

## Indo-Bangladesh Cooperation on Inland Waterways: Recent Developments, Possibilities and Ideas towards enhancing Livelihoods and Prosperity in the sub-region

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### **Abstract**

*In recent times India and Bangladesh have jointly made substantial progress towards harnessing Inland Waterways and Coastal Routes for connectivity. There have been several initiatives to this end including major infrastructural projects, expansion of protocol routes, ports of calls, development of multimodal logistics hubs, commitments to maintaining year-round water flows in the river channels, etc. This has opened up several possibilities towards enhancing trade, commerce and prosperity for both the countries. In the backdrop of the COVID19 pandemic and the consequent global economic slowdown, creating new livelihoods and economic opportunities is a crucial need. With that new normal in mind, this paper collates the recent developments and trends for inland waterways in the sub-region to highlight the opportunities and scope created by these developments. In that context, the paper argues the case for developing cross-border value chains in agri-horticulture and allied products between the North East Region (NER) of India and Bangladesh with waterways as the mode for transport and connectivity. It also discusses key challenges to this and provides recommendations for the same. In conclusion a Concrete Project Idea is shared for exploring these potential and possibilities.*



## **Indo-Bangladesh Cooperation on Inland Waterways: Recent Developments, Possibilities and Ideas**

### **Introduction:**

As human civilizations flourished across centuries, rivers played a crucial role as a mode of transport for carrying people and goods, as well as the vital source of precious water resources that made agriculture, fisheries, and myriads other livelihoods flourish. Rivers have been and are still inseparable and extremely critical enablers of prosperity, connectivity and ecological balance. In the context of South Asia, India and Bangladesh, who were once part of a single political entity, share several historical riverine routes that thrived trade, transport and people's movement in the region. In the pre- independence years, rivers used to be the most preferred mode of transportation for this region and its people. However, changing times, political boundaries and realities led to the emergence and rapid development of road and railways, while development of rivers for transportation purpose did not get adequate attention. The result was an ever diminishing modal share of Inland waterways transportation (IWT), which currently stands at a mere 2%.<sup>1</sup> While roads and railways still remain preferred modes and are usually at the forefront of cross-border discussions on regional connectivity involving India and Bangladesh, rivers and waterways have gained traction in the recent times with plans and projects being initiated for development of necessary waterway infrastructure as well as strengthening of enabling policy framework between the two nations. Recognizing the significant potential in rivers to become a regular mode of transportation, 106 waterways were declared as new National Waterways by India through the National Waterways Act, 2016 taking the total number of National Waterways to 111.<sup>2</sup>

### **India-Bangladesh Inland Waterways: Recent Developments and Progress**

The initial Agreement on Protocol on Inland Water Transit and Trade (PIWTT) was signed by India and Bangladesh in 1972. It was initially renewable every two years until October 2001; when the renewal timeline got somewhat distorted. The protocol is essentially an agreement between the two Governments for transportation of goods and keeping their respective waterways navigable, along with providing necessary infrastructure facilities. In June 2015, Indian Prime Minister Narendra Modi's visit to Bangladesh substantially strengthened bilateral ties and among other things, the two Governments renewed the

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<sup>1</sup> A short brief on Indo Bangladesh Protocol Route (IBP), Inland Waterways Authority of India

<sup>2</sup> Ibid

protocol on June 6, 2015<sup>3</sup>. Under the new arrangements, a clause for automatic renewal of the protocol every 5 years was incorporated.

In May 2017, the two governments further signed a MoU on running river cruises on the PIWTT routes, which eventually saw the first Indo-Bangla river cruise setting sail on the Brahmaputra on April 29, 2019<sup>4</sup>. In tandem with the emerging friendship at the top level which helped with alignment of policies, infrastructure development was also taken up in a big way for enhancing waterways as a mode of transportation. The Indo Bangladesh Protocol (IBP) routes initially declared under the PIWT&T was done with an aim to connect the Indian rivers of Ganga (NW-1), Brahmaputra (NW-2) and Barak (NW-16) with Bangladesh's rivers Jamuna, Padma, Gumti, Meghna and Kushiara.

***Second Addendum to the Protocol on Inland Water Transit and Trade:***

In a very recent development, the **second Addendum to the Protocol on Inland Water Transit and Trade** was signed between the two nations. Ms. Riva Ganguly Das, High Commissioner of India to Bangladesh and Md. Mezbah Uddin Chowdhury, Secretary, Ministry of Shipping, Bangladesh signed this agreement on May 20, 2020 in Dhaka, Bangladesh, on behalf of the countries which further strengthened the possibilities and potential for waterways connectivity between the nations, as well for the region as a whole. With the signing of the second addendum to the PIWT&T on May 20, 2020, the declared protocol routes are:

1. Kolkata – Silghat – Kolkata extended up to Kolaghat in India (IBP route 1 & 2)
2. Kolkata – Badarpur – Kolkata (IBP route 3 & 4)
3. Aricha – Dhulian – Aricha (IBP route 5 & 6)
4. Badarpur – Silghat – Badarpur (IBP route 7 & 8)
5. Sonamura – Daudkandi – Sonamura (IBP route 9 & 10)

The additions in the latest Addendum to the protocol has opened up several possibilities in terms of enhancing trade, connectivity and commerce. Some of the possible implications of these developments are:

- Inclusion of Sonamura- Daudkhandi stretch of Gomti river (93 Km) as IBP route No. 9 & 10 will improve the connectivity of Tripura and adjoining states with Indian and Bangladesh's economic centres, which will help the hinterland of both the countries.
- The operationalisation of Rajshahi-Dhulian-Rajshahi route and its extension up to Aricha (270 km) will majorly help the infrastructure in Bangladesh as it would

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<sup>3</sup> [https://mea.gov.in/bilateral-documents.htm?dtl/25344/List\\_of\\_Agreements\\_MoUs\\_and\\_other\\_Documents\\_concluded\\_during\\_the\\_visit\\_of\\_Prime\\_Minister\\_to\\_Dhaka\\_June\\_06\\_2015](https://mea.gov.in/bilateral-documents.htm?dtl/25344/List_of_Agreements_MoUs_and_other_Documents_concluded_during_the_visit_of_Prime_Minister_to_Dhaka_June_06_2015)

<sup>4</sup> <https://www.deccanherald.com/national/first-indo-bangla-river-cruise-sets-sail-on-brahmaputra-731297.html>

reduce the transportation cost of raw materials (stone chips/aggregate) to northern Bangladesh via this route. It will also help decongest Land Custom Stations on both sides.

- The new Ports of Call and ‘Extended Ports of Call’ will also enhance trade and connectivity. In total five new ‘Ports of Call’ and two ‘Extended Ports of Call’ have been added on each side thereby taking the total no. of Ports of Call on each side to 13 (including extended ports of call). Originally there were 6 Ports of Call on each side, viz. Kolkata, Haldia, Dhubri, Pandu, Silghat, and Karimganj on Indian side, and Narayanganj, Khulna, Mongla, Sirajganj, Ashuganj, Pangaon, on Bangladesh side. Five new Ports of Call have been added on both sides in the most recent addendum, viz. Dhulian, Maia, Kolaghat, Jogighopa and Sonamura in India, and Rajshahi, Sultanganj, Chilmari, Daudkandi and Bahadurabad in Bangladesh. In addition to this, the addendum also introduced 2 ‘Extended Ports of Call’ on each side, viz. Tribeni (Bandel) and Badarpur in India, and Ghorasal and Muktarpur in Bangladesh.<sup>5</sup> The inclusion of Jogigopha in India and Bahadurabad in Bangladesh as new Port of Call will provide connectivity to the majorly land-locked North Eastern Indian states of Meghalaya, Assam and also to neighbouring country Bhutan. The new Ports of Call would enable the loading and unloading of cargo transported on the Indo Bangladesh Protocol Route and provide stimulus to economic development of these new locations and their hinterland.<sup>6</sup>



**Figure 1: Larger Network of Indian National Waterways, IBP Routes, Ports of Call and Multi-modal Hubs and Projects**

<sup>5</sup> <https://pib.gov.in/PressReleasePage.aspx?PRID=1625342>

<sup>6</sup> Ibid

The figure<sup>7</sup> below shows all existing IBP routes, the agreed upon ports of call post the 2<sup>nd</sup> addendum, along with existing multi-modal hubs, main arterial road links and planned projects like the Kaladan Multimodal project

In addition to the new routes and ports of calls, emphasis is being laid on maintaining round-the-year navigability with Least Available Depth (LAD) of 2.5 meters for important stretches of the IBP routes in Bangladesh, viz. Sirajganj – Daikhawa and Ashuganj - Zakiganj. These stretches are being developed at a total cost of approx. Rs 305.84 Cr. on 80:20 cost sharing basis by India and Bangladesh. The contracts have been awarded for 7-year duration including 2 years of capital dredging and 5 years of maintenance dredging up to the year 2025.<sup>10</sup>

### **Second Addendum under PIWT&T: Enhancing waterways trade and enabling small players**

As a first ever development, the 2nd Addendum under PIWT&T, India and Bangladesh agreed to introduce trade between Chilmari (Bangladesh) and Dhubri (India) through the use of shallow draft mechanized vessels, provided these are registered under Inland Shipping Ordinance 1976 of Bangladesh or Inland Vessels Act, 1917 of India as per provisions of Article 1.3 of the Protocol and conform to safety requirements. This initiative will allow export of stone chips and other Bhutanese and North East cargo to Bangladesh and easy access for the traders to the hinterland of Bangladesh, enhancing the local economy in Bangladesh and the lower Assam region of India.<sup>8</sup>

The decision will also open up opportunities for small players. Waste from cotton and other textiles from Bangladesh are used widely in Assam and other northeastern Indian states to produce mattresses and blankets. Currently the cotton waste is imported via land through Mahendraganj (Meghalaya) and Mankachar (Assam). This involves loading/unloading at several locations, adding to the cost of transportation significantly. The cotton waste importers in Dhubri have asked whether empty barges coming to carry stones from Dhubri can bring cotton waste on their onward journey. Such opportunities need to be further explored so that cross-border trade via waterways becomes more profitable.<sup>9</sup>

<sup>7</sup> Source: Inland Waterways Authority of India

<sup>8</sup> <https://pib.gov.in/PressReleasePage.aspx?PRID=1625342>

<sup>9</sup> <https://www.thethirdpole.net/2020/07/04/india-bangladesh-expanded-river-trade-opens-up-opportunities-for-locals/>

<sup>10</sup> Ibid 1

One of the other key developments in the recent times is the upcoming Multi-modal Logistics Park (MMLP) at Jogighopa, in Bongaigaon district of Assam. The Assam Chief Minister's cabinet recently approved the handover of 200 *bighas* of land for the construction of the Jogighopa MMLP to the National Highway and Infrastructure Development Corporation Ltd.<sup>11</sup> This project is envisaged to transform the trade-logistics scenario in the North East and its neighbourhood, which also includes facilitating a larger modal share of waterways for transportation in the region.

In future, there are additional plans to develop another MMLP at Silchar in Cachar district of Assam. This will dovetail with plans of linking Silchar to the India-Myanmar-Thailand Trilateral Highway through an expressway passing through Lakhipur, Jiribam, and Imphal and also to Kolkata, India, through Sylhet, Bangladesh, via the India-Bangladesh-Northeast India Corridor. Railway passing through Silchar will connect to Bangladesh via the Agartala-Akhaura line, and Moreh, via Lakhipur and Imphal, thereby connecting this important hub in Cachar district of Assam to both neighbouring countries of Bangladesh and Myanmar. Connectivity to Bangladesh's Chittagong and Mongla ports through a Silchar river port on the Barak river has also been proposed, along with expansion of the existing Silchar airport at Kumbhirgram, as well as planning for a new airport.<sup>12</sup>

### ***Tripura making strides:***

Tripura, one of the other North Eastern states of India, has been taking prompt and proactive steps towards capitalizing on its inland waterways potential, particularly given the latest addendum to the Protocol which was majorly pushed by the Chief Minister of Tripura. In response to the latest addendum on end-May, 2020, Tripura has readied a floating jetty on River Gomati in Sonamura of Sipahijala district, 60 Km from Agartala, as part of the Indo-Bangla international inland waterways connectivity project, in three weeks' time. According to plans, small boats and ferries capable of carrying up to 50 tonnes of cargo would soon start moving through this route to Bangladesh and further, via the neighboring country, to rest of India and beyond. While the Gomati river has sufficient water for movement of boats and small ships in the monsoon seasons, year round movement would need a permanent jetty as well as dredging of river bed for dry seasons. To this end, the Tripura government is already planning of dredging the riverbed of Gomati to make way for small ships and boats from Sonamura till Ashuganj river port of

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<sup>11</sup> [https://www.barakbulletin.com/en\\_US/logistics-hub-in-bongaigaons-jogighopa-a-two-year-old-project-nothing-taken-away-from-cachar/](https://www.barakbulletin.com/en_US/logistics-hub-in-bongaigaons-jogighopa-a-two-year-old-project-nothing-taken-away-from-cachar/)

<sup>12</sup> <https://www.sasec.asia/index.php?page=news&nid=892&url=silchar-as-transport-hub>

### **Tripura-Bangladesh connected through Waterways for the First Time**

The first cargo vessel through Bangladesh is scheduled to reach Tripura on July 18, 2020. This is the first time that Tripura will be connected with Bangladesh through waterways. Till now, goods and cargo-carrying vessels have been coming to Tripura from Haldia by travelling a much longer route through West Bengal, Assam and Meghalaya. The cargo-loaded vessel carrying a consignment of iron bars will start from Haldia port on July 14 and reach Tripura on July 18, 2020. This has been enabled by a recent addendum to the India-Bangladesh Protocol on Inland Waterways Trade and Transit wherein the Gomati river in Tripura is being connected to the Meghna river in Bangladesh so as to access the Ashuganj river port of Bangladesh.

Bangladesh during winters and dry spells.<sup>13</sup> While a permanent jetty on Gomati will be completed in about three years' time and a custom terminal building would have to be built too for the imported goods from Bangladesh, the newest addition to the IBP routes, viz. Sonamura – Daudkandi – Sonamura (Routes 9 & 10), look all set to ensure efficient cargo movement between the two nations to harness a brand new chapter in bilateral cooperation in South Asia. This protocol will have significant implications not only on bilateral trade between India and Bangladesh but also for India's Northeast in general and Tripura in particular. Several of the planned infrastructure and developmental projects across the Northeast will receive a boost with this new development given that cargo movement to North East, particularly in terms of over-dimensional and other heavy cargo needed as components for infrastructure projects, will be easier and more cost effective via the waterways between the two neighbouring countries, with Tripura once again gaining the forefront of deepening engagement with Bangladesh.<sup>14</sup>

#### ***Relevance of Coastal Shipping Agreement:***

Additionally, the Coastal Shipping Agreement signed in 2015 between the two countries is going to be another major enabler for trade-transport-logistics link, connecting the bay to the hinterland of the region through the waterways. Under this agreement, cargo between the two countries can be shipped using River Sea Vessels (RSV) and vessels of either country plying between the two countries and also between places in the same country through other country will be permitted to bunker at 7 sea/river ports on each side viz.

<sup>13</sup> <https://indianexpress.com/article/north-east-india/tripura/tripura-readies-temporary-jetty-for-indo-bangla-inland-waterways-transport-route-in-3-weeks-6490209/>

<sup>14</sup> <https://southasiamonitor.org/spotlight/india-bangladesh-waterway-project-will-herald-new-chapter-bilateral-cooperation>

Chennai, Krishnapatnam, Visakhapatnam, Kakinada, Paradip, Haldia and Kolkata in India, and Chittagong, Mongla, Khulna, Paira, Narayanganj, Pangao and Ashuganj in Bangladesh.<sup>15</sup> Along with the Coastal Shipping Agreement and the PIWT&T, Agreement on use of Chittagong and Mongla Ports in Bangladesh for transit cargo of India was signed in October 2018, with particular emphasis on moving transit cargo to and from North East states of India via multimodal transport within Bangladesh. As per this agreement the two sea ports are to be used as entry-exit points for cargo moving through the border-crossing points of Agartala-Akhauri,



Figure 2: Land Border Crossing Points connecting to sea port

Srimantapur -Bibir Bazar, Sutarkandi-Sheola and Dawki-Tamabil along the India-Bangladesh land border (see figure<sup>16</sup>). During the first Inter-Governmental meeting in December 2019, it was proposed that the border-crossing point of Dalu -Nakugaon (at the Meghalaya- Bangladesh border) be included as an additional new route under this agreement and it was agreed that amendments to the agreement will be made accordingly during the next Shipping Secretary Level Talks in 2020.<sup>17</sup>

### India-Bangladesh Inland Waterways Transport: Growth and Trends

Over the years, the traffic on the IBP route has been steadily growing but it has largely remained restricted to exports of Fly Ash from Kolkata and Haldia area in India to Narayanganj and Khulna in Bangladesh and minor volumes of few other commodities. A look at traffic statistics on the IBP routes over the years reveal an absolute pre-dominance of Fly Ash in the cargo share. The graph and table<sup>18</sup> below show this.

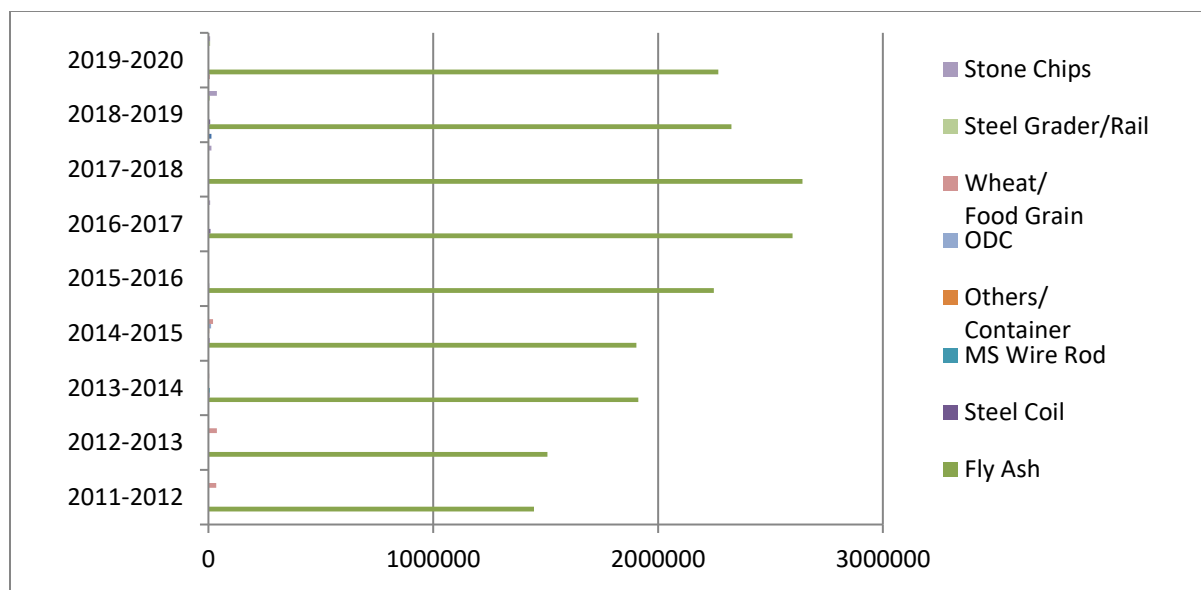
<sup>15</sup> Ibid 1

<sup>16</sup> Figure source: Inland waterways Authority of India

<sup>17</sup> Ibid 1

<sup>18</sup> Data Source: Bangladesh Inland Water Transport Authority, all figures in tonnes



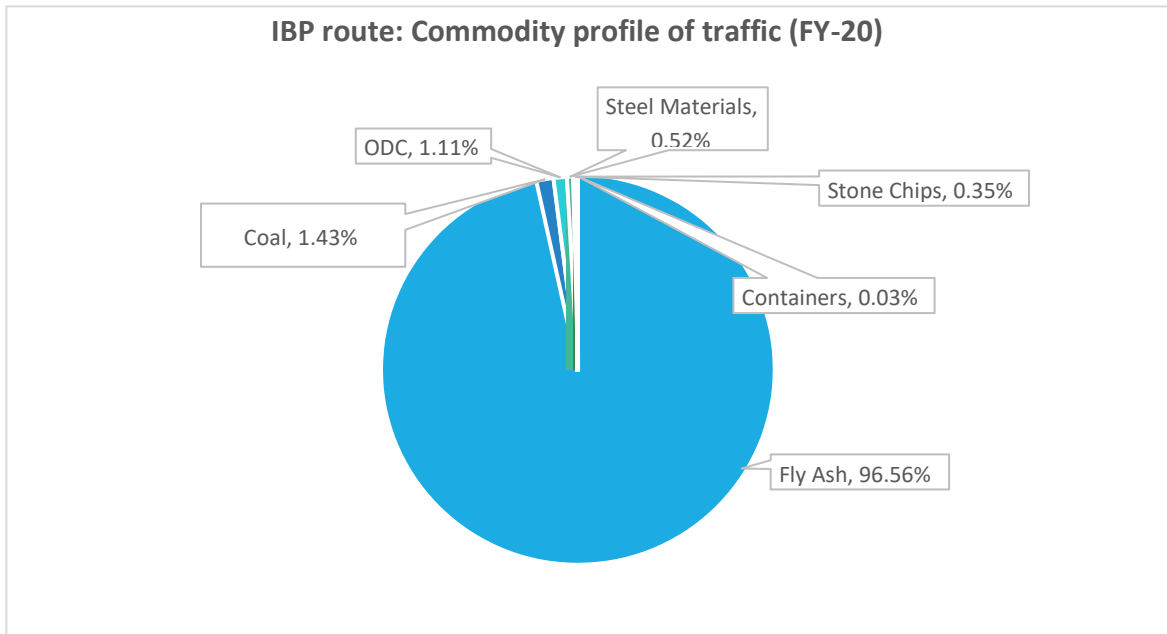


Graph 1: Commodity wise Cargo Trade under PIWT&T since 2006-2007 to 2019-2020 (up to December 2019)

Year	General Cargo	Coal	Fly Ash	Steel Coil	MS Wire Rod	Others/ Container	ODC	Wheat / Food Grain	Steel Grader/Rail	Stone Chips
2011-2012	0	610	1448562	0	0	622	0	34708	0	0
2012-2013	0	2085	1507357	0	0	0	0	37171	0	0
2013-2014	2124	0	1912751	4873	5987	2392	0	3450	0	0
2014-2015	2262	1410	1903457	4853	0	3215	11506	21059	0	0
2015-2016	2025	0	2247773	2984	1004	0	1291	0	1999	0

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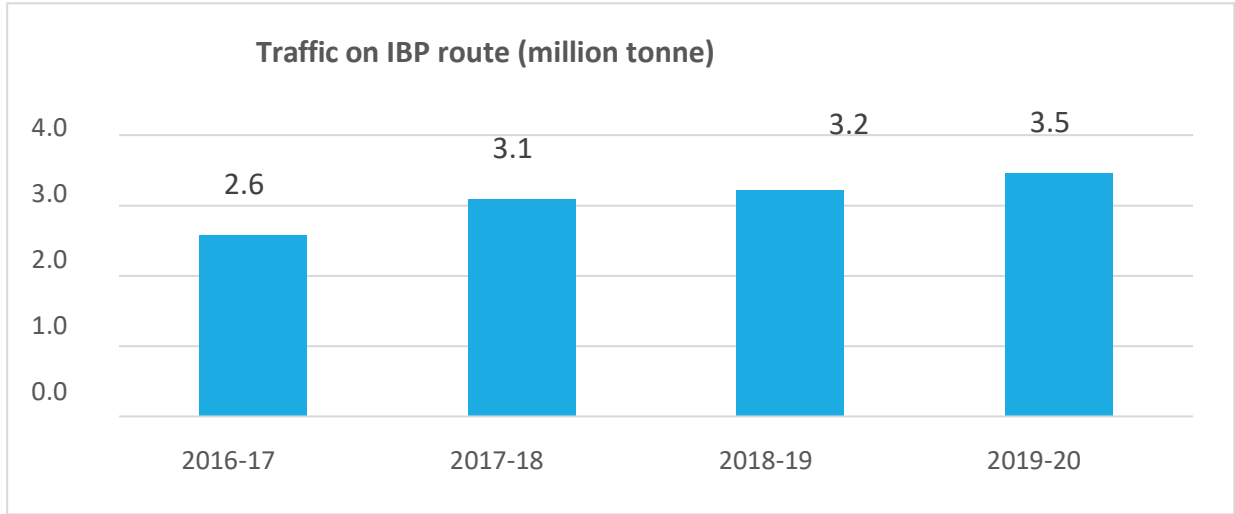
6										
2016-2017	352	0	2598023	9371	0	2363	0	2535	0	7130
2017-2018	0	0	2642298	0	0	0	2386	0	0	13352
2018-2019	13012	0	2327147	7363	0	0	0	0	6322	37962
2019-2020	0	4512	2268261	0	0	665	117	0	8103	7115



**Graph 2: Type of Cargo transported on the IBP Routes in 2019-20**

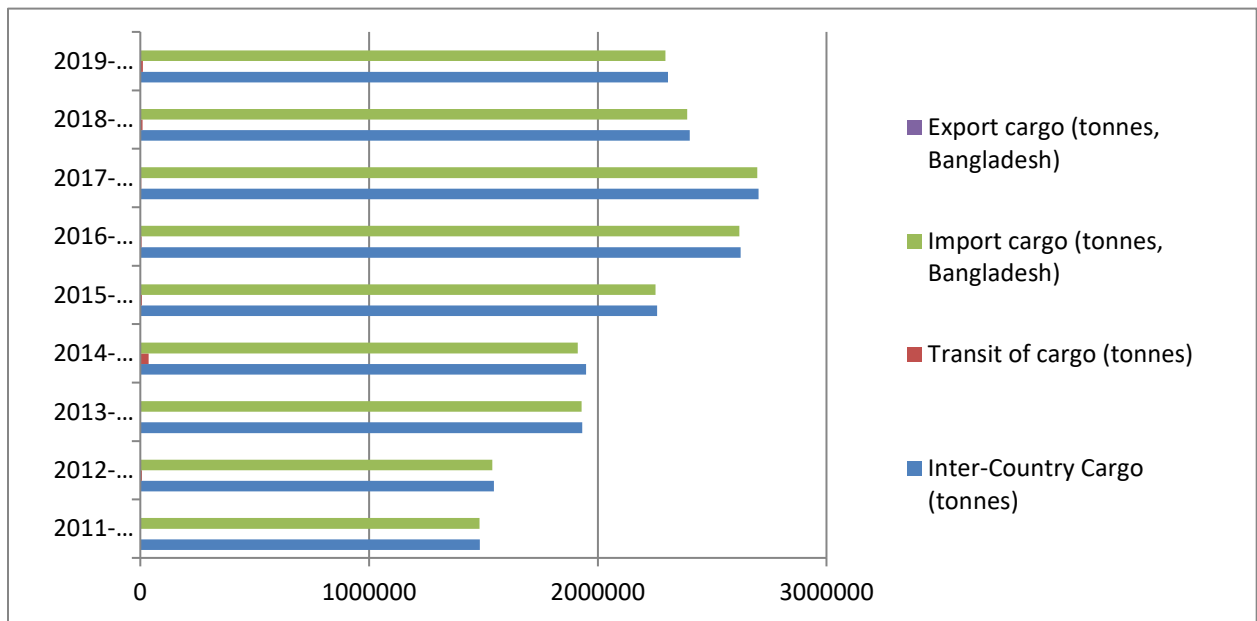
An analysis done by the Inland Waterways Authority of India shows that Fly Ash constituted more than 96% of the cargo in financial year 2019-20, with coal a distant second at merely 1.43% and ODC at 1.11%. Roughly 3.5 million tonnes of cargo was transported using the IBP routes during financial year of 2019-20 and it is expected that around 4 million tonnes of cargo will be moved using the IBP routes in during financial year 2020-21. One encouraging trend is that the cargo being transported through the IBP

routes has consistently grown over the years, even though the kind of cargo has not changed much<sup>19</sup>



**Graph 3: Quantum of Cargo on the IBP Routes over the years**

A quick analysis of the movement also reveals that the traffic predominantly moves from India to Bangladesh. This is apparent when one compares the trend of Import Cargo with Inter-Country Cargo over the years. In fact it is mostly the movement of Fly Ash from Kolkata and Haldia of India to Narayanganj and Khulna of Bangladesh. The table and graph below exhibit this phenomenon.



**Graph 4: Movement of cargo under PIWT&T since 2006-2007 to 2019-2020 (up to December 2019)**

<sup>19</sup> Data and graph source: Inland Waterways Authority of India

**Table 2: Statistics on movement of cargo under PIWT&T since 2006-2007 to 2019-2020 (up to December 2019)**

Year	Inter-Country Cargo (tonnes)	Transit of cargo (tonnes)	Import cargo (tonnes, Bangladesh)	Export cargo (tonnes, Bangladesh)
2011-2012	1485002	770	1483732	500
2012-2013	1546613	7405	1539208	0
2013-2014	1931577	2373	1929204	0
2014-2015	1949454	36928	1912564	0
2015-2016	2259654	6929	2252725	0
2016-2017	2624614	6178	2618384	0
2017-2018	2702571	4876	2697695	0
2018-2019	2401796	10512	2391255	0
2019-2020	2306715	11082	2295633	0

Source: PIWT&T

The present status notwithstanding, the IBP routes have immense potential for traffic movement in the region with particular emphasis on Bangladesh and the North Eastern states of India. This is obvious given the much-talked about and well known fact of North-East's only access to the rest of India through the "Chicken-neck" corridor in Siliguri, West Bengal. Given this, Siliguri is a major hub for trade, commerce and logistics in the region and a vital lifeline for the North East Indian states. As per estimates, more than 50 million tonnes of cargo moves through the Siliguri corridor by rail and road annually. There are geographical challenges to connectivity between this Siliguri corridor and the larger North East given the hilly terrain with steep roads and, multiple circuitous bends, difficulties in building and maintaining roadways, frequent landslides in hilly areas and the likes. This translates into higher time and costs for transportation. The reduction in distance along with lower cost of transportation via the inland waterways

**First containerised movement on IBP routes:** In line with Government's focus on improving connectivity of the North Eastern Region (NER), a landmark Container cargo consignment sailed from Haldia Dock Complex, West Bengal, to Pandu Port in Guwahati, Assam, India on NW-2 on 4<sup>th</sup> November 2019. The inland vessel MV Maheshwari carried 48 TEUs (food & beverage, edible oil etc.) for its voyage via NW-1, NW-97 (Sundarbans), IBP route and NW-2 to reach Guwahati. This initiative was taken to demonstrate the technical and commercial viability of Inland Waterways connectivity to NER to instill confidence in the industry for the modal shift of traffic and is at the same time engaging with stakeholders such as BIWTA, Customs authorities and Industry to address and resolve operational and procedural constraints. (Source: IWAI)

mode has the potential to reduce logistics cost for the industry based in the North East region. Moreover, the waterway connectivity through the IBP route provides industries based in the North Eastern states direct access to Kolkata Port Trust's (KoPT) Kidderpore Dock System (KDS) and Haldia Dock Complex (HDC) located on NW-1, thereby enhancing their potential for EXIM trade.

Although, the regular use of IBP route for movement of transit cargo to and from North Eastern states has largely been limited to Over Dimensional Cargo (ODC) such as Turbines, Structural materials etc. which is difficult to move on Road and Rail, in FY 19-20, five movements consisting of containerized and imported coal were done from HDC to Pandu, Guwahati (NW-2) using the IBP route, thereby building confidence in the industry for regular use of the IWT mode.<sup>20</sup> In more recent times there have been some shifts in terms of the nature of cargo, both within and across borders. In November 2018, Food and beverage giant PepsiCo India used the Ganges River (NW1) to ship containers equivalent to 16 truckloads- filled with food and snacks in the vessel MV R N Tagore. The trip from Kolkata to Varanasi was the first cargo container shipment on India's inland waterways since the country's independence 70 years ago. In its return journeys the vessel carried back fertiliser from IFFCO plants near Phulpur in Allahabad, Uttar Pradesh.<sup>21</sup> Following this there was cross-border movement of transit containerised cargo of food and beverages that happened in 2019 (see box). Also, a substantial portion of the Indian exports of vehicles, trucks and buses are now being transported through the Mongla port into Bangladesh. Indian company Ashok Leyland, one of the main suppliers, has opened a truck assembly plant in Dhamrai, Savar, in 2017.<sup>22</sup>

### **Rationale for IWT mode for sub-regional trade in agri-horticulture and allied products**

Overall the Inland Waterways along with Coastal Shipping arrangements between India and Bangladesh is envisaged to act as growth and connectivity engine for the region through an economical and greener mode of transport. It provides for an alternate route to the congested land routes where cargo faces various challenges including long waiting time, multiple cargo handling, damages, local rent seeking, etc. The waterways also make for a much cheaper option for transportation. A study the Rail India Technical and Economic Service(RITES) in respect to the Integrated National Waterways Transportation Grid shows that '*1 litre of fuel will move 24 tons through 1 km on road, 95 km on rail and 215 km on inland water transport.*' To cite some concrete examples, a large container

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<sup>20</sup> Ibid 1

<sup>21</sup> <https://timesofindia.indiatimes.com/business/india-business/pm-to-greet-indias-first-container-vessel-on-inland-waterways-in-varanasi/articleshow/66498522.cms>

<sup>22</sup> Ibid 14

ship weighing about 2,000 tonnes can transport up to 90 containers, the equivalent of 90 truckloads of cargo and leading to commensurate cost and emission cuts. Similarly, a large car carrier vessel can carry up to 300 small cars is would remove the equivalent of 50 car-carrying trucks from the road.<sup>23</sup>

Also, the waterways are arguably a less expensive mode to reach the last mile, particularly for the NR-Bangladesh sub-region. While roadways traditionally have an advantage of providing last mile connectivity, but in case of difficult terrains like the North East Indian states, roads do not always have that advantage given reasons already discussed earlier. So, for the sub-region comprising of North East India and Bangladesh in particular, waterways is a strong contender as a preferred mode of transportation, as it was in historical times. One of the inherent advantages of waterways is that it continues to provide connectivity even during heavy monsoons and flood situation, which is an annual phenomenon in the region, while other modes get disrupted and prohibitively expensive due to circuitous routes needed. A recent publication<sup>24</sup> compares the feasibility of roadways and waterways as modes for transportation for cross-border value chains in agri-horti produce has done a comparison of distances between the production centres of agri-horti produce across the NER from the Land Customs Station (LCS) vis-à-vis the waterway terminals. It observes that *“it is evident from the data that on an average 206kms of road travel will be saved if the select products are sent through waterways instead of roadways. The waterway borne consignments could be shipped at Pandu or Dhubri and these consignments can avail the PIWTT and directly reach Ashuganj, near Dhaka, through NW2. From Ashuganj these consignments could be again loaded in trucks and dispatched to their respective destinations. According to representatives of the food processing industries, since most of the big processing units are located near Dhaka, this would take less time than the usual route through land borders.”*

### ***The NER-Bangladesh Collaboration Advantage in Agri-horticulture and allied Sectors***

Given the above discussed positive aspects and also the fact that the sub-region is very rich in agri-horticulture and allied produce, there could be win-win collaborations across the borders to do value additions to raw materials, produce and create cross-border value chains. To cite an example, the case of the state of Tripura, can aptly demonstrate the potential and promise that this idea holds. Tripura is an agrarian state with more than half of the population dependent on agriculture and allied activities. Out of the 27% of land that is available for cultivation, 91% is used for cultivating rice. With the opening of inland

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<sup>23</sup> Inland waterways revive South Asia arteries of trade, Bob Saum, Junaid Kamal Ahmad, <https://blogs.worldbank.org/endpovertyinsouthasia/inland-waterways-revive-south-asia-arteries-trade>

<sup>24</sup> Ganguly Arnab and Bijaya Roy, Potential for Creating Cross-Border Value Chain in Select Horticulture Products and Spices between North East India and Bangladesh using Inland Water Transport, CUTS International, 2019

waterway, the state can introduce incentives to develop the agricultural activities in the region for trade with Bangladesh.

One of the recent publications from the World Bank<sup>25</sup> supports this through evidence based analysis. The publication looked at *Strengthening Cross-Border Value Chains between India and Bangladesh* examined four value chains in depth, viz. fruits and vegetables, spices, bamboo and related products, and medical tourism. The report *provides an assessment as to how value chains in NER can be strengthened while also providing more and better jobs to women and the bottom 40 percent of the workforce*. It says that *increasing connectivity is a win-win for both NER and Bangladesh. A growing market for NER products in Bangladesh benefits the latter's consumers, and foreign direct investment is good for NER but also good for Bangladeshi firms that can gain access to inputs and land and learn in a culturally similar environment.*" The publication also stresses that the *North Eastern Region (NER) of India is positioned favorably for the cultivation of several agri-horti products including fresh fruits, vegetables and spices. NER's diversity of agro-ecological zones, high share of high-value products, and relatively lower penetration of (chemical) input intensive cultivation align the region extremely well with the fast-growing global consumer segment seeking fresh and good quality products.*

For Bangladesh and other neighbouring countries, the emergence of such linked high-value production cluster in their vicinity offers several advantages. Bangladesh is a net importer of spices and other food products. NER provides Bangladesh an alternative source of fresh and quality fruits, vegetables, spices, with particular emphasis on low or no chemical and organic produce which are increasingly garnering high prices and minting demand across the region and all over the world. Given this, *there are opportunities for firms from Bangladesh to create and appropriate value in this value chain. Bangladesh, with its vibrant food industry, could also invest in farms and other businesses along the value chain in NER. Its logistics providers could partake of margins generated in the value chain by providing services, especially if transit through Bangladesh is made possible through the required policy changes. Such transit would cut down the time and costs to reach markets in India and abroad, which could be a key enabler for NER's horticultural value chains, especially those related to fresh products where the time taken in transportation plays a very important role.*

In view of the above discussions, it is evident that there are myriad benefits from creation of cross-border value chains in agri-horticulture and allied products between India and Bangladesh and also effectively utilising the waterways as a mode of transport in that

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<sup>25</sup> Kathuria, Sanjay, and Priya Mathur, eds. "Strengthening Cross-Border Value Chains: Opportunities for India and Bangladesh." Development Knowledge and Learning. World Bank, Washington, DC. License: Creative Commons Attribution CC BY 3.0 IGO

context. One such unique case of Floating Guava Markets of Barisal district of Bangladesh is shared here as an example.

### **Floating Markets of Bhimruli, Barisal, Bangladesh: A Unique combination of Agri-Horti Trade, Tourism and Socialising**

Bhimruli- a village of Jhalakathi district in Barisal, has been known for its floating market of guava (peyara) and hog plum (amra). Though Bhimruli offers various products to buy throughout the year, the highest economic activity happens during the season for guavas and hog plums. Over time, the 200-year-old guava markets of Bhimruli and Atghar Kuriana have gradually become hubs for all sorts of produce and agricultural products. In addition, along the place has recently picked up a lot in terms of foot falls given an increasing influx of tourists to experience this unique floating agri-horticulture product market, which has substantially added to the economic avenues of the market. As per report from the Daily Star, a leading newspaper in Bangladesh, *Local farmers and businesses cannot be happier to witness the rise in number of visitors at the markets. Tea stall owner Shubhrojit said, "Thanks to better road conditions, hundreds of visitors are coming to the markets, helping pick up my sales fivefold." A local guava farmer, Satish Halder, said, "We used to sell a kilogram of guava at half a taka during peak season. But now, we get at least Tk 8 to 15 for a kg from the tourists."* Bhimruli Floating Guava Market is an unique example where agro-horti producers, aggregators, boatmen and transporters, tourists and linked service providers all come together to create a thriving local-economic-social space. Such examples can be expanded and replicated for myriad and wider economic benefits across the sub-region.

(Photo Courtesy: Md. Moazzem Mustakim; <https://www.flickr.com/photos/mostakimtimur/20575763140>)





## **Challenges and Recommendations:**

Given the recent and emerging developments and also the natural complementarity that exists between the NER and Bangladesh, promotion of cross-border value chains in agri-horticulture and allied sectors is a win-win proposition. In particular reference to the present situation across a substantial part of the world given the COVID19 pandemic, economies across the world are facing troubled times with jobs and livelihoods options plummeting, in the face of such a scenario, it becomes all the more important to be able to revive the agrarian sectors for India and Bangladesh where a substantial percentage of the population depends on the agri-horticulture and linked sectors for their livelihoods. Hence, it is crucial that the existing opportunities created in this space through the proactive and positive steps from the governments on both sides, is effectively capitalized.

However, there are certain challenges to this end, owing to various factors like inadequate physical and digital connectivity, particularly in the last mile, inadequate supply chain infrastructure, low capacity and awareness among producers regarding market intelligence, needs and trends, tariff and non-tariff barriers (e.g. lack of quarantine and testing facilities across land, rail and riverine routes) to cross-border movement of produce, between India and the NER unfavourable perceptions from private sector regarding some parts of the sub-region and the likes. In terms of waterways transport specifically there are challenges like unpredictability of navigability of IWT routes all year-round, lack of confidence among private players regarding safety and security of IWT routes for business transportation, etc.

Given these challenges some of the possible recommendations to work around these challenges are as below:

- 1. Promoting and Effectively Leveraging Investments in Multi-modal Logistics with Private sector managed operations:** Both governments have been investing a lot of physical connectivity including roads, railways and waterways. In this case waterways transportation systems has received substantial boost in the recent times. However the infrastructure needs further development, with particular reference to last mile connections. Waterways can effectively serve as a low cost connector between the various modes as already discussed in this paper. It is also crucial to promote waterways alongside other modes so as to build private sector confidence to effectively utilise the upcoming and already existing multi-modal infrastructure. Alongside operations need to increasingly open up to private sector operators so as to encourage competition, build efficiencies and promote innovation. Some such efforts are already happening on both sides.
- 2. Improving last mile connectivity and the links of other modes to waterways:** For the ambitious investments in physical infrastructure to make sense for the

common producers and people, it is critical that last mile connectivity be prioritised. Existing waterways can be natural mode for last mile connectivity without the associated costs for last mile road connectivity. To prioritise and make investment feasible and viable it is crucial to utilise the natural advantage of waterways that serve as existing connector without large investments as is usually needed for roads and railway connectivity. However, what will be crucial is to ensure that such existing waterways are suitably navigable and are linked to the other modes. To this end, strengthening inter-modal links will be important. For this it is important to do *a thorough assessment and study of key last-mile connectivity gaps and prioritisation of possible infrastructure projects to bridge those gaps.*

- 3. Promotion of Production and Aggregation Clusters:** Aggregation of small surplus is a challenge in this region with small and marginal farmers finding it difficult to find markets and likewise aggregators and processors finding it difficult to achieve economies of scale for collection from diffused producers. There could be specific schemes and targeted infrastructure development for bringing together producers, aggregators and other buyers. There could specific clusters created for the organic, high food value products of NER along with clusters for specific states and districts along riverine and other modes of transport with a hub and spoke model where smaller collection centres can be the spoke to the hub located near proposed multimodal logistics and transportation junctions. This will help in structuring domestic supply chains and provide scale of economies to buyers from the private sector.
  
- 4. Developing seamless transport networks with cold chain facilities connected to technology aids, to dovetail with the production and aggregation clusters:** To ensure that fresh produce is delivered fresh to either end consumers in its original form or to processing plants for further value additions, it is important to link the production and aggregation clusters with a strong transport network equipped with cold chains. This network can link to the production and aggregation clusters at strategically located points, ideally the hubs for the aggregation clusters. The aggregation clusters can ensure a steady supply from scattered farms and producers. Consumers are becoming increasingly conscious about the food they consume and it is important that products meant for the fresh consumption in particular is transported quickly through humidity and temperature controlled mechanisms. To this end it is extremely important to integrate technology solutions in these supply chains. For example, technologies such as *blockchain* are being used to enhance the traceability of products while allowing for control checks for safety and standards. In some cases, “smart tags” with quality sensors are used to monitor the temperature at which the product moves along the value chain, a key factor in

maintaining the freshness of the product. The application of *blockchain* technology has the potential to create transparency, reduce operational costs, and improve food safety, while also improving inclusiveness.<sup>26</sup> Such similar technological interventions can be explored.

- 5. Branding and Promotion of products and offerings:** The entire sub-region has many unique and high value products to offer to the rest of the world and also the consumers in the region as well. With ever increasing consumer consciousness and layered demands for high-value, safe, environment friendly and ethical products, it is crucial that the right branding and promotion is done, particularly since the NER indeed has products that have unique value proposition (e.g. Lakadong turmeric with the highest *curcumin* percentage in the world). It will be useful to create, brand building and recognition using the unique natural qualities of products and also by maintaining quality through technology solutions and quality assurance practices. This needs to be supplemented by defined product and process standards, which will help to maintain quality and traceability for the products, which in turn, will facilitate alignment with high-value markets.
- 6. Building Producer Skills and better linkages between producers and R&D institutions:** Producers in the sub-region need substantial capacity building on market intelligence, high quality inputs, modern processes, practices & techniques on cultivation and harvesting, global demands (e.g. sanitary and phyto-sanitary needs of various export markets), etc. To this end it is crucial to be able to better extension services with strong and quick linkages between farm level and the R&D institutions so that innovations in the labs based on changing consumer demand scenarios can reach the farm level for quick uptake and production of quality products.
- 7. Ensuring better access to finance for various supply/value chain stakeholders:** it is crucial that stakeholders in the agri-horti and allied sector supply/value chains have access to easier and better finance given the need for enhancement to capacity, technology aid and other modern tools for improving the overall performance of the sector. This will be critical for the stakeholders to be able to align to practices, demands and needs of larger regional and global value chains. Specific targeted schemes can be thought of for women entrepreneurs to this end.
- 8. Reducing Trade Costs by lowering tariff and non-tariff barriers:** The sub-region suffers from some of the highest trade costs and hence one of the lowest intra-region trade. Non-tariff barriers include infrastructural barriers, procedural and documentation barriers, port restrictions, lack of testing and quarantine facilities at

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<sup>26</sup> Ibid 25

most border-crossing points, etc. These need to be phased out gradually with proper infrastructure building, procedure simplifications, training of border officials, higher dialogues between working officials and traders, etc. A lot of that has already happened like single-window systems at ports, state-of-the-art Border Crossing Points along the land border, high level talks between officials of the countries to deal with trade barriers, etc. A lot of is additionally in the process of happening to this end particularly given that both India and Bangladesh are signatories to the WTO Trade Facilitation Agreement which is already in force since February, 2017. However, this needs mentioning here since this is one of the biggest challenges to cross-border trade and connectivity.

- 9. Building state-of-the-art and world class processing units operating in alignment with global Good Manufacturing Practices:** This will be important to be able to cater to global and high value markets. NER does not have many processing units to start with. While Bangladesh does have and the complementarities in terms of raw material supply from NER and processing in Bangladesh could be a win-win, it is important that the processing units are certified for the highest quality assurance in terms of technology, plant, processes for the entire post-harvesting chain. These need to align and be upgraded so that the sanitary and phyto-sanitary requirements for destination markets can be met. This will ideally need collaboration and investment, both in terms of technology and finance, from regional and global leaders in food processing sectors.

### **Ideas to explore:**

#### **River-bank Ghat Markets as Aggregation Clusters for sub-regional Value Chains in Agri-horticulture products:**

An idea for river-bank Ghat Markets can be explored as a Hub-and-Spoke model to promote cross-border Agri-horti value chains in the sub-region. The idea will be to create an organised domestic supply chain using rivers as transport arteries and river-bank Ghat markets as planned collection-aggregation-trading points with specific markets or routes for specific products will help bring scale, ease of access and management for private sector players. The smaller ghat-markets can become the spokes and major commercial centres with multi-modal junctions can serve as aggregation and consolidation hubs. With the right transport and supply chain infrastructure, private sectors can find it easier and economical to aggregate produce along the river banks and bring it to centrally located redistribution points or processing units, which in turn, will help in value chain development.

There could be an idea for “One-Ghat-One Product” or “One-River Route-One Product” as a Branding Exercise where a value-chain for specific variety of agri-horticultural item could be developed with private participation. It can also enable end producers to directly sell their produce to aggregators or processor through specifically targeted schemes and arrangements like farmer/producer markets. In the cross-border space, this idea can be tweaked to have “Border Ghats” in the same lines as existing Border haats along the India-Bangladesh border.

In addition to being part of the supply chain for agri-horti and allied products, these spaces can very well double up as tourism destinations (like the Floating Guava Market of Bhimruli, Barisal, Bangladesh) leading to the creation of a sustainable ecosystem of livelihood for people in the remote and riverine locations of the sub-region.