

# Role of Multi-modal Connectivity in Fostering Value Chains in the BBIN Sub-region





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# Abbreviations

APEDA:	Agricultural and Processed Food Products Export Development Authority of India
BBIN:	Bangladesh, Bhutan, India, Nepal
GDP:	Gross Domestic Product
GVCs:	Global Value Chains
ICDs:	Inland Container Depots
LPI:	Logistics Performance Indicator
MoU:	Memorandum of Understanding
MVA:	Motor Vehicles Agreement
OECD:	Organisation for Economic Cooperation and Development
PIWTT:	Protocol on Inland Water Transit and Trade
RMGs:	Readymade Garments
RVCs:	Regional Value Chains
SAARC:	South Asian Association for Regional Cooperation
SASEC:	South Asian Sub-Regional Economic Cooperation
SoP:	Standard Operating Procedures
UDAN:	<i>Ude Desh Ka Aam Nagrik</i>



## Abstract

Bangladesh, Bhutan, India, Nepal (BBIN) sub-region holds immense economic and trade potential for deeper economic engagement given the strong historical, cultural and ethnic ties among these neighbouring countries. However, integration of this sub-region is severely affected by sub-optimal connectivity in different modes of transportation and their weak inter-linkages. This impedes the growth of bilateral and regional value chains. In this context, this paper aims to underline how multi-modal connectivity can facilitate and strengthen the existing Regional Value Chains (RVCs) with respect to specific commodities, and/or enable the creation of new RVCs in this sub-region.

Our study concludes that except for the Kolkata-Dhaka corridor, which experiences time and resultant cost barriers primarily due to traffic congestion at the Petrapole-Benapole border, multi-modal connectivity is a cost-efficient mode for moving goods among the BBIN countries through various other existing corridors. In addition, it is also environment-friendly, for it would ensure less carbon emission. The study also highlights various challenges to multi-modal connectivity and suggests recommendations to address those challenges.

# Introduction

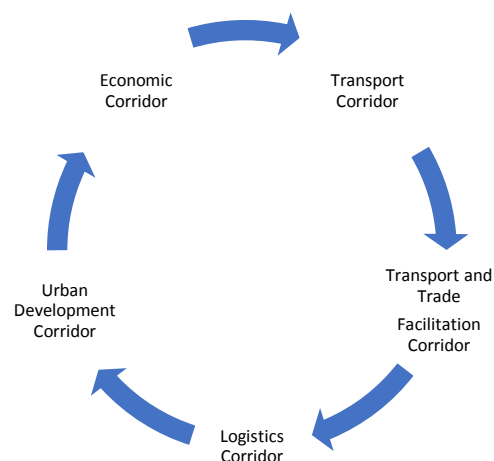
Bangladesh, Bhutan, India, Nepal (BBIN) sub-region drew attention as a result of failures of SAARC (eight-member South Asian Association for Regional Cooperation) countries to reach a consensus on critical agreements pertaining to regional integration in South Asia (Karim, T and M S Balaji, 2016). One of the examples has been the Motor Vehicles Agreement (MVA) signed on June, 2015 among the BBIN countries. The agreement was first tabled at a SAARC ministerial in 2014 meeting but owing to strained political relations between India and Pakistan, it could not see light of the day (CUTS, 2017A).

The BBIN MVA aims to facilitate smooth cargo and passenger movements, and promote greater connectivity and integration among the BBIN countries. While owing to domestic reasons Bhutan decided against being a part of the MVA, the other three countries have decided to go ahead with the agreement and presently the respective national governments are in the process of finalising the protocols regarding standard operating procedures (SoP).

It is considered that the effective implementation of the BBIN MVA will create new opportunities of growth and development for the BBIN countries. The primary goal of the agreement is to develop functional transport corridors and subsequently convert them to economic corridors (De, P and K Iyengar, 2014). These economic corridors are expected to play an instrumental role in strengthening existing value chains and in creating new ones.

Therefore, CUTS International with the support of the U.S. Department of State conducted a study (CUTS, 2018 A) across eight BBIN corridors to identify the gains from better and enhanced connectivity emanating from the BBIN MVA, understand people's perceptions about BBIN MVA, and also highlight the bottlenecks towards its effective implementation. One of the important findings is the need to address infrastructure deficits (that is, lack of good quality roads, inadequate number of Inland Container Depots (ICDs), sub-optimal use of containerised cargo, etc.) for successful implementation of the MVA.

The study also underlined the need to promote a multi-modal transportation system to facilitate both time- and cost-effective cargo movement, so that production centres in one country get better integrated with consumption points in another country via



**Figure 1: Stages of transformation of a Transport Corridor into Economic Corridor**

*Source: Adopted from ADB, 2011*

processing/manufacturing nodes that could exist in a third country. This would effectively promote symbiosis among countries in the BBIN sub-region and enable the creation of RVCs.

Given this context, this paper aims to underline the role of multi-modal connectivity in facilitating and strengthening RVCs in respect of specific commodities and/or creation of new RVCs in the BBIN sub-region.

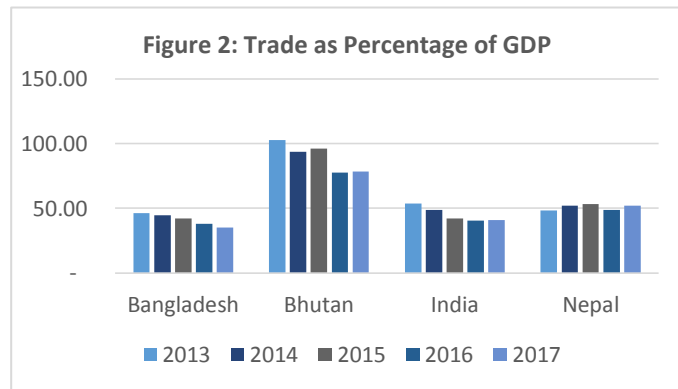
This paper consists of four sections. The first section provides a brief overview of the BBIN sub-region and current nature of its trade. The second section identifies existing and potential products in which value chains exist and products in which they can be fostered. Section three underpins the importance of multi-modal connectivity and its role in reducing transportation cost, and how it can contribute to the development of value chains in agriculture and processed products. It also analyses key challenges to multi-modal connectivity in the BBIN sub-region. The final section offers a set of policy recommendations to help BBIN countries promote multi-modal connectivity as a means to bilateral and regional value chains.

# 1

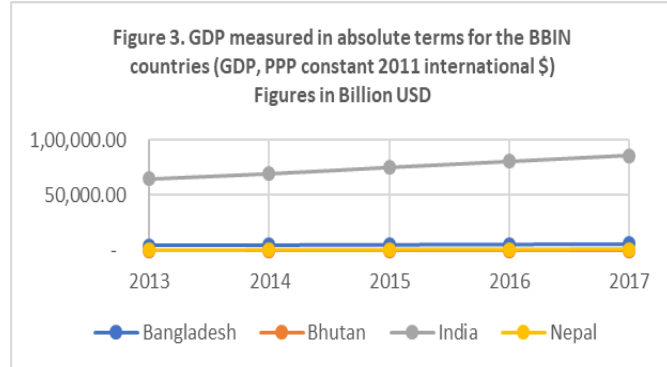
## An Overview of the BBIN Sub-region

### Intra-regional Trade

The BBIN sub-region is home to 1.56 billion people (of which India constitutes about 87 per cent) with a combined gross domestic product (GDP) of US\$2.5tn. India and Bangladesh are the biggest economies in this sub-region in terms of geographic, demographic and economic indicators. As shown in Figure 2, the trade-GDP ratio (expressed in percentage) for countries in the BBIN sub-region vary. This ratio is used as a close approximation to understand the degree of dependence of a country on trade. In general, a higher trade-GDP ratio indicates greater dependence on trade compared to a lower one indicating that a country is less dependent on trade. However, a lower ratio could also indicate a greater proportion of increase in domestic GDP compared to trade volume.

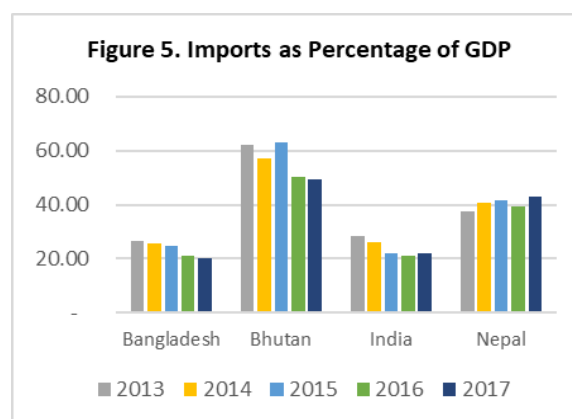
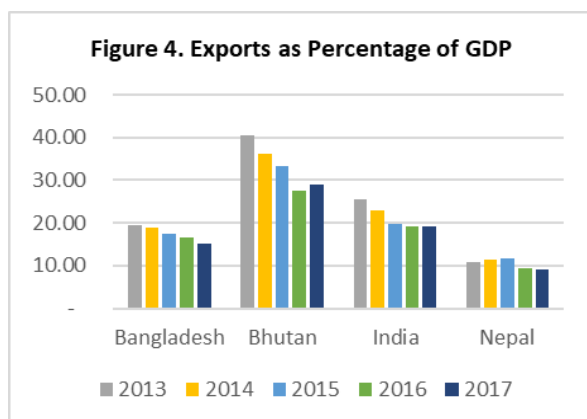


Source: World Development Indicator



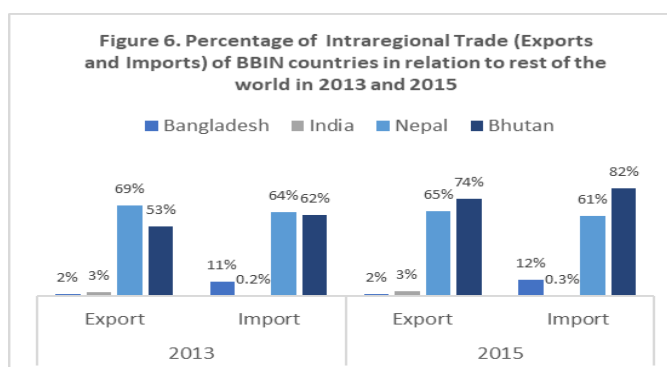
Source: World Development Indicator

In case of the BBIN countries, between 2013 and 2017, India and Bangladesh experienced a more than proportionate rise in absolute GDP (measured in purchasing power parity terms, constant 2011 US\$) compared to their growth in total trade (Figure 3). In contrast, Bhutan and Nepal registered moderate increase in their national GDP but maintained more or less the same level of growth in total trade volume. A deeper analysis by decoupling the ratio of *Exports to GDP* and *Imports to GDP* reveals that land-locked countries like Bhutan and Nepal are heavily dependent on imports (Figures 4 and 5).



Source: World Development Indicators

Furthermore, Figure 6 demonstrates a BBIN country's total exports and imports that take place within the BBIN sub-region as compared to that country's trade with the rest of the world. It is evident that a significant volume of exports and imports of India and Bangladesh happen with countries outside the BBIN sub-region. On the other hand, the bulk of the trade of Bhutan and Nepal happens with countries within this sub-region. The answer to such regional variations in intra-regional trade lies partly in the topographic challenges faced by mountainous and land locked countries like Bhutan and Nepal.



Source: World Development Indicator

Both Bhutan and Nepal are dependent either on Indian sea ports or on the land routes located/passing through India for importing/exporting goods from countries outside/within the South Asian region. For example, bulk of the trade between Nepal and Bangladesh happens through the Kakarvitta-Panitanki-Fulbari-Banglabandha corridor, and the stretch between Panitanki and Fulbari lies within India.

#### Box 1: A Case in Perspective

Import consignments from Southeast Asian countries to Nepal are generally routed through either the Kolkata or the Vishakhapatnam sea port in the east coast of India. The consignments once unloaded at the sea ports are transported to Nepal via the land route, whereby transshipments at the India-Nepal border, add to the time and cost of transporting them. The BBIN MVA will help reducing the transportation cost by allowing seamless movement of Indian trucks within Nepal and vice versa from the port in Kolkata/Vishakhapatnam directly to their destinations in Nepal, requiring no transshipment in the process.

## Composition of Intra-regional Trade

Table 1 lists out some of the major commodities traded among the BBIN countries. While various other commodities like industrial goods, mechanical and electrical goods, crude and chassis are also traded among these four countries, they have not been considered in the present study and hence have not been included in Table 1.

**Table 1: Intra-regional Trade among the BBIN Countries (other than industrial products)**

Name of trading partners and direction of trade	Primary products	Manufacturing products	Processed products
India's exports to Bangladesh	Cotton, Fresh fruits, Cereals, Edible vegetables and certain roots and tubers.	Limestone flux, Man Made Staple Fibres	Tea, Spices.
India's imports from Bangladesh	Vegetable textile fibres; Fish; Raw hides and Leather.	Cement clinkers, Articles of apparel and clothing accessories, not knitted or crocheted, Other made-up textile articles; worn clothing and worn textile articles rags; paper yarn and woven fabrics of paper yarn.	Fruit Juice and Beverages
India's exports to Bhutan	Fruit, nuts or other parts of plants; Edible fruit and nuts	-	Coffee & Spices; peel of citrus fruit or melons, Beverages and Spirits; Preparations of vegetables, Tea
India's imports from Bhutan	-	Wood and articles of wood; wood charcoal; Articles of stone, plaster, cement, asbestos, mica or similar materials;	Preparations of vegetables, fruit, nuts or other parts of plants
India's exports to Nepal	Cereals; Cotton; Fresh fruit; Nut; Edible vegetables and certain roots and tubers	Fabrics and apparels	Pharmaceuticals product, Spices
India's imports from Nepal	Edible fruit and nuts; Fresh Fruits; medicinal plants.	Footwear, gaiters and the like; parts of such articles; Other made-up textile articles; sets; worn clothing and worn textile articles, rags,	Peel of citrus fruit or melons; Sugars and sugar confectionery; Beverages, spirits and vinegar;

Name of trading partners and direction of trade	Primary products	Manufacturing products	Processed products
Nepal's exports to Bangladesh	Edible vegetables and certain roots and tubers;	-	Miscellaneous edible preparations.
Nepal's imports from Bangladesh	Other vegetable textile fibres, Cotton;	Paper yarn and woven fabrics of paper yarn; Apparel (Intermediate and final);	Preparations of vegetables, fruit, nuts or other parts of plants; Pharmaceutical products; Beverages, spirits and vinegar; Sugars and sugar confectionery.
Bangladesh's exports to Bhutan	-	Articles of apparel and clothing accessories, not knitted or crocheted; pastry cooks' products;	Preparations of cereals, flour, starch or milk; Beverages, spirits and vinegar; Pharmaceutical products.
Bangladesh's imports from Bhutan	Edible fruit and nuts	Sulphur; earths and stone; plastering materials, lime and cement;	Salt; peel of citrus fruit or melons; Coffee, tea, maté and spices.
Nepal's exports to Bhutan	-	Works of art, collectors' pieces and antiques; Apparel (intermediate and final)	Miscellaneous edible preparations.
Nepal's imports from Bhutan	-	Sulphur; earths and stone; plastering materials, lime and cement;	Beverages, spirits and vinegar; Salt.

*Source: ITC Trade Map, 2017*

Some common threads running across the commodities traded among the BBIN countries are as follows:

- Trade in fresh fruits and processed fruit juice is common across all countries in this sub-region. A detailed analysis reveals that while India is the largest exporter of fresh fruits and vegetables, Bangladesh and Nepal export processed fruit juices, beverages and other food preparations to India.
- Raw cotton, cotton yarns, apparels, fabrics and man-made fibres are predominantly traded within this sub-region. India is the largest exporter of raw cotton to Bangladesh, and Bangladesh, in turn, is one of the significant exporters of various fabrics and apparel (both intermediate and final) to the other BBIN countries.
- Bangladesh, India and Bhutan also trade in gypsum, stone boulders, limestone flux and cement clinkers. India and Bhutan export limestone flux and boulders to Bangladesh and import cement clinkers from Bangladesh.

- Trade between Nepal and Bhutan takes place in various handicraft items, food and beverages, cement and apparel (intermediate and final).
- While Nepal is one of the largest exporters of medicinal plants, India and Bangladesh export pharmaceutical products to Bhutan and Nepal.

The existing pattern of trade in the BBIN sub-region clearly indicates that there are strong value chain linkages in respect of key product categories and there is further potential to expand value chains in this sub-region.



## 2

## Existing RVCs

### Textiles & Clothing

India is the world's largest producer and second largest exporter of cotton and Bangladesh is a major importer of India's cotton having a share of around 31 per cent of India's total cotton export (PIB, 2017). Nepal too imports cotton from India. A number of studies (World Bank, 2019; FICCI, 2016; RIS, 2015) have established that there exist value chains in textile and clothing sector among India, Nepal and Bangladesh. Bangladesh is the second largest exporter of Readymade Garments (RMGs) to the world with the major export destinations including United States, United Kingdom, Germany, Spain and India. It has also been observed that India mostly exports raw materials to Bangladesh whereas Bangladesh exports intermediate apparel products to India as well, which are then converted into final product and exported to other countries by India.

This is indicated by export and import basket of India and Bangladesh in the textile and clothing sector. India's key T&C exports include raw cotton (not carded or combed), silk, cotton yarn, textured yarn, denim fabrics, woven and knit fabrics, twill weave cotton, etc. Bangladesh's key T&C exports to India include yarn of jute, T-shirts and singlets, men/boys' jackets, men and boys' trousers, sacks and bags, jute and other textile based-fibres, woven fabrics of jute, and blazers (World Bank 2019). Therefore, it is to be noted that India specialises in upstream activities while Bangladesh specialises in various downstream activities in the T&C sector. On the other hand, cotton waste from textile mills in Bangladesh is used by mattress manufacturing companies in India (CUTS, 2018A).

### Cement

One of the key raw materials for the cement industry is limestone. Other ingredients include gypsum, fly-ash and clay. Since Northeast India and Bhutan are rich in limestone and gypsum, Bangladesh sources limestone, gypsum, coal and fly-ash from those places, which are then fed into its cement manufacturing process. In 2015, Bangladesh imported around 11 per cent limestone and one per cent gypsum from Bhutan and about three per cent gypsum and less than one per cent limestone from India (United Nations Comtrade database). This denotes that there is a strong linkage between India, Bangladesh and Bhutan. India and Bhutan act as suppliers of raw materials and Bangladesh acts as a manufacturer.

# 3

## Potential RVCs

### Processed Food and Beverages

Given the current nature of trade among the BBIN countries, there exists significant scope for establishing RVCs in processed food and beverages. India, especially its Northeast region, is endowed with diverse agro-climatic conditions and grows various types of agri-horticultural crops. The Agricultural and Processed Food Products Export Development Authority of India (APEDA) has identified a list of 29 horticulture products that could be potential exports from Northeast India to the neighbouring countries in the BBIN sub-region.

The demand for these products is growing rapidly in the expanding food processing sector in Bangladesh as it is one of the fastest growing industries in that country accounting for 22 per cent of total manufactured products, 20 per cent of total labour force and five per cent of total GDP. There are approximately 700 processed food manufacturing units in Bangladesh at present and the sector has grown almost 22 per cent in the last three years (Spohrer, R, G S Garrett *et al*, 2012).

Despite all these, Bangladesh faces a growing food deficit due to its

#### Box 2: Implications of Cross-border Value Chains on Gender and Livelihood Opportunities

Cross-border value chains have the capability to increase women's participation and encourage women entrepreneurship in this sub-region. WEF (2018) pointed out that participation of women in global trade and cross-border value chains in Latin America and Caribbean region have reduced poverty and led to sustainable growth.

Moreover, it was also estimated that empowering women to participate equally in the global economy could add US\$28tn in GDP growth by 2025. T&C sector in South Asia is one of the largest manufacturing sectors that plays a vital role in employment generation and exports. It employs above 55 million people directly and nearly 90 million indirectly in the region (World Bank, 2019).

It was also observed that women are intensively involved in activities such as cultivation and plucking of medicinal plants, grading, sorting and basic processing of fruits and vegetables. For example, in Nepal, 20,000 households are engaged in Timur<sup>1</sup> value chain itself and it is a major source of livelihood for poor women and children.

Therefore, participation in cross-border value chains would be beneficial to them, in terms of expanding their markets and organising their production, marketing and delivery strategies. Moreover, it will also create more job opportunities for both men and women in this sub-region.

<sup>1</sup> Nepalese pepper, which can be used as spice or to prepare medicine and essential oils.

increasing population and is therefore compelled to import a substantial amount of food crops including fruits and vegetables. India is among the top five countries exporting fruits and vegetables to Bangladesh (International Trade Centre database). Bhutan too has developed its fruit processing industry but it depends on imports of raw materials like fruit concentrates and pulp, primarily from India for preparing fruit juices (DAMC, 2017).

The two biggest exporters of processed food to Nepal are India and Bangladesh, with shares of 41 per cent and 40 per cent, respectively (ITC, 2017). This shows that there is potential to deepen cross-border value chains in processed food sector among Bhutan, Nepal, Bangladesh and India especially with the Northeast region of India (CUTS and FICCI, 2018; RIS, 2014).

## Medicinal Plants

There is scope for fostering cross border value chains in medicinal plants and pharmaceuticals among BBIN countries (Sengupta, J, 2018; CPD, 2018; RIS, 2014). Nepal is home to 1,624<sup>2</sup> medical and aromatic species and Bhutan is home to 300<sup>3</sup> species of medicinal plants and about 46<sup>4</sup> species of rhododendrons. Almost 60 per cent of the plant species that are found in the eastern Himalayan region can be found in Bhutan. In, India, around 7,500 (Kala, C P *et al*, 2006) medical and aromatic species exist, concentrated mostly in its Northeast region. These medicinal plants are used to prepare *ayurvedic* medicines, compound formulations (ingredient in pharmaceutical products), essential oils, etc. On the other hand, India and Bangladesh are the major producers and exporters of pharmaceutical products. Nepal and Bhutan can also export essential oils to India, which can then be used in the production of various medicines (including cosmetics and toiletries) for export to Bangladesh, Bhutan and Nepal. The existing complementarities for trade in these product categories indicate the potential opportunities for fostering RVCs in the BBIN sub-region.

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<sup>2</sup> <http://nepalhomepage.com/herbal-medical-plants-of-nepal/>

<sup>3</sup> <http://www.rspnbhutan.org/flora-and-fauna-of-bhutan-2/>

<sup>4</sup> *Ibid*

## 4

# Role of Connectivity in the Development of RVCs

UNCTAD (2013) estimated that two-third of global trade takes place through global value chains (GVCs). Developing and emerging countries play a major role in the functioning of GVCs as key suppliers of raw materials, intermediate producers and assemblers. Goods produced in GVCs undergo multiple border crossings both in raw and/or in intermediate forms before reaching the final consumer. Such exchange of goods through a complex network of producers, intermediate suppliers and assemblers would not be commercially viable in the absence of time- and cost-efficient logistics and transport networks. Efficient clearance of goods at border points is critical for efficient functioning of lubricated value chains and underpins the importance of robust trade infrastructure and transparent trade regulatory procedures.

Efficient transport and logistics networks would be critical for promoting agricultural value chains. This is even more important for geographically challenged land-locked countries. A study by Organisation for Economic Cooperation and Development (OECD) has found that a 10 per cent improvement in transport and trade-related infrastructure quality can increase agricultural exports of developing countries by 30 per cent (OECD, 2013).

Transport and logistics sectors are crucial for a country to move up the value chains. As the manufacturing process becomes more complex at higher layers of a GVC, it becomes even more important to be able to move both inputs and outputs across borders rapidly, at low cost, and with as little risk as possible. This is possible only if an efficient transport and logistics network is in place.

In this context, countries in the BBIN sub-region would need to address their connectivity challenges and cumbersome “at the border” procedures to facilitate creation of efficient RVCs.

## Benefits of Multi-modal Connectivity

Multi-modal connectivity is pivotal in connecting the production centres (intermediate and final) with market places leading to the creation of cross-border value chains by easing freight movement and diminishing freight cost, either through reduction in travel time and/or through reduction in cost per tonnage, or, both.



**Figure 7: Jogighopa, a Proposed Multi-Modal Trans-Shipments Hub in Assam, India**

For example, cement being a high-volume-low-value product, low cost water transport is crucial for this industry as a barge can carry a cargo equivalent to 15 railway wagons and 60 multi axel trucks (Sarkar *et al*, 2007) using less fuel. The cost of moving one tonne of cargo over a kilometre by road is Indian Rupees (INR) 2.28, whereas by waterways this cost would be INR 1.06 (Niti Aayog of India, 2018). Furthermore, as the weight-to-value ratio of transportation declines, trade in intermediate goods and commodities increases. Therefore, waterways can play a crucial role in developing cross-border cement value chains.

Multi-modal connectivity would also improve transport connectivity between Northeast India and Bangladesh. For example, Rowmari, Bangladesh (which is on the other side of Mankachar, on the bank of Brahmaputra in Assam, India) has better connectivity to Dhaka, Bangladesh. The road from Dhaka to Chilmari is under maintenance and requires 8-10 hours to reach Dhaka due to traffic congestion, whereas from Rowmari it is a five hour drive. With multi-modal connectivity to Dhaka, cotton waste which comes from the textile mills in Bangladesh can reach Rowmari by road and then take a riverine route to Dhubri in Assam.

In terms of time and cost, the average cost of a truck load coming from Dhaka to Dhubri by road is about INR 45,000 and it will reach Dhubri on the third day. If the same consignment is brought to Rowmari by road and from there to Dhubri by waterways, it will cost much less as it can avoid multiple loading/unloading and save time as it will reach Dhubri in less than 24 hours (CUTS, 2018 B). It was observed that the production centres (of fruits/ vegetables involved in the value chains) are mostly aligned along the riverways in Assam and Meghalaya in India. The setting up of a multi-modal trans-shipment hub at Jogighopa in Assam will facilitate both trade and connectivity among Northeast India, Bangladesh and Bhutan.

Likewise, transfer of goods from Kolkata port to Patna via National Waterway 1 (the Ganges River in India) will reduce logistic cost by 24 per cent and four per cent over road and rail, respectively (Business Line, 2018 A). The distance from Patna to Nepal is 200 kilometres, which could be covered by road or rail. This route will connect Kolkata, India) and Kathmandu, Nepal in a cost efficient manner. Moreover, cost dynamics will be highly favourable for river transport as return cargo is readily available from Patna to Kolkata. With the development of National Waterway 37 (the Gandak River in India and Nepal) and National Waterway 58 (the Kosi River in India and Nepal), the consignments will be able to reach Nepal directly through waterways. Through NW 58 inland vessels could come up to Hanuman Nagar in India, which is linked to Rajbiraj and East-West Highway of India, while NW 37 could bring containerised traffic as close as possible to Bharatpur and Chitwan in Nepal.

Setting up multi-modal transport networks will also complement industrial corridors such as the Amritsar-Delhi-Kolkata Industrial Corridor. It will be able to leverage the Eastern Dedicated Freight Corridor between Khurja in Orissa and Mughalsarai in Uttar Pradesh, and the Inland Waterway System along National Waterway 1, which extends from Allahabad to Haldia in India, further connecting it to Bangladesh. It will be especially beneficial for sectors like fast moving consumer goods, textiles and clothing. Indirectly it will benefit local farmers by providing them access to distant markets.

It is also likely that reduced trade cost will help countries in this sub-region to make their products more competitive, thereby enabling them to participate in RVCs as well as GVCs.

Building RVCs is considered to be an important step towards participation in GVCs, as evidenced from examples of great world factories in Europe, North America and Asia (Tralac, 2018).

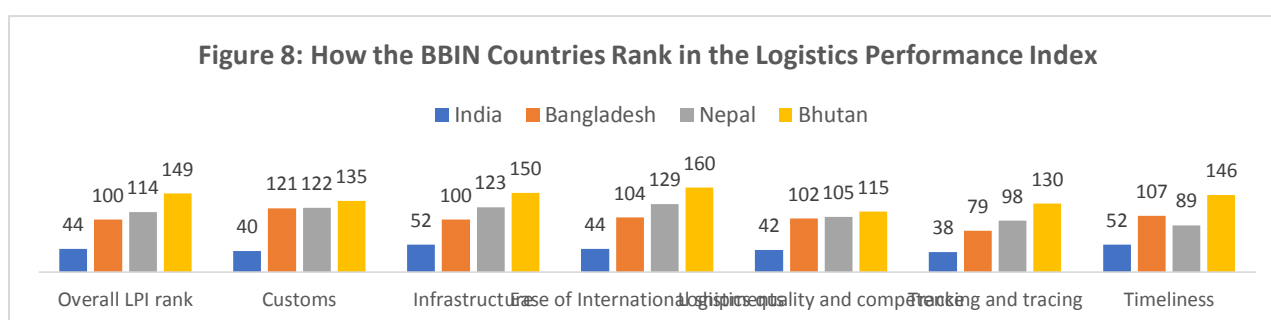
Additionally, multi-modal mix can also play a crucial role towards sustainable mobility of goods. Shifting the movement of cargo from roadways to railways and specially waterways can significantly reduce carbon emission and consumption of fossil fuels. Unfortunately transport ranks among the fastest growing sources of carbon emission and accounts for 23 per cent of energy-related carbon emissions globally (2013) and in India, trucks generate over 40 per cent of transport emissions (Mehndidrata S and T P Quiros, 2017). One litre fuel can move 24 tonnes by road, 85 tonnes by rail and 105 tonnes by water (World Bank, 2017). Given that one litre diesel emits 2.65<sup>5</sup> kilogram (Kg) of Carbon dioxide (CO<sub>2</sub>), moving one tonne of goods by road, rail and water will emit 0.11, 0.031 and 0.025 Kg of CO<sub>2</sub> respectively. This shows that the use of multi-modal connectivity will also ensure reduction of carbon footprints.

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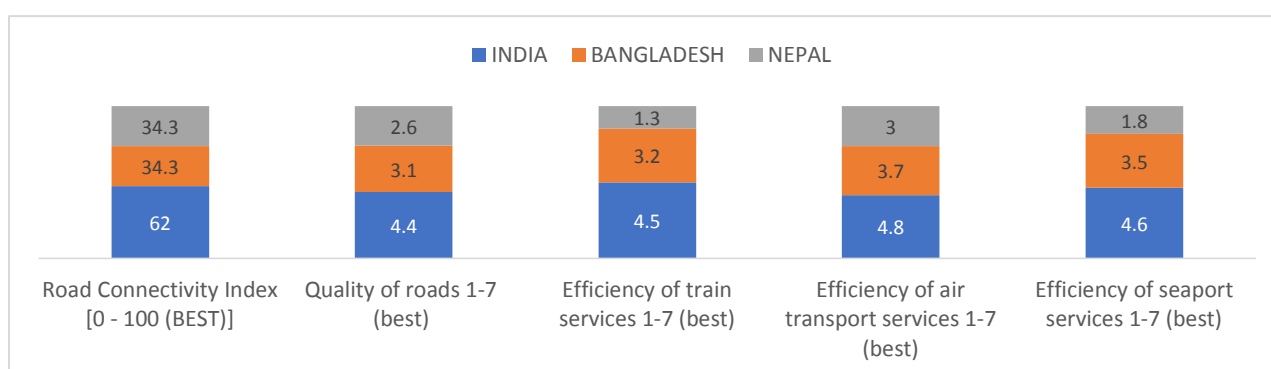
<sup>5</sup><https://carbonpositivelife.com/co2-per-litre-diesel/>, accessed on 01.04.2019

## 5 Infrastructural Bottlenecks and Recent Connectivity Initiatives

Figures 8 and 9 highlight how and to what extent the countries in the BBIN sub-region differ from each other across parameters included in the Logistics Performance Indicator (LPI) and Global Competitiveness Report.<sup>6</sup> Countries in the BBIN sub-region face serious challenges in terms of infrastructure deficit and efficient logistics, which in turn increases their overall trade cost.



Source: *Logistics Performance Indicator, 2018, The World Bank*



Source: *Global Competitiveness Report, 2018, World Economic Forum, (Schwab, K. (2018))*

Several studies (CUTS, 2015; ADB, 2018; World Bank, 2018; Karim, S and G Quamrul, 2015) have underlined the need to reduce logistic costs to bring them (the BBIN countries) at par with the developed countries. For example, for South Asia, the logistics costs constitute about

<sup>6</sup>Data for Bhutan was not available and hence not include in Figure 9

13-14 per cent of the GDP against 8-10 per cent for developed countries. In case of India, the cost of doing business at sea ports is around 15-16 per cent of the total consignment value.

Figure 8 analyses key parameters of LPI index and indicates that India ranks higher than Bhutan. The sub-optimal performance of Bangladesh, Nepal and Bhutan on LPI affect their capabilities to become part of efficient value chains. The development of cross-border value chains hinges on the state of trade infrastructure. It is an imperative for BBIN countries to invest in transport and logistics networks as it will facilitate both time- and cost-efficient movement of cargo across the BBIN sub-region. While road transport dominates the bulk of cargo movement within the BBIN sub-region, road connectivity in Bangladesh, Bhutan and Nepal remains wanting (Figure 9). For example, the roads and bridges in Bhutan are not suitable for large cargo fleets and congestion at the borders between India-Bangladesh-Nepal-Bhutan is a recurrent problem.

To address these challenges, all the countries in the sub-BBIN region are exploring ways to strengthen their waterways and railways, and hence gradually moving towards a multi-modal transport system. For example, the “Protocol on Inland Water Transit and Trade” (PIWTT) signed between India and Bangladesh is likely to ease pressure on the roads and promote trade through waterways between the two countries. Furthermore, the PIWTT is likely to prod states in Northeast India towards more efficient trade with Bangladesh. Similarly, there are talks on reviving the Agartala-Akhaura-Chittagong rail track and expanding the rail network between India and Nepal. Box 3 provides a snapshot of some of the connectivity initiatives in the BBIN region.

Box 3: A Snapshot of Multi-modal Connectivity Initiatives
<p><i>Waterways</i></p> <ul style="list-style-type: none"> <li>India is developing Jogighopa in Assam as a multi-modal trans-shipment hub for movement of cargo to Assam, Arunachal Pradesh, Nagaland and Bhutan.</li> <li>India and Bangladesh have signed an agreement to use Chittagong and Mongla ports in Bangladesh for movement of goods to and from India.</li> <li>Bhutan and Bangladesh signed a Memorandum of Understanding (MoU) on usage of inland waterways for bilateral and transit trade (via India). The inland waterways route stretching from both Chittagong and Mongla sea ports up to Dhubri in Assam (a port of call) via Chilmari in Bangladesh is now accessible to Bhutan.</li> <li>India and Nepal have declared that Kosi and Gandak rivers would be developed as Indo-Nepal waterways. They have been declared National Waterway 37 (Bhaisaslotlal barrage-Hajipur in India) and National Waterway 58 (Kosi barrage-Kursela in India), respectively. India is also building a multi-modal terminal at Kalughat near Patna to cater specifically to the demands of Nepal-bound cargo from Kolkata. Other terminals like those in Varanasi and Sahebgunj on National Waterway 1(Haldia-Allahabad in India) can also handle the distribution of such cargo traffic.</li> <li>India and Bangladesh signed PIWTT in 1972. At present, there are four protocol routes, which are operational (Kolkata to Shilghat via Mongla, Kolkata to Karimganj via Ashugn, Rajshahi to Dhulian and Karimganj to Shilghat via</li> </ul>



### Box 3: A Snapshot of Multi-modal Connectivity Initiatives

Ashuganj). The ports of call for cross-border are Dhubri (Assam), Pandu (Assam), Karimganj (Assam), Kolkata (West Bengal), Haldia (West Bengal) and Shilghat (Assam) in India and Chilmari, Narayanganj, Khulna, Mongla, Sirajganj, Pangaon and Ashuganj in Bangladesh. India and Bangladesh have also agreed to declare Badarpur on river Barak (National Waterway 16) as an extended port of call of Karimganj in Assam and Ghorasal of Ashuganj in Bangladesh on reciprocal basis.

#### *Railways*

- Nepal and India will establish a railway link between Raxaul, Bihar (India) and Kathmandu (Nepal). Five other projects are also in the pipeline.
- Rail link between Raxaul (India) and Sirsiya (Nepal) has been made operational.
- The railway project connecting Agartala (India) and Akhaura (Bangladesh) was conceptualized in the year 2010. At present, passenger trains operate between Kolkata and Dhaka. A trial run of container train was conducted in 2018.
- India and Bangladesh have agreed in principle to revive all old rail routes. The re-established rail route will ensure that India, Nepal and Bhutan will have direct rail access to the Mongla port in Khulna, Bangladesh, the second busiest sea port in that country.

#### *Roadways*

- A bridge is being built over the Feni River bordering India and Bangladesh, which will connect Sabroom in southern Tripura (India) with Feni district in Bangladesh.
- South Asian Sub-Regional Economic Cooperation (SASEC) Road Connectivity Investment Programme is operational.
- The BBIN countries signed a Motor Vehicles Agreement in June 2015.

#### *Airways*

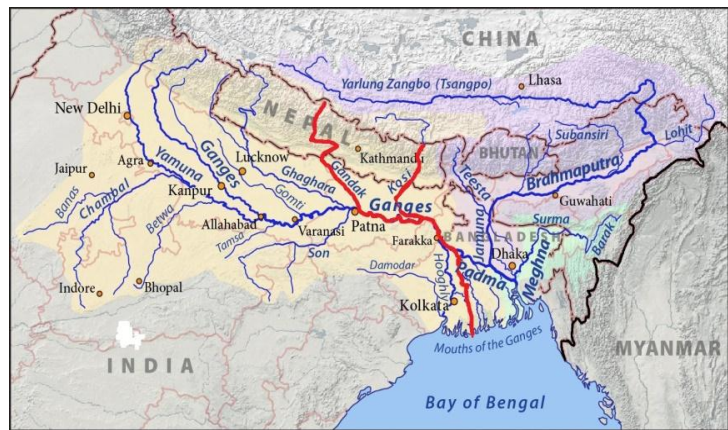
- The UDAN (*Ude Desh Ka Aam Nagrik* - facilitation of air travel by common citizens) scheme of India aims to improve air connectivity among Indian states (with a particular emphasis on Northeast India) and/or the neighbouring countries.
- Direct flights have started between Guwahati, Assam (India) and Bangladesh. Talks are also on to connect Guwahati with Singapore and Thailand.

## 6 Alternative Routes for Multi-modal Connectivity

Table 2 provides a list of proposed BBIN corridors along with the average time and cost incurred per kilometre for moving international cargo via roadways. As shown in Table 2, the cost per kilometre is highest for the Thimpu-Dhaka, Kolkata-Dhaka, and Agartala-Chittagong corridors.

Some of the key reasons for this high cost are:

- lack of proper roads;
- high detention time at the borders;
- trans-shipment at the borders; and
- traffic congestion both at the border as well as in the major cities along the corridors.



**Figure 10: Connectivity from Kolkata port and Nepal via NW1 and NW37/NW58**

**Table 2: List of Proposed BBIN Corridors**

Sl. No.	Corridor Name	Distance (KMs)	Total time (Minutes/KM)	Total Cost (USD/KM)
1.	Kathmandu-Kakarbhitta-Panitanki-Fulbari-Dhaka-Chittagong	1,183	1.86	0.12
2.	Thimphu-Phuntsholing-Jaigaon-Changrabandha-Burimari-Dhaka	725	2.18	3.8
3.	Lucknow-Gorakhpur-Sonauli-Bhairahawa-Kathmandu	631	2.5	0.04
4.	Kolkata-Raxaul-Birgunj-Kathmandu	1,011	2.11	0.21
5.	Jaigaon-Gelephu-	859	2.4	1.4

Sl. No.	Corridor Name	Distance (KMs)	Total time (Minutes/KM)	Total Cost (USD/KM)
	SamdrupJongkhar-Guwahati-Dawki-Tamabil-Dhaka			
6.	Kolkata-Petrapole-Benapole-Dhaka	351	19.64	6.15
7.	Agartala-Akhaura-Comilla-Chittagong	231	4.62	3.42

Source: CUTS International, 2018 B

There is, thus, the need to consider alternate means of transport, in fact multimodal transport. Some of the probable solutions<sup>7</sup>, based on the recent connectivity initiatives, are depicted in Figures 11, 12 and 13. Additionally, proposed alternative and cost-effective routes for the Kolkata-Kathmandu corridor and the Allahabad-Agartala corridor are highlighted in Figures 14 and 15, respectively.

## Thimphu-Dhaka Corridor

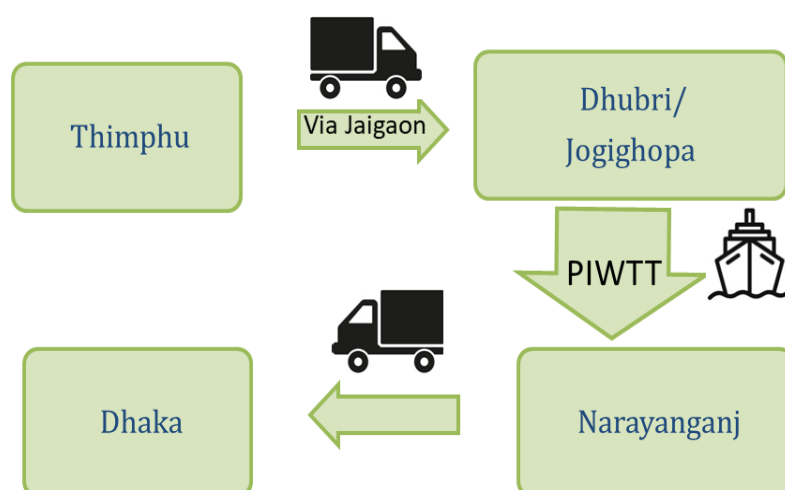
**Table 3: Showing Distance and Cost for the Routes from Thimphu to Dhaka**

Transport cost for the alternative route depicted in figure 11 (INR/ton)	Total distance of the alternative route (Km)	Transport cost for the Thimphu-Burimari-Dhaka corridor, through roadways (INR/ton)	Total distance of the Thimphu-Burimari-Dhaka corridor
919.88	614	1807.05	725

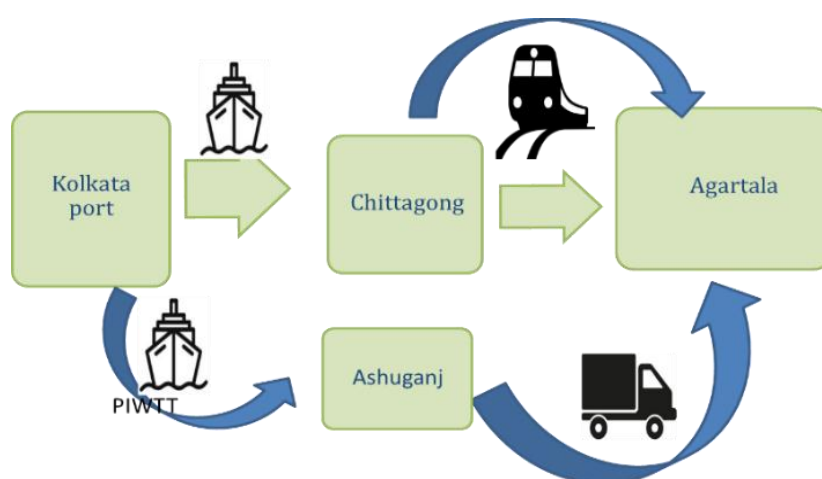
Source: Authors' Calculation

Figure 11 depicts the Thimphu-Dhaka corridor, through Dhubri (India) and Naryanganj (Bangladesh), connecting Bhutan and Bangladesh. Consignments from Bhutan can go till to Dhubri (India) from Thimphu (Bhutan) by truck which is just about 150 kilometres from Thimphu. From Dhubri, consignments can be shipped to Narayanganj through the Indo-Bangladesh protocol waterways route. Narayanganj is very close to Dhaka, so goods can be transferred by trucks to Dhaka. Table 3 shows that the usage of alternative route will reduce the cost per tonne to half. Thus, the use of this alternative route will be cost-effective, especially in case of bulk items. Therefore, waterways can play a crucial role in the cement value chains. Bangladesh can source its raw materials (gypsum, fly ash, coal) from Bhutan as trade in intermediate goods and commodities increases with decrease in weight to value ratio.

<sup>7</sup> Calculation is done based on cost estimated by Niti Aayog, 2018 for freight movement, i.e. INR 2.58/ton/Km, INR 1.41/ton/Km, i.e. 1.06/ton/Km by roadways, railways and waterways respectively. No additional trans-shipment, detention, demurrage or any other charges are included in these estimations.



**Figure 11: Alternate Route to Thimphu-Jaigaon-Guwahati-Dawki-Tamabil-Dhaka Corridor, connecting Bhutan to Bangladesh**



**Figure 12: Two Alternative Routes from Kolkata to Agartala through Bangladesh**

## Kolkata-Agartala Corridor

Figure 12 depicts two alternative routes from Kolkata port to Agartala, with usage of multiple modes.

One route is Kolkata-Chittagong-Agartala and the other is Kolkata-Ashuganj-Agartala. In case of the former, goods can be shipped by barges to Chittagong through waterways via outskirts of the Sunderbans and from there via railways to Agartala. In the case of the latter route, consignments from Kolkata port can be shipped to Ashuganj via Indo-Bangladesh protocol route and then by truck to Agartala. Moreover, this will also give India's Northeast an easy access to the rest of India. For instance, Mizoram is just 150 kilometres from Agartala.

Table 4 shows that the route via Bangladesh (through waterways) will be cost effective, as it is just about 30 per cent of the cost otherwise required for transporting goods from Kolkata via Siliguri to Agartala by road.

**Table 4: Distance and Cost for the Routes from Kolkata to Agartala**

Routes	Transport cost for the alternative routes (INR/ton)	Total distance of the alternative route (Km)
Kolkata-Chittagong- Agartala (Multimodal route)	1182.846	1062.3
Kolkata-Ashuganj- Agartala (Multimodal route)	1231.86	1089
Kolkata-Agartala via Siliguri (Through roadways)	4060.92	1574

*Source: Authors' Calculation*

## Kolkata-Dhaka Corridor

An alternative route from Kolkata to Dhaka through waterways is indicated in Figure 13. Consignments can be transferred from Kolkata port to Narayanganj through Indo-Bangladesh



**Figure 13: Alternative Route from Kolkata to Dhaka**

protocol route and from there to Dhaka via trucks. Table 5 shows that roadways are more cost-effective for this corridor, since the distance through waterways is almost thrice that of roadways. However, it is to be noted that this estimation does not include detention time or time consumed by congestion. Both detention and congestion along this route escalates the overall cost of doing trade. As shown in Table 2, this is the costliest corridor because of unusual congestion. Usage of this alternative route will also reduce congestion at the Indo-Bangladesh border in Petrapole/Benapole.

**Table 5: Distance and Cost for the Routes from Kolkata to Dhaka**

Transport cost for the alternative route depicted in Figure 13 (INR/ton)	Total distance of the alternative route (Km)	Transport cost of the Kolkata-Petrapole-Dhaka corridor, through roadways (INR/ton)	Total distance of the Kolkata-Petrapole-Dhaka corridor (Km)
1034.26	937	905.58	351

*Source: Authors' Calculation*

## Kolkata-Kathmandu Corridor

There are three alternative routes from Kolkata port to Kathmandu and they are depicted in Figure 14.

**First route:** Kolkata to Kathmandu through Gandak barrage. Consignments could be shipped to Gandak barrage through National Waterways 1 and 37, and then transferred to Kathmandu via road.

**Second route:** Kolkata port to Patna terminal through National Waterways 1 and from there via trucks to Kathmandu through Raxaul-Birgunj Integrated Check Post (ICP). Under the BBIN MVA, the same truck can go all the way till Kathmandu without stopping for trans-shipment at the Birgunj land customs station.

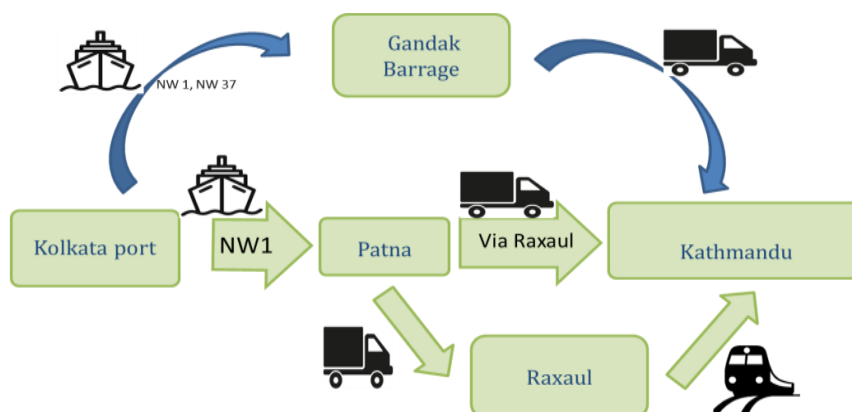


Figure 14: Alternative Routes from Kolkata to Kathmandu

**Third route:** Kolkata port to Patna terminal through National Waterways 1, from there to Raxaul via trucks and then to Kathmandu via rail. This initiative is expected to reduce traffic at the Indo-Nepal border in Raxaul/Birgunj.

Table 6: Showing Distance and Cost for the Routes from Kolkata to Kathmandu

Routes	Transport cost for the alternative routes (INR/ton)	Total distance of the alternative route (Km)
Kolkata-Gandak barrage-Kathmandu	918.76	514
Kolkata-Patna-Kathmandu	1756.58	1070
Kolkata-Patna- Raxaul-Kathmandu	1563.2	1145
Kolkata-Raxaul-Birgunj-Kathmandu (through roadways)	2608.38	1011

Source: Authors' Calculation

Table 6 shows that all these proposed routes are cost-effective compared to the conventional route through roadways. Kolkata-Kathmandu route via Gandak barrage would be the most cost-efficient route.

## Allahabad-Agartala Corridor

This route as highlighted in Figure 15 will connect the industrial corridor of mainland India with Northeast India through Bangladesh. However, the distance between Allahabad and Ashuganj could be shortened if the movement of cargo is allowed via Farakka-Dhulian-Godagari-Rajsahi-Aricha-Narayanganj-Ashuganj instead of the existing route from



Figure 15: Alternative Route to Agartala from Allahabad via Bangladesh

Allahabad-Farkka-Haldia-Mongla-Narayanganj-Ashuganj. Both routes are through waterways but the former is about 1,777 kilometre, whereas the latter is about 2,550 kilometre. Thus, re-routing of cargo through Dhulian-Godagari

will make it more cost efficient as the distance will be reduced by almost 773 kilometre. Through this route consignments can directly go from Allahabad to Ashuganj through waterways and can be transferred to Agartala by trucks. Moreover, it can also be inferred from Table 7 that this route will be much less expensive than the route through roadways, involving only 41 per cent of the cost that is normally incurred through roadways.

Table 7: Showing Distance and Cost for the Routes from Allahabad-Agartala Corridor

Transport cost for the alternative route depicted in figure 15 (INR/ton)	Total distance of the alternative route (Km)	Transport cost for the Allahabad-Agartala corridor, through roadways (INR/ton)	Total distance of the Allahabad-Agartala corridor
1961.14	1777	4788.44	1856

Source: Authors' Calculation

In short, this analysis of alternate modes of transportation, as presented above, proves that the cost of transportation can be significantly reduced in the BBIN sub-region with usage of multiple modes. Reduction in trade and transportation costs could serve as a catalyst to the growth of bilateral and regional value chains in this sub-region. It is, thus, an imperative for the BBIN countries to focus on alternate modes of transportation for cross-border trade and this could be done by streamlining export-import procedures, harmonisation of standards and regulations in different modes of transportation and coherence in respect of institutional and regulatory policies.



## 7

# Key Challenges

## Skewed Modal Mix for Freight Movements

Across all the BBIN countries at present, freight movement is heavily skewed towards road transportation. Owing to substantial cost, coupled with delays in sending small cargo (weighing 20-50 tonnes) by sea and rail, businesses prefer land routes for sending small amounts of cargo. There are other problems too: delays in getting clearance, non-availability of containers/rakes, unpredictability (especially in case of railways), and, above all, risks involved in returning empty after unloading at a destination.

**Table 8: Share of Different Modes of Freight Transport in the BBIN Countries**

Country	Land Routes	Railways	Waterways	Air/Other
Bangladesh <sup>1</sup>	60%	12%	14%	14%
Bhutan <sup>2</sup>	Completely dependent	Does not exist	Does not exist	Miniscule
India <sup>3</sup>	59%	35%	6%	1%
Nepal <sup>4</sup>	Approximately more than 90%	NA	Does not exist	NA (but supposedly small percentage)

Source:

1 – <http://www.iebconferences.info/377.pdf> , 2011

2 – <https://www.moic.gov.bt/wp-content/uploads/2017/08/Second-Draft-National-Transport-Policy-Bhutan.pdf> , 2017

3 [http://niti.gov.in/writereaddata/files/document\\_publication/Freight\\_report.pdf](http://niti.gov.in/writereaddata/files/document_publication/Freight_report.pdf), 2018

4 <https://www.unescap.org/sites/default/files/Nepal%20country%20report-TAR%20WGM-5.pdf>, Date not mentioned

## Sub-optimal Inter-modal Connectivity

Unlike India and Bangladesh, both Bhutan and Nepal are landlocked with no access to sea or inland ports. In addition, rail connectivity is also negligible in these two countries. Nepal, for example, is dependent on Kolkata/Paradip/Vishakhapatnam ports in India for its sea borne trade. Similar is the case with Bhutan. The rail connectivity for freight movement from India to



Nepal is only up to Birgunj, which is bordering India. In India and Bangladesh also, appropriate inter-modal connectivity is often lacking. In India, for example, the railways often do not connect the origin and destination points, otherwise essential for leveraging benefits of an effective value chain. ICDs that have come up in India are also not well-integrated with the rail network (Niti Aayog of India, 2018).

## Coordination among Multiple Stakeholders

In a multi-modal transport system, a shipment is handled by more than one stakeholder/company. In such a scenario, it is an imperative that those agencies work in tandem to ensure timely delivery of a consignment. Practically this is challenging, since, given their monopoly, railways hardly coordinate with either trucking companies or freight forwarders. Furthermore, who would be liable for damage or any delay in delivering cargo also needs to be determined.

## Transshipment Time and Cost

Sending cargo using multi-modal transport system would involve trans-shipment at multiple points. Till now, in the BBIN sub-region, bulk of the work involved in trans-shipment is done manually. Moreover, the use of containerised cargo has also been limited in this sub-region. Put together, these factors would increase the time and cost involved in trans-shipment and will make the process inefficient. This could be addressed by using machineries for loading and unloading of cargo and also by using standardised containers for transporting cargo.

## Standardisation of Processes

Transporting cargo across different modes involves processes like verification of vehicles, drivers and cargo-related documents and related paper-work at trans-shipment points in different ports. The processes become more cumbersome with international border crossings since customs clearance, quarantine checks would be additionally required. In the absence of standardised processes, realising benefits from multi-modal connectivity would be challenging given the time and cost incurred in trans-shipment.

## Livelihood Concerns

Since bulk of the cargo movement in the BBIN sub-region is road-based, significant employment opportunities are generated. With a share of cargo movement shifting from roads to railways, waterways and airways, there would be a subsequent reduction in employment created in the trucking business and an increase in employment opportunities in other sectors. Furthermore, livelihood concerns also emerge in the event of mechanisation of the loading/unloading processes. According to a CUTS study (2018A), this could pose a significant social and political economy challenge to the prospects of multi-modal connectivity.

## Conclusion and Recommendations

As a result of technological changes accompanied by changes in the global transport and logistics networks, the whole concept of trade has undergone a metamorphosis. As the focus of trans-national corporations is shifting towards low wage developing countries and fragmentation of production processes are happening globally, GVCs are gaining great importance (Gereffi, G, 2018). International trade earlier was largely in respect of finished goods, but today almost 60 per cent of world trade consists in intermediate goods and services and happens through GVCs (UNCTAD, 2013). As such, countries are seen to adopt strategies to get involved in the GVCs and they are also competing with each other and promoting technological innovations to move higher up in the value chains.

Countries in the BBIN sub-region are advantageously placed as a number of complementarities exist in the demand and supply of certain commodities. In addition, there exist well-established value chains in certain commodities with the potential for RVCs in other commodities too. For this purpose appropriate transport connectivity needs to be developed. The role of multi-modal connectivity becomes crucial in this respect as it would not only ease the pressure on the existing roadways but would also be helpful in reducing carbon emissions from the transport sector. Presently, the sector suffers from a number of challenges such as infrastructure deficit, poor regulatory governance, procedural inefficiencies. To this end, the following recommendations need to be considered.

### Integrate Production Nodes with Consumption Points

There is the need for a detailed study on identification of existing and potential value chains in the BBIN sub-region along with key production nodes (both final and intermediate) and consumption points, thus understanding their origins and destinations. In addition, it would be necessary to identify various least cost multi-modal transport options (as some of them highlighted in this paper) and infrastructure deficit is to be addressed for facilitating seamless, time- and cost-efficient movement of cargo.

### Align Multi-modal Transport Policy

It is an imperative that countries in the BBIN sub-region together design and enforce a sub-regional multi-modal transport policy in view of major challenges faced while transporting cargo across existing and potential modes of transportation and various stakeholder concerns. This policy should aim at uniformity in freight rates, standardisation of procedures so as to avoid delays “at the border”, and should gradually replace trans-shipment with transit arrangements in alignment with the provisions of the BBIN MVA.

## Create Single Window Systems

There is the need for creating a single window clearance system both at the national level in each of the BBIN countries and also at the sub-regional level. Such systems would be crucial for reducing time and cost both “at the border” and “off the border” by standardising procedures and reducing paper-work. In addition, a nodal authority at the sub-regional level needs to be created for better coordination among the various departments/agencies for facilitating seamless movement of cargo.

## Encourage Blockchain Technologies

Use of disruptive technologies like block-chain and Internet of Things can have tremendous impact on traceability of shipments. Such technologies need to be promoted across all the BBIN countries. This will not only ensure timely updates but will also track how a product is moving across value chains and where and why challenges are cropping up. This will encourage focussed interventions and help address bottlenecks and fix liabilities related to delays and damage of consignments.

## Address Manpower Requirements

It is beyond doubt that as a result of concerted efforts the logistics sector is evolving rapidly and strengthening connectivity. This would not only create new employment opportunities but will also lead to redistribution of existing jobs. Such temporary adjustments are likely to create a number of social and political economy challenges. To address them, there is the need for an in-depth study to understand what kind of adjustments are likely to happen in the logistics sector, what kind of jobs are likely to get created for a comprehensive understanding of job-specific skill requirements and strategies to address the skill gaps. Such interventions should consider options for imparting skill training to the people displaced by redistribution of modal shares.

India has recently adopted National Logistic and Transport Policy<sup>8</sup> to enhance its internal and external connectivity and that is multi-modal in nature. In view of this, Bangladesh, Bhutan and Nepal may consider key elements of this policy in their domestic contexts. Given the dependence of Bhutan and Nepal on India for their external trade and trade complementarities that exist between Bangladesh and India, it is necessary for them to align their respective logistic policy with each other to enhance external connectivity.

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<sup>8</sup> [https://commerce.gov.in/writereaddata/uploadedfile/MOC\\_636850448855371480\\_Notification-Draft-05022019.pdf](https://commerce.gov.in/writereaddata/uploadedfile/MOC_636850448855371480_Notification-Draft-05022019.pdf)

# References

- APEDA (2017). Comprehensive Master Plan for Tapping the Export Potential of North Eastern States. Agricultural and Processed Food Products Export Development Authority, India. Available at: [http://apeda.gov.in/apedawebsite/Announcements/APEDA\\_NER\\_Final\\_Project\\_Report\\_Compr.pdf](http://apeda.gov.in/apedawebsite/Announcements/APEDA_NER_Final_Project_Report_Compr.pdf). Accessed on December 29, 2018
- APEDA Agri-exchange: Available at [http://agriexchange.apeda.gov.in/index/country\\_directory.aspx?letter=N#](http://agriexchange.apeda.gov.in/index/country_directory.aspx?letter=N#)
- APEC (2010). The Economic Impact of Enhanced Multimodal Connectivity in the APEC Region. Asia-Pacific Economic Cooperation. Available at: <http://publications.apec.org/Publications/2010/06/The-Economic-Impact-of-Enhanced-Multimodal-Connectivity-in-the-APEC-Region>
- ADB (2011). Regional Corridors Development. Asian Development Bank (ADB) Economics Working Paper Series No. 258. Available at: [www.adb.org/sites/default/files/publication/28889/ewp-258.pdf](http://www.adb.org/sites/default/files/publication/28889/ewp-258.pdf)
- AIDIA (2018). Cross-Border Inland Waterways: Exploring New Avenues of Connectivity. Report of Seminar on Nepal Inland Waterways. The Asian Institute of Diplomacy and International Affairs (AIDIA), Kathmandu, Nepal. October 01, 2018. Available at: [www.aidiaasia.org/event/seminar-on-nepal-inland-waterways-cross-border-inland-waterways-exploring-new-avenues-of-connectivity](http://www.aidiaasia.org/event/seminar-on-nepal-inland-waterways-cross-border-inland-waterways-exploring-new-avenues-of-connectivity)
- ADB (2013). South Asia Sub-regional Economic Cooperation (SASEC) Road Connectivity Project. Available at: [www.adb.org/projects/documents/nep-sasec-road-connectivity-project-rrp](http://www.adb.org/projects/documents/nep-sasec-road-connectivity-project-rrp). Accessed on December 31, 2019
- The Hindu Business Line (2018A). Bangladesh firm to operate Kolkata river terminal to promote Nepal trade. The Hindu Business Line. October 29, 2018. Available at: [www.thehindubusinessline.com/economy/logistics/iwai-to-operatilis-kolkata-river-termibnal-to-promote-nepal-trade/article25363015.ece](http://www.thehindubusinessline.com/economy/logistics/iwai-to-operatilis-kolkata-river-termibnal-to-promote-nepal-trade/article25363015.ece)
- The Hindu Business Line (2018B). Trial run of India-Bangladesh container train service begins. The Hindu Business Line. April 03, 2018. Available at: [www.thehindubusinessline.com/economy/logistics/trial-run-of-india-bangladesh-container-train-service-begins/article23423509.ece](http://www.thehindubusinessline.com/economy/logistics/trial-run-of-india-bangladesh-container-train-service-begins/article23423509.ece), accessed on 1.02.2019
- CPD (2018). Value Chains in BIMSTEC Region Current Status, Possibilities and Challenges. Research Report 4, Centre for Policy Dialogue, Dhaka, Bangladesh.
- Chandran, R (2016). South Asia clothing industry can employ millions more women, boost growth. World Bank. Reuters. April 28, 2016. Available at: <https://in.reuters.com/article/india-textiles-worldbank/south-asia-clothing-industry-can-employ-millions-more-women-boost-growth-world-bank-idINKCN0XP29A>
- CUTS International (2015). Trade Consignment Mapping in South Asia: A Study of Three SAARC Corridors. CUTS International, Jaipur, India. Available at: [www.cuts-citee.org/TCMSA/pdf/Report-Trade-Consignment-Mapping-in-South-Asia-A-Study-of-Three-SAARC-Corridors.pdf](http://www.cuts-citee.org/TCMSA/pdf/Report-Trade-Consignment-Mapping-in-South-Asia-A-Study-of-Three-SAARC-Corridors.pdf)
- CUTS International (2016). Assessment of Bangladesh-India Trade Potentiality: Need for Cross-Border Transport Facilitation & Mutual Recognition of Standards. CUTS International, Jaipur. Available at: [www.cuts-citee.org/ibta-ii/pdf/Assessment\\_of\\_Bangladesh-India\\_Trade\\_Potentiality.pdf](http://www.cuts-citee.org/ibta-ii/pdf/Assessment_of_Bangladesh-India_Trade_Potentiality.pdf). Accessed on January 02, 2019
- CUTS International (2017A). Expanding Tradeable Benefits of Inland Waterways: Case of India. CUTS International, Jaipur. Available at: [www.cuts-citee.org/IW/pdf/IW\\_India\\_Report.pdf](http://www.cuts-citee.org/IW/pdf/IW_India_Report.pdf). Accessed on 04.12.2018

CUTS International (2017B). Benefits of the TIR Convention for the Implementation of the BBIN Motor Vehicles Agreement. CUTS International, India, Available at: [www.cuts-citee.org/pdf/Benefits of the TIR Convention for the implementation of the BBIN Motor Vehicles Agreement.pdf](http://www.cuts-citee.org/pdf/Benefits_of_the_TIR_Convention_for_the_implementation_of_the_BBIN_Motor_Vehicles_Agreement.pdf)

CUTS International (2018A). Connecting Corridors beyond Borders: Enabling Seamless Connectivity in the BBIN Sub Region. CUTS International, Jaipur. Available at: [www.cuts-international.org/bbinmva/pdf/Report-Connecting Corridors beyond Borders.pdf](http://www.cuts-international.org/bbinmva/pdf/Report-Connecting_Corridors_beyond_Borders.pdf). Accessed on January 04, 2019.

CUTS International (2018B). Boating Towards Inclusivity: Facilitating short haul cross-border trade between Dhubri (Assam, India) and Chilmari (Kurigram, Bangladesh) through Waterways. CUTS International, Jaipur, India. Available at:

[www.cuts-citee.org/IW/pdf/Study\\_Report\\_Boating\\_towards\\_inclusivity.pdf](http://www.cuts-citee.org/IW/pdf/Study_Report_Boating_towards_inclusivity.pdf). Accessed on December 19, 2018.

DAMC (2017). Why are growers unable to tap the raw material demand of the local agro-industries? Department of Agriculture Marketing & Cooperatives. Ministry of Agriculture & Forests. Thimpu, Bhutan.

De, P and K Iyengar (2014). Developing Economic Corridors in South Asia, Asian Development Bank, 2014. Available at:

[http://ris.org.in/images/RIS\\_images/pdf/Developing%20Economic%20Corridors%20%28webversion%29%20%2028.4.15.pdf](http://ris.org.in/images/RIS_images/pdf/Developing%20Economic%20Corridors%20%28webversion%29%20%2028.4.15.pdf)

FICCI (2012). Status Paper on India-Bangladesh Economic Relations. FICCI. Available at: <http://ficci.in/spdocument/20184/StatusPaperonIndiaBangladesh.pdf> .

FICCI and CUTS (2018). Cross-Border Value Chains in North East India: Prospects & the Way Forward. India.

FICCI (2016). Connectivity-led development of Northeast India through BBIN Corridor. FICCI. Available at: [www.atkearney.in/article/-/asset\\_publisher/zfwY8ibHUQKk/document/id/9366876?inheritRedirect=false&redirect=http%3A%2F%2Fwww.atkearney.in%2Farticle%3Fp\\_id%3D101\\_INSTANCE\\_zfwY8ibHUQKk%26p\\_p\\_lifecycle%3D0%26p\\_p\\_state%3Dnormal%26p\\_p\\_mode%3Dview%26p\\_p\\_col\\_id%3Dcolumn-2%26p\\_p\\_col\\_count%3D1](http://www.atkearney.in/article/-/asset_publisher/zfwY8ibHUQKk/document/id/9366876?inheritRedirect=false&redirect=http%3A%2F%2Fwww.atkearney.in%2Farticle%3Fp_id%3D101_INSTANCE_zfwY8ibHUQKk%26p_p_lifecycle%3D0%26p_p_state%3Dnormal%26p_p_mode%3Dview%26p_p_col_id%3Dcolumn-2%26p_p_col_count%3D1)

Financial Express (2018A). Agartala to Kolkata in just 10 hours by train? This new Indian Railways link via Bangladesh to make it possible. Financial Express, May 13, 2018. Available at :

[www.financialexpress.com/infrastructure/railways/agartala-to-kolkata-in-just-10-hours-by-train-this-new-indian-railways-link-via-bangladesh-to-make-it-possible/1165574/](http://www.financialexpress.com/infrastructure/railways/agartala-to-kolkata-in-just-10-hours-by-train-this-new-indian-railways-link-via-bangladesh-to-make-it-possible/1165574/)

Financial Express (2018B). Agartala-Akhaura railway project kicks off! This Indo-Bangla rail link will be an infra boost at the border. Financial Express, September 11, 2018. Available at:

[www.financialexpress.com/infrastructure/railways/agartala-akhaura-railway-project-kicks-off-this-indo-bangla-rail-link-will-be-an-infra-boost-at-the-border/1309426/](http://www.financialexpress.com/infrastructure/railways/agartala-akhaura-railway-project-kicks-off-this-indo-bangla-rail-link-will-be-an-infra-boost-at-the-border/1309426/). Accessed on January 31, 2019

ITC Trade Map. Available at: [www.trademap.org/Index.aspx](http://www.trademap.org/Index.aspx)

India Today (2018). New rail route to connect Darjeeling with Bangladesh. India Today. New Delhi, India. September 19, 2018. Available at:

[www.indiatoday.in/india/story/new-rail-route-to-connect-darjeeling-with-bangladesh-1343270-2018-09-18](http://www.indiatoday.in/india/story/new-rail-route-to-connect-darjeeling-with-bangladesh-1343270-2018-09-18), accessed on February 01, 2019

Grobelaar & Meyers (2017). The Dynamics of Regional Economic Integration: A System Dynamics Analysis of Pathways to the Development of Value Chains in the Southern African Customs Union. South African Journal of Industrial Engineering. May 2017 Vol 28(1), pp 73-89, Available at: <https://doi.org/10.7166/28-1-1613>. Accessed on December 01, 2018

Gereffi, G, (2018). Global Value Chains and Development: Redefining the Contours of 21<sup>st</sup> Century Capitalism. Cambridge University Press. ISBN: 978-1-108-45886-3

GOI (2017). Top 10 States/UTs in terms of Production of Raw Silk during 2015-16. Community.data.gov in. Government of India. October 24, 2017. Available at: <https://community.data.gov.in/top-10-statesuts-in-terms-of-production-of-raw-silk-during-2015-16>. Accessed on March 02, 2019

GOI (2019). Statement by External Affairs Minister at the Second Session of the India-Central Asia Dialogue. Media Centre. Ministry of External Affairs, Government of India. January 13, 2019. Available at:

[www.mea.gov.in/Speeches-Statements.htm?dtl/30906/Statement by External Affairs Minister at the Second Session of the IndiaCentral Asia Dialogue](http://www.mea.gov.in/Speeches-Statements.htm?dtl/30906/Statement+by+External+Affairs+Minister+at+the+Second+Session+of+the+IndiaCentral+Asia+Dialogue), Accessed on January 31, 2019

Katalyst (2016). Study on the Roles and Opportunities for Private Sector in Agro-food Processing Industry in Bangladesh. Available at: <http://katalyst.com.bd/wp-content/uploads/2017/01/Roles-and-Opportunities-for-Private-Sector-in-Agro-food-Processing-Industry-of-Bangladesh.pdf>.

Kala, C P & et al (2006). Developing the Medicinal Plants Sector in Northern India: Challenges and Opportunities. DOI: [10.1186/1746-4269-2-32](https://doi.org/10.1186/1746-4269-2-32), Available at: [www.ncbi.nlm.nih.gov/pmc/articles/PMC1562365/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1562365/), Accessed on March 02, 2018

Karim, T and M S Balaji (2016). BBIN: Paradigm Change in South Asia. Issue Brief. Vivekananda International Foundation. 2016. Available at: [www.vifindia.org/sites/default/files/bbin-paradigm-change-in-south-asia\\_0.pdf](http://www.vifindia.org/sites/default/files/bbin-paradigm-change-in-south-asia_0.pdf)

Kuensel (2017). Bhutan and Bangladesh Strengthen Cooperation. Kuensel, Bhutan. April 19, 2017. Available at: [www.kuenselonline.com/bhutan-and-bangladesh-strengthen-cooperation](http://www.kuenselonline.com/bhutan-and-bangladesh-strengthen-cooperation) Accessed on January 31, 2019

Logistic Performance Indicator (2018). Available at: <https://lpi.worldbank.org/international/global>

Mehndidratra S & T P, Quiros (2017). Follow the Moving Carbon: A Strategy to Mitigate Emissions from Transport. October 01, 2017, World Bank. Available at: <http://blogs.worldbank.org/transport/category/countries/india?page=1>

Memorandum of Understanding between Ministry of Shipping, Road Transport and Highways, Government of the Republic of India and Ministry of Shipping, Government of the People's Republic of Bangladesh. June 06, 2015. Available at: [www.mea.gov.in/Portal/LegalTreatiesDoc/BG15B2423.pdf](http://www.mea.gov.in/Portal/LegalTreatiesDoc/BG15B2423.pdf)

Money Control (2018). India to build strategic railway link between Kathmandu and Raxaul in Bihar. Money Control. April 07, 2018. Available at: [www.moneycontrol.com/news/india/india-to-build-strategic-railway-link-between-kathmandu-and-raxaul-in-bihar-2544559.html](http://www.moneycontrol.com/news/india/india-to-build-strategic-railway-link-between-kathmandu-and-raxaul-in-bihar-2544559.html), Accessed on January 31, 2019

National Horticulture Board (2017). Horticulture Statistics at a Glance. Available at: [http://nhb.gov.in/statistics/Publication/Horticulture%20At%20a%20Glance%202017%20for%20net%20uplod%20\(2\).pdf](http://nhb.gov.in/statistics/Publication/Horticulture%20At%20a%20Glance%202017%20for%20net%20uplod%20(2).pdf) Accessed on December 10, 2018

National Horticulture Board (2015). Horticulture Statistics at a Glance 2014. Available at: [http://nhb.gov.in/area-pro/nhb\\_database\\_2015.pdf](http://nhb.gov.in/area-pro/nhb_database_2015.pdf) Accessed on December 10, 2018

NITI Aayog (2018). Goods on the Move: Efficiency & Sustainability in Indian Logistics. NITI Aayog, (National Institution for Transforming India). Government of India. Available at: <http://niti.gov.in/content/goods-move-efficiency-sustainability-indian-logistics>

OECD (2013). Interconnected Economies: Benefitting from Global Value Chains. Accessed at: [www.oecd.org/sti/ind/interconnected-economies-GVCs-synthesis.pdf](http://www.oecd.org/sti/ind/interconnected-economies-GVCs-synthesis.pdf)

OECD (2015). Summary Report on Participation of Developing Countries in Global Value Chains: Implications for Trade and Trade-Related Policies. Available at: [www.oecd.org/countries/mali/Participation-Developing-Countries-GVCs-Summary-Paper-April-2015.pdf](http://www.oecd.org/countries/mali/Participation-Developing-Countries-GVCs-Summary-Paper-April-2015.pdf) Accessed on January 01, 2019

ORF (2016). Intra-BBIN Trade: Opportunities and Challenges. ORF Issue Brief. Issue no. 135. Observer Research Foundation, India. Available at: [www.orfonline.org/wp-content/uploads/2016/03/ORF-Issue-Brief\\_135.pdf](http://www.orfonline.org/wp-content/uploads/2016/03/ORF-Issue-Brief_135.pdf)

PIB (2017). India is the largest cotton producing and second largest cotton exporting country. Press Information Bureau. Government of India. Ministry of Textiles. March 09, 2017. Available at: <http://pib.nic.in/newsite/mbrel.aspx?relid=159082>, Accessed on March 02, 2019



PIB (2018). India and Bangladesh Sign Agreements for Enhancing Inland and Coastal Waterways Connectivity. Press Information Bureau. Government of India. Ministry of Shipping. October 25, 2018. Available at: <http://pib.nic.in/newsite/PrintRelease.aspx?relid=184384> Accessed on January 31, 2019

Protocol on Inland Water Transit and Trade. June 06, 2015. Available at: [www.mea.gov.in/Portal/LegalTreatiesDoc/BG15B2421.pdf](http://www.mea.gov.in/Portal/LegalTreatiesDoc/BG15B2421.pdf)

Regional Connectivity Scheme (RCS)-UDAN. Available at: [www.aai.aero/en/rcs-udan](http://www.aai.aero/en/rcs-udan) Accessed on April 04, 2019

RIS (2014). Developing Cross-Border Production Networks between North Eastern Region of India, Bangladesh and Myanmar: A Preliminary Assessment. Research and Information System for Developing Countries, Delhi, India.

RIS (2015). Towards 'Make in South Asia' Evolving Regional Values Chain. Discussion Paper 199. Research and Information System for Developing Countries, Delhi, India

Reuters (2018). India says to help Nepal build rail link to Kathmandu. Reuters. Kathmandu, Nepal. August 31, 2018.

Available at: <https://in.reuters.com/article/india-nepal-railways/india-says-to-help-nepal-build-rail-link-to-kathmandu-idINKCN1LG1YC> , Accessed on January 31, 2019

SANDRP (2018). National Inland Waterways in Bihar: Viable or desirable? South Asia Network on Dams, Rivers and People (SANDRP). August 03, 2018. Available at: <https://sandrp.in/2018/08/03/national-inland-waterways-in-bihar-viable-or-desirable/>

Spohrer, R & G S Garrett & A Timmer & R Sankar & B Kar & F Rasool & L. Locatelli (2012). Processed Foods as an Integral Part of Universal Salt Iodization Programs: A Review of Global Experience and Analyses of Bangladesh and Pakistan. Food and Nutrition Bulletin 33:S272-80. Available at: [www.researchgate.net/publication/235748338\\_Processed\\_Foods\\_as\\_an\\_Integral\\_Part\\_of\\_Universal\\_Salt\\_Iodization\\_Programs\\_A\\_Review\\_of\\_Global\\_Experience\\_and\\_Analyses\\_of\\_Bangladesh\\_and\\_Pakistan](http://www.researchgate.net/publication/235748338_Processed_Foods_as_an_Integral_Part_of_Universal_Salt_Iodization_Programs_A_Review_of_Global_Experience_and_Analyses_of_Bangladesh_and_Pakistan). DOI: 10.1177/15648265120334S303

Saha, R. C. (2016). Prospects of Bangladesh in Developing Intermodal Freight Transportation Network in South Asia. Journal of Economics and Sustainable Development. [www.iiste.org](http://www.iiste.org), ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online). Vol.7, No.1, 2016

Sarkar, P K., Mathur, V. Maitri, V. & Kalra, K. (2007). Potential for Economic Gains from Inland Water Transport in India. Transportation Research Record: Journal of the Transportation Research Board, No. 2033. Transportation Research Board of the National Academies. Washington, D.C., 2007, pp. 45–52. DOI: 10.3141/2033-07

Schwab, K. (2018). The Global Competitiveness Report 2018. World Economic Forum.

Available at: [www3.weforum.org/docs/GCR2018/05FullReport/TheGlobalCompetitivenessReport2018.pdf](http://www3.weforum.org/docs/GCR2018/05FullReport/TheGlobalCompetitivenessReport2018.pdf)

Sengupta, J (2018). Entering regional value chain is better for India. Observer Research Foundation. January 10, 2018. Available at: [www.orfonline.org/expert-speak/entering-regional-value-chain-is-better-for-india/](http://www.orfonline.org/expert-speak/entering-regional-value-chain-is-better-for-india/)

Tralac (2018). The role of trade policies in building regional value chains – some preliminary evidence from Africa”, Tralac. July 09, 2018. Africa. Available at: [www.tralac.org/news/article/12580-the-role-of-trade-policies-in-building-regional-value-chains-some-preliminary-evidence-from-africa.html](http://www.tralac.org/news/article/12580-the-role-of-trade-policies-in-building-regional-value-chains-some-preliminary-evidence-from-africa.html)

Times of India (2008): “Kolkata-Dhaka Moitree Express flagged off”, The Times of India, Kolkata, India, 14<sup>th</sup> April, 2008. Available at <https://timesofindia.indiatimes.com/india/Kolkata-Dhaka-Moitree-Express-flagged-off/articleshow/2950159.cms?>, accessed on 1.02.2019

The Guardian (2013). Potentials of Inland Water Transport in Bangladesh. The Guardian. November 06, 2013. Bangladesh. Available at: [www.theguardianbd.com/potentials-inland-water-transport-bangladesh/](http://www.theguardianbd.com/potentials-inland-water-transport-bangladesh/), Accessed on January 03, 2019

UNESCAP (2015). Asia Pacific Trade and Investment Report. UNESCAP. Available at: [www.unescap.org/sites/default/files/03\\_Trade%20Briefs\\_India.pdf](http://www.unescap.org/sites/default/files/03_Trade%20Briefs_India.pdf) Accessed on January 03, 2019

United Nations Conference on Trade and Development (2013). Global Value Chains and Development: Investment and Value Added Trade in Global Economy. Accessed at: [https://unctad.org/en/PublicationsLibrary/diae2013d1\\_en.pdf](https://unctad.org/en/PublicationsLibrary/diae2013d1_en.pdf)

UN Comtrade. Available at: <https://comtrade.un.org/>. Accessed on March 02, 2019

Vidyadharan, V and P Nath (2017). Connectivity gains for India's North East via Waterways' the thirdpole.net. December 17, 2017. Available at: [www.thethirdpole.net/en/2017/12/15/connectivity-gains-for-indias-north-east-via-waterways/](http://www.thethirdpole.net/en/2017/12/15/connectivity-gains-for-indias-north-east-via-waterways/). Accessed on December 27, 2018

World Integrated Trade Solutions (WITS). World Bank. Available at: <https://wits.worldbank.org/>

World Economic Forum (2018). This is why women must play a greater role in the global economy. January 24, 2018. Available at: [www.weforum.org/agenda/2018/01/this-is-why-women-must-play-a-greater-role-in-the-global-economy/](http://www.weforum.org/agenda/2018/01/this-is-why-women-must-play-a-greater-role-in-the-global-economy/), Accessed on March 02, 2019

The World Bank (2010). Enhancing Regional Trade Integration in Southeast Europe. The World Bank. Working Paper 185. Available at: [http://eeas.europa.eu/archives/delegations/the\\_former\\_yugoslav\\_republic\\_of\\_macedonia/documents/eu\\_the\\_former\\_yugoslav\\_republic\\_of\\_macedonia/etise\\_en.pdf](http://eeas.europa.eu/archives/delegations/the_former_yugoslav_republic_of_macedonia/documents/eu_the_former_yugoslav_republic_of_macedonia/etise_en.pdf)

The World Bank (2016). The Potential of Intra-regional Trade for South Asia. The World Bank. May 24, 2016. Available at: [www.worldbank.org/en/news/infographic/2016/05/24/the-potential-of-intra-regional-trade-for-south-asia](http://www.worldbank.org/en/news/infographic/2016/05/24/the-potential-of-intra-regional-trade-for-south-asia)

World Bank (2017). Developing India's First Modern Inland Waterway. The World Bank, 12th April 12, 2017. India. Available at: [www.worldbank.org/en/country/india/brief/developing-india-first-modern-inland-waterway](http://www.worldbank.org/en/country/india/brief/developing-india-first-modern-inland-waterway)

World Bank (2018). A Glass Half Full: The Promise of Regional Trade in South Asia. World Bank Group, Available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/30246/9781464812941.pdf?sequence=8&isAllowed=y>

World Bank (2019). The Textile-Clothing Value Chain in India and Bangladesh. Policy Research Working Paper 8731. Available at: <http://documents.worldbank.org/curated/en/101321549556073308/pdf/WPS8731.pdf>

World Development Indicators. Available at: <https://data.worldbank.org/indicator>, Accessed on April 03, 2019.





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