

# Port Development in Bangladesh

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## Abstract

This paper aims to find out the existing port infrastructure and port transport facilities in Bangladesh and its further development opportunities to mitigate the demand of port transport within the country also for regional and international requirements that needs to consider as priority activity. In addition, further development of port logistics for other countries by which Bangladesh can earn foreign exchange that will be added in GDP. Above and beyond, this paper conducts the research of existing port facilities and port performance of Bangladeshi seaports for national, regional and other's trade demand currently and how efficiency may be increased to follow the performances of ranked port of the world. Role of government, private sector engagement through PPP for reforming the port management are described for developing port infrastructure, roads and highways, easy documentation and others for quick movement of cargo and container to meet the demand of port users. Moreover, intermodal transport services within the country and especially for India, Nepal and Bhutan highly required in the South Asia that may be supplied from Bangladeshi seaports. In here, the major factors like high transport costs, import and export expenses, passage time and others may be reduced through the developments of ports that positioned with the geographical advantages for some countries including landlocked developing countries (LLDCs) of South Asia that is focused by transit facilities by Bangladesh to other countries. Furthermore, this paper makes a case study for Southern China transit and transport arrangement with Bangladesh by which both countries will be benefitted equally. Overall, development process of port transport and its interrelated subject development attributed in this paper to make it useful for all port users nationally, regionally and internationally.

**Keywords:** Transport, Logistics, Intermodal, Landlocked, Transit, China.

## 1. INTRODUCTION

A seaport (hereinafter known as "Port") is a gateway of a country, transit area, introducer of foreign trade and manufacturing industry and the center of all kinds of transport networks. In relation to, modern shipping indicated port as the hub of intermodal container transportation beside traditional multimodal systems. In this context, Rodrigue and Noteboom (2010) added that ports are part of a larger system with specific spatial and functional characteristics to serve the hinterland outstandingly. Bangladeshi port's position is highly lucrative in South Asia also for international traders because of its geographical location in the Bay of Bengal. Understanding the importance of ports in the national needs and source of earning foreign exchange by serving neighbors, in Bangladesh, port development is essential. Just then, UNCTAD (2012) reviewed that port development is the derived demand of port users where port location can increase the number of port users naturally and artificially by establishing industry. This paper aims to find out the existing port infrastructure and port transport facilities in Bangladesh and its further development opportunities to mitigate the demand of maritime transport within the country also for regional and international requirements.

To (Noteboom and Rodrigue, 2005) follow the "The Evolution of a Port" idea, port evolution in Bangladesh articulated in section 4. Above all, Branch (1998) prioritized that on the way of infrastructure development of a country, port development is a high settlement in terms of investment and high technology. Connectively, development of various subjects that related to port development are discussed accordingly where role of government, intermodalism, private sector engagement through PPP for reforming the port management for developing port infrastructure, roads and highways, easy documentation and others for quick movement of cargo and container to meet the demand of port users what discussed in section 5 and 6 in brief.

McConville (1999) argued that industrial economic development is the central factor in the volume of international seaborne trade, but the volume can also be influenced by technological development as well as political factors. In addition, to (Beresford et al., 2004) evolve with the legislation in environmental protection and sustainable development in Port also other performances of Bangladeshi and nearby ports, port competitiveness and port performance examines and appraises in section 7 and 8 respectively. Moreover, this paper explores a case study for Southern China transit and transport arrangement with Bangladesh by which both countries will be benefitted equally. Overall, development process of port transport and its interrelated subject development attributed in this paper to make it useful for all port users nationally, regionally and internationally.

## 2. EXISTING PORT FACILITIES IN BANGLADESH

The geographical location of Bangladesh can be treated as very much attractive to the international traders as she is located beside the Bay of Bengal. The bay is comprising two natural ports located Chittagong and Mongla surrounds a great portion of the boundary area of Bangladesh where Chittagong is the principal port (CPA, 2014) that situated on the right bank of the river Karnafuli in Chittagong . On the other hand, Mongla port is situated at the East Bank of Pussur River in Khulna. With the expanse of market economy, movement of various products increased day-by-day that is demanding a proper transportation system exclusively port transportation, moreover , regional requirements of port transport where port development is must to avail the opportunities appropriately. Meanwhile, to ( The News Today, 2013) mitigate the derived demand, Prime Minister Sheikh Hasina inaugurated Paira Seaport, the country's third seaport, at the Rabnabad Channel in Kalapara, Patuakhali which one is 31km from the sea boundary, 316km from Chittagong, 130km from Mongla port and 340km from the capital Dhaka. Remarkably, the strongest addition is the River-side Inland Container Terminal (RICT) in Pangaon near the capital city Dhaka that introduced as special addition of port development. Moreover, 17 nos off-dock/ ICD-Inland Container Depot in Chittagong, one ICD in Dhaka are helping Chittagong and Mongla port to store the in-out containers efficiently by import delivery and export staffing also for intermodal container transportation in the whole country forwarded to Nepal and Bhutan.

## 3. DEVELOPMENT OPPORTUNITIES

Firstly, opportunity remains for developing existing ports to mitigate the current and future demand of domestic's trade where main focus of port privatization for getting efficient service at cheaper rate. Significantly, a (Blum, 1985) high quality transport system is a precondition for enabling the economy of a country or region to grow without encountering bottlenecks and development appreciated. In a study of port investment, Goss (1968) stated that port facilities in many countries need improvement for serving of their increased volumes of trade and minimize the sea transport cost which may only be achieved by improvements in seaports considering environmental factor. Economically, port (UNCTAD, 2013) development is a process of stimulating economic activity and emerging employment opportunity.

Secondly, ports (Boske and Cuttino , 2003) as gateways for addressing foreign trade .With much talk, to connect with the Indian ports by Nepal and Bhutan is completely time and cost factoring that also applicable for seven sisters and SW part of China. Due to the complexity with Myanmar political affairs, it is safe for using Chittagong for southern part of China. Labor, resource and others are so attractive for international investor to chose for economic zone in Chittagong, Seven sisters and near SW china , key access of transport network with port for quick connection of maritime load center, Bangladeshi ports are eligible for supplying logistics to them for development as well as doing business.

Thirdly, maritime (Clark et al., 2004) transport costs is depends on the port efficiency which reduces shipping costs because inefficient ports increase cargo handling costs and time factor. However, port development is high investment factor but it will increase trade with others internationally. Greatly (UNCTAD 2011: Shafiqullah, 2013) in South Asia, proposed Sonadia deep seaport will cater the larger container ship and able to handle maximum TEUs by getting the regional advantages. Competitive (Carbone and Martino, 2003) position of a port is internal strength for efficient cargo handling and hinterland connection. Proposed port will decrease maritime transport cost and will be regional gateway.

Lastly, to follow the Maritime Silk Route both for surface and maritime transportation, there is a possibility to choose the Chittagong as center for their southern trade. The road (Subramaniam and Arnold, 2001) between East India and NE India through Bangladesh reduces transport distance by more than 60 percent in comparison to the current transport systems via Siliguri. Roy and Banerjee (2008) found that South Asian ports are inefficient and face severe congestions and delays where Rahmatullah (2009) added that Bangladeshi seaports have ability to provide access for landlocked countries of the region and others by improving the port facilities and infrastructure development.

However, in an attempt to address the lack of integration that exists between policies and strategies related to port development in Bangladesh. To (Palmer ,1999) adopt with the changes in maritime technology that also posed challenges to the efficient planning and port's facilities. In the direction of catering port development, opportunities are awaiting for Bangladesh subject to the development of port infrastructure, port efficiency, road and rail infrastructure, rules and regulations of customs, Inland waterways development, RICT and ICD as well as open corridors and transit policy for the neighbors for regional connections and adding deep seaport as regional hub. Here is the opportunity of port development in Bangladesh to serve the users efficiently by using modern equipment, setting transport network of rail, road and waterways. In addition, some domestics and

RICT's are constructing nearby capital Dhaka and one RICT in Ahshuganj exclusively for serving seven sister of India.

#### 4. PORT EVOLUTION

The port evolution model of Bangladesh is drafted on the basis of Notteboom and Rodrigue's (2005) "The Evolution of a Port" where international corridor is added by Author for serving SW and Southern part of China. To describe the setting position, Notteboom and Rodrigue (2005) accentuated in the geographical system that evolve from an initial pattern of scattered, poorly connected ports along the coastline to a main network consisting of corridors between gateway ports and major hinterland centers. In here, Chittagong and Mongla had proper setting of port facilities and able to act maritime load centers from the hinterlands within Bangladesh initially. Due to poor infrastructure facilities, port services are expanded to the major cities of country by setting Inland container off-dock, RICT, ICD that added value in the port industry and viable to the port users. However, setting and expansion stages are accessible in Bangladesh.

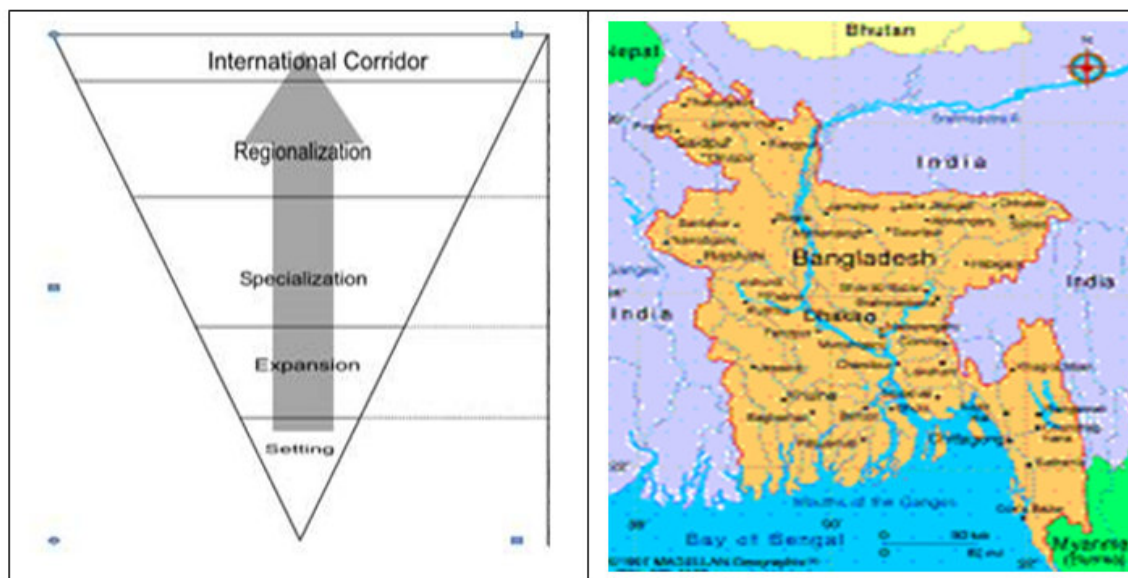


Figure-1. Port evolution in Bangladesh developed by Author (Map: Infoplease, 2015)

Afterwards, to cater the intermodal facilities, easy load unload for multimodal transportation, port specialization is required to get ready service nearby the users. Full port facilities through RICT by proper connecting with hub port, it is possible to provide specialized service. In addition, river way, road and rail facilities with the port, will help the users as specialized port facilities in port. This also for others like fuel, coal etc. While, in line with specialization, port (Jacobs and Notteboom, 2009) regionalization has been addressed as the corresponding new phase in spatial and functional evolution of port systems. The south Asia (Dash, 2008) region offers immense scope of growth, development and cooperation where Bangladesh is playing a vital role to catalyst the scope for all because of its geopolitical presence in the region. One of the important goals of economic and trade liberization in many developing countries is to attract more foreign investment and technology, the success of these policies.

To unfold, newly added the International Corridor which one is exclusively for China what followed the sustainability (Ghosh and De, 2001) against the growth to be minimized by rising hinter-land/foreland. Port may be defined the entrance point of logistical platform where ports are nodes on the logistics chain where channel intermediaries temporarily store their cargo in the form of bulk, break-bulk or unitized loads such as a container. Maritime Transport is the traditional mode of transport system which has international regulation to dominate the world business. In practice, the (UNCTAD, 2013) implementation of this basic norm suffers from numerous operational difficulties, resulting in high transport costs and long travel times, which undermine trade competitiveness and ultimately the economic development of landlocked countries and geographically locked like SW part of China through the development of Bangladeshi Port. This model will help to develop the port of Bangladesh as per requirements step by step.

## 5. INFRASTRUCTURE DEVELOPMENT

Port physical infrastructure and installation of modern equipment are the fundamentals of port development. In addition, port transport network infrastructure development by road, rail, inland waterways, and terminal development will enhance the port development to face the emerging opportunities what discussed in earlier sections and the way of port evolution in Bangladesh. Without developing the infrastructure of a country, it is not possible to develop the port because performance of port highly depends on the quick movement of cargo from/in port to destination. Moreover, vehicle movement and traffic control efficiency will increase by high quality road infrastructure of port hinterland. Particularly, infrastructure (UNCTAD, 2013) gap remains a challenge that undermines maritime transportation and seaborne trade of many developing regions. In addition, Pallis (2002) stated that the maritime transport system has been a highly institutionalized and politicized economic sector, precisely, it's strategic economic significance, and national governments are performing as market controller, as well as maritime infrastructure investors and owners. Greatly, China continues to lead the world in terms of port throughput and efficiency and increasingly as a provider of expertise in port construction and management. The operational efficiency of the ports needed to be improved to cope with Bangladesh's rapidly growing external trade who is looking for developing port infrastructure of Bangladesh. In addition, it was necessary for the efficiency of the Dhaka-Chittagong Corridor be enhanced so that it could match improvements in the Port's capacity. Finally, scaling up investment in port transport infrastructure is a key factor, especially, as the continent increasingly positions itself as an important area for maritime business and trade to open the sky of foreign direct investment.

Port development (UNCTAD, 2011) is interrelated with the inland transport development what dominated the freight volume movement by main inland transport system namely rail, road and waterways. The role of ports exceeds the simple function of services to ships and cargo. Apart from their role as the traditional sea/land interface, ports are a good location for value-added logistics, in which members of different channels can meet and interact. Thus, the (Bichou and Gray, 2004) port system not only serves as an integral component of the transport system, but is also a major sub-system of the broader production and logistics systems. Containerization (Beresford et al., 2004) changed the port into a 'passing corridor' where goods no longer resided in the port, thus reducing the opportunity to 'add value'. However, to compare (UNCTAD, 2013) with shipping, which is affected by an oversupply of vessels and declining freight rates, the container port business is growing by changing the port infrastructure. This literature brought the necessity of infrastructure development on the way of port development solely in Bangladesh to make a good transport system in South Asia.

## 6. PORT PRIVATIZATION

In a study, Tongzong and Heng (2005) found that private sector participation in the port industry is used for improving port operational efficiency and financial management. Slack and Wang (2002) suggested that a new geography of container terminals based on management and operational strategies of public and private bodies involved in the port industry needs to be fashioned. In a research, Pallis and Syriopoch (2007) found that port privatization have also been employed, targeting improved operational efficiency and control of the heavy financial burden to support a capital intensive industry. A better understanding of the development seen in the Bangladesh port sector is the intention of foreign to investment in the proposed Sonadia deep seaport in Chittagong. As a note of caution, port investment is the biggest investment in the world what featured maximum hinterland opportunity and growing manufacturing industry by centering the ports. As (Tongzong, 1995) terminal efficiency is a vital component for improving port performance and efficiency, recently, Bangladesh government had leased out some port terminals as road to privatization of port sector.

Port development is highly depends on the desire of two key players ICT approaches and liner shipping operator what focused and intended to invest where they will get liberal policy for doing business, surface transportation and hinterland facilities. UNCTAD (2012) research forecasted that port developments continue by national needs and availing transshipment opportunities of other's cargo. UNCTAD believed that every port's government has a development plan to develop the infrastructure of the country, virtually port development is the derived demand of the port users. There (Azad, 2014) is a good news that 38 nos PPP project listed in the Fiscal Year 2015 budget where transport sector had prioritized by allocating USD11.1 billion. Investment climate, poor confidence of business communities and political determination are the main issues of attracting PPP project and the lack for implementing in Bangladesh. However, many ports (Baird, 2000) of the world had benefitted from the involvement of private sector and developed the port physical structure, equipped as state of the art and related infrastructure development of road, rail and inland waterways also inland freight terminals but policy (Tally, 2009) always kept by government as regulator to control the sector strategically.

## 7. PORT COMPETITIVENESS

Globalization (Nayeer, 2006) has created unparallel opportunities and posed unpredicted challenges for

development. Moreover, unsatisfactory (Muntean et al., 2010) quality port service removed the country from the international trade market where shipping (Roe, 2013) is an intensely globalized sector. The (Meersman and Voorde 2002) port landscape altered in many respects because new technology and strategic developments have led almost automatically to greater port competition that is dominating by shipping companies and terminal operators. In addition, all port players, from authorities to terminal operator agents, are looking for ways to maximize profits, to maintain or increase market share or simply to survive. Kharel (2009) informed that Indian ports that are using for Nepal, Bhutan and Seven Sister are congested and inefficient. Moreover, Chittagong port is closer to the Seven Sister and Mongla favorable to Nepal and Bhutan and these will reduce transport cost and increase export competitiveness. In a study, Rahmatullah (2010) added that 71 percent distance will decrease if seven sisters use Chittagong port rather than Kolkata port.

De Langen and Pallis (2006) argued that intra-port competition promotes the innovation and specialty that are passed to port users. Recent (UNCTAD, 2013) efforts by port customers to assess port performance are leading towards an era of increased transparency in port operations that could spur greater inter-port competition, increased port performance and reduced transport costs. Economic competitiveness in more general sense especially for developing the port industrialized. Goss (2002) expected to see very good initiative for reforming the pricing of port which will be an attractive factor for ship-owner, shipper, consignee overall for port users. In terms of the logistics cost (Cullinane 2002) which they account for within any given supply chain, the level of port's performance and/or relative efficiency will, to a large extent, determine the competitiveness of a nation and can ultimately have an influence upon industrial location decisions and the benefits derived from the economic policies of national governments. Reviewing that competition may be extended to the regional hub of Sri Lanka, Singapore and Malaysia. Driven in particular, port (Carbone and Martino, 2003) competitiveness is becoming increasingly dependent on external coordination and control of whole supply chain. Moreover, competitiveness (De Martino and Morvillo ,2008) is determined by the quality of entire port specifically infrastructure and linking with transport networks and services exclusively information systems. Overall, Bangladesh has the opportunity to take the advantages of regional competitiveness in port sector.

## **8. PORT PERFORMANCE**

Baird (2000) fixed the key objective of port privatization to facilitate trade as well as much production. In a nutshell, private sector engagement will increase the efficiency of port for reaching to the pick of port performance indicator where necessary development initiative will be taken shortly rather than waiting for complex procurement policy of government. Mention that eliminations (Subramaniam and Arnold, 2001) of unnecessary customs procedures and delay in cargo handling will cause cargo to be routed through more efficient seaports. In here, customs procedure will be very easy and users friendly for choosing the ports by shipping line, vessel owner, terminal operators, Byers , shippers , overall, port users. Currently, intermodal (DeWitt and Clinger, 1999) freight transportation plays a vital role in port performance because of unit staying at port in a minimum time but facing constraints on infrastructure, policy and regulations. As a part of port development, port performance indicator target needs to set in a position where all parties will be benefitted equally which will attract to use the port inevitably. Importantly, financial (UNCTAD, 1976) and operational indicators to be considered where ports pricing, ship's turnaround time, cargo/container handling capacity are common phenomenon in the process of port development. Remarkably, safety indicators like ISPS, CT-PATH, and CSC etc are increasing the velocity of port performance where port has to develop as compliance of safety and security. It is noteworthy that liberal policy will help to increase port performance where Bangladesh government may take initiative for port reformation.

Port development opportunity is relay on the existing performance of the ports along with the constraints available in the transport networks of a country. Demand and supply ratio of port transport sector also indicating the government or policy maker for taking initiative for port development. It is obvious that domestic port performance signifies the position of the ports in a country, how much development is required or what kind of service may be offered to neighbors as surplus. The main port Chittagong is able to serve the domestic import export trade fully and may spare approx 40% capacity (Rahmatullah, 2010) to neighbors and facilitate the intermodal freight as additional performance through ICD or off-dock. Another port Mongla has enough capacity but unutilized due to poor connection with the capital Dhaka and massive infrastructure development is required to set as international standard for creating transit port. Low performance (Wu and Lin ,2008) of Kolkata and Haldia port, it has great opportunity to act as alternative of them and to be main intermodal freight source for Eastern part of India, Nepal and Bhutan.

## 9. CASE STUDY: SOUTHERN CHINA



Figure-2. Maritime Silk Route (Mrunal, 2014).

This paper brought one case study regarding Southern China that inspired from the speech of Chinese President Xi Jinping for starting the activities of Maritime Silk Route where Bangladesh is the strategic partner for developing transport networks where Chittagong is the key point among India, Myanmar and Bangladesh. In addition, another possibility to serve the SW region of China through international corridor by using Bangladeshi port exclusively for Tibet. China had adopted the Silk route diplomacy. The proposal of rebuilding the Maritime silk route (Figure-2) and Silk Road economic belt is manifestation of Beijing's "Two wheel approach: development and security." China (Islam 2014) is developing ports and maritime infrastructure across Asia. In South Asia, there is some progress and record to the development of BCIM (Bangladesh, China, India and Myanmar), an economic corridor that intends to connect China with India, Bangladesh and Myanmar physically that means by using surface transport networks and source will be a seaport what may be centered by existing Chittagong port or proposed deep seaport of Chittagong because of its strategic location from the view of Mrunal (2014). Moreover, globalization (Zondog et al., 2010), economic growth and the rising Chinese economy are forecasting the future trade and it is highly feasible in the maritime silk route through Chittagong, Bangladesh. Importantly, deeper regional integration in South Asia and development attitude of Chinese government of their southern part by maritime silk route that created the opportunity for Bangladesh to do maritime business through port development. However, Intermodal freight transportation will be developed through maritime silk route and overland silk route in an integrated transport approaches of BCIM optimistically.

## 10. CONCLUSION

The Port is a place where international shipping originates, terminates or transits and thereby of necessity making it highly dynamic venue which will keep pace with increasing commercial and economic activities. Notably, port (Tally, 2009) sector is experiencing significant changes regarding structure and operational strategy to attract the port user for reducing passage time and cargo handling time and cost. According to World Investment Report (2013), Bangladesh stands out as the sourcing hotspot in the industry by offering the advantages of both low costs and large capacity. Finally, a logistics (Bichou and Gray, 2004) and supply chain management approach to ports may prove of great benefit in underlining the strategic role and future potential of ports within the framework of international business in general. Due (Chowdhury ,2008) to geographical position Chittagong will ever be a hub port on the major world container trade routing and it is likely that it will continue to be served for the containers from the likes of Colombo and Singapore. On the other hand, Mongla port is the alternative for eastern part of India, Nepal and Bhutan. Moreover, Chittagong is considering for strategic, economic and political importance for developing deep seaport as another hub port of Asia. The private (Subramaniam and Arnold, 2001) sector is pursuing improvements in trade relations and transport logistics to ensure a smoother flow of goods and more cost effective services among the countries in the region. Clearly, Bangladesh has the development opportunity of its port sector as well as business through port transport.

However, Roe (2013) argued that maritime governance direct, control and influence the shipping and port sectors and its success depends on the government policy which will attract all for maximum uses of port transport. In relation to the geographical position in South Asia in the area of merchandising the trade of consumer goods and manufacturing industry, Chittagong is the ranged low distance and cost port for Nepal, Bhutan, and Seven sisters of India and for Southern China. Now, the question is the development of port through new technology, expert human resource also adding high quality road and highways, rail connection, river and land port development by investing or financing through PPP or with the cooperation of international investor who is expert in this field like DP, APM Terminal etc.

Overall, despite the strengths and opportunities illustrated in this article, in a word, port development is essential and needs to take initiative by the government for creating the environment with the local and international investor to develop the port and shall be opening for all. Remember that, being service industry, port will understand the requirements of the port users and make efforts to meet and exceed their expectations. In a whole, port users will feel satisfaction to the management of port for good customer service and government for transport networks. Lastly, with the comments of Palmer (1999), the attitude of government that tends to port as engines for economic growth, foreign trade and regional revitalization.

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