for inland water transport (IWT), it is necessary to enhance the capacity of river port inland container terminals (ICTs).

➢ Specifically, import and export container volumes in 2050 are forecast to reach approximately 13 million TEU. The modal share of IWT for container traffic is expected to increase from the current level of less than 1% to 5–10%. Accordingly, the total ICT capacity in the Dhaka area will need to be expanded to approximately 0.75–1.3 million TEU.

(Vessel size and traffic)

➢ Given that significant improvements in channel depth and width are unlikely to be realized in the future due to budget constraints, a substantial enlargement of the maximum vessel size operating on inland waterways is also unlikely.

➢ Technical innovation is expected to offer limited scope for increasing the loading capacity of individual vessels, as naval architecture is a mature technical field.

➢ Therefore, as demand for transportation on inland waterways increases, the number of vessels operating on these waterways is expected to rise proportionally.

➢ It will be necessary to implement all possible measures to enhance the transportation capacity of inland waterways, other than channel improvement, including the following:

- Providing a vessel traffic information service to maximize channel capacity and ensure safe navigation;
- Establishing an appropriate regulatory framework to manage vessel traffic, covering various types of vessels, including small boats, launches, bulk carriers, and large motor vessels;

- Installing navigation aids to ensure safe navigation on a 24/7 basis; and
- Securing a sufficient number of pilots to accommodate the increasing number of vessels.

4. Expected future role of river ports in Bangladesh

The expected future role of river ports in Bangladesh comprises their current functions as well as additional roles outlined in government policies.

(Current roles)
River ports and inland waterways contribute to Bangladesh's economy and society through import and export cargo transport, domestic cargo transport, passenger transport, and local community transport.

According to the Seaport Strategy, the volume of import and export of container and bulk cargo is expected to increase significantly in the future. Consequently, vessel traffic along the main inland waterways and the volume of container and bulk cargo handled at river ports will also increase.

(Additional roles)
Several government policies encourage a modal shift from road to waterways. These policy directions imply an expanded and more strategic role for river ports and inland waterways within the national transport system.

5. Guiding principles

5.1 Mission fulfillment of IWT roles

5.1.1 Import and export cargo transport

In areas that serve as the main origins and destinations of cargo to and from major importing and exporting seaports, such as Chittagong, river ports and inland waterways must be properly maintained and upgraded to accommodate the projected surge in transport demand, which is forecast to triple as indicated in BNPS Volume I: Seaport Strategy.

Continuous efforts to collect cargo and vessel traffic data from industries located along waterways are essential for accurate demand analysis and capacity evaluation of busy river routes.

Typical cargo carriers include: (a) lightering vessels handling bulk, liquid bulk, and break-bulk cargo through ship-to-ship (STS) operations at seaports; and (b) feeder container vessels.

Capacity evaluation of waterway sections requires comprehensive demand and traffic volume analysis, taking into account vessel size and characteristics, as well as the realistic mix of navigating vessels.

Future economic growth will require additional land for industrial development with higher productivity supported by advanced technologies. Riverside land areas will need to be newly developed or redeveloped, and in some cases, land-use reform will be necessary. The relevant authorities, in their roles as landlords and regulators of river ports, should provide assistance and facilitate smooth and efficient implementation of such development initiatives.

5.1.2 Domestic cargo transport

Major industrial centers in Bangladesh are primarily located in Dhaka and other large cities. Industries that require bulk cargo transport for raw materials, intermediate goods, or finished products are predominantly situated along riverside areas. Many of these industries own and operate dedicated port facilities, such as private jetties.

Typical cargo includes construction materials such as sand and brick which generally require yard space for stockpiling.

The vast majority of inland water transport traffic consists of sand transported by bulkhead vessels. Fully laden bulkhead vessels navigating busy channels may pose risks to navigation safety due to their relatively slow speeds and limited maneuverability. Continuous efforts to collect cargo and vessel traffic data from riverside industries are essential for demand analysis and capacity evaluation of busy river routes.

5.1.3 Passenger transport

A response is required to address the declining market share of inland water passenger transport due to competition from other modes, particularly in terms of travel time and transport costs.

At the same time, there is potential for the development of new market-oriented, higher value-added passenger services, such as premium long-distance ferry services with sleeper cabins, river cruises for tourism, and dining cruises for lunch or dinner.

Harmonized investment strategies should be considered to respond to these trends, including:

- Utilizing dormant or underused launches for cruise and leisure services; and
- Upgrading passenger terminals and improving waterfront amenities, including the development of riverside walkways and waterfront parks.

5.1.4 Local community transport

There are numerous small river-crossing ghats consisting of simple steps along riverbanks, located both within and outside designated river port limits. Some of these facilities are licensed, while others operate without formal authorization from the relevant authorities, such as BIWTA, BWDB, or local administrations.

These ghats are primarily used for river-crossing services operated by small country boats. They constitute important assets for community-based water transport, supporting local mobility and social connectivity.

As river crossings by small vessels may pose potential risks to navigation safety, it is necessary to regularly monitor traffic conditions, at least on congested sections of river routes.

The involvement of local governments and communities should be considered to improve the management and use of small community water transport facilities. The government should focus on overseeing traffic safety at these facilities and in adjacent river channels, based on reports from local stakeholders.

5.2 Sustainable IWT navigation

Demand analysis associated with forecasted cargo volumes by type at importing and exporting ports is required. Key factors are:

- Geographical distribution of cargo owners along river routes;
- Vessel characteristics by cargo type;
- Vessel traffic volume surveys and analysis by different segments of the main river routes.

Capacity evaluation of existing and proposed inland waterway sections is required.

Vessel characteristics are a decisive factor in determining the capacity of waterway sections with physical constraints such as depth, width, and air clearance.

Capacity evaluation of waterway sections requires demand and traffic volume analysis based on the maximum navigable vessel size, as well as comprehensive traffic safety analysis that reflects the realistic mix of vessels, including small and high-speed boats, slow-moving and less maneuverable bulkhead vessels, medium-sized cargo vessels, coastal vessels, and passenger launches.

5.3 Efficient investment

5.3.1 Project evaluation

Port development usually requires a large investment and has a large impact on the socio-economy of the country. Therefore the government requests a port authority to submit its development plan for approval.

If a port development plan is important to the government, they may subsidize the development and encourage early completion. If a port development plan is profitable, a private investor may be interested in investing. If it is not profitable but would contribute to national economic growth, public sector should invest in it.

There are different criteria for evaluating port development projects depending on whether investment is by the public sector or by private investors. Public sector places importance on generating benefits for the national economy, while private investors will focus on return on investment. There are two types of project evaluations:

- Economic Analysis: to check national economic benefit against the project cost
- Financial Analysis: to check earnings against the project cost

The purpose of the economic analysis is to appraise the feasibility of the project. The result of the economic analysis is utilized to judge whether the project is worth implementing from the national economic viewpoint. For this reason, economic analysis is more important for the public sector like the government than the private sector.

The feasibility of a project can be measured by Net Present Value (NPV) or Internal Rate of Return (IRR) value. IRR in the economic analysis is called “EIRR (Economic Internal Rate of Return)”. Social capital like ports can affect national economy in various terms/sectors and the ultimate effect of operation of newly developed social capital would be the contribution to the national economic growth. But it is difficult to evaluate the extent to which the new social capital affects national economic growth in monetary value. Therefore, it is recommended to evaluate only direct effects generated by the project such as reduction of transportation cost and reduction of waiting time without considering economic spillover effects or overall economic effects.

The essence of the economic analysis is to confirm whether the expected benefits of a project exceed the costs, and if so, by how much. Since the service life of port infrastructure is several decades, the economic benefits and costs over the service life are converted to present value for comparison in NPV method. Or an interest rate which balances them is calculated in IRR method. However, in the case of investments that are effective for only one year such as maintenance dredging, the benefits and costs for that one year should be compared.

Economic analysis and financial analysis should be based on actual data, not fabricated data. All organizations should take responsibility in this regard to ensure that all assumptions made are valid.

5.3.2 Consideration of sedimentation

Sediment of as much as 0.5 - 2.4 billion tons per year [1] (due to run-off from the Himalayas) causes sedimentation in navigation channels and basins of ports in Bangladesh.

We should understand that the nature is truly powerful, and recognize that the characteristics of sedimentation vary depending on factors such as grain size of sediment, current, tides and waves. Th following article presents lessons learned from foreign ports.

(Lessons Learned from Foreign Ports)

Dynamic Equilibrium

A state of dynamic equilibrium generally exists in coastal waters and represents the balance between water flow and sedimentary conditions. The natural bathymetry that existed in coastal waters prior to any anthropogenic deepening of channels for navigation purposes often represents the dynamic equilibrium. When a channel in dynamic equilibrium is deepened there is often an inherent tendency for the channel to shoal until it returns to its equilibrium condition. Dynamic equilibrium is also analogous to the classical "regime theory" developed for river engineering although strictly speaking regime theory is not applicable to muddy sediments.

From 1909 the inner tidal Thames channel to the historic Port of London was deepened from its natural state, thereby creating a controlling depth 8.25 m below Chart Datum. The greater part of this deepened channel proved to be self-maintaining, but two zones were subject to high rates of siltation. Between 1928/9 & 1955/6 maintenance dredging need rose from modest values to 1.55-2.4 M m^3/yr and showed a rising trend. Inglis & Allen applied concepts of regime theory to demonstrate that the deepening had disturbed the estuary from its equilibrium. Permitting the bed to shoal by as little as 0.4-0.8 m returned the channel closer to its equilibrium condition with an attendant reduction in maintenance dredging, down to 77,000 m^3 by 1955/6. Today, the system requires maintenance dredging of 50,000-150,000 m^3/yr, coupled with an additional 120,000-150,000 m^3/yr dispersed by water injection dredging. These were achieved for the modest penalty of slight reductions in vessel entry and departure windows.

Flow Training

[1] Source: "Research on Sediment Distribution and Management in South-West Region of Bangladesh", Inception Report, July 2019, WAPRO and IWFM, BUET.

Flow training is a means for re-establishing a dynamic equilibrium between flow conditions and channel depths in order to minimise sedimentation. Conventional earth/rubble mound dikes are a form of training structure. Dikes are commonly placed along the sides of a dredged channel where the natural waterway is wider than the channel itself. The purpose of the dike is to reduce the effective hydraulic width for an idealised rectangular flow area. Confining flows within a narrower channel increases velocities, thereby reducing sedimentation. Provision of a dike along the banks of the dredged channel can, depending on the geometry of the construction of the dike, return the velocity to its pre-dredged, or equilibrium, conditions with an attendant reduction in sedimentation in the channel.

A number of major European estuaries have been greatly altered by anthropological changes during the last century - for example in the Elbe and Weser in Germany, the Scheldt estuary in Flanders and The Netherlands, and the Loire in France. The estuaries have been modified by training walls, reclamation works, and by capital fairway deepening with a view to permitting access by deep-drafted vessels. Tidal range has typically increased up-estuary, as has siltation, and the zone of saline intrusion has migrated upriver. Together these have resulted in a degradation of natural attributes, recognised by all users of these estuaries. A scientific understanding is now available of the requirements for integrated and long term sustainable estuary and sediment management.

Flow training structures can also impact salinity intrusion, estuarial circulation and water quality. The potential impacts of the flow training works are generally proportional to the extent of the works. Isolated works tend to have isolated impacts; lengthy works, larger impacts. In many cases, estuarial impacts of additional training works of limited extent will be small in comparison to historical impacts. An example would be a limited training structure in the vicinity of a lock or harbour opening. On the other hand, works comprised of long dikes training a narrow channel could have significant impacts. Accordingly, a thorough analysis of all of the potential impacts of flow training works is mandatory to assure safe and responsible design with protection to valuable estuarial ecosystems. Fortunately, most regions of the world have environmental management systems whose purpose it is to vet proposals for actions such as estuarial training works. Finally, it is important to evaluate the financial feasibility of flow training works. It is not uncommon to find such works more expensive than dredging options.

Several addition points can be drawn from the long-term experience with training walls. First, such systems may take prolonged periods to reach a new equilibrium. Initial success (e.g., self-scouring channel) may be followed by the need to extend the works. In the past such need may have been unexpected, however, judicious use of the sedimentation analyses technology recommended in the present report should limit such unintended consequences. One comment arising from expensive works is that if they do not perform as anticipated, especially in the

longer timescale where predictive capability is limited, it can be very expensive to remove the works at a later date. Capital dredging works which can be permitted to backfill naturally or re-aligned if they create undesirable side effects are likely to be preferable where viable.

Source: PIANC, "Minimizing Harbour Siltation", Report No. 102-2008

5.4 Efficient and resilient river port operation

5.4.1 Efficient cargo handling operation

The most critical factor in improving port operational efficiency is enhancing cargo handling efficiency. Currently, cargo handling at Bangladesh's river ports is conducted almost entirely manually, creating an urgent need for faster and more efficient operations. One potential solution is to introduce large-scale automated equipment at each port. However, this would require extensive land within the port areas and involve substantial investment, making it an impractical option at this stage.

It would therefore be wise to draw on the improvement measures implemented by advanced logistics nations. For example, until about 50 years ago, Japan relied almost entirely on manual labor for cargo handling at railways and logistics hubs. To address this, Japan introduced the concept of shifting from "manual handling by humans" to a system in which "humans focus on judgment and operation of tools, while the physical movement of cargo is handled by those tools." Specifically, Japan's logistics industry adopted a system where workers use their judgment to consolidate related cargo into batches, palletize these units, and then transport them using cost-effective rollers and roller conveyors as shown in Figure 5-1. This led to a dramatic increase in efficiency at Japanese logistics sites and marked the starting point of Japan's logistics modernization.

In Bangladesh as well, improvements should be implemented step by step, beginning with approaches such as grouping cargo based on human judgment and moving it using inexpensive tools like rollers and roller conveyors.

		
Bags on pallet and roller conveyer	Cartons on pallet	Loading cartons on pallet
		
Bags on pallet and roller conveyer	Setting roller conveyer	Manual unloading from vessel

Source: Transformation of cargo handling methods in Japan (1958)

Figure 5-1 Cargo Handling using Pallet and Roller Conveyer

5.4.2 Consideration for Business Continuity Plan (BCP) of the Port

Bangladesh's ports are, in principle, designed to withstand natural disasters that have occurred in the past. However, it does not mitigate the risk of being struck by disasters that were unimaginable in the past. Therefore, it is necessary to formulate Business Continuity Plans that account for the occurrence of such disasters.

A BCP is a plan to ensure that port operations do not completely stop even in the event of disasters or accidents. It does not aim to protect all activities, but rather to maintain critical functions on a priority basis. To achieve this, the plan identifies in advance which functions should be prioritized and prepares alternative measures and response actions. The example of BCP formulation process is shown in Table 5-1.

Ideally, at the national level, it is necessary to consider the concepts of alternative ports and reserve ports. Simultaneously, each port must prepare for such situations by establishing alternative facilities for emergencies, clarifying operational procedures for business continuity based on the scale of damage., Considering the rather limited financial and human resources currently available to BIWTA, it is recommended to begin by developing an emergency decision

making system and then gradually expand efforts to include planning for alternative port concepts and developing alternative facilities at each port.

It is also necessary to require private companies that rent riverbank space from BIWTA to develop BCPs and to ensure that these plans are harmonized with BIWTA's.

Furthermore, as part of advanced preparations, it is also necessary to conduct periodical training simulating emergency response procedures and decision-making exercises regarding the selection of alternative operational procedures.

Table 5-1 BCP Formulation Process (Example)

Step 1	Identify Critical Functions	Identify the functions that must not be stopped under any circumstances at the port. Rather than covering all activities, it is essential to prioritize them (e.g., cargo transport, cargo handling, customs clearance).
Step 2	Identify Potential Hazards and Risks	Identify events that may affect port operations. The types of risks vary depending on each port (e.g., cyclones, accidents, power outages, cyber-attacks, border closure).
Step 3	Assess Impacts on Operations	Assess the consequences if the functions are disrupted. Consider how long operations can be suspended before serious problems arise.
Step 4	Develop Continuity Strategies	Identify alternative measures to maintain operations (e.g., use of alternative berths, alternative transport modes, manual operations).
Step 5	Establish Response and Implementation Arrangements	Define who will do what, and when. Ensure that actions are clearly specified so that there is no confusion during emergencies.
Step 6	Implement, Exercise, and Improve the BCP	Regularly implement and exercise the BCP through training. Review the results and continuously improve the plan to ensure its effectiveness under actual emergency conditions.

Sours: OCDI

5.4.3 Alleviating traffic congestion

Large numbers of trucks and other small cargo carrying vehicles gather around ports to deliver or pick up cargo. At river ports, although the number of trucks and vehicles is relatively small, the surrounding port areas are often cramped, and there is frequently insufficient space for trucks and vehicles to wait during cargo handling. Addressing this issue – just as at seaports - requires cooperation among many stakeholders. Ports need to share relevant information with these

stakeholders and regularly hold meetings to jointly resolve this challenge. For detailed countermeasures, please refer to the chapter on seaports.

In most river ports, however, road connections are too poor to accommodate modernized road transportation using heavy load trucks and trailers. In many cases, the access roads to the ports are narrow, lined with street stalls, and congested with various types of vehicles operating at different speeds and with varying maneuverability. Future development in any river port must therefore include the modernization of road connections alongside the development of the port itself.

5.4.4 Implementation of Digital Transformation (DX) and paperless port procedures

The expansion of DX utilization is essential for efficient port operations. It is particularly important to actively promote the introduction of the following measures as referenced in the integrated One Stop Platform described in the Bangladesh National Logistics Policy 2025 (Chapter 5: Use of information technology in the logistics sector).

- Single Window System at Ports for stake holders of inland waterway to apply various applications and to share the information concerned.
- Introduction of an online payment system that issues invoices using a billing accounting system and links to the bank's system.

5.5 Hinterland connectivity

5.5.1 Connecting road to the nearest arterial road

The origins and destinations of cargo transported by inland waterways may include private factories and depots located along inland waterways, as well as inland locations situated several to several tens of kilometers away from the waterways. In such cases, last-mile transport from river port facilities is required. To ensure smooth transportation, it is necessary to develop access roads connecting these facilities to the nearest arterial roads.

Public river port facilities at Dhaka and Narayanganj River Ports are tightly constrained by surrounding properties, with little room for expansion. Access roads connecting these ports to the nearest arterial roads for hinterland transport are narrow and often in poor condition, making their improvement an urgent priority.

5.5.2 Investment in locations with efficient transport links

In the case of clusters of private factories along the Shitalakshya River, the key issue is whether sufficient space can be secured to construct new facilities or expand existing factories and port infrastructure to meet future demand growth as projected in this strategy. As it is becoming

increasingly difficult to find suitable sites along rivers within the Dhaka metropolitan area, it will be necessary to consider investments in locations that offer greater development potential and efficient transport links to both Chittagong Port via waterways and arterial roads. The area around the confluence of the Shitalakshya and Meghna Rivers is considered a potential candidate.

Hinterland connectivity of ICT is discussed in Section 6.1.1.

5.6 Framework of port management and operation

5.6.1 Scope of river port and inland waterway management

Efforts toward data-driven IWT administration and Evidence-Based Policy Making (EBPM) are expected. These efforts include the preparation of statistics and databases, as well as the formulation of the IW Corridor Master Plan and the River Port Master Plan.

Greater involvement in overseeing river port operations and IWT traffic generated by private port facilities and industrial cargo owners is required, from the perspectives of statistical data collection and navigational safety.

BIWTA now bears proper spatial management responsibilities as the court-appointed guardian of rivers recognized as legal persons.

5.6.2 Public Private Partnership (PPP)

Many ghats and industrial facilities have been constructed and are operated by the private sector through the PPP mechanism. These ghats and facilities contribute to the enhancement of transport and industrialization by taking advantage of IWT.

Regarding container transportation, in November 2025 CPA concluded a concession agreement for Pangaon ICT with MEDLOG, a logistics affiliate of MSC. BIWTA leases the land of Pangaon ICT to CPA.

For future PPP projects, it is recommended that private companies be required to ensure integrity in reporting key figures, including cargo volume, tonnage, and the number of passengers handled by the facility.

5.6.3 Organizational structure for Evidence-Based Policy Making (EBPM)

There are 21 departments/centers/institute in BIWTA. It is observed that information sharing among departments, the development of statistics, and analytical capacity are insufficient. To address these challenges, the following initiatives are proposed:

- From a flat organization to a hierarchical organization
  (Establish new directorate generals and reorganize the departments into groups)
- Enhance Statistics Section
- Establish Economic Analysis Section under Planning Dept.

5.7 Security and safety

5.7.1 Port security and safety

（Undisclosed)

5.7.2 Navigation safety

Consideration of safe navigation measures and vessel traffic information services is essential, particularly for river ports where waterways are constrained and traffic comprises vessels of widely varying size and maneuverability. In general, key focus areas include: (i) collision risk management in narrow channels and at crossing areas, (ii) securing sufficient navigable width through appropriate control of anchoring and mooring practices, (iii) development and systematic maintenance of aids to navigation, and (iv) strengthening traffic data and information services to better understand and manage waterway utilization. The following case illustrates these concerns in the Narayanganj River Port area.

5.7.3 Navigational concern in Narayanganj River Port

(1) Collision Avoidance in Narrow Channels

In narrow channels, it is extremely difficult for large vessels navigating within the channel to avoid vessels crossing their path. In particular, in the Narayanganj river port area—such as around Tanbazar—amendments to, or clarification of, existing navigation rules should be considered. Furthermore, the introduction of specific regulations requiring crossing vessels or small craft to keep clear of large vessels navigating within designated channels should also be considered.

The following actions are recommended to address collision avoidance concerns in narrow channels:

- Define vessel categories by gross tonnage (e.g., vessels below a defined small-craft threshold) and draft to establish a right-of-way hierarchy prioritizing vessels with limited maneuverability.
- Require crossing vessels and small craft to keep clear of large vessels in the channel, analogous to COLREGs Rule 9 (Narrow Channels).
- BIWTA should examine an appropriate legal instrument (notification, port order, or other subordinate regulatory measure) for the establishment of local traffic rules for narrow channels.

(2) Securing Navigable Areas in Narrow Waterways

On inland waterways, particularly within river port areas, vessels are frequently observed anchoring or mooring stern-to, and in some cases forming double- or triple-banked moorings in very narrow sections. Such practices restrict the available width and may obstruct the safe passage of large inland water transport vessels, including inland container vessels and coastal cargo vessels. In these locations, regulations governing anchoring and mooring practices should be introduced or strengthened to ensure adequate navigable areas and maintain safe vessel traffic flow.

The following actions are recommended to address risk-based zoning for stern-to mooring and double/triple banking:

- Conduct a risk assessment of current mooring/anchoring practices, identifying locations where stern-to mooring and double/triple banking critically reduce the effective navigable channel width.
- Perform a cost-benefit analysis (CBA) weighing the economic impact on cargo handling against navigational safety risks and disruption to through-traffic.
- Establish designated anchorage/mooring zones with minimum navigable channel width requirements, and restrict unauthorized mooring outside these zones.

(3) Development and Maintenance of Aids to Navigation

Regular reviews of the adequacy of aids to navigation, along with the establishment of systematic maintenance procedures to ensure their continued functionality, should be undertaken.

The following actions are recommended to strengthen AtoN management:

- Establish an AtoN deficiency reporting and maintenance system managed by BIWTA, enabling waterway users to report malfunctioning buoys, beacons, and navigational marks, with centralized record-keeping and deficiencies addressed in accordance with their criticality.
- Consider securing a ring-fenced annual budget for AtoN procurement, installation, and preventive maintenance across the inland waterway network.

(4) Understanding the Utilization of Inland Waters

To better understand traffic patterns on inland waterways connecting river ports, as well as between river ports and seaports or the open sea—such as the number of vessels navigating each section, the number of vessels entering river ports by type, and the typical routes and movement patterns (e.g., main tracks, crossing points, and merging/diverging areas)—consideration should be given to upgrading or improving the operation of the Navigational Clearance Application (BIWTAVHC) system.

The following phased approach is recommended for vessel traffic reporting and waterway utilization monitoring:

- Phase 1: Consider renovating the existing BIWTAVHC system, or improving its operation, so that it can support a better understanding of inland waterway utilization, including vessel movements between river ports, between river ports and seaports, and the number and type of vessels entering major river ports.
- Phase 2: Based on the knowledge obtained through such efforts, consider broadening the monitoring of vessel traffic on major waterways in order to support safer navigation, improved traffic management, and data-based planning for inland water transport.

Note: The administrative burden on both waterway users and BIWTA should be carefully considered. A phased approach beginning with major river ports and principal waterways may help balance monitoring objectives with operational feasibility. Coordination with local governments and communities, particularly regarding small vessel traffic at river-crossing ghats and congested sections, should also be considered in designing the monitoring framework.

5.7.4 Cargo handling operation safety

Ensuring safe cargo handling operations in ports requires a comprehensive approach, including establishing and coordinating a safety management system, improving the work environment, implementing safety measures for cargo handling machinery, and formulating detailed work plans. Adhering to these measures prevent labor accidents such as falls, cargo collapse, and machinery-related incidents, enabling safe and efficient operations. Moreover, securing safe cargo handling fosters a culture of safety within the port, significantly enhances operational efficiency, and contributes to sustainable port management.

(1) Establishment and coordination of safety management system

- A robust safety management system must comply with international safety regulations and guidelines established by organizations such as the International Labor Organization (ILO) and the International Maritime Organization (IMO). Examples include the ILO Code of Practice on Safety and Health in Ports and the International Maritime Dangerous Goods Code (IMDG Code). Stakeholders within the port should collaboratively develop, document, and share safety regulations and work manuals based on these standards. This approach ensures that port cargo handling safety meets international levels and forms the foundation for promoting safe operations.
- Appointing safety managers and responsible personnel with clearly defined roles and responsibilities is essential. These individuals must systematically provide safety education to workers, including initial training upon employment, periodic refresher courses, and practical skill development. Also, clear communication of work procedures, proper use of protective equipment, and emergency response protocols are vital. Such education directly

reduces accidents and occupational hazards, fostering a safety culture and balancing operational efficiency with safety.

(2) Improvement of work environment

- Adequate workspace and safe passageways must be secured. Attention should be given to surface conditions, lighting, ventilation, and the organization of tools and equipment. Work areas and hazardous zones should be clearly marked, with strict enforcement of entry restrictions and evacuation instructions. Installing caution signs and marking stop lines on the ground help raise awareness and prevent accidents.

(3) Safety measures for cargo handling operations

- Machinery should undergo regular inspection and maintenance to detect and prevent faults early.
- Before work begins, the site must be inspected and organized.
- Fall prevention measures, such as avoiding work on unstable cargo, should be strengthened.
- Weather conditions, including wind speed and adverse weather, must be continuously monitored, with work suspended promptly if safety cannot be ensured.
- Appropriate protective equipment must be always worn as shown in **Table 5-2**.

Table 5-2 Safety Gear and its Purpose

SAFETY GEAR	PURPOSE
Safety Helmet	To protect against falling objects and impacts
Safety Shoes with slip resistance and steel toes	To protect the feet and prevent slips
Gloves	For hand protection
Fall Arrest Equipment (Safety Harness)	For fall prevention during high work
Respiratory Protective Equipment	Respiratory protection against harmful gases, dust, and smoke
Safety Goggles	Eye protection from hazards such as dust and chemicals

Source: OCDI

(4) Work plan formulation

- A detailed work plan must be prepared in advance to ensure safety and efficiency. It should outline the sequence of operations, work areas, types of machinery and equipment used, and worker allocation and roles. For high-risk tasks, necessary safety measures, emergency communication systems, rescue arrangements, and evacuation routes should be included. Regular training ensures readiness for prompt and appropriate responses in emergencies.

5.8 Disaster prevention

5.8.1 Overview of natural disaster in Bangladesh

Due to its geographical and climatic conditions, Bangladesh faces multiple disaster risks, including earthquakes, cyclones, and floods. These disasters have repeatedly caused severe damage throughout the country's history. Inland river ports are particularly vulnerable to floods and earthquakes (see Table 5-3).

Bangladesh is located in a seismically active region where the Indian, Eurasian, and Burmese plates intersect, and large earthquakes frequently occur near Bangladesh. Therefore, in Bangladesh and its surrounding regions, earthquakes exceeding magnitude 6 have occurred frequently, including the 1897 Great Indian (Assam) earthquake, which is said to have caused the most severe damage in recorded history.

In response to this seismic environment, the Bangladesh National Building Code (BNBC), which was established as the national standard governing building construction, includes a seismic zoning map developed specifically for seismic design considerations. Although there are no specific design standards for port and harbor structures in Bangladesh, general structures are designed in accordance with BNBC. Therefore, it is considered that a port facility including quay wall designed in compliance with BNBC would demonstrate sufficient seismic resilience.

Furthermore, Bangladesh is located in the downstream region of three major transboundary rivers: the Padma (Ganges), the Jamuna (Brahmaputra), and the Meghna. Approximately 80% of the country’s land area consists of floodplains, and about half of these floodplains lie in low-lying areas with elevations below 5 meters. Consequently, during the monsoon season (April to October), which accounts for roughly 80% of the annual rainfall, the country frequently suffers from extensive inundation and flood-related damage.

Table 5-3 Overview of Natural Disaster in Bangladesh for River Ports

Natural Disaster	Major Characteristics	Typical Frequency or Return Period	Most Affected Areas	Main Impacts on Port Infrastructure
Flood	River overflow and heavy rainfall	Minor: annually Major: every 10–30 years	Nationwide, especially along major rivers and low-lying coastal areas	Disruption of port access roads, delays in logistics
Earthquake	Bangladesh lies in a seismic zone; risk of urban infrastructure damage	Moderate: every few decades Major: every 100+ years (estimated)	Southeastern (Chittagong, Cox's Bazar)	Structural damage to port facilities, seismic vulnerability

Source: OCDI

5.8.2 Disaster mitigation recommendation

As described above, river ports in Bangladesh are susceptible to earthquakes, floods, and other natural hazards. Therefore, it is essential that port facilities adopt resilient design approaches, including BNBC-compliant structural design. Furthermore, much of the surrounding hinterland, including access roads, remains vulnerable to natural disasters. To enhance the overall disaster prevention capability of the port, it is critical either to improve the resilience of these key access routes (e.g., raising ground elevations) or to establish a Business Continuity Plan (BCP) that incorporates disaster mitigation measures for critical access infrastructure.

5.8.3 BIWTA capacity development for disaster prevention/ mitigation

BIWTA's role in disaster management centers on infrastructure resilience and navigational recovery, specifically through rapid damage assessment and waterway clearance. Furthermore, BIWTA can serve as a partner for emergency responders by providing logistical support and technical data for regional disaster management planning. To achieve these objectives, enhancing the organization's functional and operational capacity is essential, including upgrading the BIWTA salvage unit capacity.

5.9 Environmental and social considerations

River port development may generate environmental and social impacts, including pollution, disruption to natural and social environments, and potential risks of accidents such as oil and chemical spills. While compliance with national regulatory frameworks ensures that these impacts

are properly assessed and mitigated during planning and construction phases, an additional layer of preparedness is required to address accidental pollution events that occur during operation.

For this reason, this section also highlights the roles of National Oil and Chemical Spill Contingency Plan (NOSCOP) and the Bangladesh Coast Guard (BCG) as they constitute Bangladesh's national system for emergency response, monitoring, and surveillance of oil and chemical spills. Their inclusion ensures that river port development aligns not only with regulatory requirements but also with the country's operational capacity to manage environmental emergencies effectively.

5.9.1 Compliance with national regulatory frameworks

In anticipating environmental and social impacts from river port development, there are four main regulations that must be adhered to. First, Environment Conservation Act (1995, amended 2010) is the primary act governing environmental protection in Bangladesh. Article 12 stipulates that no industrial unit or project shall be established or undertaken without obtaining, in the manner prescribed by rules, an Environmental Clearance Certificate from the Director General of Department of Environment (DoE). Second, Bangladesh enacts Environmental Conservation Rules (2023) which stipulates that for the purpose of granting locational and environmental clearance by the Directorate, industrial establishments and projects shall be divided into four categories: green, yellow, orange, and red.

By considering the scope of the activities of the industrial establishments or projects and the extent, level and possible harmful effects on the environment and human health, all activity should follow procedures based on its classified level (ECR 2023, Section 5 item 1). Further, it states that Environmental Management Plan and public opinions shall be implemented according to the laws and regulations, as well as all the necessary procedures. In the context of this report, any development involving existing/new river ports or relevant activities that take place in the surrounding land area shall be carried out, after obtaining location or environmental clearance from relevant authorities depending on the scope of the project. The following projects are red class projects that have relevance to river port development.

- Land development (above 25 acres);
- River, canal dredging and dredging materials management (above 5 km);
- Ports and harbors construction (annual cargo capacity of over 30 lakh Metric tons);
- Ports and harbors expansion (above 50%).

Third, Bangladesh Labor Act (2016) enforces rules about workers' rights to compensation, ground for dismissal, proper working conditions, and others. In the context of this report, proponents

should carefully follow this act considering frequent cases of work accidents[2]. Chapter VI about Safety enforces maintenance of machinery and equipment, as well as distance that must be preserved during machinery activities. Chapter III describes rules on employing adolescent workers (14 – 18 years old), which could not be permitted unless a certification of fitness is issued[3][4]. Finally, Acquisition and Requisition of Immovable Property Act (ARIPA) was enacted in 2017. Shall land acquisition is implemented for port development, Chapter 2 describes rules and procedures on acquisition, whereas Chapter 3 on requisition. They describe the mandate to issue a notice about potential acquisition/requisition to serve public interests, award for compensation, payment, final decision, as well as objections from owners which must be addressed by Deputy Commissioner.

5.9.2 NOSCOP and BCG's Roles in Emergency Response, Monitoring and Surveillance

Bangladesh's Environmental Conservation Act (ECA) requires immediate action and notification when accidental pollution occurs and empowers the government to intervene and recover costs from polluters. To support this, Bangladesh established the NOSCOP as its national system for responding to oil and chemical spill incidents, in line with obligations under the OPRC Convention.

Although not legally binding at the same level as systems in some other countries, NOSCOP defines a nationwide response structure. The National Oil and Chemical Spill Control Committee (NOSC Committee) provides strategic leadership, while On Scene Commanders designated depending on the incident location—manage response operations according to spill tier classification (Tier I–III). Port Authorities are responsible for immediate notification and cooperation with relevant agencies.

Bangladesh Coast Guard (BCG) holds statutory authority under the BCG Act (2016) to conduct environmental surveillance, law enforcement, navigational safety measures, and emergency response activities across maritime zones. BCG may carry out inspections, searches, and seizures related to environmental offences and plays a key operational role during spill incidents, particularly in coastal and port areas.

Together, NOSCOP and BCG provide the operational capacity and legal authority needed for rapid mitigation of spill-related risks from river port activities.

[2] https://networkbangladesh.com/crane-collapse-at-narayanganj-river-port-kills-two-workers-injures-others/
[3] https://www.thedailystar.net/news/bangladesh/news/childhood-lost-child-labour-transport-sector-rampant-port-city-3006846
[4] https://shipbreakingplatform.org/wp-content/uploads/2022/01/Child20Labor20Final_compressed.pdf

5.9.3 Water pollution in the rivers around Dhaka

To address the severe water pollution in the rivers around Dhaka, such as the Buriganga, Turag and Balu, coordinated action among the relevant agencies, including the Department of Environment, the National River Conservation Commission, BIWTA and local government bodies, is required.

6. Major development projects and action programs

6.1 Major development projects

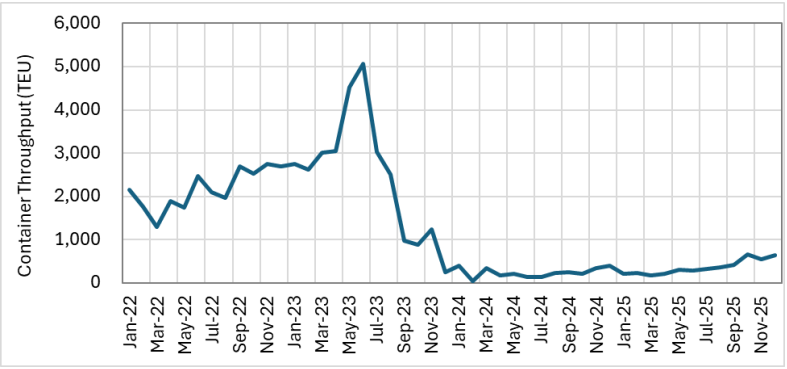
In addition to BIWTA's ongoing project as mentioned in Section 3.4, ICT capacity in the Dhaka area must be strengthened to accommodate the increasing import and export container demand at seaports and to align with government policies promoting a higher modal share of IWT.

6.1.1 Development of Inland Container Terminal (ICT)

As mentioned in Section 3.6, import and export container volumes in 2050 are forecast to reach approximately 13 million TEU. The modal share of IWT for container traffic is expected to increase from the current level of less than 1% to 5–10%. Accordingly, the total ICT capacity in the Dhaka area will need to be expanded to approximately 0.75–1.3 million TEU.

At present, however, the utilization rate of ICTs remains extremely low as mentioned in Section 3.1.3. The reasons why container IWT has not increased are:

- Vessel service is not reliable to ensure connection to trunk line mother vessels and arrival date at the destinations. Regular and frequent services are required for RMG, etc.
- Overall cost from the factories to Chittagong is not low enough to compete road transport.
- Location of Pangaon ICT and SAPL ICT are not convenient for cargo owners located at North Dhaka taking into account the distance and daytime truck ban in Dhaka.
- Cargo owners find little interest and attractiveness in IWT of containers.
- Private sector doesn't find much business potential in IWT of containers.
- IW Dhaka - Chittagong has not fully been kept as IW Class I depth.
- Operational issues with customs inspections, which must have caused the sudden decrease in throughput of Pangaon ICT.



Source: Prepared by OCDI based on CPA data

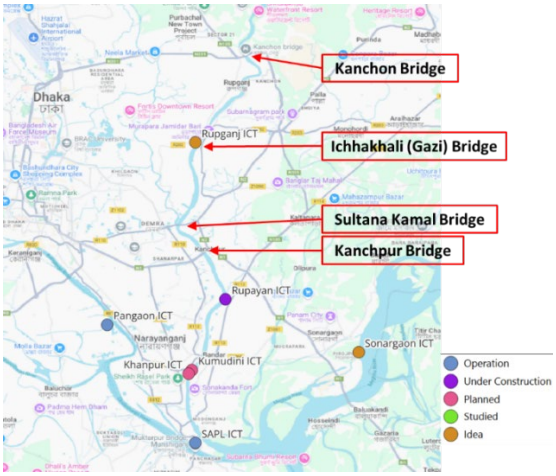
Figure 6-1 Container Throughput of Pangaon ICT

Therefore, it is necessary to hear opinions on the location suitability from stakeholders such as importers, exporters, logistics providers, approved ICT operators. Preliminary evaluation of locations of existing and candidate ICTs is shown in Table 6-1. While an ideal location without disadvantages cannot be identified, the Sonargaon area seems comparatively appropriate, assuming that land acquisition is possible. Ashuganj is a suitable location not for ICT but for intermodal multi-purpose terminal [5].

Table 6-1 Evaluation of Locations of Existing and Candidate ICTs

ICT (candidate)	Annual Capacity (mil. TEU)	Operator	IW Class (Draft Restriction)	Bridge Vertical Clearance	Proxmity to Gazipur	Daytiime Truck Ban in Dhaka	Space Availability	Evaluation for North Dhaka	Evaluation for South Dhaka	Evaluation for Narayanganj	Main Condition for Construction
Pangaon (in opeartion)	0.12	CPA	Class I	OK	Medium 40km, 60min	NG	Existing	Poor	Good	Poor	
SAPL (in opeartion)	0.10	private	Class I	OK	Far 55km, 90min	NG	Existing	Poor	Poor	Good	
AK Khan (approved)	0.25	private	Class I	8.62m Kanchon B.	Medium 30km, 60min	OK	Available	Poor	Poor	Poor	Very Low Height Vessel
Rupayan (under construction)	0.30	private	Class I	OK	Far 40km, 90min	OK	Existing	Medium	Poor	Good	
Kumudini (approved)	0.15	private	Class I	OK	Medium 50km, 70 min	NG	Available	Poor	Poor	Poor	
Khanpur		BIWTA /private	Class I	OK	Medium 50km, 70 min	NG	Available	Poor	Poor	Poor	
Mawa-Shimulia (Pre-F/S)	0.10	BIWTA /private	Class I (3.9m)	OK	Far 70km, 90min	NG	Available	Poor	Poor	Poor	Ring Road Connection
Rupganj (Idea)	0.30	NA	Class I	12.02m Kanchpur B.	Near 25km, 40min	OK	used as ghat	Medium	Poor	Poor	Land Acquisition Low Height Vessel
Sonargaon (Idea)	0.30	NA	Class I	OK	Far 60km, 90min	OK	unused	Medium	Poor	Medium	Land Acquisition
Ashuganj Multi-Purpose & Intermodal	0.03	BIWTA /private	Class I (upstream)	OK	Far 70km, 120min	OK	Available	Poor	Poor	Poor	

Note: Representative point of Tongi-Gazipur is Mirer Bazar (23 58'48"N, 90 27'10"E).
Note: Distance and travel time is measured in less traffic time and using expressway.
Note:Reassessment is necessary when road improvements are made.
Source: OCDI



Source: OCDI

Figure 6-2 Locations of Existing and Candidate ICTs

[5] The port is located at the upstream end of a waterway with a present draft restriction of 4 m, and therefore has the potential to serve as an intermodal multi-purpose terminal for hinterland regions further upstream. The available acquired land of BIWTA at Ashuganj (downstream of existing bridge) represents a valuable asset that can be utilized to meet future demand of cargo considering the capacity of under construction jetty/terminal at Ashuganj Cargo Ghat (upstream of existing bridge) under BRWTP-1 Project. It is also recommended to develop reliable commodity-wise cargo statistics and to determine the timing of investments appropriately based on such data.

6.2 Major action programs

6.2.1 Preparation of Statistics and traffic data

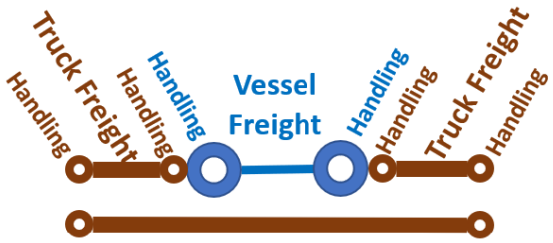
(1) Necessity of statistics and traffic data

(a) Characteristics of IWT within transport modes

Inland water transport (IWT) is generally regarded as a low-cost and environmentally friendly mode of transportation; however, this characterization is subject to several conditions. IWT does not unconditionally offer a cost advantage. The conditions under which IWT is cost-advantageous are as follows: (1) long-haul transport, (2) smooth and minimal last-mile overland transport, (3) a high vessel load factor, and (4) cargo that is not sensitive to transit time.

Cost comparisons among transport modes are often made using the metric of price per ton-kilometer, in which case detailed assumptions are typically omitted, and road transport is considered the most expensive, followed by rail transport, with IWT regarded as the least costly. However, actual transport costs consist not only of distance-dependent components but also of handling and administrative costs at the origin and destination for each transport mode. As a result, IWT is at a disadvantage for short-distance haulage. In addition, unlike road transport, which is well suited to small-lot shipments, IWT does not necessarily operate at full load factors. Furthermore, freight transport between origins and destinations is not always completed using a single mode. In the case of IWT in particular, last-mile overland transport is often required to reach locations distant from river port facilities. Therefore, a more accurate description of the characteristics of inland water transport would be as follows:

"Inland waterway transport (IWT) is a cost-effective and environmentally friendly mode of transport when cargo lots are large and transport distances are sufficiently long. In particular, in cases where a factory located along a navigable inland waterway unloads raw materials from vessels and loads finished products onto vessels, the benefits of IWT are maximized."

Transport Pattern	Mode	Cost Components and Corresponding Magnitudes
1. Simple Single Mode Transport	**IWT** Road	
2. Single Mode Transport from Seaport	**IWT** Road	
3. Multi Mode Transport From Seaport	**IWT** Road	
4. Long-Haul Multi Mode Transport	**IWT & Road** Road	
5. Short-Haul Multi Mode Transport	IWT & Road **Road**	
6. Ferry Service (when the detour road route is long or the bridge toll is high)	**IWT & Road** Road	

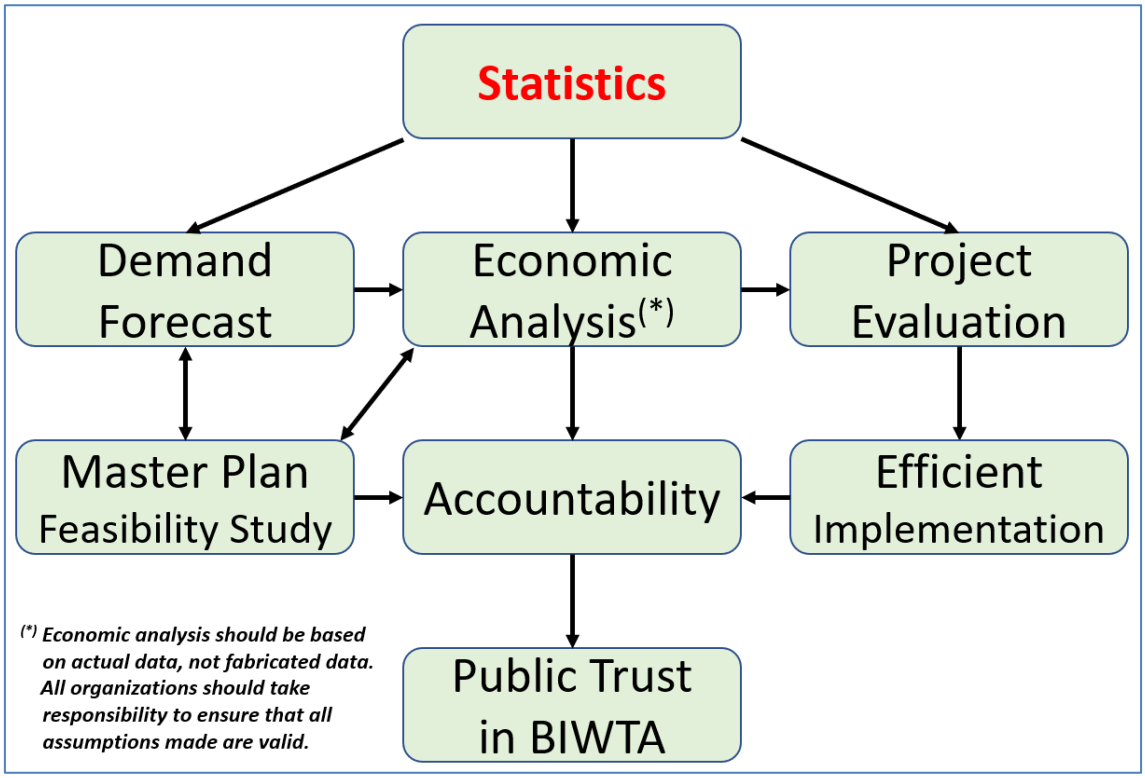
Note: The underlined modes are cost-advantageous.
Note: Thicker lines and circles correspond to higher transportation and handling unit costs.
Source: OCDI

Figure 6-3 Conditions for IWT to be Cost-Advantageous

(b) Necessity of accurate and reliable statistics and information

The National Integrated Multimodal Transport Policy (NIMTP) was formulated in 2013. The NIMTP aimed to increase the modal share, on a ton-kilometer basis, of rail and inland waterways to 20% and 15%, respectively, in order to create a more balanced and sustainable transport system. After a decade, progress in implementing the NIMTP has fallen far short of its targets. During this period, the modal share of road transport has risen to over 80%, further exacerbating imbalances in the transport system.

The Bangladesh Delta Plan 2100, the National Logistics Policy 2024, and the National Logistics Policy 2025 also place greater emphasis on the further utilization of inland water transport (IWT). In order to ensure that these plans and policies succeed, while reflecting the lessons learned from the NIMTP, reliable demand forecasting, economic analysis, and evaluation of IWT projects are required. For this purpose, accurate and reliable statistics and information are indispensable.



Source: OCDI

Figure 6-4 Relation between Statistics and Other Planning Items

(2) River Port Statistics

BIWTA manages aggregate cargo and passenger statistics for river ports. However, accurate demand forecasting for individual river ports requires cargo statistics disaggregated by commodity. Furthermore, in order to formulate a development plan for public port facilities, it is necessary to categorize port cargo into cargo handled at common-use facilities or ghats and cargo handled at company-owned dedicated jetties or foreshores.

Recommended survey format for river port cargo statistics is shown in Table 6-2. Recommended survey method and statistics preparation process are as follow:

- Each river port office annually requests operators (ghat lessees and foreshore licensees) to complete the survey form.

- To increase the survey response rate, it is advisable to stipulate cooperation with the survey as a contractual obligation.
- BIWTA calculates the "benchmark cargo volume" for each ghat. It is the contract amount (between BIWTA and the ghat operator) divided by the cargo fee per ton. If no response is received from the operator, or if a response is received but the cargo volume is below the benchmark value, the benchmark value shall be regarded as the cargo volume of the ghat for the statistics purpose.
- If no response is received from the operator regarding the commodity, it shall be recorded as “unknown,” not “others.” Port offices are requested to conduct interviews with operators to supplement the data.
- The statistics team at headquarters is expected to establish unified standards on statistics, conduct training, and carry out inspections to improve the accuracy of statistics.
- Each river port office aggregates these data, prepares river port cargo statistics by commodity and by category, and submits them to BIWTA Headquarters.
- BIWTA Headquarters aggregates these data and prepares national river port cargo statistics by commodity and by category.
- Regarding passenger statistics, long-haul voyage passengers and river-crossing passengers within the port limits should be aggregated separately for use in demand forecasting and in calculating economic benefits.
- Although the definitions applied in the statistical data may appropriately differ by year and by port, it is considered standard practice to clearly articulate such definitions. Otherwise, the credibility and reliability of the statistics may be adversely affected.

Table 6-2 Recommended Survey Format for River Port Cargo Statistics

Operator & Commodity-wise Cargo Volume

Statistics for the year 2025

River Port Name	
Ghat or Foreshore (Factory)	Ghat Foreshore (please circle)
Ghat / Foreshore Name	
Operator Name	
Submission Date	

Note: Operator is Ghat Leasee or Foreshore Licensee.

UNLOAD (metric ton)

Commodity	at Ghat	at Foreshore	Total
Food Grain (Wheet, Rice)			
Cement			
Clinker, Gypsum, Slag, Limestone			
Fly-ash			
Coal			
Steel Products			
Sand/Selection Sand			
Stone/Stone Chip			
Petroleum Products			
Others			
Total Unload			

LOAD (metric ton)

Commodity	at Ghat	at Foreshore	Total
Fruits			
Food Grain (Wheet, Rice)			
Cement			
Steel Products			
Sand/Selection Sand			
Stone/Stone Chip			
Others			
Total Load			

UNLOAD + LOAD (metric ton)

	at Ghat	at Foreshore	Total
Total Unload + Load			

Source: OCDI

(3) Vessel traffic volume surveys

To quantitatively explain the contribution of inland waterways to the national economy and to carry out efficient dredging activities, it is effective to estimate the economic benefits derived from the use of inland waterways. To calculate these economic benefits, it is first necessary to

identify vessel traffic volumes by vessel type and size. For this purpose, it is recommended to conduct surveys using the survey format shown in Table 6-3. Survey locations should be selected at a single point within each representative section of the major inland waterways, taking into account the convenience of survey personnel. The recommended survey method is continuous visual observation by BIWTA staff for seven consecutive days and nights. In principle, it is recommended to conduct the survey every three years.

Table 6-3 Recommended Format of Vessel Traffic Volume Survey

Date	
Name of Survey Location	
Coordinates of Survey Location	
Name of Surveyer	

(unit: number of vessels)

Time	Vessel Type								
	Dumb Barge	Cargo/ freight ship	Sand Carrier/ Bulk Head	Tanker	LPG	Passenger ship	Container ship	Others	Total
00:00-									
01:00-									
02:00-									
03:00-									
04:00-									
05:00-									
06:00-									
07:00-									
08:00-									
09:00-									
10:00-									
11:00-									
12:00-									
13:00-									
14:00-									
15:00-									
16:00-									
17:00-									
18:00-									
19:00-									
20:00-									
21:00-									
22:00-									
23:00-									
Total									

Note: Survey locations should be selected at one point for each representative section of the major inland waterways.
Note: Candidate survey locations are; Muktarpur Bridge (R812), Bir Muktijoddha Nasim Osman Bridge (R113), Kanchan Bridge (N105), and Dapdapia Bridge (N8).
Note: The recommended survey method is continuous visual observation by BIWTA staff for seven consecutive days and nights. In principle, it is recommended to conduct the survey every three years.
Source: OCDI

6.2.2 Formulation of IW Corridor Master Plan

(1) Necessity of IW Corridor Master Plan

Inland Water Transport (IWT) has faced a long-term decline in its modal share. Despite government policies highlighting its environmental and energy efficiency, actual growth remains stagnant. A primary factor is the insufficient budget allocation, which does not align with the sector's expected strategic role.

To justify increased funding to the public and treasury authorities, BIWTA must demonstrate the sector's value through rigorous economic analysis. Evaluating the costs and economic benefits of IWT is essential to prove its impact on the national economy.

A comprehensive assessment requires a solid data foundation, including:

- OD cargo volumes data;
- Vessel traffic data;
- Demand forecasting.

This evidence-based approach is the starting point for developing the IW Corridor Master Plan, ensuring that every Taka invested delivers maximum economic returns.

(2) Formulation process

(a) Alignment with BNPS

The IW Corridor Master Plan should align with BNPS.

(b) Planning organization

BIWTA should function as the planning organization, with its plans subject to approval by the Ministry of Shipping. The Planning Department is expected to serve as the lead department.

(c) Stakeholder Consultation

The IW Corridor Master Plan should be developed through systematic information collection and consultations with stakeholders, including shippers, carriers, port users, and port-based firms.

(3) Contents of the IW Corridor Master Plan

Table 6-4 shows an example of the contents of a IW Corridor Master Plan.

Table 6-4 Contents of IW Corridor Master Plan (Example)

Contents	Explanation & Consideration	Interface
Executive Summary	Summary and Maps	
1. Basic Policy	Efficient, effective and safe IWT, Align with Logistics Policy 2025, Environment & Energy policy	Strategic policies
2. Demand Analysis	OD cargo flow forecast OD vessel traffic forecast (loaded/ballast voyage)	Statistics, survey data
3. Planning target	Channel classification, Least Available Depth (LAD), design vessel size, mixture of vessel traffic, peak/ average vessel traffic volume, navigational KPIs, river port	Technical consideration
4. Bottlenecks & Alternative Solutions	Bottlenecks: channel capacity, physical restrictions Alternative Solutions: capital/maintenance dredging, regulatory measures, nav-aids, signaling, RIS	Survey, technical and regulatory study
5. Economic Analysis	CBR, EIRR, NPV as budget prioritizing information	Project evaluation, budget allocation, accountability
6. Monitoring & PDCA	Continuous monitoring of operational outcomes and periodical review of the master plan	Efficient implementation

Source: OCDI

(4) Considerations for Formulating the IW Corridor Master Plan

(a) From decentralized management to corridor-based approach

While decentralized management is efficient for routine maintenance and resource allocation, strategic infrastructure development must shift toward a "Corridor-based Approach." To meet future growth in transport demand, investment should not be limited to individual sections but must consider the entire network's integrity.

(b) Ensuring seamless End-to-End standards

To maximize the economic benefit of waterway investments, the following principles should be applied:

- Uniformity: Guaranteeing that the designated vessel class (standard grade) is maintained without bottlenecks from the point of origin to the destination.

- Strategic prioritization: Ranking projects based on their contribution to the overall throughput of major transport corridors rather than localized requirements.

(c) Design conditions

The IW Corridor Master Plan is structured around "design conditions," which remain valid even when data availability is limited. These include representative vessel types, indicative draft ranges, expected traffic ranges, and assumptions regarding daytime or nighttime navigation. As data improves, these conditions can be refined without altering the overall planning logic.

(d) Evaluation method

Table 6-5 shows an example of evaluation method of IW Corridor Master Plan. To avoid redesigning the system each time new data becomes available, the evaluation framework should be maintained as same.

Table 6-5 Evaluation Method of IW Corridor Master Plan (Example)

Corridor	Current Benefits	Target Classification	Estimated Cost	B/C	EIRR	NPV	Other Consideration	Overall Evaluation
Dhaka-Chittagong								
Dhaka-Mongla								

Source: OCDI

(e) Data collection linked to the update cycle

Data collection is not treated as an independent requirement, but as part of the "monitor–update–re-prioritize" loop of the plan. Routine traffic surveys, navigational information, and hydrographic observations—already mandated under BIWTA functions—feed directly into periodic updates rather than being prerequisites for initiating planning.

6.2.3 Formulation of River Port Master Plan

(1) Necessity of River Port Master Plan

(a) Toward plan-led administration

In congested river ports like Narayanganj River Port, merely accumulating individual responses makes it difficult to sustainably restore order and enhance functionality within the port area.

Therefore, in inland waterway administration, it is essential to adopt, at the organizational level, a shift from case-by-case administrative responses to a "plan-led administration." Under this

approach, future visions and management policies are established in advance, and decisions are made based on them.

This master plan is intended not only for facility development or individual regulations. Its primary purpose is to establish a common planning framework that serves as the basis for decisions regarding vessel traffic management, mooring/occupancy responses, asset management, and other matters.

In short, moving away from "reactive" management to "proactive" governance based on a unified master plan is one of the most basic and important assumptions of the master planning concept. Table 6-6 shows summary of the characteristics of plan-led approach.

Table 6-6 Characteristics of Plan-led Approach

Factor	Current: Reactive Approach/ Project-led Approach	Example: Plan-led Approach
Decision-Making	**Ad-hoc & Individual** Decisions based on customs, intuition, or case-by-case requests.	**Standardized & Unified** Consistent decisions guided by a common Master Plan and legal maps.
Data Foundation	**Fragmented & Speculative** Sporadic surveys and estimates; data is silos within departments.	**Cumulative & Evidence-based** A "Dynamic Baseline" that grows as basic statistics are continuously updated.
Spatial Utilization	**Disorganized & Unregulated** "First-come, first-served" basis; frequent encroachment and mooring chaos.	**Zoned & Regulated** Clear demarcation of fairways, mooring zones, and public foreshore areas.
Organizational Synergy	**Isolated Operations** Departments work independently with inconsistent reference materials.	**Integrated Governance** A shared platform (GIS/Maps) ensuring all departments act as one entity.

Source OCDI

(b) Importance of spatial management

While navigation safety has traditionally been the primary focus of inland water transport administration, experience in Dhaka and Narayanganj river ports demonstrates that safety-oriented measures alone are insufficient in river port areas where traffic density, urban activities, and informal uses of river space are deeply intertwined.

In such contexts, the absence of an explicit public master plan for river port areas has resulted in uncontrolled vessel mooring, encroachment on public land, underutilization of port facilities, and inefficient use of valuable riverfront space.

(c) Difference between IW Corridor Master Plan and River Port Master Plan

In the context of inland water transport planning, the IW Corridor Master Plan and the River Port Master Plan serve distinct yet complementary functions. The IW Corridor Master Plan is structured around the waterway network as a continuous linear system linking major origins and destinations. Its primary purpose is to enhance navigational reliability and transport efficiency along these extended corridors. Accordingly, the economic benefits generated by corridor-level interventions—such as dredging, channel widening, or improvements in navigation aids—tend to be direct and quantifiable, making them well suited to conventional cost-benefit analysis.

In contrast, the River Port Master Plan focuses on specific port areas as spatial units, where dense clusters of activities, overlapping uses of river space, and localized constraints shape operational performance. The aim of the port-level master plan is to re-establish spatial order, resolve conflicts among competing uses, and improve the functional integration of assets within the port environment. The benefits associated with such measures are often indirect or enabling in nature—for example, reducing operational friction, improving safety, or restoring the effective capacity of the port area. These effects are less easily captured through standard economic evaluation techniques and therefore require a broader assessment framework that accounts for strategic importance, local feasibility, and the need to safeguard the function of the waterway corridor as a whole. A comparison between the IW Corridor Master Plan and the River Port Master Plan is presented in Table 6-7.

Table 6-7 Comparison between IW Corridor Master Plan and River Port Master Plan

Perspective	Corridor Master Plan	River Port Master Plan
Planning Unit	Network-based planning focused on extended waterway corridors (linear, origin–destination oriented)	Area-based planning focused on specific river port zones (points, nodes, and surrounding spatial areas)
Core Purpose	Improving navigational reliability, reducing transport costs, and enhancing overall corridor efficiency	Re-establishing spatial order, resolving conflicts of use, and ensuring efficient and safe functioning of densely used port areas
Nature of Benefits	Direct, quantifiable benefits such as reduced travel time, improved navigability, lower vessel operating costs, and increased year-round corridor availability	Indirect or enabling benefits such as improved safety, reduced conflict, better space utilization, and restored operational capacity; benefits often realized through enabling other investments or administrative measures
Evaluation	Economic analysis can be conducted relatively easily if information on cargo transport volumes and deployed vessels is available.	Less suitable for quantitative economic analysis due to regulatory, spatial-management, and safety-related actions; evaluation relies more on strategic importance, risk reduction, operational feasibility, and enabling effects

Source: OCDI

Taken together, the two planning instruments offer a coherent structure in which network-wide investments can be appraised using quantitative approaches, while spatial and operational improvements within port areas can be evaluated according to their contribution to the orderly

functioning of the corridor system. This dual structure allows the administration to align decision-making across different scales without forcing fundamentally different types of interventions into a single evaluation method.

(2) Formulation Process

(a) Alignment with BNPS

The River Port Master Plan should align with BNPS.

(b) Planning Organization

BIWTA should function as the planning organization, with its plans subject to approval by the Ministry of Shipping. The Planning Department is expected to serve as the lead department.

(c) Stakeholder Consultation

The River Port Master Plan should be developed through systematic information collection and consultations with stakeholders, including shippers, carriers, port users, lessees, and port-based firms. In addition, because the Master Plan must function as a bridge between port operations and urban governance, close coordination with relevant authorities on critical issues is indispensable.

(3) Contents of the River Port Master Plan

(a) Proposed contents of the River Port Master Plan

Table 6-8 shows an example of the contents of a River Port Master Plan.

Table 6-8 Contents of River Port Master Plan (Example)

Roles and Responsibilities of the Master Plan ➢ Provision of public infrastructure in line with forecasted demand for the target year ➢ Management of water space and foreshore areas ➢ Management of navigational safety
Part 1. Definition of port jurisdiction & functional mapping ➢ Port boundary mapping: Delineation of water surface, shoreline, and hinterland (including BIWTA/State land). ➢ Functional mapping for passengers, general cargo, bulk, ferries, repair/maintenance, and river crossing. ➢ Water area use planning: Navigation corridors vs. maneuvering basins: Shifting from "line management" to "area management" within the port.
Part 2. Navigation & traffic safety management including mooring policy & spatial allocation (Optional: Finalized administrative arrangements will be described)
Part 3. Public waterfront accessibility policy ➢ Current status and long-term target of the ratio of publicly accessible waterfront to the total waterfront length. ➢ Digital asset register: A comprehensive ledger of quays, jetties, and land occupancy status (titles, users, and disputes).
Part 4. Demand Forecast ➢ Cargo/ passenger, by commodity type, by unloading/ loading, by type of facility ownership (public/ private) ➢ Identify the share of forecasted demands which public port facility should respond.
Part 5. Facility development, operation & maintenance, and connectivity ➢ Evidence-based development: Facility planning based on institutionalized traffic surveys, demand forecast. ➢ Operation & maintenance program: Budgeting for dredging, cleaning, and maintenance with clear accountability. ➢ Land-side interface: Managing the "Last Mile" connection (roads, rickshaws, and multi-modal access).
Part 6. Environmental resilience & sustainability (Optional)
Part 7. Implementation roadmap & KPI (Optional)

Source: OCDI

(b) Expected outcome

1. Commit to "Plan-led Administration"
   - ➢ Key Action: Formalize a shift from reactive, ad-hoc management to a proactive, plan-based governance framework.

- Value: Establish the River Port Master Plan as the unified legal and operational foundation for all administrative decisions.

2. Institutionalize basic traffic statistics
   - Key action: Prioritize the continuous accumulation of reproducible data (arrival/departure, transit, and cross-river traffic) over complex forecasting.
   - Value: Build an immediate, reliable evidence base that can evolve into high-precision modeling in the future.
3. Establish a shared spatial information platform
   - Key action: Visualize jurisdictions, fairways, and mooring zones through unified mapping to eliminate "implicit" or inconsistent management.
   - Value: Enhance transparency and consistency in issuing permits and enforcing regulations across all departments.
4. Implement via a "Scalable & Phased" approach
   - Key action: Focus on "Quick Wins" using existing legal powers and resources without requiring immediate high-tech investment.
   - Value: Ensure a robust foundation that remains compatible with future technological upgrades and data integration.

7. Recommendations, Way forward, and Conclusion

7.1 Recommendations

The recommendations of this strategy are as follows:

- Major development projects and action programs—including inland container terminal (ICT) development, the preparation of statistics, and the formulation of IW Corridor Master Plans and River Port Master Plans—should be implemented in alignment with the established guiding principles.
- The underlying philosophies and shared implementation considerations are presented in the "Way Forward" section.

7.2 Way Forward

7.2.1 Evidence-Based Policy Making (EBPM) and enhancement of statistics

Evidence-Based Policy Making (EBPM) means basing policy planning on rational evidence rather than relying on a one-time episode or inspiration, after clearly defining policy objectives. Promoting EBPM by utilizing data such as statistics of ship calls and cargo volume as well as other reliable information that are crucial for measuring policy effectiveness enhances policy efficacy and contributes to securing public trust in administration. Government agencies in Bangladesh are increasingly expected to adopt evidence-based policy making and implementation. While reconciling diverse stakeholder views remains essential, the foundation of any policy dialogue must be robust data, statistics, and analytical insights.

7.2.2 Periodical review of the demand forecast and major plans

Periodical review of the Bangladesh National Port Strategy will be necessary in response to changes in both international and domestic circumstances hereafter. In particular, the demand forecast of cargoes is the most important factor for defining the future course of action as the required capacity of river ports and inland waterways is based on demand.

It is recommended to review the demand forecast and timelines for major plans every three years, while the guiding principles should be reviewed every five years to adapt to changes in the external situation.

7.2.3 Cooperation among stakeholders

To ensure that port development is conducted effectively and in a timely manner, coordination with developments in other fields of infrastructure or industries is important. It is also recommended that inter-ministerial coordination be made on each major development plan in

view of the maximization of the effect of the investment and realization of the return from it in a short period.

In addition, among authorities under MOS, it is recommended to conduct exchange programs of their officers regularly. This program is expected to bring the following benefits in administration of each port:

- Sharing public or social mission
- Sharing knowledge, expertise, and best practices
- Strengthening inter-port collaboration
- Objective review of each operation

7.3 Conclusion

The conclusion of this strategy is as follows:

- River ports and inland waterways contribute to Bangladesh's economy and society through import and export cargo transport, domestic cargo transport, passenger transport, and local community transport.
- According to the Seaport Strategy, the volumes of container and bulk cargo for import and export are expected to increase significantly in the future. In addition, several government policies a modal shift from road to waterways.
- This strategy establishes a framework for quantitatively demonstrating the significance of inland water transport in fulfilling the roles expected by the Government and the public. It also sets guiding principles for the coherent, nationwide development of inland waterways and river ports, as well as for enhancing their management and operational performance.
- Major development projects and action programs should be implemented in alignment with the established guiding principles.

National Port Strategy 2026

Part III: Land Ports

Ministry of Shipping

Government of the People's Republic of Bangladesh

October, 2026

Supported by :

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0. Executive Summary

0.1 Introduction

The role of land ports in Bangladesh is to provide value-added facilities for the transshipment of cargo and the movement of passengers in conjunction with existing land customs stations (LCSs), which serve as official border trade control points. Land ports play an important role in bilateral exchanges and regional integration, particularly in cross-border trade and passenger transit.

While fifty-seven LCSs have been established under bilateral agreements and are operated by the National Board of Revenue (NBR), twenty-one land ports have been declared by the government, of which seventeen are currently operating.

In this strategy, the current situation and development plans of land ports are first reviewed. Next, the guiding principles for land ports are discussed from a comprehensive perspective. Major action programs are then presented. The final section presents recommendations, the way forward, and conclusions.

0.2 Strategic Objectives

The objectives of this strategy are to establish a framework for sound operation, planning, and investment to enable land ports to sustainably deliver value-added services that meet the needs of customers at high-traffic land customs stations (LCSs). It also sets out guiding principles for the coherent, nationwide development of land ports, as well as for enhancing their management and operational performance.

0.3 Land ports in Bangladesh

0.3.1 Overview

(1) Operational status of land ports

- Bangladesh has 21 declared land ports. These land ports are managed by BLPA, which is a statutory body established in 2001 under the Bangladesh Land Port Authority Act, 2001.
- The basic facilities of land ports include sheds and warehouses, open courtyards, and weighbridges. High-traffic land ports are equipped with passenger, truck, and bus terminals.
- The findings from the data on cargo and passengers data of land ports are as follows:
  - There is no commodity-wise cargo data. According to an analysis, however, Energy and Mining accounts for 70%, Vegetable Products accounts for 23%.
  - All land ports handled a total of 17 million tons of cargo and 1.86 million passengers in 2024–25. Imports account for 92% of all land port cargo;
- The findings from the expenditure and revenue of the land ports are as follows:

- Among 16 land ports currently in operation, the top 4 ports in terms of BLPA tariff revenue in 2023-24 account for 78% of total revenue;

(2) Completed and ongoing projects

- Since 2008, thirteen projects have been implemented, and three projects are ongoing.
- An ongoing World Bank-funded project represents a substantial investment, with a cost equivalent to approximately 45 years of the current annual profits generated by the three target land ports—Benapole, Bhomra, and Burimari.

0.3.2 Characteristics of land ports

(1) Difference between land ports and land customs stations (LCS)

- The transshipment of cargo at LCSs often occurs without permanent infrastructure, with foreign and domestic vehicles positioned back-to-back along roadside areas. As such, land ports serve to enhance efficiency and convenience rather than fulfill an operational necessity.
- This discretionary nature of facility use at land ports, in contrast to the obligatory use of infrastructure at seaports, has direct implications for financial viability and cost recovery. In other words, users will use the facility only when they determine that the benefits they receive are worth the fees they pay.

0.3.3 Challenges and core issues

- At Benapole LP, there is a shortage of manpower to manage many drivers and workers.
- Safe and healthy handling, as well as shorter storage periods for chemical and dangerous goods, are necessary.
- The preparation of a sanitary environment—including water supply and sanitation systems, as well as hygienic rest facilities for drivers and workers—is also necessary.
- Demand is likely to fluctuate due to changes in the surrounding environment.
- There is a lack of mechanization.
- In terms of long-term financial sustainability, World Bank-funded and Asian Development Bank-funded projects will require substantial debt repayment in the near future. Annual debt repayments after 2028 are expected to be approximately five times the current annual net income; therefore, corrective actions are necessary.
- It takes more than two Bangladeshi trucks to match the capacity of one Indian truck.

0.4 Expected future role of land ports in Bangladesh

- Land ports are expected to facilitate faster delivery times and efficient handling of smaller import consignments, thereby promoting cross-border trade and regional integration.

- Land ports, which serve as gateways for exports such as Akhaura LP, are expected to support smooth export activities.
- Land ports also serve as facility providers to the National Board of Revenue (NBR), thereby facilitating efficient revenue collection through logistical support.

0.5 Guiding principles of land ports in Bangladesh

0.5.1 Ensuring cargo and passenger handling capacity

- Although demand for land ports is prone to fluctuate due to changes in the surrounding environment, in cases where demand is projected to increase, facility capacity should be appropriately expanded to prevent land ports from becoming bottlenecks.
- However, since the 21 land ports differ significantly in the volume and types of cargo they handle, it is difficult to standardize the set of facilities and equipment regardless of the actual cargo volume or the commodities handled at each land port.
- Essential services for passengers such as passenger and bus terminal is necessary.

0.5.2 Application of classification to land ports

- Since the 21 land ports differ significantly in the volume and types of cargo they handle, it is proposed to establish port classes and to implement declaration, management, operations, and facility expansion according to the designated class of each port.
- The proposed classification criteria take into account cargo volume, passenger volume, BLPA's income, and customs revenue.

0.5.3 Efficient investment

- There are different criteria for evaluating development projects depending on whether investment is by the public sector or by private investors. Public sector places importance on generating benefits for the national economy, while private investors will focus on return on investment. An economic analysis is conducted to confirm whether the expected benefits of a project exceed the costs.
- Economic analysis and financial analysis should be based on actual data, not fabricated data. All organizations should take responsibility to ensure that all assumptions made are valid.

0.5.4 Efficient and resilient port operation

- The following themes are discussed for efficient and resilient port operation:
  - Efficient cargo handling operation
  - Consideration for Business Continuity Plan (BCP) of the port
  - Alleviating traffic congestion
  - Implementation of Digital Transformation (DX) and paperless port procedures

0.5.5 Framework of port management and operation

- To identify and eliminate bottlenecks and enhance service quality at land ports, BLPA is expected to play a coordinating role among the relevant agencies and stakeholders such as CIQ, border security, banks, porters, and transport companies.
- To enhance administrative coordination and improve service delivery, it is desirable for the relevant government agencies to be located adjacent to one another or accommodated within a joint government building.
- To enhance operational efficiency through bilateral cooperation, the exchange of cross-border traffic data and the establishment of practical communication channels with counterpart agencies should be pursued.
- To enhance climate resilience and operational environments at land ports, it is important to implement climate-adaptive management practices and develop resilient infrastructure and equipment to counter Bangladesh's harsh environmental conditions.
- It is important to provide appropriate welfare infrastructure and working environments for the workforce, tailored to each land port, including accommodation and health and sanitation facilities, in order to ensure safe and stable operations and to retain qualified personnel.
- Gender-responsive considerations should be reflected in operational and institutional frameworks, including the promotion of inclusive participation, as well as in the design of land port facilities, ensuring safe, accessible, and user-friendly spaces.
- It is recommended to introduce strategic tariff structure to decrease long stay chemical/dangerous goods.
- As BLPA began land port operations relatively recently in 2002 and multiple related administrative agencies are involved, capacity building and development of its staff—including the enhancement of training planning and implementation, as well as on-the-job training—are necessary.

0.5.6 Security and safety

(1) Port security

(Undisclosed)

(2) Operation safety

- Ensuring safe cargo handling operations in ports requires a comprehensive approach, including establishing and coordinating a safety management system, improving the work environment, implementing safety measures for cargo handling machinery, and formulating detailed work plans. Adhering to these measures prevent labor accidents such as falls, cargo collapse, and machinery-related incidents, enabling safe and efficient operations.

0.5.7 Disaster prevention

- Bangladesh faces multiple disaster risks, including earthquakes, cyclones, and floods. Land ports are particularly vulnerable to earthquakes and flood.
- In coordination with fire service agencies, a standardized fire safety protocol should be established along with regular training and emergency response drills for personnel.

0.5.8 Environmental and social considerations

- Land port development may generate environmental and social impacts, including pollution, disruption to natural and social environments, and potential risks of accidents.
- Compliance with national regulatory frameworks ensures that these impacts are properly assessed and mitigated during planning and construction phases.

0.6 Major development projects and action programs

0.6.1 Major development projects

- There are two major development projects: a World Bank-funded project and an Asian Development Bank-funded project. Phased investment is proposed in this strategy for the World Bank-funded project to mitigate risks and enhance efficiency.

0.6.2 Major action programs

- **Application of classification to land ports:** since the 21 land ports differ significantly in the volume and types of cargo they handle, it is proposed to establish port classes and to implement declaration, management, operations, and facility expansion according to the designated class of each port.
- **Phased investment for large-scale projects:** An ongoing World Bank-funded project represents a substantial investment, with a cost equivalent to approximately 45 years of the current annual profits generated by the three target land ports. By implementing this project in a phased manner, it becomes possible to hedge demand risks and improve facility utilization rates. As a result, economic and financial indicators are expected to improve, thereby contributing to the national fiscal position.
- **Commodity-wise statistics:** Identifying cargo volumes by commodity type and preparing the statistics accordingly are essential for future demand forecasting and facility development planning. While commodity-specific cargo statistics based on HS codes are desirable in the long term, at this stage a simplified category-based classification is proposed.
- **Monitoring of facility-wise utilization:** It is recommended that the utilization of each facility be monitored continuously in every land port. Such monitoring shows how well each facility is performing compared with its planned capacity and helps determine the right timing for re-investment to expand its capacity if necessary.

0.7 Recommendations, Way forward, and Conclusion

0.7.1 Recommendations

- Major action programs—including the application of classification to land ports, phased investment, preparing commodity-wise statistics, and monitoring of facility-wise utilization—should be implemented in alignment with the established guiding principles.
- The underlying philosophies and shared implementation considerations are presented in the "Way Forward" section.

0.7.2 Way forward

- Promoting Evidence-Based Policy Making (EBPM) by utilizing data such as statistics of cargo volume as well as other reliable information that are crucial for measuring policy effectiveness enhances policy efficacy and contributes to securing public trust in administration. While reconciling diverse stakeholder views remains essential, the foundation of any policy dialogue must be robust data, statistics, and analytical insights.
- It is recommended to review the demand forecast and timelines for major plans every three years, while the guiding principles should be reviewed every five years to adapt to changes in the external situation.
- To ensure that land port operation and development are carried out effectively and in a timely manner, coordination with developments in other infrastructure sectors and industries is important. It is also recommended that inter-ministerial coordination be undertaken for each major development plan in order to maximize investment benefits and achieve returns within a shorter period.

0.7.3 Conclusion

- Land ports in Bangladesh play an important role in bilateral exchanges and regional integration, particularly in cross-border trade and passenger transit.
- This strategy has established a framework for sound operation, planning, and investment to enable land ports to sustainably deliver value-added services that meet the needs of customers at high-traffic land customs stations (LCSs). It also sets guiding principles for the coherent, nationwide development of land ports, as well as for enhancing their management and operational performance.
- Major action programs should be implemented in alignment with the established guiding principles.

1. Introduction

The role of land ports in Bangladesh is to provide value-added facilities for the transshipment of cargo and the movement of passengers in conjunction with existing land customs stations (LCSs), which serve as official border trade control points. Land ports play an important role in bilateral exchanges and regional integration, particularly in cross-border trade (imports and exports) and passenger transit.

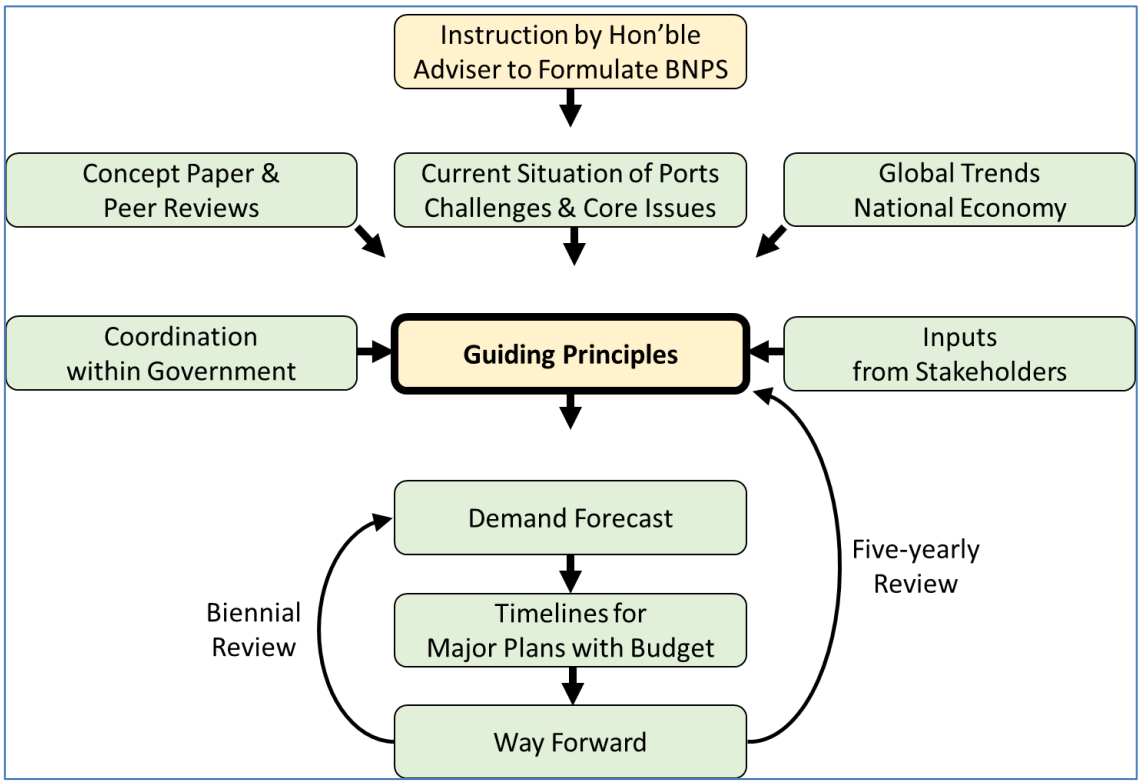
While fifty-seven LCSs have been established under bilateral agreements and are operated by the National Board of Revenue (NBR), twenty-one land ports (15: BLPA, 6: BOT) have been declared by the government, of which seventeen are currently operating.

Trade volume through land ports amounted to 19.3 million tons in 2023–24, with 90% concentrated in the top eight ports. More than 90% of BLPA tariff revenue is generated by the top seven ports. BLPA operates as a financially autonomous agency under the Ministry of Shipping. While it is currently financially viable, loan repayments pose future fiscal risks.

Land port services focus on value-added facilities such as sheds and warehouses, open courtyards, mechanized handling equipment, and rest areas to improve operational efficiency and working conditions. Some users choose nearby LCSs to save costs and time instead of using land ports.

Efficient operation, planning, and investment in land ports are essential. Accordingly, the formulation of a National Land Port Strategy is of critical importance.

In this strategy, the current situation and development plans of land ports are first reviewed. Next, the guiding principles for land ports are discussed from a comprehensive perspective. Major action programs are then presented. The final section presents recommendations, the way forward, and conclusions.



Source: OCDI

Figure 1-1 Flowchart of Formulating Bangladesh National Port Strategy

2. Strategic Objectives

The objectives of this strategy are to establish a framework for sound operation, planning, and investment to enable land ports to sustainably deliver value-added services that meet the needs of customers at high-traffic land customs stations (LCSs). It also sets out guiding principles for the coherent, nationwide development of land ports, as well as for enhancing their management and operational performance.

3. Land ports in Bangladesh

3.1 Overview

3.1.1 Operational status of land ports

Bangladesh has 21 declared land ports, as shown in Figure 3-1. These land ports are managed by the Bangladesh Land Port Authority (BLPA), which is a statutory body established in 2001 under the Bangladesh Land Port Authority Act, 2001. Of the 21 land ports, 15 (12 operational and 3 non-operational) are or will be operated by the BLPA, while the remaining 6 (5 operational and 1 non-operational) are or will be operated by private operators on a BOT basis.

Facilities and manpower of the land ports are shown in Table 3-1. The basic facilities of land ports include sheds and warehouses, open courtyards, and weighbridges. In addition, high-traffic land ports are equipped with passenger, truck, and bus terminals.

Historical statistics of cargo and passengers of land ports are shown in Table 3-2. The findings from this table are as follows:

- There is no commodity-wise cargo data;
- All land ports handled a total of 17 million tons of cargo and 1.86 million passengers in 2024–25. Although it is not shown in the table, imports account for 92% of all land port cargo, while exports make up only 8%. At some land ports (Akhaura, etc.), exports exceed imports, but the absolute volumes are small;
- The top 5 land ports by cargo volume for 2024-25 are: 1) Sonamosjid, 2) Burimari, 3) Benapole, 4) Bhomra, and 5) Banglabandha;
- The top 5 land ports by passenger volume for 2024-25 are; 1) Benapole, 2) Bhomra, 3) Akhaura, 4) Hilli, and 5) Burimari ;
- Cargo volumes remained relatively stable despite environmental changes, while passenger movements fluctuated significantly due to the impacts of COVID-19 and political developments with India in mid-2024. This relative stability in cargo traffic indicates a strong and structural economic relationship between Bangladesh and India.

Notable import commodities of each land port are shown in Table 3-3. The findings from this table are as follows:

- Among the 13 commodity categories, Energy and Mining accounts for 70%, Vegetable Products accounts for 23%, Chemical and Related Products accounts for 3%, and Metals and Metal Products accounts for 3%.
- Within the “Energy and Mining” category, it is assumed that stones and similar low-value construction materials account for the majority share. Although their

monetary value is relatively low, their practical importance for Bangladesh is significant, as the country has an acute shortage of such natural resources.

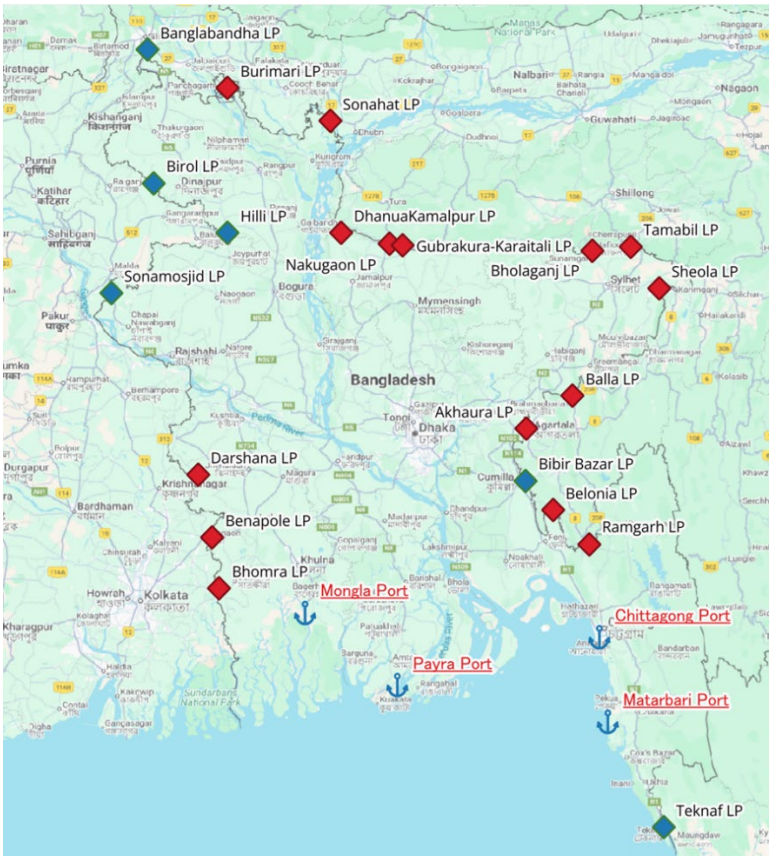
- The substantial volume of "Vegetable Products" indicates that the trade between Bangladesh and India is closely tied to the people's everyday lives in Bangladesh.
- At Benapole LP, the widest variety of commodity is imported. This is followed by Bhomra LP and Burimari LP.
- At land ports located east of Sonahat LP, the range of imported goods is limited to Stones, Coal and limited Vegetable Products.

The expenditure and revenue of the land ports are shown in Table 3-4. The findings from this table are as follows:

- Among 16 land ports currently in operation, the top 4 ports in terms of BLPA tariff revenue (2023-24) account for 78% of total revenue. The same 4 ports also rank highest in profit, contributing 74% of total profit. These ports are Benapole, Burimari, Bhomra, and Tamabil, with the same ranking order in both revenue and profit;
- Extending to the sixth in ranking, the top 6 ports together account for as much as 89% of tariff revenue and 87% of profit. In terms of revenue Sonahat ranks fifth and Sonamosjid ranks sixth, while in profit they reverse the order.

Revenue breakdown of land ports is shown in Table 3-5. The findings from this table are as follows:

- Revenue from "Product handling charges by labor" accounts for 53% of total revenue, while "product handling charges by machine" contributes only 5%, and this occurs only at Benapole. This suggests that operations in land ports currently rely heavily on manual handling, indicating significant potential for mechanization;
- Of the total revenue from 'warehouse charges,' Benapole alone accounts for as much as 92%. This indicates that warehouse facilities at other land ports are underutilized;
- When planning mechanization or warehouse facilities, however, it is essential to assess user demand and requirements, and to determine whether the benefits of mechanization or warehousing for users justify the additional tariff charges incurred at each land port.



Note: Red-colored land ports are operated by BLPA, while green-colored land ports are operated by private operators.
Source: OCDI-QGIS

Figure 3-1 Locations of Land Ports

Table 3-1 Facilities and Manpower of Land Ports

Land Port	Operation	Deaclaration	Monpower in Organogram	Facility Availability (Account 2023-24)						
				Shed and Warehouse area (m2)	Open Courtyard area (m2)	Total area of Port (m2)	Weigh bridge (number)	Passenger terminal (number)	Truck Terminal (number)	Bus Terminal (number)
Bhomra	BLPA	12/01/2002	9	3,000	39,950	103,437	3			
Benapore	BLPA	12/01/2002	121	30,095	285,678	412,779	7	1	2	1
Darshana	BLPA	12/01/2002	8							
Sonamosjid	BOT	12/01/2002	10	4,459	8,052	77,416	3			
Hilli	BOT	12/01/2002	10	2,676	70,011	88,464	2			
Birol	BOT	12/01/2002	6							
Banglabandha	BOT	12/01/2002	10	1,486	8,551	0	3			
Burimari	BLPA	12/01/2002	10	3,737	37,529	45,122	3			
Sonahat	BLPA	25/10/2012		1,250	31,139	0	2			
DhanuaKamalpur	BLPA	21/05/2015		372	25,273	0	2			
Nakugaon	BLPA	30/09/2010		743	29,937	54,471	1			
Gubrakura-Karaitali	BLPA	14/06/2010	6	743	39,292	126,019	4			
Bholaganj	BLPA	30/06/2025								
Tamabil	BLPA	12/01/2002	10	743	55,560	108,860				
Sheola	BLPA	30/06/2015		2,336	46,097	89,112	2			
Balla	BLPA	23/03/2016		372	10,558	52,609	2			
Akhaura	BLPA	12/01/2002	8	372	20,334	60,703	1			
Bibir Bazar	BOT	29/08/2010		929	2,435	0	1			
Belonia	BLPA	23/02/2009		207	25,273	40,469	2			
Ramgarh	BLPA	07/11/2010								
Teknaf	BOT	12/01/2002	8	1,626			1			
Total			216	55,145	735,668	1,259,462	39	1	2	1

Note: The land ports shown in blue are operated under the BOT scheme.
Note: Declaration dates in green are after 2009.
Source: Prepared by OCDI based on BLPA data

Table 3-2 Cargo and Passengers of Land Ports

Land Port	Cargo Volume (lakh tons)						No. of Passenger (person)			
	2019-20 Total	2020-21 Total	2021-22 Total	2022-23 Total	2023-24 Total	2024-25 Total	2021-22 Total	2022-23 Total	2023-24 Total	2024-25 Total
Bhomra	27.22	26.26	35.21	32.77	26.76	24.30	69,252	448,958	379,136	186,629
Benapore	23.55	30.75	26.32	25.40	25.87	24.33	558,598	2,166,138	2,205,478	1,190,821
Darshana										
Sonamosjid	13.22	33.48	29.01	34.30	37.42	36.24	377	17,285	99,048	53,638
Hilli	18.28	21.50	18.88	13.08	6.70	7.06	27,113	252,113	219,355	92,990
Birol										
Banglabandha	12.99	18.05	18.19	16.68	17.56	16.12	16,424	39,304	76,303	44,811
Burimari	34.02	47.85	35.81	32.92	31.27	26.38	32,381	258,296	200,642	74,775
Sonahat	2.10	7.28	9.36	8.57	8.43	11.84				
DhanuaKamalpur					0.24	0.40				
Nakugaon	0.86	1.52	2.76	2.13	3.91	3.24		123	15,505	7,143
Gubrakura-Karaitali				2.03	0.01	0.39				
Bholaganj										
Tamabil	14.81	12.53	31.65	15.75	15.42	7.54	10,508	79,542	10,827	40,032
Sheola				2.03	9.63	5.23	-	1,083	16,112	8,115
Balla										
Akhaura	1.42	1.32	1.87	0.73	0.09	0.43	114,973	342,173	305,494	108,981
Bibir Bazar	1.34	1.30	1.46	0.90	0.92	0.97	98	50,458	81,938	45,226
Belonia				2.03	0.93	0.86		7,738	14,246	6,203
Ramgarh										
Teknaf	2.02	0.78	2.44	2.03	8.13	0.24				
Total	151.83	202.62	212.96	191.34	193.29	165.57	829,724	3,663,211	3,624,084	1,859,364

Note: The land ports shown in blue are operated under the BOT scheme.
Note: The red-colored cells represent cargo volumes greater than 10 lakh tons or passenger volume greater than 100,000 persons.
Source: Prepared by OCDI based on BLPA data

Table 3-3 Import Commodities of Land Ports

Land Port	Import Commodity												
	Animal Products	Beverages and Oils	Chemicals and Related Products	Energy and Mining	Computers, Office, Communications, and Professional Equipment	Machinery and Electrical Equipment	Metals and Metal Products	Miscellaneous	Glass and Non-Metallic Products	Transportation Equipment and Parts	Textiles, Leather, and Apparel	Vegetable Products	Wood, Paper and Related Products
Bhomra	Frozen fish, Dried fish, Vannamei shrimp seeds, Fish feed		Alum, Dolomite powder, Phlogopite, Talc powder, Potash feldspar	Stones, China clay, Ball clay, Marble Slabs, Fly ash, Fire clay, Sandstone, Marble chips, Quartz powder				Incense sticks,				Fruits, Onions, Chilies, Garlic, Ginger, Turmeric, Betel leaves, Capsicum, Grass pea,Wheat, Maize, Rice, Lentils, Chickpeas, Cashews, Peanuts, Coconuts, Raisins, Oil cake, Fenugreek seeds, Seeds, Cumin, Tamarind, Dried plum, Raw cotton, Chickpea husk, Grass pea husk, Pea husk, Wheat bran	
Benapore	Fish, Animal feed		Varnish, Paint, Pesticides, Acid	Carbon black, Coal, Bitumen, Lubricating oil, Gas, Quartz powder			sponge iron, pig iron, Rods, Steel pipes	Cosmetics, Jewelry, Film, Capsules	Empty glass bottles	Two-wheeler parts, CKD, Spare parts, parts and accessories for bicycles/ vehicles, Chassis	Yarn, Cotton grey fabrics, Non-woven fabrics, Denim fabrics, Sarees	Rice, Fruits, Pomegranate, Grapes, Oranges, Kinnow, Apples	
Darshana													
Sonamosjid			Pigment color	Stones					Glass fiber, Cork sheets, PVC sheets			Coriander, Peas, Onions, Molasses, Coconuts, Rice, Wheat, Oil cake, Soybean extract, Peanuts, Lentils, Grass peas	
Hilli	Fishmeal		Bleaching powder	Black stones, Coal								Onions, Green chilies, Garlic, Potatoes, Ginger, Peas, Cumin, Sago, Tamarind seeds, Oil cake, Nuts, Raisins, Rice, Lentils, Molasses, Cardamom, Cashews, Cinnamon, Vegetable seeds, Maize seeds, Bran	
Birol													
Banglabandha				Stones		Machinery			Plastic granules			Onions, Ginger, Molasses.	
Burimari			Amino resin, Calcium carbonate, Dolomite powder,	Stone boulders, River stones, Gypsum powder			Sponge iron, Silicon manganese,		Broken glass			Potatoes, Oranges, Apples, Cordata fruits, Various fruit juices, Green chilies, Ginger, Onions, Rice, Wheat, Cardamom, Jam, Jelly, Maize seeds, Bran, Jute seeds	Veneer sheets, Plywood
Sonahat				Stone, Coal								Ginger	
Dhanua Kamalpur				Stones									
Nakugaon				Stones, Coal								Dried chilies	
Gubrakura-Karaitali				Coal									
Bholaganj													
Tamabil			Methanol	Stones, Coal								Oranges, Ginger	Medium paper
Sheola				Stones, Coal								Rice, Ginger, Onions	
Balla													
Akhaura	Dried fish			Stones								Onions, Ginger, Wheat, Cumin	
Bibir Bazar								Incense sticks				Bel, Ginger, Wheat, Rice, Pulses, Cumin	
Belonia													
Ramgarh													
Teknaf	Fish, Dried fish			Sun-dried soil				Sandals			Cloth	Ginger, Onions, Garlic, Pickles, Plums, Tamarind, Tamarind seeds, Turmeric, Coffee, Spices, Betel nuts	Wood, Bamboo, Tree bark
Share 2020-24	0%	0%	3%	70%	0%	0%	3%	0%	0%	0%	0%	23%	0%

Note: The land ports shown in blue are operated under the BOT scheme.
Source: Share 2020-24 is analyzed by OCDI based on IHS GTAS Forecasting Database.
Source: Prepared by OCDI based on BLPA data

Table 3-4 Expenditure and Tariff Revenue of Land Ports

Land Port	BLPA Expenditure (crore BDT)		BLPA Triff Revenue (crore BDT)		Rev - Exp	Rev/Cargo	NBR Revenue	
	2023-24 Recurring	2023-24 Capital	2022-23	2023-24	2023-24 Recurring crore BDT	2023-24 BDT/ton	2023-24 crore BDT	2024-25
Bhomra	11.77	2.20	39.01	31.04	19.27	116	908	979
Benapore	40.68	0.72	73.36	70.63	29.95	273	6,155	7,029
Darshana	0.03	0.00			-0.03			
Sonamosjid	0.24	0.00	10.23	10.37	10.13	28	665	700
Hilli	0.41	0.08	6.69	4.11	3.70	61	89	138
Birol	0.03	0.00			-0.03			
Banglabandha	0.21	0.00	4.11	3.82	3.61	22	129	238
Burimari	22.41	9.62	52.05	50.52	28.11	162	87	87
Sonahat	6.68	3.52	14.01	13.63	6.95	162	45	66
DhanuaKamalpur	0.26	0.00	0.00	0.38	0.12	157	7	4
Nakugaon	2.16	2.27	2.27	5.55	3.39	142	1	4
Gubrakura-Karaitali	0.65	0.77	1.32	0.02	-0.63	208	2	15
Bholaganj					0.00			
Tamabil	11.70	0.08	28.53	29.77	18.07	193	98	76
Sheola	2.36	0.00	0.00	6.96	4.60	72	56	35
Balla	0.26	0.00			-0.26			
Akhaura	1.53	0.05	1.06	0.67	-0.86	744	5	4
Bibir Bazar	0.31	0.00	0.02	0.03	-0.28	3	3	18
Belonia	0.51	0.00	0.05	0.12	-0.39	13	0	0
Ramgarh	0.47	0.00			-0.47			
Teknaf	0.26	0.08	7.63	5.16	4.90	63	405	111
Total	102.94	19.39	240.34	232.78	129.84	120		

Note: The land ports shown in blue are operated under the BOT scheme.
Note: The red-colored cells represent amounts greater than BDT 10 crore.
Source: Prepared by OCDI based on BLPA data

Table 3-5 Tariff Revenue Breakdown of Land Ports

Land Port	Interest on bank deposit	Passenger entry fee	Import truck weight charge	Export truck weight charge	Product handling charges (by machine)	Product handling charges (by labor)	Import truck location charge	Export truck location charge	Warehouse charge	Carpenter charge	Yard charge	Import truck entry fee	Export truck entry fee	Night time charge	Holiday charge	Transfer charge	Documentation charges	Miscellaneous income	Total
Bhomra	0		94			1,732	35		0	18	335	286	33	51	50	462	7	1	3,104
Benapore	0	520	243	23	1,136	1,336	275		2,796	92		533	84				12	13	7,063
Darshana																			0
Sonamosjid	0		64			579	31		38	20	106	103	2	29	24	27	12	3	1,037
Hilli	0		30			181			35	6	32	31	3	30	19	5	20	0	393
Birol																			0
Banglabandha	0	11	30			266	4		2		1	58		0	10	0	0	1	383
Burimari	0	49	100	10		4,033	64		42	0	425	200	19	0	103		2	5	5,052
Sonahat	0		24	1		1,121	39		0		112	47	3		16			0	1,363
DhanuaKamalpur			2	0	0	28	1				3	4	0	0	0				38
Nakugaon	0	4	13	0		436					54	28		0	20			0	555
Gubrakura-Karaitali	0		0		0	1			0		0	0		0	0	0		0	2
Bholaganj																			0
Tamabil	0		243			2,090	12		5	1	210	337	0		79	0	0	1	2,977
Sheola	0		59		0	356	0		0	0	129	129		0	34		1	1	708
Balla																			0
Akhaura	0		5	7		26	1	1	0	0	16	3	7	1	0		0	0	67
Bibir Bazar			0				0		1	2	0	0			0			0	3
Belonia			0	6	0		0		0		0	0	6	0				0	12
Ramgarh		0	0									0							0
Teknaf			0			36			113	2	134	3		5	1		3	4	301
Total	0	584	908	47	1,136	12,220	461	1	3,032	141	1,557	1,762	156	117	357	494	56	28	23,058

Note: The land ports shown in blue are operated under the BOT scheme.
Source: Prepared by OCDI based on BLPA data

3.1.2 Completed and ongoing projects

Since 2008, thirteen projects have been implemented, and three projects are ongoing, as shown in Table 3-6. Detailed information on the three ongoing projects is summarized in the Appendix. Project No. 16, an ongoing World Bank-funded project, represents a substantial investment, with a cost equivalent to approximately 45 years of the current annual profits generated by the three target land ports—Benapole, Bhomra, and Burimari.

Table 3-6 Completed and Ongoing Projects of BLPA

No.	Project Name	Duration of the Project	Source of Funding	Estimated Cost (crores in Taka)	Current Status
1	Modernization of Benapole Land Port (1st Revised)	July 2008 to June 2013	GOB	51.57	Implemented
2	Bhomra Land Port Development (1st Revised)	November 2010 to June 2014	GOB	20.86	Implemented
3	Nakugaon Land Port Development (1st Revised)	July 2011 to June 2014	GOB	16.77	Implemented
4	Tamabil Land Port Development (1st Revised)	July 2014 to June 2019	GOB	72.86	Implemented
5	Sonahat Land Port Development (1st Revised)	July 2015 to June 2018	GOB	39.43	Implemented
6	SASEC Road Connectivity Project: Benapole and Burimari Land Port Development (1st Revised)	July 2013 to June 2019	GOB and ADB	156.90	Implemented
7	Construction of the Bangladesh Land Port Authority's head office building at Sher-e-Bangla Nagar in Dhaka City.	July 2016 to June 2021	GOB	34.50	Implemented
8	Development of Gobarakura-Karaitali Land Port (1st Revised)	January 2018 to June 2022	GOB	75.17	Implemented
9	Development of Dhanua-Kamalpur Land Port (1st Revised)	July 2018 to June 2023	GOB	59.30	Implemented
10	Development of Belonia Land Port (Special Amendment)	July 2017 to June 2023	GOB	38.64	Implemented
11	Development of Balla Land Port(1st Amendment)	July 2017 to June 2023	GOB	48.90	Implemented
12	Construction of cargo vehicle terminal at Benapole land port	July 2019 to June 2024	GOB	329.28	Implemented
13	Bangladesh Regional Connectivity Project-1: Development of Sheola, Bhomra, Ramgarh Land Ports and Development of Security System of Benapole Land Port (1st Revised)	July 2017 to June 2026	GOB and World Bank (Subsidiary Grant Agreement)	966.13	Ongoing (97% Completed)
14	South Asia Sub-Regional Economic Cooperation (SASEC) Integrated Trade Facilitation Sector Development Project; Part of Bangladesh Land Ports Authority (BLPA)	July 2022 to December 2026	Own financing and ADB	217.00	Ongoing
15	Digitalization of the Border Procedures at Bhomra Land Port	January 2023 to March 2024	Financial assistance from Switzerland	7.88	Implemented
16	Accelerating Transport and Trade Connectivity in Eastern South Asia (Access Program) Bangladesh Phase-1 (BLPA Component)	April 2023 to June 2027	GOB and World Bank	3,457.15	Ongoing (Now land acquisition and bidding process is ongoing.)

Note: Updated in January 2026

Source: BLPA

3.2 Characteristics of land ports

3.2.1 Difference between land ports and land customs stations (LCS)

The transshipment of cargo at LCSs often occurs without permanent infrastructure, with foreign and domestic vehicles positioned back-to-back along roadside areas. As such, land port services—such as sheds and warehouses, mechanized handling, and rest areas—primarily serve to enhance efficiency and convenience rather than fulfill an operational necessity.

Unlike seaports, where vessels are inherently dependent on berths and cargo infrastructure for unloading and storage, land ports facilitate direct truck-to-truck transshipment—often without the need for fixed facilities.

This discretionary nature of facility use at land ports, in contrast to the obligatory use of infrastructure at seaports, has direct implications for financial viability and cost recovery. In other words, users will use the facility only when they determine that the benefits they receive are worth the fees they pay. Benefits vary depending on the type of cargo and the nature of the business, including time savings, reduced damage or deterioration of goods, and the provision of storage functions. In extreme case, some of the target users choose the nearby LCS rather than waiting in the long queue to a land port just to pay extra cost for the land port services they feel little benefit.

3.2.2 Facility services

The basic facilities of land ports include sheds and warehouses, open courtyards, and weighbridges. In addition, high-traffic land ports are equipped with passenger, truck, and bus terminals.

In considering the diversification of facility services at land ports, the provision of infrastructure that enables users to comply with environmental standards and occupational safety and health regulations—both domestic and international—can serve as a driver of increased utilization from a long-term perspective.

In some land ports, cargo requiring special handling and compliance with international and national regulations—such as dangerous goods and chemical products—is increasing. However, such compliance-related services may only be required by a limited subset of users, and the associated capital investment raises concerns about cost-effectiveness and financial sustainability.

While concerns remain regarding cost recovery, compliance-oriented facility services may serve as a means of differentiating land ports from basic LCS operations. However, such differentiation is only meaningful if regulatory obligations—such as environmental and safety standards—are uniformly enforced across all border points, including non-equipped LCSs. If compliance

requirements are routinely bypassed at LCSs due to a lack of infrastructure, the comparative advantage of land ports is undermined, and incentives for proper facility use are diminished. Under current laws and regulations, the BLPA does not have policing powers.

3.2.3 Connectivity and logistics

(1) Regional/cross-border connectivity

Cargo and passengers transported by rail to the border only require a change to a domestic locomotive, with no need for transshipment or boarding and alighting. Passengers using buses are required to cross the border on foot. Even if railway facilities exist near the border, they sometimes do not connect to those in neighboring countries.

(2) Possibility of land port as logistics hub

Land ports are not viable from a location theory perspective. Transportation economics generally requires facilities to be located either near markets or at production hubs. Land ports at borders function primarily as transit points, and this characteristic will be further reinforced once the BBIN Agreement is implemented.

Since there are no competing locations other than Dhaka, establishing a logistics hub at an intermediate point is considered unnecessary. Even for perishable goods, given the truck transit time from the border to Dhaka, they can arrive in time for the morning market opening, effectively making the Dhaka market itself function as a logistics hub.

3.3 Contribution of land ports to the national economy

The total length of Bangladesh's land border is 4,246 km. Of this, 4,053 km is shared with India, and 193 km with Myanmar. This long land border has played an important role in bilateral exchanges, particularly in import and export activities.

Historical development:

1978: Land port operations were initiated under the Bangladesh Warehousing Corporation at Benapole (Customs Act of 1969).
1979: Warehousing station was declared (Gazette Notification). The responsibility for managing the Benapole Customs Station was entrusted to the Bangladesh Jute Corporation (abolished cell) under the Ministry of Jute.
1984: The responsibility for management and supervision of the Benapole Customs Station was handed over to the Mongla Port Authority.
2001: Bangladesh Land Port Authority was established under the Bangladesh Land Port Authority Act, 2001 (Act No. 20 of 2001).

The government has declared 21 land ports (15: BLPA, 6: BOT) as of March 2026 at important land customs stations, of which 17 land ports are operating. Land ports contribute to proper operation in import and export with neighboring countries at border crossing points.

3.4 Challenges and core issues

At Benapole Land Port, there is a shortage of manpower to manage the large number of drivers and workers. As a result, quarrels and smuggling incidents sometimes occur.

Safe and healthy handling, as well as shorter storage periods for chemical and dangerous goods, are necessary. This requires expediting the clearance procedures of government agencies, adopting a strategic tariff structure, and shortening job rotation cycles in chemical storage areas.

The preparation of a sanitary environment—including water supply and sanitation systems, as well as hygienic rest facilities for drivers and workers—is also necessary.

Demand is likely to fluctuate due to changes in the surrounding environment.

Presently, most of the cargoes are handling by manually which is one of the core issue for inefficient port operation. In port operation, there is a lack of mechanization, including insufficient cargo handling equipment and conveyor belts.

In terms of long-term financial sustainability, World Bank-funded and Asian Development Bank-funded projects will require substantial debt repayment in the near future. Annual debt repayments after 2028 are expected to be as much as approximately five times the current annual net income; therefore, corrective actions are necessary.

The following information has been obtained from the BLPA database for Bhomra.

Bangladeshi Truck:	4-12 wheel	6-30 metric tons
Indian Truck:	4-24 wheel	6-80 metric tons

Based on a simple average, it takes more than two Bangladeshi trucks to match the capacity of one Indian truck. These differences in truck sizes are attributable to national laws and regulations, road conditions, and other factors. Such differences not only reduce transport and cargo handling efficiency but also make it difficult to implement the BBIN Motor Vehicles Agreement.

4. Expected future role of land ports in Bangladesh

Land ports of Bangladesh are expected to facilitate faster delivery times and efficient handling of smaller import consignments, thereby promoting cross-border trade and regional integration.

Land ports, which serve as gateways for exports, are expected to support smooth export activities.

- The northeastern region of India, known as the Seven Sister States, has demand for Bangladeshi goods. For these states, importing from Bangladesh is often cheaper than importing from other parts of India due to limited connectivity with the rest of the country. Akhaura Land Port is one of the key export gateways from Bangladesh to India. In the future, it is expected to become an even more advantageous route for Bangladeshi exports.

Land ports also serve as facility providers to the National Board of Revenue (NBR), thereby facilitating efficient revenue collection through logistical support.

5. Guiding principles of land ports in Bangladesh

5.1 Ensuring cargo and passenger handling capacity

Although demand for land ports is prone to fluctuate due to changes in the surrounding environment, in cases where demand is projected to increase, facility capacity should be appropriately expanded to prevent land ports from becoming bottlenecks.

However, since the 21 land ports differ significantly in the volume and types of cargo they handle, it is difficult to standardize the set of facilities and equipment regardless of the actual cargo volume or the commodities handled at each land port.

Busier land ports may require a variety of facilities for weather-protected cargo handling. Careful design is necessary to allow a wide range of commodities to be handled, in order to avoid underutilization of facilities and equipment. Specialized facilities or equipment should be financed according to the Beneficiary Pays Principle.

Many of the lower-class land ports mainly handle stones and gravel, which can be handled without sheds or stockyards provided by the land ports. Normally, heavy cargo requires its own stockyard near the transshipment point, and temporary storage at the land port is unnecessary if efficient cargo inspection and weighing systems are available. When the stockyard is located near the market, transshipped vehicles tend to leave as soon as possible after customs clearance.

Essential services for passengers such as passenger and bus terminal is necessary.

5.2 Application of classification to land ports

Since the 21 land ports differ significantly in the volume and types of cargo they handle, it is proposed to establish port classes and to implement declaration, management, operations, and facility expansion according to the designated class of each port. The proposed classification criteria take into account cargo volume, passenger volume, BLPA's income, and customs revenue.

Table 5-1 Proposed Classification of Land Ports

Land Port	Classification (proposed)						Note
	Cargo	PAX	BLPA Rev-Exp	Customs Revenue	Class (OCDI)	Class (BLPA)	
Bhomra	a	c	a	a	A	A	
Benapore	a	a	a	a	A	A	
Darshana						C	
Sonamosjid	a	d	a	a	A	A	
Hilli	b	c	c	c	B	B	
Birol							
Banglabandha	a	d	c	b	B	B	
Burimari	a	c	a	c	A	A	
Sonahat	b	d	b	c	B	B	
DhanuaKamalpur	d	d	d	d	D	D	
Nakugaon	c	d	c	d	C	C	
Gubrakura-Karaitali	d	d	d	d	D	D	
Bholaganj						C	
Tamabil	a	d	a	c	A	A	
Sheola	b	d	c	c	C	B	Opened recently and increasing
Balla						D	
Akhaura	d	c	d	d	D	B	Export and Passenger Gateway
Bibir Bazar	d	d	d	d	D	C	
Belonia	d	d	d	d	D	C	
Ramgarh						D	
Teknaf	b	d	c	b	B	B	
Total							

Note: Classification criteria (proposed by OCDI)

Cargo	a >10 lac tons, b > 5 lac tons, c > 1 lac tons, d < 1 lac tons
PAX	a >1 million, b > 0.5 million, c > 0.1 million, d < 0.1 million
Rev-Exp	a >10 crore BDT, b > 5 crore BDT, c > 1 crore BDT, d < 1 crore BDT
Customs Revenue	a >500 crore BDT, b > 100 crore BDT, c > 10 crore BDT, d < 10 crore BDT

Note: Classifications in red are a or A.
Source: Prepared by OCDI based on BLPA data.

5.3 Efficient investment

5.3.1 Project evaluation

Port development usually requires a large investment and has a large impact on the socio-economy of the country. Therefore the government requests a port authority to submit its development plan for approval. Such a development plan must be based on projects whose technical feasibility and economic and financial viability have been confirmed through a feasibility study, including field surveys.

If a port development plan is important to the government, they may subsidize the development and encourage early completion. If a port development plan is profitable, a private investor may be interested in investing. If it is not profitable but would contribute to national economic growth, public sector should invest in it.

There are different criteria for evaluating port development projects depending on whether investment is by the public sector or by private investors. Public sector places importance on generating benefits for the national economy, while private investors will focus on return on investment. There are two types of project evaluations:

- Economic Analysis: to check national economic benefit against the project cost
- Financial Analysis: to check earnings against the project cost

The purpose of the economic analysis is to appraise the feasibility of the project. The result of the economic analysis is utilized to judge whether the project is worth implementing from the national economic viewpoint. For this reason, economic analysis is more important for the public sector like the government than the private sector.

The feasibility of a project can be measured by Net Present Value (NPV) or Internal Rate of Return (IRR) value. IRR in the economic analysis is called “EIRR (Economic Internal Rate of Return)”. Social capital like ports can affect national economy in various terms/sectors and the ultimate effect of operation of newly developed social capital would be the contribution to the national economic growth. But it is difficult to evaluate the extent to which the new social capital affects national economic growth in monetary value. Therefore, it is recommended to evaluate only direct effects generated by the project such as reduction of transportation cost and reduction of waiting time without considering economic spillover effects or overall economic effects.

The essence of the economic analysis is to confirm whether the expected benefits of a project exceed the costs, and if so, by how much. Since the service life of port infrastructure is several decades, the economic benefits and costs over the service life are converted to present value for comparison in NPV method. Or an interest rate which balances them is calculated in IRR method.

However, in the case of investments that are effective for only one year such as maintenance dredging, the benefits and costs for that one year should be compared.

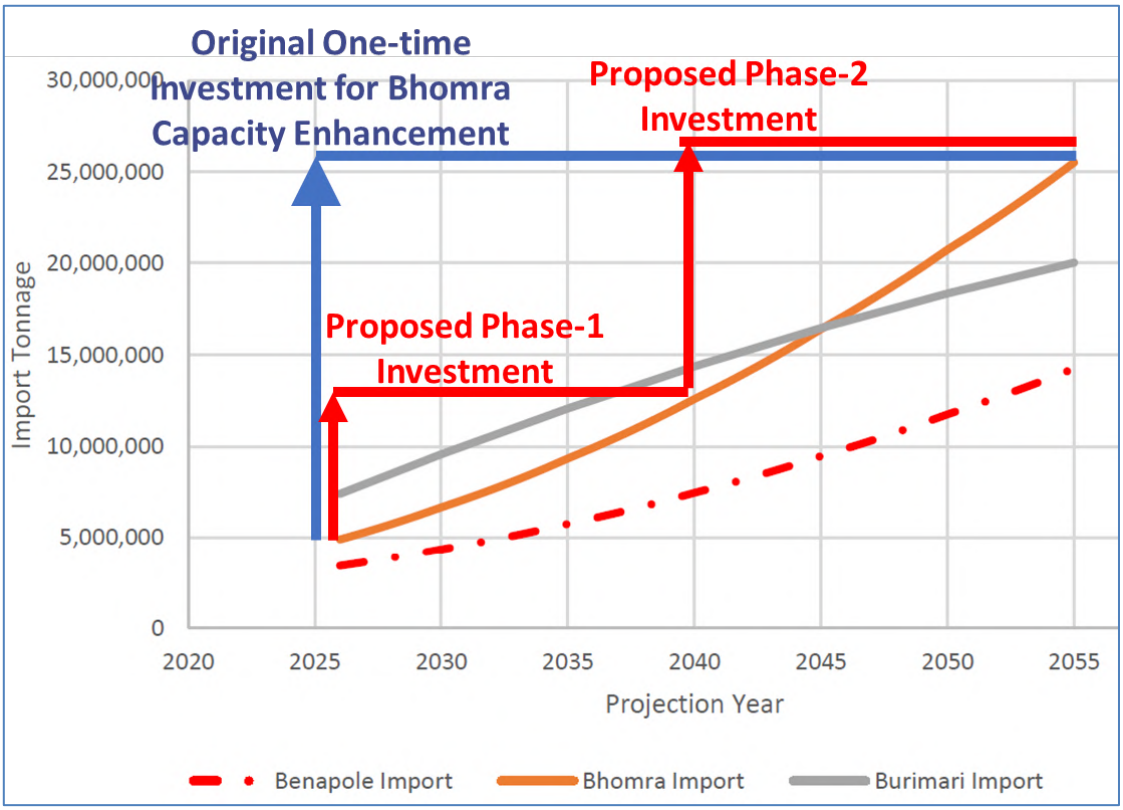
Economic analysis and financial analysis should be based on actual data, not fabricated data. All organizations should take responsibility in this regard to ensure that all assumptions made are valid.

The economic benefits of land ports should be distinguished between those for Bangladesh and those for neighboring countries.

The investment on a land port should be carried out taking into account its classification.

5.3.2 Phased investment

By implementing investments in a phased manner, it becomes possible to hedge demand risks and improve the utilization rate of facilities. Example is shown in Figure 5-1. As a result of introducing this concept, the indicators in the economic and financial analysis will be improved, thereby contributing to the national fiscal position. Phased investment is typically implemented based on a feasibility study of the short-term development components within an overall long-term development plan (e.g., a 30-year horizon), comprising the following steps: (a) establishment of an intermediate target year (e.g., 15 years); (b) commodity-wise demand forecasting for the target year; (c) planning of facilities to accommodate the projected demand; (d) cost estimation; and (e) economic and financial analysis. It is recommended, however, to acquire land in a single phase to ensure integrated development towards the final form, as far as financial conditions allow.



Source: Prepared by OCDI with base figure from WB F/S report for Development of Benapole, Bhomra and Burimari Land Ports, 2022

Figure 5-1 Image of Phased Investment

5.4 Efficient land port operation

5.4.1 Efficient cargo handling operation

The most critical factor in improving land port operational efficiency is enhancing cargo handling efficiency. Currently, cargo handling at Bangladesh's land ports is conducted almost entirely manually, creating an urgent need for faster and more efficient operations.

It would therefore be wise to draw on the improvement measures and experience implemented by advanced logistics nations. For example, until about 50 years ago, Japan relied almost entirely on manual labor for cargo handling at railways and logistics hubs. To address this, Japan introduced the concept of shifting from "manual handling by humans" to a system in which "humans focus on judgment and operation of tools, while the physical movement of cargo is handled by those tools." Specifically, Japan's logistics industry adopted a system where workers use their judgment to consolidate related cargo into batches, palletize these units, and then transport them using cost-effective rollers and roller conveyors as shown in Figure 5-2. This led to a dramatic increase in efficiency at Japanese logistics sites and marked the starting point of Japan's logistics modernization.

In Bangladesh as well, improvements should be implemented step by step, beginning with approaches such as grouping cargo based on human judgment and moving it using inexpensive tools like rollers and roller conveyors.

		
Bags on pallet and roller conveyer	Cartons on pallet	Loading cartons on pallet
		
Bags on pallet and roller conveyer	Setting roller conveyer	Manual unloading from vessel

Source: Transformation of cargo handling methods in Japan (1958)

Figure 5-2 Cargo Handling using Pallet and Roller Conveyer

5.4.2 Consideration for Business Continuity Plan (BCP) of the Port

Bangladesh's ports are, in principle, designed to withstand natural disasters that have occurred in the past. However, it does not mitigate the risk of being struck by disasters that were unimaginable in the past. Therefore, it is necessary to formulate Business Continuity Plans that account for the occurrence of such disasters.

A BCP is a plan to ensure that port operations do not completely stop even in the event of disasters or accidents. It does not aim to protect all activities, but rather to maintain critical functions on a priority basis. To achieve this, the plan identifies in advance which functions should be prioritized and prepares alternative measures and response actions. The example of BCP formulation process is shown in Table 5-2.

Ideally, at the national level, it is necessary to consider the concepts of alternative ports and reserve ports. Simultaneously, each port must prepare for such situations by establishing

alternative facilities for emergencies, clarifying operational procedures for business continuity based on the scale of damage, Considering the rather limited financial and human resources currently available to BLPA, it is recommended to begin by developing an emergency decision making system and then gradually expand efforts.

Furthermore, as part of advanced preparations, it is also necessary to conduct periodical training simulating emergency response procedures and decision-making exercises regarding the selection of alternative operational procedures.

Table 5-2 BCP Formulation Process (Example)

Step 1	Identify Critical Functions	Identify the functions that must not be stopped under any circumstances at the port. Rather than covering all activities, it is essential to prioritize them (e.g., cargo transport, cargo handling, customs clearance).
Step 2	Identify Potential Hazards and Risks	Identify events that may affect port operations. The types of risks vary depending on each port (e.g., cyclones, accidents, power outages, cyber-attacks, border closure).
Step 3	Assess Impacts on Operations	Assess the consequences if the functions are disrupted. Consider how long operations can be suspended before serious problems arise.
Step 4	Develop Continuity Strategies	Identify alternative measures to maintain operations (e.g., use of alternative berths, alternative transport modes, manual operations).
Step 5	Establish Response and Implementation Arrangements	Define who will do what, and when. Ensure that actions are clearly specified so that there is no confusion during emergencies.
Step 6	Implement, Exercise, and Improve the BCP	Regularly implement and exercise the BCP through training. Review the results and continuously improve the plan to ensure its effectiveness under actual emergency conditions.

Sours: OCDI

5.4.3 Implementation of Digital Transformation (DX) and paperless port procedures

The expansion of DX utilization is essential for efficient land port operations and real-time data sharing between relevant stakeholders. It is particularly important to actively promote the introduction of the measures as referenced in the integrated One Stop Platform described in the Bangladesh National Logistics Policy 2025 (Chapter 5: Use of information technology in the logistics sector).

5.5 Framework of port management and operation

5.5.1 Inter-agency and stakeholder coordination for enhancing service quality

To identify and eliminate bottlenecks and enhance service quality at land ports, BLPA is expected to play a coordinating role among the relevant agencies and stakeholders such as CIQ, border security, banks, porters, and transport companies.

5.5.2 Government buildings for the facilitation of border procedures

To enhance administrative coordination and improve service delivery, it is desirable for the relevant government agencies to be located adjacent to one another or accommodated within a joint government building.

5.5.3 Enhancement of operational efficiency through bilateral cooperation

While land port operations inherently depend on high-level bilateral diplomacy, BLPA should prioritize a pragmatic, working-level approach. To enhance operational efficiency through bilateral cooperation, the exchange of cross-border traffic data and the establishment of practical communication channels with counterpart agencies should be pursued.

5.5.4 Enhancing climate resilience and operational environments at land ports

Implement climate-adaptive management practices [1] and develop climate-resilient infrastructure and equipment to counter Bangladesh's harsh environmental conditions such as heat wave and heavy rainfalls. This includes optimizing onsite working environments to minimize operational delays and safeguard personnel health [2].

5.5.5 Welfare and Occupational Health and Safety considerations

For ensuring stable operation of land ports and for securing and retaining qualified personnel, it is important to provide appropriate welfare infrastructure and working environments for workforce. Welfare infrastructure should be tailored to the site location, ranging from functional support in urban areas to full-scale accommodation in remote areas. Provision of health and sanitation facilities is essential, regardless of land port location for safe and stable operations at worksites. These measures also contribute to reducing accidents at worksites.

[1] Climate-adaptive management practices include, for example, the implementation of flexible work-rest cycles, the provision of cooling personal protective equipment, and strategic staff augmentation to prevent operational delays.

[2] Climate-resilient infrastructure and equipment include, for example, the provision of stable electric power supply systems, particularly in remote areas; the deployment of mobile or standalone solar power systems in cargo handling and storage areas; the establishment of mobile medical units, cooling shelters, and rest and hydration stations; and the use of personal protective equipment such as misting fans and cooling vests.

5.5.6 Gender considerations

Gender-responsive considerations should be reflected in operational and institutional frameworks, including promoting inclusive participation, and creating a safe and secure working environment for all personnel. In particular, gender-responsive design should be adopted for improving working and living conditions at land ports, including the provision of safe, accessible, and user-friendly spaces.

5.5.7 BLPA tariff

It is recommended to introduce strategic tariff structure to decrease long stay chemical/dangerous goods.

5.5.8 Capacity building

As BLPA began land port operations relatively recently in 2002 and multiple related administrative agencies are involved, capacity building and staff development—including the enhancement of training planning and implementation, as well as on-the-job training—are necessary.

5.6 Security and safety

5.6.1 Port security

(Undisclosed)

5.6.2 Operation safety

Ensuring safe cargo handling operations in ports requires a comprehensive approach, including establishing and coordinating a safety management system, improving the work environment, implementing safety measures for cargo handling machinery, and formulating detailed work plans. Adhering to these measures prevent labor accidents such as falls, cargo collapse, and machinery-related incidents, enabling safe and efficient operations. Moreover, securing safe cargo handling fosters a culture of safety within the port, significantly enhances operational efficiency, and contributes to sustainable port management.

(1) Establishment and coordination of safety management system

- A robust safety management system must comply with international safety regulations and guidelines established by organizations such as the International Labor Organization (ILO). Examples include the ILO Code of Practice on Safety and Health in Ports and the International Maritime Dangerous Goods Code (IMDG Code). Stakeholders within the port should collaboratively develop, document, and share safety regulations and work manuals

based on these standards. This approach ensures that port cargo handling safety meets international levels and forms the foundation for promoting safe operations.

- Appointing safety managers and responsible personnel with clearly defined roles and responsibilities is essential. These individuals must systematically provide safety education to workers, including initial training upon employment, periodic refresher courses, and practical skill development. Also, clear communication of work procedures, proper use of protective equipment, and emergency response protocols are vital. Such education directly reduces accidents and occupational hazards, fostering a safety culture and balancing operational efficiency with safety.

(2) Improvement of work environment

- Adequate workspace and safe passageways must be secured. Attention should be given to surface conditions, lighting, ventilation, and the organization of tools and equipment. Work areas and hazardous zones should be clearly marked, with strict enforcement of entry restrictions and evacuation instructions. Installing caution signs and marking stop lines on the ground help raise awareness and prevent accidents.

(3) Safety measures for cargo handling operations

- Machinery should undergo regular inspection and maintenance to detect and prevent faults early.
- Before work begins, the site must be inspected and organized.
- Fall prevention measures, such as avoiding work on unstable cargo, should be strengthened.
- Weather conditions, including wind speed and adverse weather, must be continuously monitored, with work suspended promptly if safety cannot be ensured.
- Appropriate protective equipment must be always worn as shown in Table 5-3.

Table 5-3 Safety Gear and its Purpose

SAFETY GEAR	PURPOSE
Safety Helmet	To protect against falling objects and impacts
Safety Shoes with slip resistance and steel toes	To protect the feet and prevent slips
Gloves	For hand protection
Fall Arrest Equipment (Safety Harness)	For fall prevention during high work
Respiratory Protective Equipment	Respiratory protection against harmful gases, dust, and smoke
Safety Goggles	Eye protection from hazards such as dust and chemicals

Source: OCDI

(4) Work plan formulation

- A detailed work plan must be prepared in advance to ensure safety and efficiency. It should outline the sequence of operations, work areas, types of machinery and equipment used, and worker allocation and roles. For high-risk tasks, necessary safety measures, emergency communication systems, rescue arrangements, and evacuation routes should be included. Regular training ensures readiness for prompt and appropriate responses in emergencies.

5.7 Disaster prevention

5.7.1 Overview of natural disaster in Bangladesh

Due to its geographical and climatic conditions, Bangladesh faces multiple disaster risks, including earthquakes, cyclones, and floods. These disasters have repeatedly caused severe damage throughout the country's history. Land ports are particularly vulnerable to earthquakes and floods (see Table 5-4).

Bangladesh is located in a seismically active region where the Indian, Eurasian, and Burmese plates intersect, and large earthquakes frequently occur near Bangladesh. Therefore, in Bangladesh and its surrounding regions, earthquakes exceeding magnitude 6 have occurred frequently, including the 1897 Great Indian (Assam) earthquake, which is said to have caused the most severe damage in recorded history.

In response to this seismic environment, the Bangladesh National Building Code (BNBC), which was established as the national standard governing building construction, includes a seismic zoning map developed specifically for seismic design considerations.

Furthermore, Bangladesh is located in the downstream region of three major transboundary rivers: the Padma (Ganges), the Jamuna (Brahmaputra), and the Meghna. Approximately 80% of the country’s land area consists of floodplains, and about half of these floodplains lie in low-lying areas with elevations below 5 meters. Consequently, during the monsoon season (April to October), which accounts for roughly 80% of the annual rainfall, the country frequently suffers from extensive inundation and flood-related damage.

Table 5-4 Overview of Natural Disaster in Bangladesh for Land Ports

Natural Disaster	Major Characteristics	Typical Frequency or Return Period	Most Affected Areas	Main Impacts on Port Infrastructure
Earthquake	Bangladesh lies in a seismic zone; risk of urban infrastructure damage	Moderate: every few decades Major: every 100+ years (estimated)	Southeastern (Chittagong, Cox's Bazar)	Structural damage to port facilities, seismic vulnerability
Flood	River overflow and heavy rainfall	Minor: annually Major: every 10–30 years	Nationwide, especially along major rivers and low-lying coastal areas	Disruption of port access roads, delays in logistics

Source: OCDI

5.7.2 Disaster mitigation recommendation

As described above, land ports in Bangladesh are susceptible to earthquakes, floods, and other natural hazards. Therefore, it is essential that port facilities adopt resilient design approaches, including BNBC-compliant structural design. Furthermore, much of the surrounding hinterland, including access roads, remains vulnerable to natural disasters. To enhance the overall disaster prevention capability of the port, it is critical either to improve the resilience of these key access routes (e.g., raising ground elevations) or to establish a Business Continuity Plan (BCP) that incorporates disaster mitigation measures for critical access infrastructure. In addition, the utilization of ICT, including radio communication systems, is essential for effective disaster management.

5.7.3 Strengthening fire safety measures

In coordination with fire service agencies, a standardized fire safety protocol should be established along with regular training and emergency response drills for personnel. In the event of a fire involving hazardous materials stored at a land port, it is necessary to ensure that information on the type and quantity of the stored hazardous materials can be promptly provided to fire service agencies.

5.8 Environmental and social considerations

Land port development may generate environmental and social impacts, including pollution, disruption to natural and social environments, and potential risks of accidents. Compliance with national regulatory frameworks ensures that these impacts are properly assessed and mitigated.

5.8.1 Compliance with national regulatory frameworks

In anticipating environmental and social impacts from land port development, there are four main regulations that must be adhered to. First, Environment Conservation Act (1995, amended 2010)

is the primary act governing environmental protection in Bangladesh. Article 12 stipulates that no industrial unit or project shall be established or undertaken without obtaining, in the manner prescribed by rules, an Environmental Clearance Certificate from the Director General of Department of Environment (DoE). Second, Bangladesh enacts Environmental Conservation Rules (2023) which stipulates that for the purpose of granting locational and environmental clearance by the Directorate, industrial establishments and projects shall be divided into four categories: green, yellow, orange, and red.

By considering the scope of the activities of the industrial establishments or projects and the extent, level and possible harmful effects on the environment and human health, all activity should follow procedures based on its classified level (ECR 2023, Section 5 item 1). Further, it states that Environmental Management Plan and public opinions shall be implemented according to the laws and regulations, as well as all the necessary procedures. In the context of this report, any development involving existing/new land ports or relevant activities that take place in the surrounding land area shall be carried out, after obtaining location or environmental clearance from relevant authorities depending on the scope of the project. The following projects are red class projects that have relevance to land port development.

- Land development (above 25 acres);
- Ports and harbors construction (annual cargo capacity of over 30 lakh Metric tons);
- Ports and harbors expansion (above 50%).

Third, Bangladesh Labor Act (2016) enforces rules about workers' rights to compensation, ground for dismissal, proper working conditions, and others. In the context of this report, proponents should carefully follow this act considering frequent cases of work accidents. Chapter VI about Safety enforces maintenance of machinery and equipment, as well as distance that must be preserved during machinery activities. Chapter III describes rules on employing adolescent workers (14–18 years old), which could not be permitted unless a certification of fitness is issued. Finally, Acquisition and Requisition of Immovable Property Act (ARIPA) was enacted in 2017. Shall land acquisition is implemented for port development, Chapter 2 describes rules and procedures on acquisition, whereas Chapter 3 on requisition. They describe the mandate to issue a notice about potential acquisition/requisition to serve public interests, award for compensation, payment, final decision, as well as objections from owners which must be addressed by Deputy Commissioner.

5.8.2 Air pollution control and decarbonization

Regarding air pollution control and decarbonization at land ports, the following initiatives are recommended:

- Promotion of the reduction of truck idling within the cargo yards and parking areas;
- Monitoring and calculation of GHG emissions in high-traffic land ports.
- Development of a roadmap to achieve net-zero emissions, including the adoption of renewable energy, energy-efficient technologies, and sustainable operational practices.

6. Major development projects and action programs

6.1 Major development projects

There are two major development projects: a World Bank-funded project and an Asian Development Bank-funded project. It is recommended to introduce phased investment for the World Bank-funded project to mitigate risks and enhance efficiency.

6.2 Major action programs

6.2.1 Application of classification to land ports

As mentioned in the guiding principles, since the 21 land ports differ significantly in the volume and types of cargo they handle, it is proposed to establish port classes and to implement declaration, management, operations, and facility expansion according to the designated class of each port.

6.2.2 Phased investment for large scale projects

An ongoing World Bank-funded project represents a substantial investment, with a cost equivalent to approximately 45 years of the current annual profits generated by the three target land ports—Benapole, Bhomra, and Burimari.

By implementing this project in a phased manner, it becomes possible to hedge demand risks and improve facility utilization rates. As a result, economic and financial indicators are expected to improve, thereby contributing to the national fiscal position. It is recommended to acquire land in a single phase to ensure integrated development towards the final form, as far as financial conditions allow.

6.2.3 Commodity-wise statistics

Identifying cargo volumes by commodity type and preparing the statistics accordingly are essential for future demand forecasting and facility development planning. While commodity-specific cargo statistics based on HS codes are desirable in the long term, at this initial stage, it is suggested to use a simplified category-based classification as shown in Table 6-1.

Table 6-1 Import Commodity Categories and their Examples

Category No.	Import Commodity Category	Examples
1	Animal Products	Livestock, Fish Fry, Poultry Feed, Powdered Milk, Dried Fish, Cattle
2	Beverages and Oils	
3	Chemicals and Related Products	Chemical Fertilizers, Methanol, Rubber (Raw), Bitumen
	(Dangerous Goods)	Methanol (IMO-3, IMO-6.1), Chemical Fertilizers (IMO-5.1), Bitumen (IMO-9)
4	Energy and Mining	Stone & Boulders, Coal, China Clay, Limestone, Bulk Clay, Ball Clay, Fly Ash, Building Stone, Road Stone, Sand Stone, Various Types of Clay, Granulated Slug, Gypsum, Clinker, Marble Slabs, Tiles, Rock Chip, Marble Chip, Granite Slabs, Bitumen, Natural Sand, Gravel, Quartz, Petroleum Products (e.g. Diesel)
	(Dangerous Goods)	Petroleum Products (IMO-3), Coal (IMO-4.2), Fly Ash (IMO-4.2)
5	Computers, Office, Communications, and Professional Equipment	Radio TV parts
6	Machinery and Electrical Equipment	Project Equipment, Welding Rods, Generator
7	Metals and Metal Products	Iron, Pig Iron, Ingot & Billet (Aluminum), Stainless Steel Ware, Scrap & Waste (Iron/Steel)
8	Miscellaneous	
9	Glass and Non-Metallic Products	Formica Sheets, Ceramic Ware, Sanitary Ware, Broken Glass, Railway Sleepers
10	Transportation Equipment and Parts	Bicycle parts, Motorcycle Parts (Tires and Other Parts), CNG, Spare Parts
11	Textiles, Leather, and Apparel	Yarn, Yarn (except yarn imported under bond license by 100% export-oriented knitwear industry enterprises having customs bond license), Raw Cotton, Garments, Raw Leather, Raw Cotton & Cotton Bales
12	Vegetable Products	Fresh Fruits, Plants, Seeds, Wheat, Onion, Chilli, Garlic, Ginger, Rice, Maize, Pulses, Juice, Tobacco (excluding tobacco stalks imported as raw materials by established VAT registered cigarette manufacturing industries), Potetoes (HS Code 0701.90.19 3 0701.90.29), Betel, Betel Nuts, Tamarind Seeds, Spices, Lentil, Bay Leaves, Turmeric, Tomato, Dried Fennel, Cumin, Green Coconut, Cashew Nuts, Sesame, Corn, Fresh Flowers, Satkara, Soybean Seeds, Sugar, Chocolate, Fenugreek Seeds, Dry Indian jujube, Mustard, Chickpeas, Cane Molasses (Feed Grade), Various Types of Kheil, Husk, Wheat Bran, Soyabean Extract, Rape Seed Extract, DORB (Dry oil Rice Bran)
13	Wood, Paper and Related Products	Wood, Timber, Bamboo, All Types of Paper and Paper Boards (including duplex board, newsprint, kraft paper, cigarette paper),

Source: Prepared by OCDI refering BLPA Annual Report 2023-24.

6.2.4 Monitoring of facility-wise utilization

It is recommended that the utilization of each facility be monitored continuously in every land port. Such monitoring shows how well each facility is performing compared with its planned capacity and helps determine the right timing for re-investment to expand its capacity if necessary.

As mentioned in Section 3.1.1, since revenue breakdowns are now captured by kind of service in each land port, it should not be difficult to capture the utilization of each facility. A suggested format for monitoring is shown in Table 6-2.

Table 6-2 Suggested Form of Monitoring Facility-wise Utilization

	(a) handling volume	(b) planned capacity	(c) utilization ratio ((a)/(b))	(d) revenue
Warehouse				
Transfer shed				
Storing yard				
Weigh bridge				
Passenger terminal				
Truck terminal				
Others (if any)				

Source: OCDI

6.2.5 Summary of major action programs

Summary of major action programs is shown in Table 6-3.

Table 6-3 Summary of Major Action Programs

Item	Necessity
Application of classification to land ports	Since the 21 land ports differ significantly in the volume and types of cargo they handle, it is proposed to establish port classes and to implement declaration, management, operations, and facility expansion according to the designated class of each port.
Phased investment for large scale projects	By implementing large-scale and long-term project in a phased manner, it becomes possible to hedge demand risks and improve facility utilization rates. As a result, economic and financial indicators are expected to improve, thereby contributing to the national fiscal position.
Commodity-wise statistics	Identifying cargo volumes by commodity type and preparing the statistics accordingly are essential for future demand forecasting and facility development planning.
Monitoring of facility-wise utilization	It is recommended that the utilization of each facility be monitored continuously in every land port. Such monitoring shows how well each facility is performing compared with its planned capacity and helps determine the right timing for re-investment to expand its capacity if necessary.

Source: OCDI

7. Recommendations, Way forward, and Conclusion

7.1 Recommendations

The recommendations of this strategy are as follows:

- Major action programs—including the application of classification to land ports, phased investment, preparing commodity-wise statistics, and monitoring of facility-wise utilization—should be implemented in alignment with the established guiding principles.
- The underlying philosophies and shared implementation considerations are presented in the "Way Forward" section.

7.2 Way forward

7.2.1 Evidence-Based Policy Making (EBPM) and enhancement of statistics

Evidence-Based Policy Making (EBPM) means basing policy planning on rational evidence rather than relying on a one-time episode or inspiration, after clearly defining policy objectives. Promoting EBPM by utilizing data such as statistics of commodity-wise cargo volume as well as other reliable information that are crucial for measuring policy effectiveness enhances policy efficacy and contributes to securing public trust in administration. Government agencies in Bangladesh are increasingly expected to adopt evidence-based policy making and implementation. While reconciling diverse stakeholder views remains essential, the foundation of any policy dialogue must be robust data, statistics, and analytical insights.

7.2.2 Periodical review of the demand forecast and major plans

Periodical review of the Bangladesh National Port Strategy will be necessary in response to changes in both international and domestic circumstances hereafter. In particular, the demand forecast of cargoes is the most important factor for defining the future course of action as the required capacity of land ports is based on demand.

It is recommended to review the demand forecast and timelines for major plans every three years, while the guiding principles should be reviewed every five years to adapt to changes in the external situation.

7.2.3 Cooperation among stakeholders

To ensure that land port operation and development are carried out effectively and in a timely manner, coordination with developments in other infrastructure sectors and industries is important. It is also recommended that inter-ministerial coordination be undertaken for each major development plan in order to maximize investment benefits and achieve returns within a shorter period.

In addition, among authorities under MOS, it is recommended to conduct exchange programs of their officers regularly. This program is expected to bring the following benefits in administration of each port:

- Sharing public or social mission
- Sharing knowledge, expertise, and best practices
- Strengthening inter-port collaboration
- Objective review of each operation

7.3 Conclusion

The conclusion of this strategy is as follows:

- Land ports in Bangladesh play an important role in bilateral exchanges and regional integration, particularly in cross-border trade (imports and exports) and passenger transit.
- This strategy has established a framework for sound operation, planning, and investment to enable land ports to sustainably deliver value-added services that meet the needs of customers at high-traffic land customs stations (LCSs). It also sets guiding principles for the coherent, nationwide development of land ports, as well as for enhancing their management and operational performance.
- Major action programs should be implemented in alignment with the established guiding principles.