# IMPORTANCE OF INTERMODAL TRANSPORTATIONS AND COMMUNICATION INFRASTRUCTURE IN DEVELOPING PRESENT HINTERLAND CONNECTIVITY WITH PORTS OF BANGLADESH

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## INTRODUCTION

Bangladesh is a country of hope, prosperity and opportunity. Most of its area is relatively flat lying in the deltaic plain, covered with a network of rivers and roads forming a maze of interconnecting corridors. As an emerging nation, Bangladesh places special priority on economic and social development. Any well-planned, neatly laid-out, sustainable modern multi-modal transport system and communication infrastructure is as a key element for better connectivity with the hinterlands.

To manage the diverse and increasing needs of the movement of container cargo traffic efficiently, any shipping process needs to follow door-to-door connectivity. In Bangladesh, there are serious bottlenecks in the integrated chains for the import and export bound container cargo traffic that adversely affect the movement of container cargo traffic resulting in increase in the unit cost of transportation. Since, the containerized cargo traffic movement is obtained via integrated chain to keep the unit cost of transportation competitive, the country's maritime industry has to look, analyze and push for targeted policies to ease out and remove these bottlenecks. Specifically, there is clear requirement for rapid and unhindered hinterland connectivity, improvement in multimodal infrastructures and legislation in line with established world practices in multimodal transportation[1].

### Objective of the Study

Containerized cargo provides easy handling, lesser unit cost of transportation, and a greater economy of scale in modern times over an ever increasing proportion of the world's manufactured goods. In most door-to-door transport chains, the costs of hinterland transport are higher than maritime transport costs and port costs combined. Hinterland connectivity is probably the most critical area to ensure a seamless flow of containers and to improve port productivity. It is an essential part of a world class logistics system that Bangladesh needs to

1. Coordination in Hinterland Transport Chain: A Major Challenge for the Seaport Community by Martijin VAN DER HORST and Peter DE LANGEN, Corresponding author: Erasmus University Rotterdam, Department of Port, Transport and Regional Economics, The Netherland.

develop with a strategic focus. Bangladesh is subjected to the impacts arising from developments in the logistics industry and transportation sector.

The broad objectives of this study is to analyze port–hinterland connectivity. In detail the study seeks:

a. To propose a systematic and user oriented intermodal transportation system is built in the country.

b. To identify current and projected future corridor problems and needs, and various projects and strategies to address those needs.

c. To explore ways of encourage consignees using both rail and river transport as these contributes less pollution and consume less fuel per ton transported and these are the safest means of transport for containers.

## PORTS OF BANGLADESH AND THEIR CONTAINERIZATION

**Prerequisites for Smooth Functioning of Ports** Human civilization started its journey centered round ports[2]. Adequate Port facilities and efficient management have a vital role to play towards achievement of economic growth in developing countries; this is more so in the case of Bangladesh. In order to develop port facilities connectivity between hinterland and port the inter-port connectivity is very important. Ports should invest in hinterland connectivity to be able to offer total transportation solutions to the clients. That connectivity to the hinterland by road, rail and waterways is the key to the success of a container terminal. Slow evacuation of cargo coupled with poor hinterland connectivity has undermined the efficacy of ports and it is imperative to develop a multi-modal system to enhance their competitiveness. An efficient multi-modal system, which uses the most efficient mode of transport from origin to destination, is a prerequisite for smooth functioning of any port[3].

**Chittagong Port**. Bangladesh is a littoral state and ports provide a gateway for its sea-borne trade with outside world. As the meeting place of the east and west, Chittagong occupies the key position in the development of foreign trade. The Chittagong Port being the principal port of the country has been playing a

2. Coordination of Business Plans Major Ports in India, Volume 2, Indian Ports Association Coordination of business plans for major ports in India Consolidated port development plan; Prepared by Port of Rotterdam Authority, September 2007.
3. CPA Container Handling Facilities and Processes Chittagong Port Trade Facilitation Project, Bangladesh; Asian Development Bank, Bangladesh Ministry of Shipping and Chittagong Port Authority; Prepared By: TERA International Group Inc., 107 E. Holly Avenue, Suite 12, Sterling, VA 20164, U.S.A

vital role for the economic development of the country. During the year 2010-11 Chittagong port handled over 45 million metric tons of cargo including 1.5 million TEUs containers which constituted around 92% of total maritime trade of Bangladesh[4]. Chittagong Port is not only an opening to the economy of Bangladesh, but there is no second installation in Bangladesh equal to the Chittagong Port considering its strategic, economic and political importance thereby making it highly dynamic to keep pace with increasing commercial and economic activities of the country.

**Mongla Port**. Mongla Port is the second most important seaport in Bangladesh. It is situated 90 km from sea in the Passur River. Mongla is in the unique position to handle export and import traffics of the country as well as the transit trade and commerce of neighboring countries of Bangladesh as that of Nepal and Bhutan. But due to inadequate depth of water in the port area very few vessels call at the Mongla Port. Due to heavy sedimentation, the present river depth alongside the port jetty has come down to six meters from earlier 7.5 meters. Continuous dredging is required to keep the channel navigable. Mongla Port has neither installed adequate equipment, nor implemented the Electronic Data Interchange Facility (EDTF) in port operations and hence suffers from inordinate delays in areas like dock clearing and ship turnaround time[5].

**Containerization of the Port** Containerization contributes to a higher efficiency in the development of multimodal transport operations. Container shipping has been the fastest growing sector of the maritime industries during last two decades[6]. In the year 1980, the average container ship size was 975 TEUs and the largest ship was 3057 TEUs. In the year 2011, the average size of a fully cellular container ship was 2 218 TEUs and the largest size was about 9600 TEUs and this is still increasing. The draft requirement at the port has also changed accordingly. Therefore, it is imperative for the Bangladeshi ports to improve on the parameters such as draft, average turnaround time, average pre-berthing time, etc in order to remain an attractive destination and transit point for the global container cargo traffic and to meet effectively and fulfill the demands of internal trade as well. By the study of container volume growth during the past twenty years, it has been predicted that the container volume will double on most major routes within the next ten years or less.

4. People's Republic of Bangladesh: Strategic Master Plan for Chittagong Port, ADB's Technical Assistance Report, Project Number: 45078 Policy and Advisory Technical Assistance (PATA) , December 2011.
5. Mongla Port Area Development Project Final Report Feb 1996 by Japan Overseas Consultant Co Ltd in association with Fredric R. Harris INC. Bangladesh Consultant Ltd.
6. Theo NOTTEBOOM ITMMA The Relation Between Seaports and the Intermodal hinterland in Light of Global Supply Chains, European Challenges; Discussion Paper No. 2008-10 March 2008. Joint Transport Research Centre of International Transport Forum.

## SUPPLY CHAIN AND MULTIMODAL TRANSPORT SYSTEM

**Supply Chain**. A supply chain is a system of organizations, people, technology, activities, information and resources involved in moving a product or service from supplier to customer. Supply chain activities transform natural resources, raw materials and components into a finished product that is delivered to the end customer[7]. The 21st century will see a renewed focus on intermodal freight transportation driven by the changing requirements of global supply chains[8]. Intermodal transportation, with the options of integrating multiple modes, provides a flexible response to the changing supply chain management requirements in global markets and distribution systems[9]. In Bangladesh some modes are over utilized, creating delays and hazards, while other modes are under utilized and have excess capacity. To improve overall efficiency of the transport system, each mode should be used for what it does best in an overall transport supply chain[10]. The Bangladeshi institutions, in general, have weak and outdated structures. Inadequate capacity and shortage of resources and trained manpower seriously undermine their ability to deliver good services that requires sound policy making as well as management.

**Intermodalism**. In one of its most widely accepted meanings, intermodal freight transportation refers to a multi-modal chain of container transportation services. This chain usually links the initial shipper to the final consignee of the container (so-called door-to-door service) and takes place over long distances[11]. Transportation is often provided by several carriers. In a classical example of an inter-continental intermodal chain, loaded containers leave a shipper's facility by truck either directly to port or to a rail yard from where a train will deliver them to port[12]. A ship will move the containers from this initial port to a port on the other continent, from where they will be delivered to the final destination by a single or a combination of "land" or "water" transportation means: truck, rail, coastal or river navigation.

7. Steenken and Stahlbock, 2004,
8. Intermodal Freight Transportation, by WILLIAM DEWITT, University of Maryland and JENNIFER CLINGER, Louis Berger Group, Inc. A1B05: Committee on Intermodal Freight Transport Chairman: Gerhardt Muller, U.S. Merchant Marine Academy.
9. Ibis
10. Policy Brief on "Transport and Infrastructure" CPD task force report, National Policy Forum Dhaka: 20-22 August, 2001 Organized by: Centre for Policy Dialogue, *Prothom Alo, The Daily Star.*
11. Teodor Gabriel Crainic and Kap Hwan Kim Intermodal Transportation Montr´eal, December 9, 2005
12. Intermodal Freight Transportation, by William Dewitt, University of Maryland and JENNIFER CLINGER, Louis Berger Group, Inc. A1B05: Committee on Intermodal Freight Transport Chairman: Gerhardt Muller, U.S. Merchant Marine Academy.

**Advantages of Multimodal Transport**[13]

Competitive advantage from an efficiently integrated transportation network may ultimately lead to wider reach of markets, higher production, lower cost and improved quality of goods to the benefit of customers[14]. Some key advantage of multimodal transport are as follows:

a. **Minimizes Time Loss**. Multimodal transport, which is planned and coordinated as a single operation, minimizes the loss of time and the risk of loss, pilferage and damage to cargo at trans-shipment points. The multimodal transport operator maintains his own communication links and coordinates interchange and onward carriage smoothly at trans-shipment points.

b. **Provides Faster Transit.** The faster transit of goods made possible under multimodal transport reduces the disadvantages of distance from markets and the tying-up of capital. In an era of Globalization the distance between origin or source materials and consumer is increasing thanks to the development of multimodal transport.

c. **Reduces Documentation.** The burden of issuing multiple documentation and other formalities connected with each segmented of the transport chain is reduced to a minimum.

d. **Saves Cost.** The savings in costs resulting from these advantages are usually reflected in the through freight rates charged by the multimodal transport operator and also in the cost of cargo insurance. As savings are passed onto the consumer demand is increased.

e. **Establishes One Agency Dealing.** The consignors has to deal with only the multimodal transport operator in all matters relating to the transportation of his goods, including the settlement of claims for loss of goods, or damage to them, or delay in delivery at destination.

## IMPORTANCE OF UNHINDERED HINTERLAND CONNECTIVITY

**Hinterland Connectivity** The development and changes in port hinterlands have received a lot of attention since they represent substantial opportunities to improve the efficiency of global freight distribution. Port hinterland is one of the most important concepts in transport geography; literally, hinterland means the land behind a city or a port. A port's hinterland is the market reach area from which

13. Multimodal Transport Operations., 2002. UNESCAP Training Module
14. The Law of Intermodal Transportation: What it was, what it is and what it should be -A Report on Intermodal Transportation in USA by Paul Stephen Dempsey, Ph.D, J.D.

the port's customers are drawn from that is, the areas from which cargo originates, as well as the areas where cargo moving through the port is destined[15] Some ports will have hinterlands that extend across many states, while other ports will have smaller hinterlands. Therefore, the connectivity of Ports with the hinterland is important not only to ensure smooth flow of traffic at the present level but also to meet the requirements of projected increase in traffic[16].

**Communication with Hinterland** While ports have always been important nodes in the logistics system, globalization of production has sharpened the need for ports to be value adders, not value subtractors, in the supply chain, and has given ports a unique opportunity to become value-adding entities. A port is the interface between intercontinental transport and a place in the hinterland being considered for production, assembly, or final distribution[17]. Port capability and efficiency can greatly influence the decision for locating a distribution center, and often determine whether a local producer can compete globally or regionally with other producers. The challenge is for ports to relate to the needs of their customers and assist them in improving their competitive positions by providing low-cost, efficient port services. At present 70% cargoes of the Chittagong Port are hinterland bound. So far model split of cargo is concerned, 10% by rail (containers), 50% by road (break bulk[18]) and 40% by river (bulk) are transported to hinterland. As long as full load container is concerned only 10% by rail, 2% by road and not a single container is transported through river route[19].

## ROADS AND CORRIDORS CONNECTING HINTERLAND

**Roads**. The Roads and Highways Department (RHD) and local government bodies are the two principal organizations responsible for the construction and maintenance of the road network in Bangladesh. In Bangladesh roads carry over 70 percent of national passenger traffic, providing the backbone of the transport sector in this country of 160 million people. Of multiple modes of existing transportation encompassing rail-water-roadways in Bangladesh, road transport by an order of magnitude in carriage of goods and passengers, has

15. Free Trade Zone and Port Hinterland Development, Report Submitted by ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC in 2005, No of Report ST/ESCAP/2377.
16. Report of a conference on" Ports of India", New Delhi, November 17, 2006.
17. Hinterland Connections of Seaports UNECE Conference September 17-18, 2008 Piraeus, Greece Introduction of the Session 'Challenges to the Development of Seaports in a Globalized World' By its Chairman C. Bert Kruk Lead Port Specialist ETWTR (Energy, Transport and Water Transport Group), the World Bank, Washington DC, USA.
18. Break-bulk cargo traffic is defined as all general cargo that is not containerized, for instance in loose, palletized, and bagged or in a pre-slung packing form.
19. Report and recommendation of the president to the board of Directors on a proposed loan and technical assistance grant to the people's republic of Bangladesh for the Chittagong port trade facilitation project; Asian Development Bank RRP: BAN 36105; November 2004.

apparently been playing the most dominant role. Taking cognizance of need of rapid socio-economic development, a good number of transport infrastructure building projects have been launched by Roads and Highways Department that are currently going underway of implementation. The axle load permitted on tracks in India was 20.3 to 22.9 tons as against 25 to 37.5 tons per axle carried by major freight carrying systems in the world such as the Australian system[20]. In Bangladesh, only the 10% -11% of the export bound container traffic is transported by rail and the remaining part of the traffic is transported by road after un-stuffing the container at Chittagong and Mongla area. Therefore, it is critical and important to improve roads network and enhancement of axle load, so that the logistics cost can be brought down to international standards.

**Dhaka Chittagong Corridor.** A transport corridor is a set of routes between hub centre where maritime, fluvial, land and air transportation systems converge. Transport corridors will integrate economic activities over a territory or a region. Dhaka-Chittagong National Highway with a length of 248.3 km is considered to be the most important arterial road and lifeline of commerce in Bangladesh and carries port traffic to Dhaka and other places in the country. The improvement of this strategic corridor is envisaged to provide substantial economic and social benefits to the people through generation of employment, creation of improved facilities for trade and commerce.

**Road Traffic Facilities.** The road at present has two lane traffic facilities from Daudkandi to Chittagong section with certain stretches paved shoulders. The Government has decided to make an independent alignment of Dhaka-Chittagong Highway, a 4-lane divided carriageway capable of carrying container and other traffic from the port city of Chittagong to the hinterland with access control. It is envisaged that, the implementation of this project will reduce journey time from Dhaka to Chittagong by two/three hours[21].

**Ushering New-Southwest Corridor (Dhaka-Mongla).** The Government of Bangladesh (GOB) will soon start implementing a plan to construct USD 3 billion Padma Bridge on River Padma which separates depressed southeast zones and Mongla Port from Dhaka. The bridge will be the longest bridge of the country. The proposed Bridge will be 5-6 Kilometer long, 25-meter wide with four-lane roadway and a railway track, gas pipeline and electricity power transmission line on it. Once this mega project is completed, travel among all the major divisions and cities between the two sides of the river will be easier and faster. According

20. BANGLADESH TRANSPORT POLICY NOTE *Unit Sustainable Development Department South Asia Region* April 2009 by Graham Smith under the guidance of Jean-Noel Guillossou, Sr. Transport Economist
21. Project Paper submitted by ADB to R&H division for Dhaka –Chittagong 4 lane project in 2006

to the feasibility study, it was projected that the traffic volume at the Padma Bridge will reach 21,300 vehicles per day soon after opening of the bridge and will reach 41,600 vehicles per day by 2025. This fixed link between centre and southwest parts of the country will improve accessibility, lower transport costs and delays, and reduce the economic isolation of the Southwest.

## OPPORTUNITIES IN RAILWAY NETWORK

**Railway** Containers have become the most important component for rail and maritime intermodal transportation. Bangladesh Railway has entered into a new era in transportation of freight traffic in containers from Chittagong to Dhaka. Special type Flat Wagons required for container movement were initially arranged by converting some existing wagons. Subsequently 80 bogie container flats were procured from China and another 100 bogie container flats were procured from India. An Inland Container Depot has been opened at Dhaka with custom and port facilities for clearance of container traffic. Exclusive container train was introduced on 5th August, 1991. Since then, volume of container traffic gained momentum.

**Dhaka-Chittagong Rail Corridor**. The Dhaka-Chittagong rail corridor has a total length of 321 km. A container train takes around 8/9 hours to reach Dhaka from Chittagong and vice-versa. At present 121 km of this corridor is already double-tracked. Double tracking the Tongi-Bhairab Bazar section is taken under hand. Doubling of the Laksam-Chinkiastana section and Akhaura-Laksam section will be taken when adequate financial aid will be received from donors[22]. Number of containers transported by BR between Chittagong Port and Dhaka ICD has been growing during recent years at an average rate of about 10%. BR now transports around 90,000 TEUs of containers annually, which is approximately ten percent of the total demand. The growth is being hampered due to limitations of line capacity, insufficient equipment, less number of locomotives and inadequate terminal facilities.

## UNEXPLOITED INLAND WATERWAYS

**Inland Water Transport (IWT)**. Bangladesh is a riverine country. Water Transport of Bangladesh lies at the apex of the Bay of Bengal and has rivers that come down from the surrounding countries and flow through it. The inland waterways play a vital role in the economic development of a country. Because of its geographical and topographical conditions, water transport has developed as the main mode of communication. A number of rivers and numerous channels

22. Railway sector investment programe report, project no. 32234, September 2006.

criss-cross the country so as to resemble the mesh of a net. Out of an overall 24,000 km-long network of rivers, canals, creeks and bodies of water occupying about 11% of the total area of the country. The length of navigable waterways is 8,372 km in the rainy season and 5,200 km in the dry season[23]. Nearly all waterways are natural rivers, the navigability of which is affected by river morphology and hydraulics. A number of initiatives were launched to enhance the inland waterway mode of transport, which is estimated to carry approximately 35% of the country's annual freight volume[24]. Inland ports handle about 40 percent of the nation's trade[25].

**BIWTA and BIWTC**. Inland waterways are estimated to carry approximately 14% of the country's annual passenger volume and 35% of its annual freight volume. Of the three surface modes, IWTC has the lowest share of the passenger transport task and the second-lowest share of the freight transport task (with rail taking the lowest share of the latter). The basic inland waterway transport system comprises a triangle of two seaports, Chittagong and Mongla, with the Dhaka-Narayanganj metropolitan area. Because of the physical properties of water conferring buoyancy and limited friction, water transportation is the most effective mode to move large quantities of cargo over long distances. Interconnections between barge services and ocean shipping, particularly on the Chittagong Dhaka route barge shipping offers a low cost solution to inland distribution where navigable waterways penetrate to interior markets[26].

**Construction of ICD at Pangaon**. CPA and BIWTA have jointly built an ICD on the bank of river Buriganga at Pangaon in Narayanganj to introduce waterway container transportation for the first time in the country. Total area of the Pangaon ICD is 44 acres and holding capacity will be 8000TEUs. The CPA has provided Tk 154 crore for the implementation of the project[27]. When the ICD will be commissioned 60%-70% container will be transported by river route. If container transportation is carried through waterway, traffic congestion will also be minimized on the Dhaka-Chittagong corridor to a large extent.

23. People's Republic of Bangladesh Revival of Inland Water Transport: Options and Strategies May 29, 2007; A report (Report No. 38009) prepared by a team led by Jean-Noel Guillossou World Bank, South Asia Sustainable Development, SASSD.
24. Review of Maritime Transport 2011; *Report by the UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT (UNCTAD) secretariat; Chapter 4.* UNITED NATIONS, New York and Geneva, 2011.
25. Private sector to make mark in inland cargo handling. The Daily Star 22 December 2009. http://www.thedailystar.net/newDesign/news-details.php?nid=118770 (Accessed on 24 May 2012)
26. People's Republic of Bangladesh, Revival of Inland Water Transport: Options and Strategies Bangladesh Development Series Paper No. 20 the World Bank Office, Dhaka September 2007.
27. People's Republic of Bangladesh Revival of Inland Water Transport: Options and Strategies May 2007 Sustainable Development Department South Asia Region. Report No. 38009.

Water transportation is cheaper, safer, and environment-friendly, and will thus continue to play a significant role in the economic life of Bangladesh in the future. Therefore MLOs must be encouraged to build suitable transport so that it can carry 80 to 100 TEUs of containers[28]. Initial work on the container terminal is completed and an operator being appointed to run the terminal. A container terminal may be built in the River Turag in order to facilitate import-export of Savar, Ashulia and Gazipur EPZ areas.

## FACTORS EFFECTING IN IMPROVEMENT OF INTERMODALISM

**Customs Interferences** The efficiency and effectiveness of Customs in processing trade goods has a significant influence on the international competitiveness and economic growth of the country and in the expansion of foreign trade in the global marketplace[29]. Customs procedures, transport documentation and data exchange should be simplified and harmonized to achieve faster turnaround time for cargo processing. While Chittagong Customs House has done well in computerizing various processes over the years, there is still much room to improve operational effectiveness custom clearance process[30]. The harmonization of Customs processes and procedures is essential to the objective of facilitating global trade. Customs clearance can be made easy by adopting the following measures:

a. A wide area network needs to be established for bringing all stakeholders under one computerized system, including customs, port authority, customs agents, shippers, traders and banks

b. Only high-risk cargo may be opened for customs examination

c. Simplified customs procedure for transshipment between gateway port and dry port (ICD/CFS)

d. LCL carrying containers allowed movement from one CFS to another CFS for final consolidation/stuffing.

e. Customs messages exchange with ports, airports, ICDs/CFSs and banks.

28. *Ibid*
29. Challenges of Customs Automation in Bangladesh and Future Prospects by Dr. Khairuzzaman Mozumder First Secretary (Customs Policy), National Board of Revenue prepared for Asia-Pacific Trade Facilitation Forum 2009: Setting the Regional Agenda, 26 November 2009.
30. Contributions of Auxiliary Factors to Investment Climate in Bangladesh: A Study on Ports and Customs by AKM Matiur Rahman, Technical Advisor: Charles C. Villanueva, AJBE Special Issue, May 2011

f. Facility of customs duty payment through more banks and via e-banking

g. The NBR may employ adequate number of preventive officers in the dry port to transport container by road and waterways for facilitating Door to Door operation.

Despite some computerization, the documentation needed for customs clearance is lengthy and still C&F agent has to submit the hard copy. Even with the Pre-Shipment Inspection (PSI) system now in place, customs continues to check 5 to 10% of the shipments that have CRF (Clean Report of Findings) and up to cent percent of the packages in these consignments[31]. These measures taken by customs officials result in delay of releasing goods, in addition, such inspections generate mere prospect of elicit informal payments.

**Bonded Transportation in Bangladesh**. The bonded transportation of containerized cargo between Chittagong port and the Dhaka ICD is carried out by means of the use of Bangladesh Railway. However, containerized cargo is not permitted to be classed as bonded transportation if the destination of the cargo declared in the bill of lading and the Internal General Manifest is other than Dhaka or Dhaka ICD. The Shipping Agent draws a new IGM (Separate container list for bonded transportation) and submits it to the collectors of customs at Chittagong for its haulage.

**Transport Policies of Bangladesh** As multimodalism involves promoting cooperation and linkages amongst different transport modes, plenty of challenges and obstacles stand to get in the way. By establishing rules and modifying them as links and relationships across transport modes are built, participants in this network will be better quipped to preserve their individual business objectives. The introduction of multimodal laws and regulations will be the most crucial first step in developing "through-transport" linking the various transport modes in the country in a systematic and efficient manner. Taking consideration of these points the GoB has drafted an Integrated Multi Modal Transport Policy (IMMTP) in June 2008 which aims to build a secure, dependable and uninterrupted transport network, addressing problems related to road, rail, inland water transport, including access to ports and airports[32]. The IMMTP will help GoB in achieving a more rational and balanced investment across the different transport modes.

31. Bangladesh Strategy for Sustain growth. A report on Development of Port and Customs by Asian Development Bank. 2009.
32. Implementation of Multimodal Transport Rules, A Report prepared by the United Nation Conference on Trade and Development Secretariat in 2002.

The integrated transport policy is intended to extend choice in transport and secure mobility in a way that supports sustainable development.

## RECOMMENDATIONS

The following is a set of broad policy recommendations that can hopefully form a sound platform upon which hinterland connectivity and multimodal transport system can be built. They are by no means exhaustive, but it is hoped that their introduction could inspire further debate on the subject of multimodal development and spur more detailed studies into the proposed areas:

a. It is generally agreed that a well-articulated multimodal transport policy is needed for the development of transport sector, even when the private sector plays an increasing role in such development. Therefore the draft national policy on integrated multimodal transportation may be enacted as soon as possible.

b. The integration of the individual modes into a seamless intermodal system may be incorporated into the national transportation policy.

c. National corridors where traffic count reaches 12,000 PCUs preferably have at least four lanes road connectivity. Double line rail connectivity may be taken up for speedy implementation. Increased length of loops at sidings and larger space envelopes should be factored in while implementing new rail projects so as to harness increased volumes of cargo.

d. In order to avoid elicit informal payments the NBR may take advance duty/tax from importer while opening the LC.

e. The Inland Container Depots (ICD) may be established according to demand, at strategic locations, to enable multimodal door to door operation without stuffing and de-stuffing of containers at the ports. ICDs may be well-equipped with proper container handling equipments.

f. The inland waterway system has been found to have lowest marginal cost for moving containers to hinterland; hence Pangaon container terminal may be brought into operation as soon as possible.

g. To check overloading of trucks and buses, weight bridges may be placed into RHD roads. This will help prevent the damage of roads from heavy axle-loads and reduce the need for road maintenance.

h. Country's inland water transport remains completely ignored. As a result the opportunities of spreading industries to different parts of the county remain unachieved. Therefore implement a continuous and sustainable river dredging plan and development and sustainable navigability plan of the Mongla Port.

j. Inadequate energy supply and under developed transport networks connecting ports with the hinterland impose a major drag on growing economic performance. Building sustainable hinterland connectivity the government may take following measures on priority basis:

a) Increasing expenditures on maintenance of road and rail;

b) Establish a national highway authority;

c) Making Dhaka Chittagong rail corridor double track;

d) Introduce double stacked container train service;

e) Simplify Customs procedures and make the regulation users friendly;

f) Connect Mongla Port and Dhaka via rail line;

g) Employment of adequate number of Customs officials to the ports and ICDs;

## CONCLUSION

Hinterland connectivity is probably the most critical area to ensure a seamless flow of containers and to improve port productivity[33]. It is an essential part of a world class logistics system that Bangladesh needs to develop with a strategic focus. Inadequacy and technical incapacities of the road sector has been addressed by various means. For improving inland connectivity through waterways, inland waterway policy aims to increase the share of the total inland cargo. Dhaka-Chittagong 4 lane road and double track rail aim to remove capacity constraints

33. David Cole, Tony Furst, Sharon Daboin, Warren Hoemann, Dr. Michael Meyer, Richard Nordahl, Marygrace Parker, Leo Penne, Norman Stoner, Dr. Tianjia Tang Freight Mobility and Intermodal Connectivity in China; Technical Report Documentation, Sponsored by Office of International Programs, Office of Policy, Federal Highway Administration, U.S. Department of Transportation; American Association of State Highway and Transportation Officials National Cooperative Highway Research Program.

of hinterland connectivity. Simply building more and more roads is not the answer to increasing transport demand. Rail and inland water transport have been marginalized and now an integrated transport policy is needed to address the massive demand of the future and to combat congestion and pollution.

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