



A Network of Multi-modal Logistics Parks in the BBIN Sub-region Proposing a Blue Quadrilateral for Enhancing Trade



Joining Dots • Connecting People • Shared Prosperity

Kajal Sharda* and **Deepankar Sinha****

Trade among the Bangladesh, Bhutan, India and Nepal (BBIN) countries suffer from high logistics costs and skewed modal mix dominated by costly road transport. The region underutilises its inland waterway connectivity, despite having an extensive network.

Of late, governments of the BBIN countries have taken several initiatives to revamp the waterways routes and shift the traffic from road to water. Evidence suggests that using waterways as a mode of transportation is cheaper, greener and provides various other benefits when compared to other modes of transportation. It can also enhance the logistical competence of the region as a whole.

This would, however, require establishing necessary infrastructure in the form of multi-modal logistics parks (MMLPs) with connectivity to different modes of transport to facilitate easier movement and transfer of freights from one mode to others, such as from roadways and railways to waterways, and vice versa.

In view of the above, this Discussion Paper explores the possibility of setting up a network of four interlinked MMLPs in the BBIN sub-region to enhance trade among the member countries through waterways. The authors have identified four locations, namely Jogighopa, Sahibganj, Tribeni (India) and Ashuganj (Bangladesh), taking into account their strategic location in the sub-region.

Introduction

A more integrated BBIN sub-region is critical for the region's economic growth and political stability. BBIN countries' share in world exports was 1.95 per cent and that of imports was 2.69 per cent in 2019. Combined, these four economies accounted for more than US\$3.2tn in 2019 (ITC Trade Map). The seamless connection forming the BBIN network serves to move further eastwards and extend to the Cambodia, Lao, Myanmar and Vietnam region.

There has been an increase in trade within the BBIN countries as well. Bangladesh and India are the biggest economies in the BBIN sub-region regarding demographic, economic and geographic indicators. Trade has risen over the years with a compound annual growth rate (CAGR) of 8.55 per cent regarding India's export to the other BBIN countries; and CAGR of 11.56 regarding India's imports from these countries during the year 2014-2019.

There is scope for increasing the trade among the BBIN nations with each other. One major factor that

* Research Associate, CUTS International

** Professor & Head - Research at Indian Institute of Foreign Trade (IIFT), Kolkata Campus

acts as a barrier to increased trade is the time and costs undertaken in border and documentary compliance to trade across their borders.

The performance of BBIN countries on Trading across Border, 2019 can be analysed by various indicators given by World Bank in Table 1.

Various indicators related to cross-border trade depict the same story regarding the underutilised trade potential among the BBIN countries. The

Enabling Trade Index (ETI) assesses the extent to which economies have in place institutions, policies, infrastructures and services facilitating the free flow of goods over borders and their destinations. The World Economic Forum and the Global Alliance for Trade Facilitation have together produced the report of 2016.

The index also highlights the most problematic factors for importing and exporting in terms of percentage, illustrated in Tables 2 and 3.

Table 1: Performance of the BBIN Countries on Trading across Border, 2019

Indicators/Country	Bangladesh	Bhutan	India	Nepal
Time to export: Border compliance (hours)	168	5	52.1	11
Cost to export: Border compliance (US\$)	408.2	59.2	211.9	102.9
Time to export: Documentary compliance(hours)	147	9	11.6	43
Cost to export: Documentary compliance (US\$)	225	50	58	110
Time to import: Border compliance (hours)	216	5	65.3	11
Cost to import: Border compliance (US\$)	900	266.1	190	110.1
Time to import: Documentary compliance (hours)	144	8	19.9	48
Cost to import: Documentary compliance (US\$)	370	50	100	80

Source: World Bank, 2019

Table 2: Most Problematic Factors for Importing

Indicators/Country	Bangladesh	Bhutan	India	Nepal
Burdensome import procedures	20.8	19.6	12.0	18.4
Corruption at the border	17.3	8.9	13.1	18.0
Crime and theft	8.6	1.4	15.0	3.9
Domestic technical requirements and standards	6.4	10.1	10.2	7.9
High cost or delays caused by domestic transportation	14.2	12.9	15.6	13.8
High cost or delays caused by international transportation	8.2	20.1	11.1	15.2
Inappropriate telecommunication infrastructure	2.9	5.0	10.7	2.5
Tariffs and non-tariff barriers	21.5	22.1	12.3	20.2

Source: World Economic Forum, 2016

Table 3: Most Problematic Factors for Exporting

Indicators/Country	Bangladesh	Bhutan	India	Nepal
Access to imported inputs at a competitive price	11.5	9.1	9.1	9.2
Access to trade finance	8.7	8.4	8.2	3.4
Burdensome procedures at foreign borders	1.5	4.5	10.5	4.4
Corruption at foreign borders	0.0	2.2	11.4	3.8
Difficulties in meeting quality/quantity requirements of buyers	12.7	16.1	9.5	13.9
High cost of delays caused by domestic transportation	14.2	10.6	10.7	13.6
High cost of delays caused by international transportation	6.8	6.9	8.1	6.8
Identifying potential markets and buyers	15.2	18.1	9.3	12.1
Inappropriate production technology and skills	13.1	12.8	5.9	16.2
Rules of origin requirements abroad	3.5	1.7	5.1	2.6
Tariff barriers abroad	6.3	3.7	6.0	4.6
Technical requirements and standards abroad	6.4	6.0	6.1	9.5

Source: World Economic Forum, 2016

Research Statement

The region's trade and transit system face several complexities due to a low level of coordination between cross-border businesses, logistical companies and government authorities, infrastructural bottlenecks, procedural difficulties and delays, and lack of awareness, among other things.

The majority of trade in the BBIN countries takes place through Land Customs Stations (LCSs). There are more than 40 LCSs established over the years to facilitate cross-border trade in the BBIN countries. The modal mix of cargo transportation is highly disproportional and majorly comprises transportation via roadways.

Figure 1 shows that despite having an extensive network of inland waterways, transportation by waterways is highly under-utilised. Currently, waterways contribute around 6 per cent to India's transportation modal mix.

On the other hand, Bangladesh has a vibrant Inland Water Transport sector. It carries over half of the Bangladesh's cargo traffic and one-quarter of all passenger traffic. India and Bangladesh are the biggest economies in the sub-region regarding demographic, economic and geographical indicators.

Figure 1: India's Freight Movement (World Bank)



Figure 2: Key Facilities in a Multi-modal Logistics Park by Cargo Type (Asian Development Bank)

Cargo type	Dry cargo		Containers		Processing and Value-Added Services
	Perishable	Nonperishable	Empty	Stuffed	
Storage type	Covered warehouse	Open storage or covered warehouse	Open storage	Open storage or covered warehouse	
Facilities	<ul style="list-style-type: none"> Weather- and pest-proof drainage and bagging facilities Cold storage facilities Pack house for horticulture produce Multimodal transport Packing and sorting 	<ul style="list-style-type: none"> Normal storage—heavy industrial floor Conveyor belt systems for bulk cargo Multitrack facilities Multimodal transport Bagging or packaging 	<ul style="list-style-type: none"> Cargo stuffing yard Empties storage and repair yard Multimodal and multicountry transport Inland container depots Packaging 	<ul style="list-style-type: none"> Cargo destuffing yard or stacking yard Multimodal and multicountry transport Unpacking Multitrack warehouses 	<ul style="list-style-type: none"> Facilities for labeling and packaging Last mile value addition Electronic hardware Light manufacturing and horticulture/food processing
Common facilities	<ul style="list-style-type: none"> Bonded zone and customs clearance Distribution facilities Communication facilities (information technology linkage with port, customs, railways, and end users) Business center facilities and trade finance assistance (wholesale and retail trading platforms) Documentation facility Refreshment/recreation facility (desirable) 			<ul style="list-style-type: none"> Parking facilities Petrol/compressed natural gas/diesel fuelling stations and truck repair shops Light engineering facility Power, water supply, drainage facilities Approach road from highway Weighbridge facilities Security services 	

This paper aims at exploring ways to enhance the logistical competence of the BBIN sub-region. It proposes four MMLPs linked with each other to form a quadrilateral. Four locations with distinctive geographical advantages can be identified and connected via various modes of transportation to decrease the logistical cost of transporting goods from their origin to destination.

These locations can act as a hub for aggregation and distribution of goods via a ‘hub and spokes’ model. The main connectivity can be provided via waterways and for the first and last-mile connectivity roadways and railways can be used. Figure 2 describes the facilities at MMLPs.

The paper draws insights into the country’s present challenges by analysing the country-level indicators, namely, ETI and Trading Across Border. It explores different networks already set up for road and railways and aims at a similar one for multi-modal logistics parks connected majorly via inland waterways. Thus, it proposes a Quadrilateral of Logistics Parks, the concept, nature and features. It also highlights the challenges and the way forward.

The authors studied the existing inland waterway transport infrastructure through desk-based research and site visits, including interactions with various stakeholders.

An Overview of the Existing Quadrilaterals in India

Golden Quadrilateral

The National Highways of India have a total length of approximately 72,000 km and constitute only about 2 per cent of the road network. Currently, it carries 40 per cent of the total road traffic. The Government of India launched various initiatives to upgrade National Highways through the National Highways Development Project (NHDP) in a phased manner.

It aimed to improve the golden quadrilateral, the North-South and East-West corridors, port connectivity and several other projects, shown in Figure 3.

Golden Quadrilateral is a network of highways connecting four top metropolitan cities: Delhi, Mumbai, Chennai, and Kolkata. Its length is 5,846 km consisting of four to six-lane express highways.

The North-South and East-West corridors with a length of 7,300 km connect Srinagar to Kanyakumari and Silchar to Porbandar. Around 442 km of the highway is common between the quadrilateral and the corridors.

Figure 3: National Highways Development Project

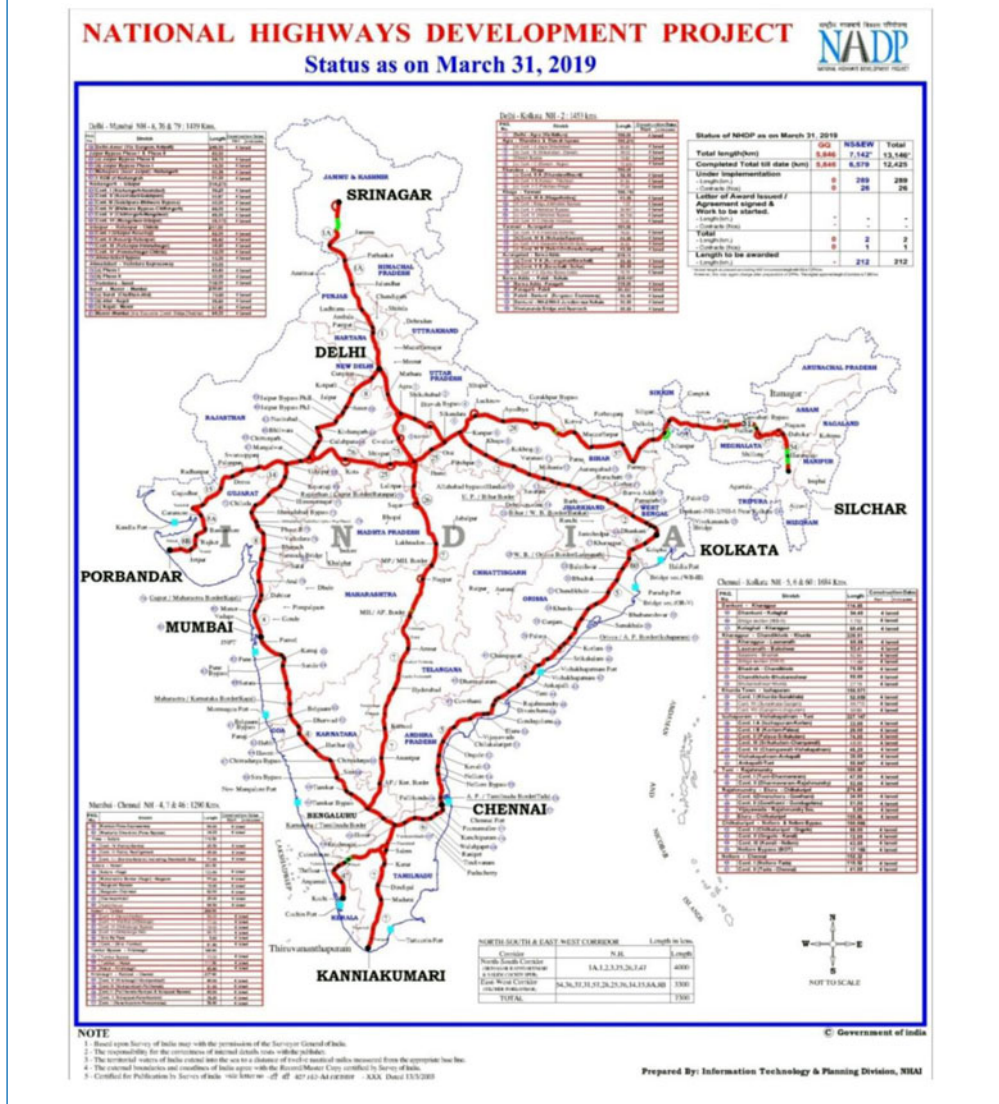
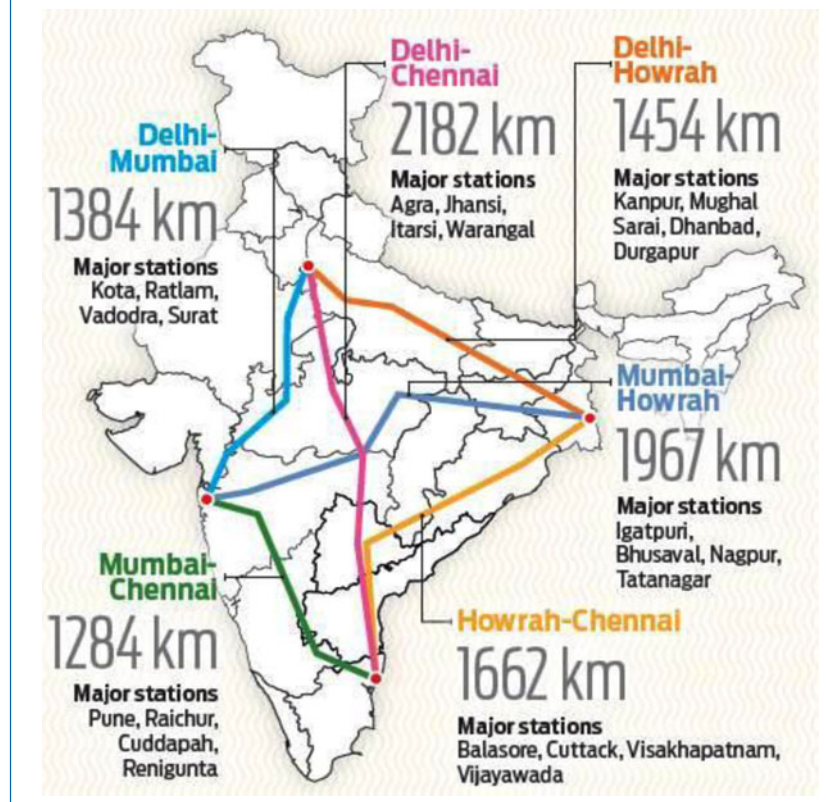


Figure 4: Diamond Quadrilateral of India



The Locations of Proposed Quadrilateral of Logistics Parks

Similar to the golden and diamond quadrilateral, to improve the connectivity in the overall BBIN sub-region, four MMLP could be established and connected to facilitate seamless connectivity in the sub-region. Bhutan and Nepal are landlocked countries and thus depend heavily on India and Bangladesh for their international transportation. Thus, the four points are located in these two countries.

The golden and the diamond quadrilateral do not cover much of northeast India (as shown in the Figures above). Northeast India needs to be taken into account as it plays a vital role in the whole sub-region. Diverting the cargo from roadways to waterways in the region will significantly relieve the Siliguri corridor.

India has started constructing India's first MMLP in Jogighopa, Assam. The three other locations proposed in the paper include Sahibganj and Tribeni (India) and Ashuganj (Bangladesh). The four locations are connected with each other via National Waterway 1 and 2 and the India Bangladesh Protocol Route.

Figure 5 shows the inland waterways of India and its connectivity with Bhutan and Nepal and the India-Bangladesh protocol route. The stars in the figure show the locations in the proposed quadrilateral.

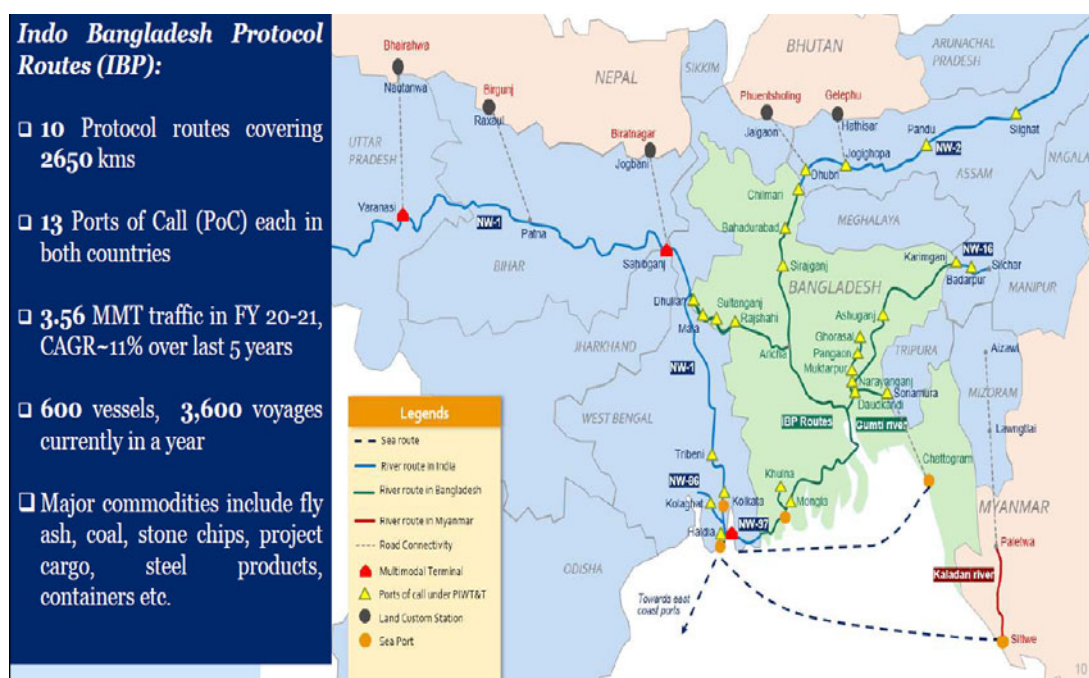
The governments of all four countries could come together to facilitate this by removing the policy and infrastructural gaps. The MMLPs are expected to provide integrated solutions, multi-modal transport, oversized scale freight, modern technology and value-added services (ADB, 2020).

The quadrilateral is expected to increase the volume of trade in the sub-region extending to other parts of South Asia, leading to more employment opportunities and also lower prices of products for consumers.

Jogighopa, Assam, India

Jogighopa is located on the northern bank of the Brahmaputra River in Bongaigaon district, Assam, India. It has proximity to various vital hubs of economic activities. Guwahati is at a distance of 153 km from Jogighopa via NH 17. Barpeta (55 km) and Tura (175 km) – all are important trade centres for the states of Assam and Meghalaya, respectively.

Figure 5: Inland Waterways and India-Bangladesh Protocol Route



Jogighopa is also not far from Bhutan and Nepal. Phuentsholing, a major trade and transit point along the India-Bhutan border, is 175 km. Similarly, Kakarbhitta, a significant trade and transit point, is at a distance of around 300 km.

An MMLP is being constructed at Jogighopa, under the Bharatmala Pariyojana of the Government of India, in a plot of 317-acre land along the Brahmaputra. National Highways and Infrastructure Development Corporation Limited (NHIDCL) has been entrusted with the work by the Ministry of Road Transport and Highways.

The development project includes railway sidings, container terminal, warehousing, non-cargo processing, a truck terminal, common facilities, support infrastructure and equipment.

The Asian Development Bank (ADB) conducted a pre-feasibility study to assess the suitability of MMLPs in Guwahati, Assam and identify the pre-requisite infrastructure, connectivity and regulatory reforms. The traffic of the MMLP is expected to grow to 2.9 million metric tonnes in the year 2035.

The proposed MMLP is strategically located to offer multi-modal connectivity through road, rail and inland waterways modes and can develop as a distribution and aggregation centre for the Northeastern states besides serving as a hub for the

cross-border trade with Bangladesh, Bhutan, Nepal and Myanmar. In subsequent expansions and based on techno-commercial feasibility, an airstrip and/or an air cargo facility may also be considered in the MMLP.

With the MMLP coming up, various other developments are being taken up to connect Jogighopa with other regions. The distance of 154 km between Jogighopa and Guwahati will be covered by making a 4-lane road on this stretch, a 3-km rail line will connect Jogighopa station to the MMLP, another 3-km rail link will connect it to the IWT, and the road to newly developed Rupsi airport will be upgraded to 4-lanes for easier connectivity.

It is also linked to the Eastern-Western Corridor via the Tulungia-Hapachara Highway. Dhubri-Phulbari Bridge and the Dalu-Tura-Goalpara-Gelephu route will also be a value addition in the Jogighopa MMLP.

It is also included as a Port of Call in the Second Addendum under Protocol on Inland Water Transit and Trade (PIWTT) between India and Bangladesh. The two countries have also agreed to develop Jogighopa as a hub/trans-shipment terminal for cargo movement to Assam, Arunachal Pradesh, Nagaland and Bhutan.

Jogighopa MMLP is poised to cater to India's Northeast, Central and Southeast regions, besides

bridging with the countries of Bangladesh and Bhutan as part of the BBIN sub-region. Furthermore, this provides opportunity to connect with 800 million consumers in 10 members' Association of Southeast Asian Nations (ASEAN) markets.

The Location of Proposed Multi-modal Logistics Park

Sahibganj

Sahibganj is a district in the state of Jharkhand, India. The district has a good network of roadways. The Jamtara-Dumka-Sahibganj road provides a link with Assam after ferry across the Ganges. The National Highway 33 passes through the district. The area is approachable by train from Bhagalpur (Bihar) and Dhanbad (Jharkhand) via West Bengal. The nearest airport is Bagdogra Airport, Siliguri, which is at a distance of approximately 173 km.

India's second of the three Multi-Modal Terminals is constructed in Sahibganj on river Ganga under Jal Marg Vikas Project (JMVP). It is expected to open up industries of Jharkhand and Bihar to the global economies and provide India-Nepal cargo connectivity. Other than coal, stone chips, fertilisers, cement and sugar are expected to be transported through the terminal.

This multi-modal terminal has helped to create direct employment of about 600 people and indirect employment of about 3,000 people in the area. A

freight village has been ideated near the terminal. The idea is to develop basic infrastructure for logistical operations and ensure better last-mile connectivity for traffic movement from the terminal to Manihari and Farakka and further downstream through the feeder canal towards Kolkata and beyond.

Additionally, a bridge between Manihari and Sahibganj of Katihar crores is expected to be completed by 2024. The cost is ₹1,900. With all the existing road and rail linkages and the developments on the inland waterways, the terminal can be further expanded into an MMLP.

It is located in the logistic chain of the Eastern Transport Corridor of India. Being close to both NH-80 and the Sakrigali railway station, the MMT is expected to boost cargo movement in the area, leading to the region's extensive socio-economic and industrial development.

The convergence of Road-Rail-River Transport at Sahibganj through the new multi-modal terminal will connect this part of the hinterland to Kolkata, Haldia, and the Bay of Bengal. The current capacity of the terminal is 30 lakh tonnes per annum. It will increase in phase II to 54.8 lakh tonnes per annum.

The government has planned further investment of ₹376 crores for capacity enhancement, which will be done entirely by the private concessionaire under the public-private mode.

Figure 6: Nepal Connectivity with National Waterway 1 and MMT at Sahibganj





This is a part of JMVP, which aims to develop the stretch of Ganga between Varanasi to Haldia for navigation of 1,500-2,000 tonnes vessel by maintaining a draught of 2-3 metres in the stretch and setting up other systems required for safe navigation.

As shown in Figure 6, Sahibganj is very close to Nepal and can boost Nepal's exports and imports. The terminal and freight village can be transformed into an MMLP.

Tribeni

Tribeni is located in Hooghly district, West Bengal, India. It is a part of the area covered by the Kolkata Metropolitan Development Authority. Tribeni was declared an Extended Port of Call in the Second Addendum to the India-Bangladesh Agreement on PIWTT. The port is located on the banks of the Ganga river.

The IWAI has set up two jetties in Tribeni to facilitate trade in Fly Ash with Bangladesh. Fly ash is one of the essential commodities, ply in huge quantities from India to Bangladesh.

The Kolkata port serves a vast hinterland comprising West Bengal, Bihar, Uttar Pradesh, Madhya Pradesh, Punjab, Haryana, Rajasthan, Assam, other Northeastern states and the two neighbouring landlocked countries viz. Nepal and Bhutan.

Kolkata Port has two sets of infrastructure for handling seaborne cargo traffic. One is the Kolkata Dock System (KDS) and the other the relatively recently developed satellite port, Haldia Dock Complex (HDC). KDS predominantly handles container, liquid cargo and breakbulk cargo, while HDC mainly handles bulk items, including liquid and dry bulk commodities.

The traffic at the Kolkata Dock System has been seeing a steady growth in the past years. While this is a case of cheer, it is also a matter of concern for Kolkata Port Trust. The increasing container and other general cargo volumes may outgrow its capacity and the port may struggle to handle the excess volume or lose it altogether.

Thus, the port wishes to shift part of its operation to another site. For the extended site, the port has identified Balagarh, about 85 km away from its main docks. The port proposes to develop a barge terminal and associated facilities initially for handling containers and pulses. Balagarh would offer a natural draft of minimum of 3.0 m for barges carrying about 3,000 tonnes of cargo.

The port plans to discharge containers and pulses from mother vessels into barges in-stream and bring the barges to Balagarh for unloading and further handling. Similarly, it will load export containers on barges at Balagarh and take them to stream for loading on mother vessels. The port is also

interested in using the facility for any other new cargoes that have the potential to be handled at this site, such as LNG and Ro-Ro traffic.

Ashuganj

Ashuganj is a town in the Brahmanbaria district under the Chittagong Division of Bangladesh. Ashuganj is a designated Port of Call in the PIWTT, which was bilaterally agreed between the countries in January 2010. It is one of the most critical industrial ports of the Bengal delta and located on the Meghna River. The port is a regional transshipment centre in Eastern South Asia.

It is situated approximately 90 km northeast of Dhaka and connected by NH-2 with Dhaka and NH-102 with Brahmanbaria. The distance from Ashuganj to Brahmanbaria is 28km and the distance to Akhaura is approximately 44 km. The governments of Bangladesh and India signed an agreement to upgrade the 50.58 km long road between Ashuganj river port and the Akhaura land port in Bangladesh into a four-lane highway in January 2020.

The Bangladesh Roads and Highways Department, along with Afcons Infrastructure Ltd, India will upgrade the road between the Ashuganj Port and Dharhar, India. The Bangladesh Roads and Highways Department will develop the road from Dharhar to Akhaura in Chattogram, Bangladesh, with an India-Bangladesh joint venture firm.

Ashuganj has also become an important trade and transit hub connecting with northeast India. Inland

water transportation has made Ashuganj a commercial hub and becomes important for Bangladesh and India. It is also connected with Mongla or Chittagong port by inland waterways.

Basically, Ashuganj can be defined as a transshipment point for connecting Northeast India with the rest of India, considering the inland water or coastal line-based connectivity.

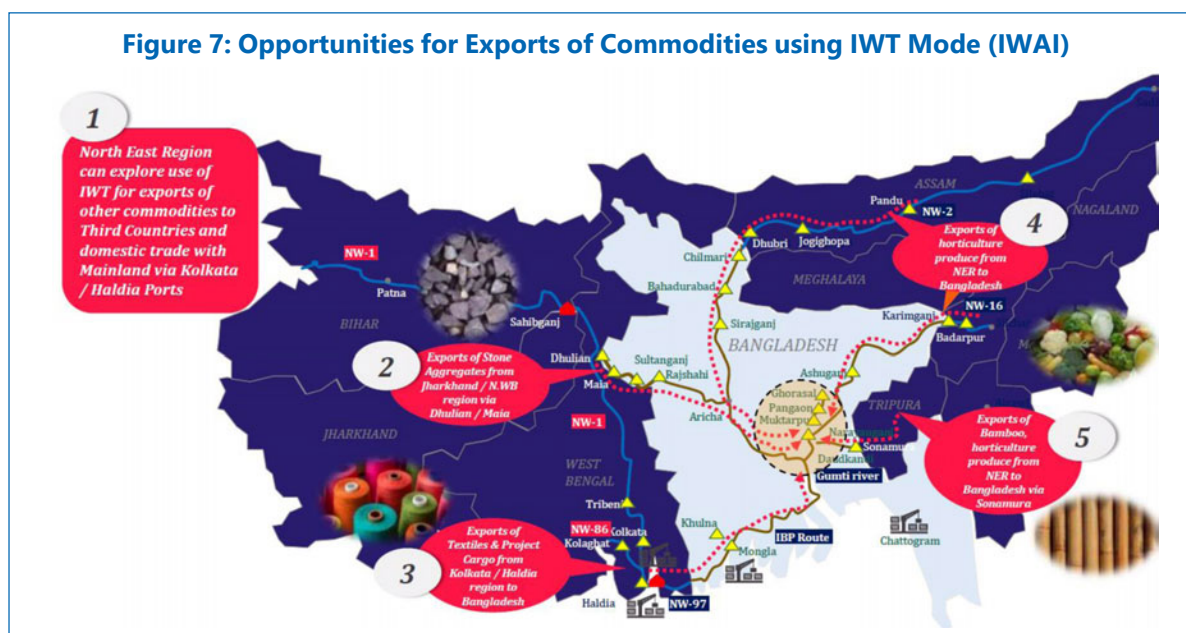
An MMLP in Ashuganj will be beneficial for Bangladesh and help connect mainland India to Northeast states of India majorly, like Tripura, Mizoram and Manipur.

Integrating Logistics and Transport and Impact on the BBIN Sub-region

Integrating waterways connectivity between India and Bangladesh also opens up opportunities to explore multi-modal trade routes with Nepal, Bhutan and Myanmar.

All four locations are connected via waterways via the National waterway 1, 2 and the India Bangladesh Protocol Route.

The key minerals transported from Sahibganj to Jogighopa and Bangladesh include coal, stone chips and clay. Barges carrying minerals from the Eastern part of mainland India to Northeast India could get commodities like tea and organic horticultural and agricultural products return cargoes.





Additionally, the terminal would facilitate the movement of the India-Nepal cargo through waterways. Biratnagar and parts of eastern Nepal, including Kathmandu, are close to Sahibganj. Goods from Nepal can reach Sahibganj through roadways and thereafter can be sent to Bangladesh. This commodity distribution is put forward in Figure 7.

Similarly, Bhutan has access to use Jogighopa for trade and transit. Ashuganj and Jogighopa are connected via the India-Bangladesh Protocol route. Ashuganj has a very strategic location as it is also close to Karimganj and can facilitate the states of Mizoram, Tripura and Manipur. Ashuganj and Jogighopa can also be connected via a multi-modal route where goods from Jogighopa are transferred to Karimganj via road and from Karimganj to Ashuganj via IBP route.

The distance between mainland India (say Allahabad) and Ashuganj could be shortened via Allahabad-Farakka-Dhulian-Rajshahi-Aricha-Narayanganj-Ashuganj (NW1 and PIWTT). This route is about 1,777 km compared to the longer 2,550 km route from the Allahabad-Farakka-Haldia-Mongla-Narayanganj-Ashuganj land route (CUTS 2017).

Two stretches of Bangladesh inland waterways, viz Sirajganj-Daikhawa and Ashuganj-Zakiganj, on the IBP route are to be developed. This would provide seamless navigation to and from Northeast India through waterways.

Bhutan and Nepal have agreements with India and Bangladesh to use the inland waterways in these two

coastal countries to transport Bhutanese and Nepalese bilateral, international and transit trade.

India consented to grant Nepal access to the Kolkata-Kalughat-Raxaul, Kolkata-Sahibganj-Biratnagar and Kolkata-Varanasi-Raxaul routes. Similarly, Dhubri, Jogighopa and Pandu, located in Assam on India's National Waterway 2 (NW2) along the Brahmaputra River, are included in the trade routes for Bhutan's bilateral and transit trade with India.

Conclusion

If the four nodal points are considered for multi-modal logistics facilities, it will provide many benefits in the sub-region. Jogighopa would facilitate Bhutan and northeast India; Sahibganj would facilitate Nepal and mainland India; Tribeni would facilitate India and Bangladesh; and Ashuganj would facilitate Bangladesh and Northeast India.

If these four points have sufficient required logistics facilities and connectivity, the most important constraint of choosing the waterways, which is the high amount of time taken and transshipment, would decrease drastically. 'Hub and Spokes' model at these four locations would benefit a large part of the BBIN sub-region.

This will also benefit the small traders when their small assignment becomes a part of a large consignment in a vessel as their per tonne per km cost will decrease manifold.

Table 4: SLOT Analysis

Strengths <ul style="list-style-type: none"> • Improve the logistics competency of the region • Create infrastructure for the revival of usage of inland waterways • Decongest roadways and railways • Environment friendly and cheaper 	Limitations <ul style="list-style-type: none"> • Asymmetry in policies in BBIN nations and lack of unified approach • Inadequate last-mile connectivity • Lack of awareness of usage of inland waterways • Huge investment required in dredging and navigability
Opportunities <ul style="list-style-type: none"> • Promote trade and tourism • Contribute to the emergence of new industrial hubs • Employment generation and development of local community • Developing resilient inter-linkages between the existing and upcoming multi-modal connectivity 	Threats <ul style="list-style-type: none"> • The hesitation of shifting from roadways and railways to waterways • Security concerns of nations • Safety of vessels and operators • Inter-country rivalry/third country influence • Periodic hindrances caused by natural calamities, pandemic

Table 5: Comparative Cost for Movement of Freight

Mode	Railways	Highways	IWT
Freight (₹/T.km)	1.41	2.28	1.06
Source: World Bank			

Using waterways is the cheapest mode as the cost to transport 1 tonne of freight over 1 km is ₹1.19 for waterways compared to ₹2.28 and ₹1.41 for roadways and railways, respectively. Additionally, using waterways is the greenest mode as a 1 litre of fuel can move 105 tonnes on the water compared to 24 tonnes and 85 tonnes by road and rail, respectively (World Bank, 2017).

According to the Government of India, 1 litre of fuel moves 24 tonne-km on-road, 95 tonne-km on rail and 215 tonne-km on IWT. It also provides a comparative cost for the movement of freight shown in Table 5.

The four points proposed can be connected via waterways. A quadrilateral of logistics parks could be created like the quadrilateral of roadways and railways and can be spread gradually. This will lead to a modal shift from roadways and railways to waterways.

To accomplish this, a political economy discourse has to be created among the BBIN countries to coordinate the logistics with minimum infrastructural investments, keeping in mind the security concerns to

decrease the administration, cultural, geographical, economical, and ecological distance.

These can be set up in the public-private partnership mode, given that the private sector has been a key player in the logistics sector. Build-Operate-Transfer has known to work well for large infrastructural projects.

The National Logistics Policy drafted by the Logistics Division of the Department of Ministry of Commerce and Industry also aims to promote seamless movement of goods. The aim is to reduce the logistics cost from 13 per cent of the country's gross domestic product (GDP) at present to 8 per cent in five years.

This study will help in partial fulfilment of this objective as this will help in reducing the logistics cost and making supply chains resilient. However, it is essential to mention that this paper only indicates the possible locations, which can be transformed into MMLPs with their strategic geographical advantages. A detailed demand and supply assessment, availability of land, authentic cargo projections are required for planned investment.

References

1. World Economic Forum, 2016, 'The Global Economic Enabling Trade Report, 2016'
2. Sagarmala, Coastal Shipping and Inland Waterways, Accessed at: <http://sagarmala.gov.in/projects/coastal-shipping-inland-waterways>
3. Bangladesh Inland Water Transport Authority (BIWTA), 2016, "Environmental and social assessment and Resettlement Policy Framework" Accessed at: https://ewsdta.rightsindevelopment.org/files/documents/11/WB-P154511_vtT2Hvc.pdf
4. National Highways Authority of India, Accessed at: <http://www.nhai.org/>
5. Nag D, 2021 'Indian Railways Eastern & Western DFCs to be operational by India's 75th year of independence' Financial Express, March 17, Accessed at: <https://www.financialexpress.com/infrastructure/railways/indian-railways-eastern-western-dfcs-to-be-operational-by-indias-75th-year-of-independence/2214551/>
6. National Highways & Infrastructure Development Corporation Ltd, Ministry of Road Transport & Highways, Government of India, Accessed at: <https://nhidcl.com/wp-content/uploads/2021/03/Assam.pdf>
7. Mitra S, Etal, 2020 'Developing Multimodal Logistics Parks in India', Asian Development Bank, Accessed at: <https://www.adb.org/sites/default/files/publication/614876/adb-brief-142-multimodal-logistics-parks-india.pdf>
8. National Highways & Infrastructure Development Corporation Ltd, 'Development of Multi-Modal Logistic Park at Jogighopa, Assam' Accessed at: <http://environmentclearance.nic.in/DownloadPfdFile.aspx?FileName=KFM34jhn7XYobt0qtAyYDE7Ytpjw2fmgmCf8wBnFjKfE8uEfsugsXporm5zc5P4Yru1xwVGzucX1DmTO4eoYmSatNjFMifATRsR4La/Xuuhw0LD8VU4dOh3SAI&FilePath=93ZZBm8LWEXfg+HAIQix2fE2t8z/pgnoBhDIYdZCzUIadBGU7t8v4JoQvNU6UBZ1E4iyolUmnsbALWHBrgd/PltEFsXwmuI8du0no2AENaRKNFsRTD/82MKLX9hZhL>
9. Singh B, 2020, 'India's first international multi-modal logistic park to come up in Assam's Jogighopa', Economic Times, October 20, Accessed at: <https://economictimes.indiatimes.com/industry/services/property/-construction/indias-first-international-multi-modal-logistic-park-to-come-up-in-assams-jogighopa/articleshow/78751765.cms?from=mdr>
10. Ministry of Ports, Shipping and Waterways, 2019, 'PM to inaugurate India's second Multi-Modal Terminal on Ganga at Sahibganj in Jharkhand' Accessed at: <https://pib.gov.in/PressReleasePage.aspx?PRID=1584628>
11. Ministry of Ports, Shipping and Waterways, 2019, 'Multi-Modal Terminal at Sahibganj to Open up Alternate Route for Nepal Bound Cargo', Accessed at: <https://pib.gov.in/PressReleaseDetail.aspx?PRID=1578785>
12. Saluja N, 2019, 'PM to inaugurate India's second multi-modal terminal in Sahibganj', Economic Times, September 10, Accessed at: <https://economictimes.indiatimes.com/news/politics-and-nation/pm-to-inaugurate-indias-second-multi-modal-terminal-in-sahibganj/articleshow/71065966.cms?from=mdr>
13. Kolkata Port Trust, Government of India, Accessed at <https://www.kolkataporttrust.gov.in/>
14. South Asian Subregional Economic Cooperation, 2020, 'Bangladesh, India to Upgrade the Ashuganj-Akhaura road', Accessed at: <https://www.sasec.asia/index.php?page=news&nid=1120&url=ashuganj-akhaura-road>
15. Roy Chaudhari D, 2019, 'India to allow Nepal use of three rivers for inland waterways to push regional connectivity' Economics Times, October 07, Accessed at: <http://bit.ly/3t2Do3Y>
16. Roy Chaudhari D, 2020, 'India to open new trade routes with Bhutan to enable smoother sub-regional coop' Economics Times, December 04, Accessed at: <https://bit.ly/3bwq3uR>
17. World Bank, 2017, 'Developing India's First Water Inland Waterway', Accessed at: <https://www.worldbank.org/en/country/india/brief/developing-india-first-modern-inland-waterway>
18. Ministry of Ports, Shipping and Waterways, 2018, 'Operational National Waterways in the Country', Accessed at: <https://pib.gov.in/Pressreleaseshare.aspx?PRID=1557459>

With the support of



UKaid
Foreign, Commonwealth
& Development Office



Asian Development Bank