

## Songs of a Sea Port

A portrayal of the Chittagong Port

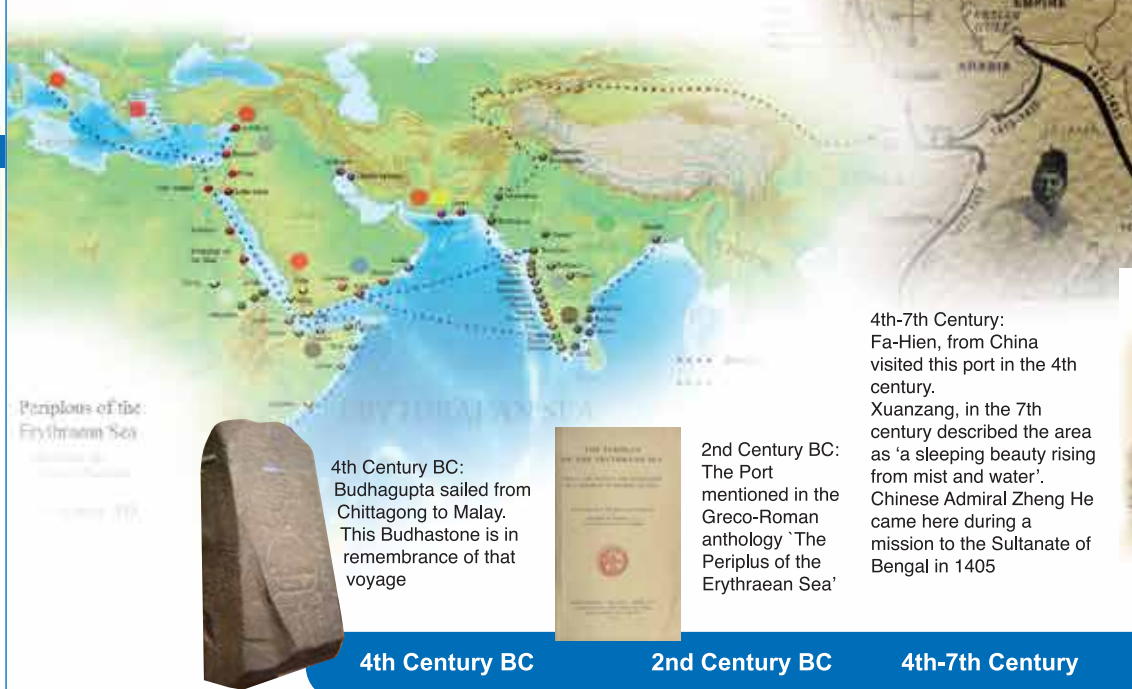
**The Blue Economy: Opportunity for Sustainable Development in Bangladesh**

**Bay Terminal: Challenges and Potentials**

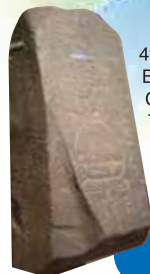


## The Long Road of CPA

A journey of more than two thousand years, a long history of various rulers and an amazing story of prosperity entwined in the historical path of Chittagong Port Authority



Periplus of the Erythraean Sea



4th Century BC:  
Budhagupta sailed from Chittagong to Malay. This Budhastone is in remembrance of that voyage



2nd Century BC:  
The Port mentioned in the Greco-Roman anthology 'The Periplus of the Erythraean Sea'

4th-7th Century:  
Fa-Hien, from China visited this port in the 4th century.  
Xuanzang, in the 7th century described the area as 'a sleeping beauty rising from mist and water'. Chinese Admiral Zheng He came here during a mission to the Sultanate of Bengal in 1405

4th Century BC

2nd Century BC

4th-7th Century



July 1, 1960: The Chittagong Port Trust established

1928: Chittagong port declared as a Major Port by the then British Government

1947: Pakistan born, Chittagong became the only gateway to East Pakistan

1950s: The Port Commissioners and the Railway constructed 9 jetties (including 7 new) and a number of pontoon berths and moorings

1900: Formal Agreement signed between ABR and the port Commissioners

1900-1910: 4 jetties built by ABR to handle 0.5 million tones of cargo annually. And thus the operation of the port passed into the hands of the Railway from the Commissioners and this arrangement continued till June 30, 1960

Early 19th century painting: Pirate boats anchored near Chittagong coast



1960

1950

1928-1947

1900-1910

1971: Bangladesh liberated

24 March, 1971: A large procession set off for the port's jetty-3 gate and another from Polo Ground to protest the arrival of Pakistani Military vessel MV Swat  
April 18, 1971: MV Swat had to go back along with the arms and ammunition from Chittagong jetty no-17



1992: Formulated guidelines styled 'Cyclone Disaster Preparedness and Post Cyclone Rehabilitation Plan 1992' and 'Contingency Plan'



2004: Became compliant with International Ship and Port Facility Security Code. Conducting training courses on the ISPS code in collaboration with Mercantile Marine Department from May 17



1971

1976

1980

1992

2004

2007-2008

March 25-December 16, 1971: Several port officials and staffs sacrificed their lives during the liberation war



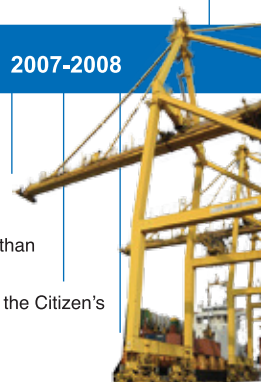
1976: The Port Authority Ordinance 1976 (Amended 1995) promulgated in September

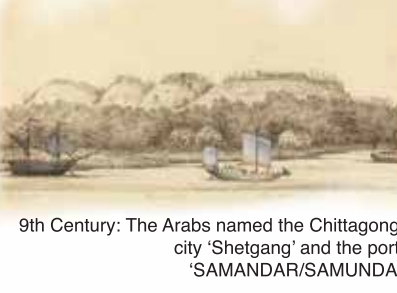
April 25, 1980: The Chittagong Port Authority Training Institute (CPATI) was established.

2007: Berth Operating System was introduced

2007-2015: Container handling increased by more than twice in number

2008: Promulgated the Citizen's Charter in June





## 9th Century 16th Century 17th Century

June 1899:  
The first jetty was constructed

1892: Assam Bengal Railway (ABR) established  
1897: The port was established at its present location and the Government granted ABR permission for construction and maintenance of jetties at the port

April 1, 1889: Port Fund handed over to the Commissioners by the Government. GEKKO, the steam tug-boat acquired by the commissioners

June 1888: The Port Trust was legally established

1887: Enactment of The Chittagong Port Commissioner Act, 1887 (Bengal) and the Port Trust constituted

April 25, 1888: The Chittagong Port Commissioner Act, 1887 (Bengal) came into effect and the Commissioners for the Port of Chittagong started functioning. The port affairs were administered by an officer who held the combined appointment of the Port Officer and the Collector of Customs

1899

1892-1897

1889

1887-1888

2010: Two Stage Gate constructed to scan truck-trailer entering and leaving the port. Fixed under Vehicle Inspection System for searching vehicles and Mobile X-ray Screening System for ensuring maximum security throughout the port

2012: Undertaken the project titled 'Capital Dredging and Bank Protection with Jetty Facilities in Karnaphuli river from Sadarghat Jetty to 3rd Karnaphuli Bridge'. After dredging the navigation channel it is now suitable for hosting ships with 9.5m in draft and 190m in length. A 400m long and 15m wide jetty was constructed for lighterage ship. Eight water bodies were dugged to prevent water logging

2015: Simulator is introduced to enhance skill level

Constructed a Tug boat with higher capacity up to 45,00 metric ton

Port handled 20,24,000 TEUs. Achieved a new height of performance

Established Surface Water Treatment Plant with a capacity to treat four lakh litres of water per hour to meet the port's daily consumption

2010-2012

2011: CTMS was installed. 12 lady staffs were trained and engaged in this operation  
Installed the radiation detection to scan the presence of nuclear and other radioactive materials under the NNSA's Megaport and Second Line Defence SLD initiatives  
Introduced two specialised cleaning ships- Bay Cleaner-1 (Solid Waste Cleaner Vessel) and Bay Cleaner-2 (Oily Water Cleaner Vessel)

2013-2014

2013: Ambulance Ship added to the fleet.  
Strategic Port Master Plan has been developed for the next 30 years  
2014: VTMS introduced.  
Ship turnaround time reduced to 2.69 days, container dwell time reduced to 10.2 days

2015-2016

March 23, 2016: Multipurpose container vessel MV Harbour-1 left the port for the Krishnapattam Port of Chennai, India under Bangladesh-India Coastal Shipping Agreement

**CPA News**

A Quarterly Publication of  
Chittagong Port Authority



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## Editorial

**The port is going through a momentum...**

In the beginning it was only a harbour. Down the course of the mighty Karnaphuli, just one strategically positioned natural shelter for the trading ships of the ancient world who came here, moored their boats and did little business with the local people. More or less, this had been the wide picture of the waterfront scenario at Chittagong port for over the last two thousand years. The concept of a port was yet to be developed.

During the period of British-India, the importance of Chittagong port as an outlet for the North-Eastern regions was growing rapidly, so the government enacted the Port Commissioner's Act, in 1887 and a Trust was constituted. But it was enforced on 25 April 1888 and its affairs were administered by an officer who held the combined appointment of the Port Officer and the Collector of Customs. Thus, Chittagong has transformed from a harbour to a port from this day. We proudly celebrate the day as the port's birthday.

The Chittagong Port Authority (CPA) feels an immense pleasure to launch an English publication on the occasion of the 129th Port Day. We have designed the issue in such a manner that will help the readers to have a comprehensive picture on the port's past, present and future. Some efforts have also been made to focus on the huge prospects of country's maritime sector.

The port is going through a momentum as CPA is committed to contributing to the country's economy by improving its efficiency and productivity as per its Strategic Port Master Plan 2043. Therefore, the issue contains features on proposed Bay Terminal, prospects of blue Economy, some world-class features of the port like CTMS and VTMS, news on inauguration of the coastal shipping activities between Bangladesh and India, dialogue on maritime cluster, export potentials of the country's ship building industry, etc.

We have included a special interview of the new and a visionary Chairman Rear Admiral M Khaled Iqbal, BSP, ndc, psc, where he has talked about his commitment to achieve the Government's vision 2021 and emphasised on some fast act projects and issues. He also shared his thoughts about modernizing the port in line with the future planning to keep a growth rate of at least 12 percent per annum.

We have made some humble efforts to launch the inaugural issue of the CPA News on the eve of Port Day 2016. We hope to continue the publication quarterly.

A handwritten signature in black ink, appearing to be 'Zafar Alam', written over a horizontal line.

**Zafar Alam**  
Editor

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Arab traders moored at this port in its earliest days. Portuguese, followed by the other Europeans came later. It is the British colonial rule, who took to the primary development of Chittagong as an international seaport that eventually evolved to grow up as the economic lifeline of Bangladesh



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Vessel Traffic Management Information System (VTMIS) at the Port supported by RADAR, CCTV camera, day-night camera system, VHF radiotelephony and AIS keeps track of vessel movements, ensures its safety and improves efficiency of navigation over a day-and-night monitoring

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Back in the 15th century, Chittagong port built the entire fleet of ships for the Sultan of Turkey. British navy also built their ships here for the famous battle of Trafalgar in 1805. Considerably after a long break, Bangladesh is back on the track yet again and has attained international recognition with the private-sector ship-building enterprise over the last few decades

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Maritime cluster comprising of ports, shipping companies, maritime manufacturing is a newer concept facilitating world trade of goods through sea routes and is thus of great importance to economics worldwide. In Bangladesh, currently this sector earns about USD 1.5b per annum.

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The first Maritime India Summit (MIS 2016) was held in Mumbai from 14-16 April hosted by the Shipping Ministry of India in an effort to boost port-led development in the country

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We dream together and make them come true

#### Face-to-face



In an exclusive interview, the CPA Chairman elaborates on the current and future expansion schemes of the port plus, ongoing operations regarding the Strategic Master Plan, prospects of newly introduced coastal shipping and possibilities of Blue Economy for the country

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Bay Terminal: Challenges and Potentials

#### Future Roads



Bay Terminal near Patenga, one of the major future projects of CPA, with its extended capacity and greater facilities provides an excellent solution to the imminent challenges Chittagong port meets by 2023 when the container handling demand would reach up to near 5 million TEUs

**TO KEEP UP WITH THE EXPANSION AND MODERNIZATION WORK, CONSTRUCTION OF PATENGA CONTAINER TERMINAL, LALDIA BULK TERMINAL AND BAY TERMINAL IS UNDERWAY. THE MINISTRY OF SHIPPING AND THE CHITTAGONG PORT AUTHORITY, HAND-IN-HAND, ARE WORKING TOWARDS THE BUILDING OF THIS PORT AS A WORLD-CLASS SEAPORT KEEPING IN TUNE WITH THE FREQUENT INNOVATION OF GLOBAL TECHNOLOGY FOR A SAFER AND A FASTER TRANSPORTATION.**

**T**he Port of Chittagong is the golden gateway to the economic progress of Bangladesh. It is a matter of great pleasure for me to know that this port is going to celebrate its 129th Port Day to present its widespread activities before the whole countrymen.

To that end, my heartiest felicitations and thanks to all the staff and the stakeholders of Chittagong Port.

This port deserves commendation for the vital contribution it has been making as the backbone of

our economic setup. In addition to being a service provider organization Chittagong port has evolved as a dynamic body towards further growth of international trade. Our present democratic government under the able and dynamic leadership of honorable Prime Minister H.E. Sheikh Hasina, the daughter of the Father of the Nation Bangabandhu Sheikh Mujibur Rahman, has taken various steps for the development of Chittagong Port. To give it an up-to-date face, installation of VTMS (Vessel Traffic Management Information System), collection of cargo-handling equipment, tug-boat, water-supply vessel has been done in the previous years. Container stacking capacity has been boosted with construction of a number of new yards. An auction-shade and a car-shade had also been inaugurated, recently. Chittagong Port has set up its own Water Treatment Plant for the supply of water to the port-staff as well as the sailors of the foreign ships. To keep up with the expansion and modernization work, construction of Patenga Container Terminal, Laldia Bulk Terminal and Bay

Terminal is underway. The Ministry of Shipping and the Chittagong Port Authority, hand-in-hand, are working towards the building of this port as a world-class seaport keeping in tune with the frequent innovation of global technology for a safer and a faster transportation. To grasp the ultimate efficacy and standard of service it is imperative that all staff and laborers of the port along with its stakeholders work together towards that end.

On this Port Day, I believe this existing team-spirit towards improving the standard of service and efficiency of the port will continue in days to come.

I wish a grand success of the Port Day in our united march towards that change.

Bangladesh is going ahead and will be.

Joy Bangla,  
Joy Bangabandhu  
Long Live Bangladesh



**NINETY TWO PERCENT OF THE EXPORT-IMPORT TRADE OF THE COUNTRY IS BEING CARRIED OUT THROUGH THIS PORT. CONTAINER HANDLING VOLUME IS ALSO GROWING IN THE SAME STRIDE, THANKS TO THE FACE-LIFT AND RENOVATION INITIATIVES OF CONTAINER HANDLING TECHNOLOGY AT THE PORT BESIDES PUTTING INTO PRACTICE THE FREE MARKET ECONOMY AND LIBERALIZATION OF OUR FOREIGN TRADE POLICY.**

Since time immemorial, Chittagong Port has been making colossal contribution in the socio-economic growth of Bangladesh as its economic lifeline. However, the foundation of its beginning as a modern port was laid only 129 years back. In due course, through phases of evolution, extension and renovation Chittagong port has earned its name globally as the largest organization of today's Bangladesh.

Ninety two percent of the export-import trade of the country is being carried out through this port. Container

handling volume is also growing in the same stride, thanks to the face-lift and renovation initiatives of container handling technology at the port besides putting into practice the free market economy and liberalization of our foreign trade policy.

To elevate this port further up to a modern standard, installation of VTMS (Vessel Traffic Management Information System), collection of cargo-handling equipment, tug-boat, water-supply-vessel has been made in the previous years. Container stacking capacity has been boosted with construction of new yards. An auction-shade and a car-shade had also been inaugurated, recently. Chittagong Port has set up its own Water Treatment Plant for the supply of water to the port-staff as well as the sailors of the foreign ships. To keep up with the expansion and modernization work, construction of Patenga Container Terminal, Laldia Bulk Terminal and Bay Terminal is currently underway.

I strongly believe, collective effort of all parties involved

with the functioning of the port will continue the same in future, as well, with the vision of infusing extra momentum into the economic growth of the country through enhancement of its efficacy and standard of service. Observation of the Port Day will surely augment this awareness among us all.

I convey my sincere felicitation to all regarding the celebration of this Port Day. .

I wish a grand success of the 129th Port Day of Chittagong Port.



**Facilitated by a double-digit growth, the Port of Chittagong is moving forward with the challenge of realizing Vision-2021 and Vision-2041 set by our Honorable Prime Minister Sheikh Hasina. As a regional hub, newer possibilities for bilateral cooperation with India, Nepal, Bhutan and other regional countries are evolving fast.**

**A**part from its legacy of over two and a half thousand years, the Port of Chittagong has come under a legitimate structure only at the end of the 19th century. With the enactment of the Chittagong Port Commissioner's Act (Bengal) on April 25, 1888 under the British colonial rule, Chittagong port began its official voyage as an international sea-port of this south-east Asian region. Since then, this very day has been observed as the 'Port Day' of the Port of Chittagong. On that note, I am immensely proud and happy at the celebration of the 129th Port Day of the Port of Chittagong.



Beginning with the construction of a single jetty in 1899, the port has come a long way setting new milestones in line, specially serving this nation as its vital economic lifeline. This port currently handles 92 percent of the commodity and 98 percent of the container in the export-import trade of Bangladesh with the outside world.

With the clarion call of our father of the nation Bangabandhu Sheikh Mujibur Rahman, profound contributions were made by the heroic Bengali staff of Chittagong Port for our war of Independence. Dock-workers of the port raised their voice in the early days of the war protesting the deceitful unloading of arms and ammunitions from the Pakistani ship MV SWAT. Eventually 23 brave souls died on that day when the Pakistani soldiers opened direct fire on the mass demonstration. Many other Bengali officers and workers were also killed during the Liberation War. My heartfelt tribute for those undaunted souls of this Port who had made supreme sacrifice for the cause of our Independence.

The Port stepped into the

container-era with the handling of only 6 containers in 1977. Keeping in pace in that direction, Chittagong port reached over the threshold of handling two million containers in 2015, much earlier than its prefixed timeline.

Facilitated by a double-digit growth, the Port of Chittagong is moving forward with the challenge of realizing Vision-2021 and Vision-2041 set by our Honorable Prime Minister Sheikh Hasina. As a regional hub, newer possibilities for bilateral cooperation with India, Nepal, Bhutan and other regional countries are evolving fast. The recent commencement of coastal shipping with India has shown new prospects of our port's growth. This momentum must continue in coming days for the sake of an overall economic growth of our country.

On this meaningful occasion, I appreciate the sincere efforts of our editorial team for the launching of this special publication, which is the first of its kind.

I thank and invite all to be a part of this grand celebration of the 129th Port Day of the Port of Chittagong.

## Songs of a Seaport

In the beginning it was only a harbor. Down the stream of the mighty Karnaphuli, just one strategically positioned natural shelter for the trading ships of the ancient world who came here, moored their boats and did little business with the local people. More or less, this had been the wide picture of the waterfront scenario at Chittagong port for over the last two thousand years. The concept of a port was yet to born.

Milton Molla

### The Beating of My Heart

The Arab traders knew this port since the earliest days as 'SHETGANG' and had great command over it until the influx of the European mariners. It was mentioned in the works of Ptolemy, Fa-hien, Hieu-en tsng, and Ibn Battuta. Joao De Barros, the Portuguese Livy, in his memento, Decades of Asia, in 1552 mentioned Chittagong, aka, 'PORTE GRANDE' as 'a prosperous town and busy trading center' which was then the gateway to the royal capital of Gaur as it is today the gateway to Bangladesh. By the middle of the sixteenth century most of the trade at the port went into the hands of the Portuguese followed by the English during the seventeenth century.

In 1860, some of the local and foreign traders with occupational interest in the harbor constructed two makeshift jetties on Karnaphuli at their own cost. The trade at port was of a peculiar type then. Both jute and rice were transhipped from smaller boats into the seagoing vessels in the midstream of the Karnaphuli. One interesting point to note here, although nothing was spent between

river Karnaphuli and its approaches, ships of even 2,000 tons entered into and went out the port without difficulties and in perfect safety.

Things around Chittagong port began to take definite shapes by 1884 when ship masters of some of the vessels anchored in the port met together to discuss the problems they were facing in then. This assembly decided that construction of a proper road along the river with safe and clean landing places every quarter mile and hackney carriage stands opposite to those was a necessity. D. R. Lyall as Commissioner forwarded his report on this to the Secretary of Bengal with the recommendation that a Port Trust was far more likely to improve the Port, and eventually, a Trust was constituted in the year 1887-88. The Chittagong Port Commissioners Act, 1887 (Bengal) actually came into force on April 25, 1888, and officially, the Port of Chittagong was born.

The entire management of the Port and its fund was handed over to the Commissioners by the Government on April 1, 1889. Through a loan from the Government the Port Commissioners acquired a steam tug boat 'GEKKO' at this time. The need

Elephant loading in Chittagong port (1960)



*Things around Chittagong port began to take definite shapes by 1884 when ship masters of some of the vessels anchored in the port met together to discuss the problems they were facing in then. This assembly decided that construction of a proper road along the river with safe and clean landing places every quarter mile and hackney carriage stands opposite to those was a necessity.*

for connecting Chittagong port with the production centers through rail was first emphasized in 1882. The Assam Bengal Railway (ABR) by an English company was approved by the Government in 1892. Immediately they convinced the Government for building jetties and other port facilities. The persistence of the ABR yielded result in July, 1897 and the Government of India allowed construction of the first jetty and operation of the same by the ABR. The first jetty constructed in the Double-mooring was thus brought into operation in June, 1899 with only one vessel named 'S S SIR ROBERT FERNIC' placed alongside it. A formal agreement to this effect was also duly signed between the Commissioners and the ABR in 1900. Over the next 10 years the ABR completed 4 jetties to facilitate berthing of ships. Thus the operation of the port passed into the hands of the railway from the Commissioners and this arrangement continued till 30th June, 1960.

The Port of Chittagong began its cruise under the new leadership and at one point was declared as a major port in 1928 under the statutory provision of the Port Act 1908. Commissioners also acquired two dredgers named 'KARNAPHULI' and 'PATUNGA' for the dredging works of the navigation channel. Initiatives for the river training and its maintenance were undertaken as a serious concern. Principal export items from the port this time were food grains, jute, tea and raw cotton while imported items were mineral, oil, salt, machinery and iron scraps. In 1947 after the creation of Pakistan, through short and long term plans new jetties, moorings, railway marshalling yards and other ancillary facilities were constructed. To deal with the situation a separate body under the name 'Port Railway' under railway division was established. This was in fact a dual administration that stood in the way of the overall operation of the port. In order to remove these impediments, The Chittagong Port Trust was established in 1960.

On 16th December 1971 the Port of Chittagong emerged as the principal port of the sovereign state of Bangladesh. The port was seriously affected during the war of liberation. Wholehearted energy and an ardent attention to clear the port off the wrecks and make it operational to handle international shipping was given by the Government and the Port administration. To improve further, the Port Act 1914 was



repealed and the Port Authority Ordinance was promulgated in September 1976.

And thus, the Chittagong Port Authority (CPA) was born.

## Meeting up the Sun

The Port invigorated into a new life with the enactment of this newer arrangement and started off its ride towards an all-out expansion and growth. The Authority became the center of all the development spree of the port since then. It is administered by a Board comprising a Chairman and four Members appointed by the Government. Under the pretext, in a changed geo-political scenario with an independent Bangladesh, Chittagong now emerged as an important regional hub in South-Asia region and consequently began to flourish as its economic nerve-center unfolding great possibilities every new step.

In course of time, located at a distance of about 9 nautical miles from the shoreline of the Bay of Bengal, Chittagong, as the principal sea-port earned and upheld its reputation of being a seamless and congestion-free link in the transport for the last 129 years. Contribution of the Port to the national economy of Bangladesh is remarkable. Besides handling 93 percent of the sea-trade of Bangladesh Chittagong also provides transit facilities to some of its neighbors and is determined to expand this provision to other countries as well, like, Nepal, Bhutan, Myanmar, the southern regions of China, and Arunachal, Mizoram, Nagaland and Tripura of India.

Chittagong Port, with the river Karnaphuli as its lifeline, offers the most diverse, well-connected, well-equipped and service-oriented cluster of port-facilities. CPA and its staff who work behind the scene providing the expert services and support round the clock, 24 hours a day, seven days a week and 365 days a year, ensure an effectual and smooth handling of imports and exports. As a recognition to these consistent efforts, the Lloyd's Register upgraded the position of the Port of Chittagong to 86 in the list of 100 Busiest Ports in the World. This time it aims to leap to the 75th position leaving behind 11 other ports.

Chittagong port is moving headway with an average traffic growth rate of 14/15 which is twice the national

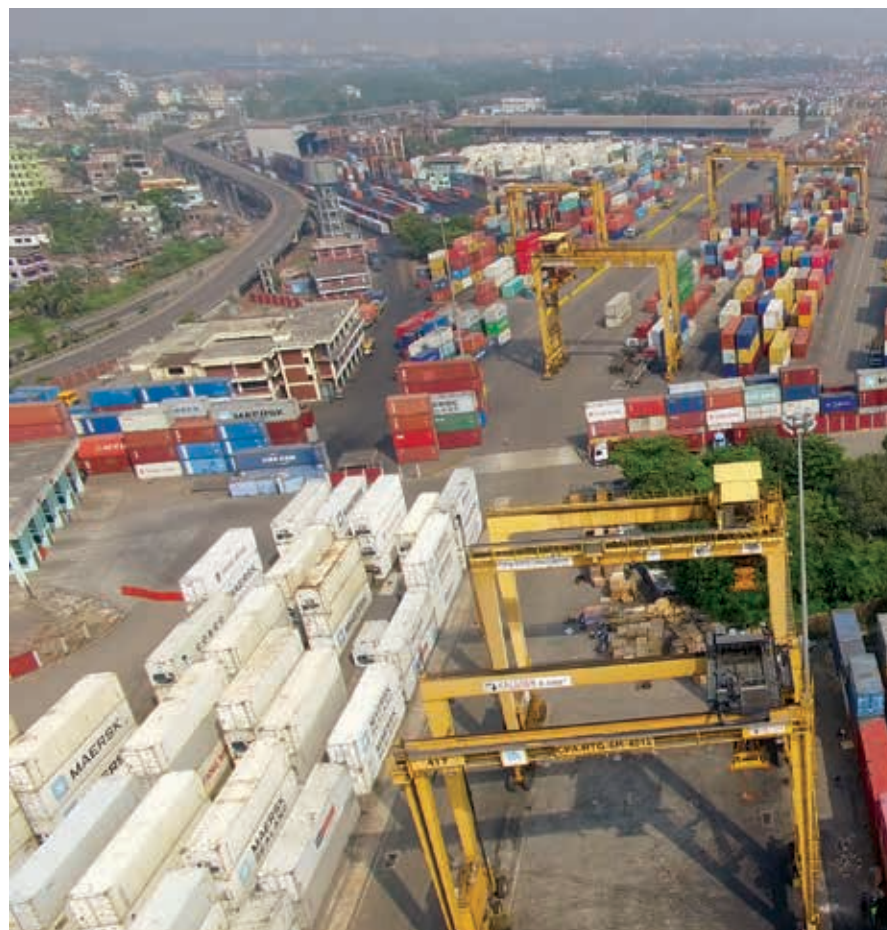
pace of GDP. Constructed as general cargo berth, the Port started handling containers in 1976 with only 6 TEUs of containers. However, they set a new record by reaching the milestone of handling 2 million TEUs of containers before the end of the 2015, much earlier than their projected timeline. The port these days mainly handles items e.g. cement clinkers, coals, grains, vehicles, machinery, electronic goods, spare parts, readymade garments (RMG), containers, fertilizers, food items, all these and more are transported into and out of the region via the port of Chittagong.

To meet up with the growing demand and to keep in line with the advancements of the 21st century the Port Authority undertook radical development projects concerning the growth and expansion of the port during the previous years. New jetties were constructed and the Inland Container Depot started its journey. Introduction of VTMS (Vessel Traffic Management Information System) comprised of Radar, AIS, VHF and Infra-red day-night camera system has earned the port global standard enhancing the efficiency and safety of

the maritime traffic at the outer anchorages, harbor entrance and inside the main channel up to Shah Amanat Bridge. CTMS (Container Terminal Management System) technology modernized the port giving it a digital touch for the first time. Some of the biggest infrastructure projects got underway. Pangaon Inland Container Terminal began its operation providing a low-cost transport from the port to the central-region of the country.

As a result of these renovations, the port gained extraordinary speed and efficiency in almost all its departments. At present it takes a maximum of five minutes to complete all the documentation process while it requires only 30 minutes to release the goods from inside the port. Turnaround time has been radically reduced as it takes in 2.69 days for loading or discharging a container vessel at the port. Dwell time has also been cut to 10.2 days from 26.5 days in 2006 to boost up trade. Since 2009, the port has not stopped for once. Political unrest, strike or blockade nothing could stop the port, thanks to its management excellence and its dedicated staff. Chittagong is

*CPA and its staff who work behind the scene providing the expert services and support round the clock, 24 hours a day, seven days a week and 365 days a year ensure an effectual and smooth handling of imports and exports.*



primarily a container port as, roughly half the throughputs at the port is container. Carrying of break bulk cargoes like sugar, rice and wheat had also been containerized in previous years improving its efficiency and efficacy both in human resources and technology. To maximize capacity, new warehouses and car-shades have been introduced besides extension of railway.

The port operates through a total of 20 berths out of which 9 are general cargo berths and the rest are container berths. All berths are equipped with a number of modern logistics including Rubber Tyred Gantry Cranes and Mobile Harbor Cranes. CPA operates over 300 items of equipment ranging from Quay Gantry Cranes to Light Trailer of 6 tons capacity. Marine workshop ensures optimum use of equipment and water crafts.

Opening of Newmooring Container Terminal (NCT) comprising five berths has increased the stacking capacity of the port which is expected to handle 1.5 million TEUs containers annually in near future. CPA operated Inland Container Depot (ICD) in Dhaka linking the port of Chittagong

via rail provides the shippers with dry port facilities ensuring secure transport, reduced dwell time and storage for empty containers awaiting shipment. In addition, the port in hands with the Bangladesh Inland Water Transport Authority introduced Pangaon Inland Container Terminal (PICT) to provide transportation of goods at a cheaper cost through the waterways.

Continuous improvement in the existing and new facilities is playing a responsible role in the strategy of the Port Authority. Average depth of the channel is 10m which provides easy entrance to 9.3m draught vessel. Capital dredging work in the river with the powerful M.D. Khanak has upgraded the draft limit to 9.5m from 9.14m in the past. CPA provides medical support to sailors of the ships anchored at the port through its own ambulance ship. It also supplies water from its own Water Purification Plant capable of providing nine thousand liters of pure water set up in 2013.

Chittagong port has set its new target of handling over 3 million TEUs of containers per year over

implementation of its far-reaching projects including Karnaphuli Container Terminal (KCT) and Laldia Multipurpose Container Terminal near Patenga. At present an average of three thousand ships anchor annually at the port. To add to it, a Bay Terminal on Patenga coastline for bigger vessels with all modern facilities is underway on an area of 900 acres to mobilize port activities and reduce transportation cost. It has a length of 6.5 km while providing berthing facility to 50 ships at the same time. Big vessels carrying different kinds of cargoes including cement clinkers, coals and food grains cannot berth at port jetties as CPA currently allows ships with 190 meters length and 9.5 meters draft to berth at jetties for unloading cargoes.

Security measures recently upgraded in strengthening of maritime security at the port has resulted in Chittagong port categorized in ISPS (International Ship and Port Facility Security) Code Level One denoting maximum safety for the shippers. CCTV and Fire Alarm System has been introduced at every nook and corner of the port premises to minimize risk.

The port is regarded a city within a city. It has its own training institute, school, college, sports complex, auditorium, hospital, stadium, staff colonies, bazars, mosques, temples and what not. Besides two schools and colleges for boys and girls both producing several hundred school graduates every year, CPA is also planning on setting up one special school for the children with special needs. The port hospital with 150 beds offer reliable free treatment to the people involved with the port and to their families. The training institute runs internship programs for different university students and provides support to various vocational and technical institutes.

Being committed to the environment, the port authority conducts regular mobile courts in the port area to prevent marine pollution. It also operates two cleaning ships for sweeping of the port channel. Environment management unit has been formed to conserve the river and the environment and to monitor the pollution for taking suitable measures.

- Milton Molla: Associate Editor, CPA News

Ref:

1. History of the Port of Chittagong, by Misbahuddin Khan.
2. Bandar Shahar Chittogram, by Abdul Haque Chowdhury

Container loading in Chittagong port ( Dec, 2015)



*The port is regarded a city within a city. It has its own training institute, school, college, sports complex, auditorium, hospital, stadium, staff colonies, bazars, mosques, temples and what not*



## Introduction

At present the Chittagong port is going through a momentum as the Port Authority (CPA) is committed to contributing to the country's economy by improving its efficiency and productivity as per the Strategic Port Master Plan 2043. As a modern port and the number one among 79 seaports in Asia it is now planning to invest in one of its largest and ambitious projects - the Bay Container Terminal (BCT), which will be the future Port of Chittagong. After completion, it will contribute significantly to the port's containerized cargo handling activities as it has tremendous prospects of development regarding vessels' turnaround time, draft of vessels calling at the port, dead weight tonnage (DWT), container carrying capacity, berthing facilities, connectivity, coal and clinker handling, and unloading of fuel oil.

## Site proposed for the BCT

The proposed site for the BCT is on the coast to the west of the existing port, in the North Haliashahar region of Chittagong, Figure-1. The site is bounded by the Port Link road to the east, and the sea to the west. The width of the site from the Port Link road to the sea (high tide) is approx. 600m. The total length in a north-south direction of the available land is not known, but it is understood to run for several kilometres north from the Patenga EPZ. The land has been formed by sedimentation in the last few decades. Near to the road there is some cultivation, but closer to the sea the land is very low, with water pools and limited vegetation. A surge protection embankment has been constructed down the entire coast, to protect the land from tidal surges and during cyclones.

## Waterside Assessments

The coast at the proposed site was an exposed site until about 1990. Since that time a Char has developed about 800m from the shore. Figure-2 is showing the situation in a recent survey by CPA. It can be seen that the water depth between coast and the Char is between 7 and 10m, whereas the Outer Anchorage to the west of the Char has a depth between 12 and 13m.

Surveys since 1990 have shown that the Char has developed steadily. Figure-3 graph shows the development of the Char from 1994 to 2012.

*The proposed site for the BCT is on the coast to the west of the existing port, in the North Haliashahar region of Chittagong. The site is bounded by the Port Link road to the east, and the ocean to the west.*

## Bay Terminal: The Future Port of Chittagong

Zafar Alam

The proposed Bay Terminal will contribute greatly to attaining economic emancipation for the country as it is likely to be completed by 2023. It will also establish an international gateway for traders of seven states of Eastern India, Nepal, Myanmar, Bhutan and south-western province of China.'

## Landside Access – Road and Rail

### 1 Road Access

The site is located next to the Port Link Road. This is a limited access road controlled by CPA. It has excellent connections to the main port areas, and also to the Dhaka-Chittagong Highway to the north of the site. It is understood that a new Coastal Road is planned connecting the Dhaka-Chittagong Highway with the new tunnel under the Karnaphuli River at Patenga.

### 2 Rail Access

The main rail line runs about 700m east of the Port Link Road. It is more likely that a single rail terminal will be provided, serving the existing port and the BCT.

## Marine Accesses

It is assumed that a dredged channel will be formed from the site to the Outer Anchorage, Figure-4. However, there is a stretch of shallow water from the Outer Anchorage to Kutubdia Island (approx. 40km). With some limited dredging it is assumed that a channel with depth of -10m CD could be provided. A deeper channel could be dredged, but this would require regular maintenance dredging.

If it is assumed that transit of the shallow zone will be carried out at high tide, it would be possible for vessels with draft up to 11m to access the site. There will be no limitation on the length of vessels that can access the site. Right now only 190 meter long vessel can enter the Chittagong Port.



Figure-1: Location of Proposed BCT

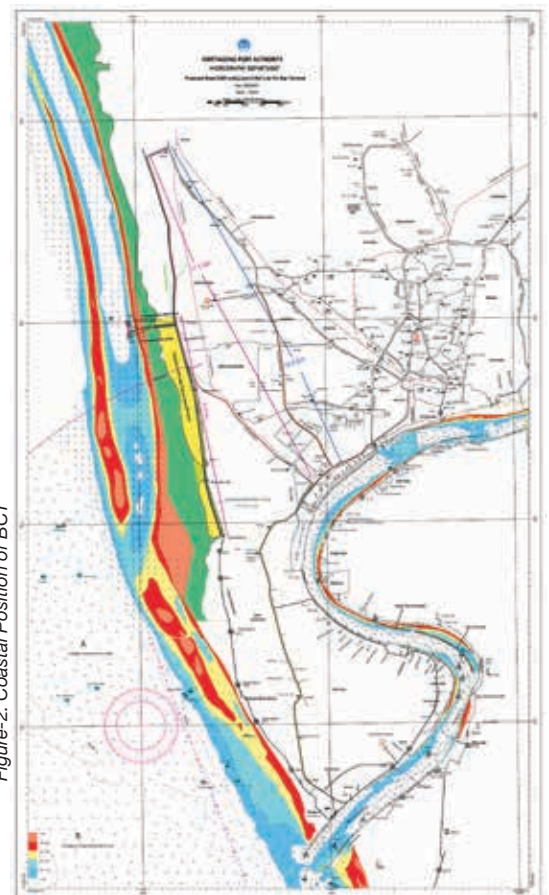


Figure-2: Coastal Position of BCT

### Flood Protection Embankment

There is a flood protection embankment running parallel to coast, which protects the land areas from tidal surge (principally during

cyclones). The flood protection wall will be incorporated into the design of the terminal.

### Functional Requirements

This section considers the functional

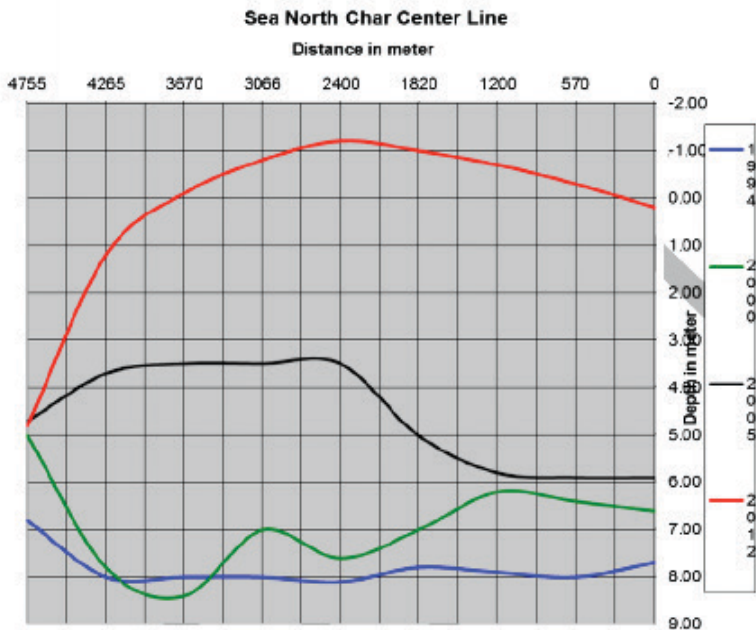


Figure-3: CPA Survey of BCT Area Marine Side Conditions



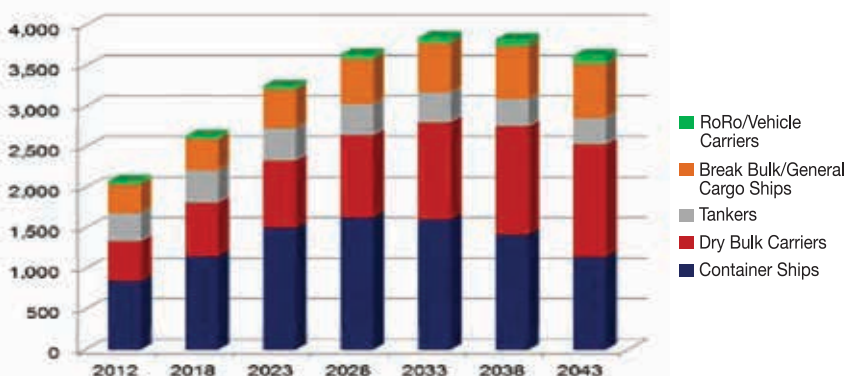
Figure-4: BCT Marine Access

requirements of the BCT. Whilst the focus is on containers, it is also useful to consider the requirements for other cargoes, as presented in the Strategic Master Plan Report, Figure-5.

### Container Carriers

The Strategic Master Plan (SMP), and this Pre-Feasibility Study, has identified a clear need for additional container terminal capacity, and preferably an increase in the size of the vessels. The SMP recommends a Phase-1 development with 4 berths (1000m quay length), followed by a Phase-2 with an additional

Figure-5: BCT Potential Cargo Handling



2 berths (total length of 1500m), Figure-6. In addition, there would be a 340m quay for IWT vessels.

The total area recommended for the container terminal is 2500m by 1000m. Limiting the vessel draft to 11m will restrict the number of container vessels that can visit the Bay Terminal fully laden. As there will be no (reasonable) limit on the length of vessel the restrictions will be much less than the existing container terminals. It is recommended that a study should be carried out at a later date to determine the option depth for the approach channel.

### Possible Overall Layout

A possible overall layout that would meet the multiple functional requirements set out above is shown in Figure-7.

### Constructions

#### 1 Safe harbour

The primary function of a port is to provide a safe harbour for ships in bad weather, and to provide a suitable location for cargo handling. If the ships move too much then cargo handling must stop and the ships can be damaged. It has been suggested in SMP that the offshore Char may provide sufficient natural protection for the harbour, and no artificial breakwaters will be required. It should be confirmed by a wave study and wave measurements inside and outside the Char. This would be relatively cost effective if the overall stability of Char can be confirmed.

Whilst the harbour should provide a safe haven during "normal" monsoon storms, it is unlikely that it could be made safe in cyclones. A plan would need to make to ensure that all vessels left the port in advance of a cyclone.

#### 2 Stability of Char and channel

The feasibility of the entire project depends on the stability of the offshore Char, and the natural flushing of the channel.

At the present time the Char and deep water channel are in the perfect location for Bay Terminal. They provide wave protection and a deep access channel that seems to be self-flushing.

It is therefore essential to understand the current patterns in the region, and the reason for the formation of the Char. It would then be possible to ensure that future developments do not change this pattern.

It is understood that a hydrodynamic

*There is a flood protection embankment running parallel to coast, which protects the land areas from tidal surge (principally during cyclones). The flood protection wall will be incorporated into the design of the terminal*



study of the Bay Terminal will be carried out as part of the Strategic Master Plan.

### 3 Breakwaters

It would be desirable to show that the *Char* provides sufficient protection to the berths in a natural state. They would then be improved by placing sand in areas where the height is less than in other places, and if possible stabilized by planting vegetation. A study would need to be carried out to estimate the damage to the *Char* during a cyclone. It may be possible to accept some damage, and plan for emergency repairs after a cyclone.

### 4 Quays

The quays would be constructed on a line near to the existing deep water channel. Detailed hydraulic studies would be carried to ensure that the construction of the quays will not affect the currents, leading to sedimentation in the channel or erosion of the *Char*. It is suggested that the quay walls should be solid walls (rather than vertical piles with a concrete deck), as this will increase the flushing currents in front of the quay. The structures must be designed to withstand the wind and wave forces during cyclone. The height of the quay surface should be determined taking into account possible tidal surges during cyclones. It is likely that the quay itself will be allowed to flood in a major cyclone, but the stacking areas will be protected by the surge protection wall.

### 5 Landside Facilities

The ground behind the quays will need consolidation before it can be used for stacking areas or roadways. This is normally achieved by surcharging the ground with sand and the process can be speeded up by various ground improvement techniques. Once the ground has been prepared, the construction of the landside facilities will be done in the conventional way. The design should make adequate provision for storm run-off from inland, and for high flows in the rivers.

### Conclusions

#### 1 Market Demand justifies the need for Future Container Terminals

The need for new container terminals over the next ten years is clear. Container traffic at Chittagong has been expanding at around 10% per year and it is forecast that by 2023, which is considered the earliest year in which the Bay Container Terminal

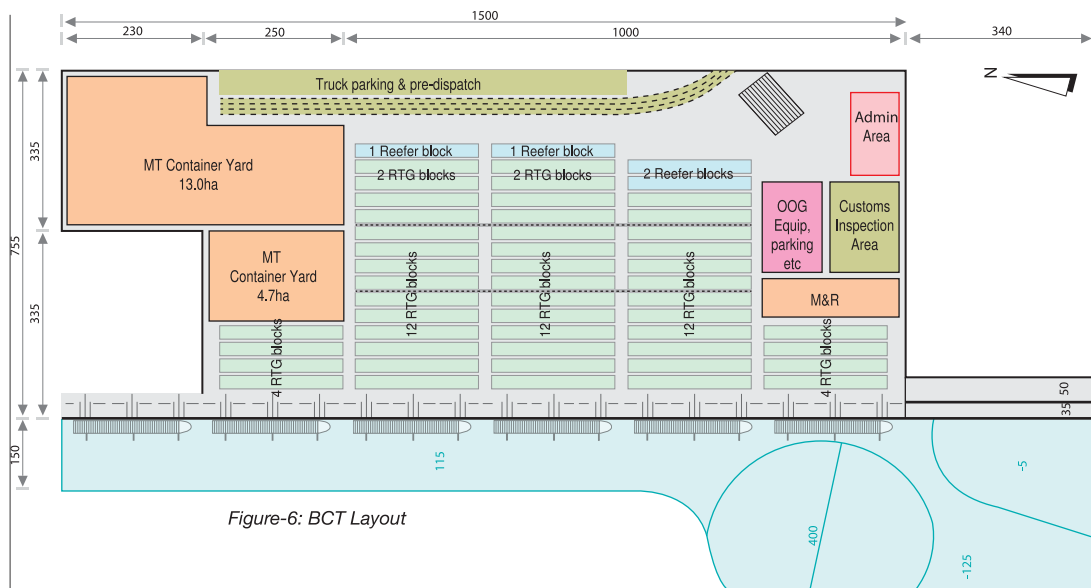


Figure-6: BCT Layout

could be built, it will reach 4,880,000 TEU. This is over three times the volume handled in 2013 (1.5 million TEU). The major reason for the very high growth rate is the expected introduction of inland waterway transport for containers between Chittagong and Dhaka.

The forecast traffic is well above capacity of the terminals in the existing port, which is estimated at 3,703,000 TEU - on the assumptions that NCT is made fully operational and General Cargo berths 4-13 of Chittagong port are converted to container terminals. With this traffic volume there would be a shortfall in capacity of 1,176,000 TEU by 2023.

### 2 BCT is a Viable Option

The Bay is an excellent site for a container terminal. It has a large area without buildings or occupants, and the land is being made available by the local authorities at no cost. It offers potential for future port expansion, and is close to the existing road and rail links to and from Dhaka. SMP concluded that if BCT were the only option its justification in terms of traffic volumes, economic benefits to Bangladesh and financial returns to CPA would be sound.

- Zafar Alam: Member (Administration & Planning), Chittagong Port Authority. Editor, BandarBarta & CPA News

Figure-7: Overall Layout of Bay Terminal to Meet Cargo Handling Requirements



*The total area recommended for the container terminal is 2500m by 1000m. As there will be no (reasonable) limit on the length of vessel the restrictions will be much less than the existing container terminals*



## The Blue Economy: Opportunity for Sustainable Development in Bangladesh

Rear Admiral M Khaled Iqbal  
BSP, ndc, psc

The ocean is regarded as the last major frontier on earth for the exploration and development of resources to sustain mankind in the future. The oceans are considered as an unfailing source of food, minerals and energy. Yet man has been able to touch only infinitesimal part of these riches, the main drawback being his incomplete knowledge of the ocean. A wide array of thinking is being brought to bear on the blue economy, and it is a sign of progress that many countries are now adopting or exploring sustainable framework for their ocean economies.

Today thanks to the verdict of ITLOS and Permanent Court of Arbitration we have a sea area of our own which is 1,18,813 square km in size and the demarcation was only possible because of the excellent initiative taken by government to settle the maritime disputes with India and Myanmar.

There has been a growing appreciation that the world's oceans and seas require more in-depth attention and coordinated action. The Independent World Commission on the Oceans launched in December 1995 presented its report named 'The Ocean-Our Future', which emphasized on global dependence

on the oceans. The world faces one of the biggest challenges of the 21st century- how to feed global population in the face of climate change, economic and financial uncertainty and the growing competition for natural resources. These multiple challenges require an integrated response and an urgent transition of the world economy towards a sustainable, inclusive and resource-efficient path especially for Bangladesh.

The aim of this write-up is to highlight the basic concept of blue economy and explore opportunities for sustainable development in Bangladesh.

Blue Economy in a layman's form means ocean based economic system. The most adopted working definition of blue economy is 'A sustainable ocean economy emerges when economic activity is in balance with the long-term capacity of ocean ecosystems to support this activity and remain resilient and healthy.' But above all, the blue economy concept is based on principles of equity, well-being, low carbon development, resource efficiency and social inclusion.'

The Blue Economy is a developing

world initiative but relevant to all coastal states and countries with an interest in waters beyond national jurisdiction. It typically prioritizes growth over sustainability. The European Commission's Blue Growth strategy, for example, is designed 'to steer the EU out of its current economic crisis' as a source of jobs, competitiveness and greater resource opportunity that can be tapped while 'safeguarding' the health of European seas. China's idea of a blue economy, though evolving of late to include a new focus on 'sustainable development and conservation', prioritizes bringing coastal and ocean resources into a broader integrated plan for national economic development and encouraging the marine industry to play a greater role in the economy.

The objective of the Blue economy initiative is to promote smart, sustainable and inclusive growth and employment opportunities in Bangladesh's maritime economic activities in the short, medium and long-term time frames. To realize the necessary international cooperation and support to elevate the Blue Economy to the international sustainable development agenda, Bangladesh amongst the coastal countries has targeted the preparatory process leading up to the first International Workshop on Blue Economy in September 2014 in Dhaka. During the workshop Hon'ble Prime Minister Shaikh Hasina emphasized that the Blue Economy can play an important role in the economic upliftment of the country in the context of poverty alleviation, ensuring food and nutrition security, combating climate change impacts. We need to turn the Bay of Bengal to a hub of economic development and prosperity.

The Blue Economy, however, offers the potential for Bangladesh to alleviate one of their defining obstacles to sustainable development. More than 90% of the Bangladesh's external freight trade is sea-borne. Presently, Bangladesh's value of export and import stands at about US\$ 67b and are carried by 2800 foreign ships visiting our ports. Considering the average import growth rate of 15.79% and export growth rate of 15.43%, projected freight value for next 10 years would be around US\$ 435b. In order to keep pace with this fast growing sector, Bangladesh must facilitate local shipping companies to add more

*The oceans are considered as an unfailing source of food, minerals and energy. Yet man has been able to touch only infinitesimal part of these riches, the main drawback being his incomplete knowledge of the ocean. A wide array of thinking is being brought to bear on the blue economy, and it is a sign of progress that many countries are now adopting.*





ships to the existing fleet. With the target of becoming a higher middle income country by 2021 and US\$ 50b export target of garments, the shipping business is bound to increase.

Bangladesh must enhance the existing handling capacities of ports and develop deep sea ports with more capabilities and modern handling equipment to cater for increased trade and commerce. Moreover, the futuristic Bay Terminal in Sandweep channel also needs to be developed to increase Chittagong port capacity. It is matter of great hope that the upcoming Payra Port is likely to substantially contribute in the handling of our future trade and may become a regional hub in the maritime trade sector.

Coastal shipping from India, Sri Lanka, Singapore, Malaysia, Thailand and Myanmar ports could play as a game changer in the feeder services. Such arrangements would be cost effective, time saving and would increase employment opportunities. The implementation of the coastal shipping agreement between Bangladesh and India recently has been a positive step towards the maritime growth of our country. In line with that, the inland shipping route also needs to be developed further in order to ensure better hinterland connectivity via rail, road and waterways.

During 2012 about 231.5m passengers and 32.6m metric tons (MT) of cargoes were transported through inland/coastal networks leaving sufficient scope for further investment and expansion around the coastal belt.

Bangladesh has one of the largest inland water transport network in the world covering 24,000km, with 1000 landing points and 21 inland river ports. Pangaon Inland Container Terminal (PICT) in Dhaka; with 55,000sqm of container yards, 2400 TEU handling capacity and with two jetties; has already been commissioned since November 2013.

There are more than 300 shipyards and workshops in Bangladesh and almost 100% requirement of inland vessels, fast patrol boats, dredging barges, passenger vessels, landing craft and tug are being built by these yards. Ship building yards are constructing 10,000 DWT sea-going ships for export and are expected to upgrade their capacity to 25,000 DWT.

*Globally 350 million jobs are linked to marine fisheries with 90% of fishers living in developing countries. Global catch rose from 16.7 million tones in 1950 to 86.7 million tones in 2000 and has stagnated subsequently.*



There are about 125 ship breaking yards with annual turnover of about US\$ 2.4b. A move to dismantle decommissioned big ships in an environment-friendly way and recycle them has spread throughout the world. Ship recycling must be turned into modern industry with all eco-friendly infrastructure and compliance of international convention.

Globally, 350m jobs are linked to marine fisheries with 90% of fishers living in developing countries. Global catch raised from 16.7m tones in 1950 to 86.7m tones in 2000 and has stagnated subsequently. There are about 475 species of fish found in our EEZ compared to 250 species on land. About 57,000 artisanal mechanized and non-mechanized wooden boats and 200 industrial steel-body trawlers are engaged in fishing in the coastal waters up to 60km (within 40m depth) from our coastline having very limited capability in catching pelagic fishing-shoals closer to surface. At present 50-60% of global Hilsa fish catch takes place in the coastal and marine waters of Bangladesh. A total of 46,568MT tiger shrimp was caught from the Bay of Bengal during 2012-2013, most of which directly go to the processing plant and end up in the markets of USA, EU and Japan. There is tremendous scope for increasing marine catch introducing technology and long line, huge scope for higher end industry in venturing beyond that 60km coastline or 40m depth. However, Marine Protected

Areas (MPA) have been declared to maintain marine biodiversity and fish stocks at sustainable levels.

The global market for marine biotechnology products and processes is currently estimated at US\$ 2.8b and projected to grow to around US\$ 4.6b by 2017. Marine bacteria are a rich source of potential drugs. In 2011, there were over 36 marine derived drugs in clinical development, including 15 for the treatment of cancer. One area where marine biotech may make a critical contribution is the development of new antibiotics.

In 2009, offshore oil fields accounted for 32% of worldwide crude oil production and this is projected to rise to 34% in 2025 and higher subsequently with almost half of the remaining recoverable conventional oil is essential to be in offshore fields – a quarter of that in deep water. However, Bangladesh is yet to assess the true potential of its offshore oil and gas prospects. A logical plan is necessary to carry out extensive survey in the Bay of Bengal to identify potential oil in gas fields.

Sea salt has been produced traditionally along the Cox's Bazar coast of Bangladesh for generations. The annual salt production in that coastal segment is 22MT.

Off-shore wind covers all activities related to the development and construction of wind parks in marine waters, and the exploitation of wind energy by generating electricity off-shore. A wind generator with a

capacity of 2MW has already been installed in the coastal area of Kutubdia and it is waiting for activation. In addition, we need to undertake research on other ocean renewable energy like wave, tide, ocean currents, thermal conversion and salinity gradients.

Industrially produced nutrient fertilizers (Nitrogen, Phosphorus) are essential to global food security and have been the main driver of dramatically improved agricultural yields over the last 60 years to feed a growing population.

Sands containing valuable heavy minerals are found intermittently over the length of a 250km coastal belt from Patenga to Teknaf. The entire area has been explored with the discovery of 17 deposits of potentially valuable minerals such as Zircon, Rutile, Ilmenite, Leucosene, Kyanite, Garnet, Magnetite and Monazite.

The world is gearing up for the deep sea exploration and exploitation of mineral deposits on and beneath the sea floor. Industry, due to rising commodity prices, is turning its attention to the potential riches of Polymetallic nodules, Cobalt crusts and massive Sulphide deposits; the latter a source of rare earth elements, such as Yttrium, Dysprosium and Terbium, important in new ICT hardware and renewable energy technologies. Commercial interest is particularly strong in Polymetallic nodules.

Globally, coastal tourism is the largest market segment and represents 5%

of world GDP and contributes to 6-7% of total employment. Tourism is a major global industry; in 2012 international tourist arrivals increased by 4% despite the global economic crisis and constituted 9% of Global GDP. A large portion of global tourism is focused on the marine and coastal environment and it is set to rise. Cruise tourism is the fastest growing sector in the leisure travel industry. Out of 10 economic zones initiated by the government, Sabran Tourism Special Economic Zone in Cox's Bazar indicates our interest for developing the tourist sector. However, we need to adopt proper coastal zone management, developing marine parks, marine protected areas, safeguard reefs of Saint Martins Islands, Sundarbans and other off-shore Islands.

A large eligible population places Bangladesh in a suitable position to produce skilled human resources in almost any sector imaginable. Bangladesh has enormous potential for seafaring job opportunities from its private and public marine academies. BSMMU has been inaugurated in recent years for maritime higher education where there is a Department of Oceanography in Dhaka University and Institute of Marine Science in Chittagong University. However, it is important to encourage maritime higher education in various universities of Bangladesh. Maritime surveillance aims to improve the situational awareness of all activities at sea impacting on maritime safety and security. Therefore, we need to enhance the capacity of Bangladesh



Navy and Coast Guard to ensure that our sea area is safe and secure for blue economy activities.

The vision of our ocean policy should be to ensure a healthy ocean; cared for, understood and used wisely for the benefit of all, now and in the future. In the context of the Bay of Bengal we need to develop international maritime cooperation mechanism pursued through coordinated strategic frameworks among the littoral states to promote collaboration for reaping maximum benefit of blue economy.

Bangladesh is a sea-faring nation and Blue Economy can act as a driver of our national economy. Day by day our land resources will deplete and we will be increasingly dependent on sea. Therefore, we need an action plan to derive benefit out of an efficient ocean blue economic policy. In light of this, it is essential that Bangladesh recognizes the true potential of its marine resources and develops an integrated maritime policy that acknowledges the true impact of blue economy as a driver of our national economic development.

- Rear Admiral M Khaled Iqbal, Chairman, Chittagong Port Authority

*Bangladesh is a sea faring nation and Blue economy can act as a driver of our national economy. Day by day our land resources will deplete and we will be increasingly dependent on sea. Hence, we need an action plan to derive benefit out of an efficient ocean blue economic policy.*

Note: Some statistics and information have been taken from the article on Blue Economy written by Rear Admiral M Khurshed Alam (Retd), Secretary, Maritime Affairs Unit, MFA



**A**s part of modernising the port and lifting it up in terms of global standard the Chittagong Port Authority (CPA) has introduced several advanced systems and technologies following the involvement of so many shipping lines/agents and operators within the sea boundary of Bangladesh. From the point of view of a developing port this is an important ingredient in its future progress.

Therefore, for upgrading its information and communication technology in order to ensure a safe and smooth flow of traffic and take care of the planning and streamlining of the logistic processes in the port CPA has installed the Vessel Traffic Management and Information System (VTMIS) in 2014. It is a marine traffic monitoring system similar to the control system for aircraft. With the establishment of VTMIS, now it is possible to monitor the Chittagong port authority maritime area- 7 nautical miles of arc towards the sea from the Patenga point light house and up to the Shah Amanat bridge.

Modern ports in Singapore, Hong Kong, Belgium (Antwerp), the USA (New York) and other countries use VTMIS.

### Why VTMIS

VTMIS is designed to improve the safety and efficiency of navigation, safety of life at the outer anchorage, harbour entrance and inside the main channel. It also ensures the protection of the marine environment.

VTS is governed by Safety Of Life At Sea (SOLAS) Convention (Chapter V Regulation 12) together with the Guidelines for Vessel Traffic Services adopted by the International Maritime Organization [IMO Resolution A.857(20)] on 27 November 1997.

Typical VTMIS systems mainly use RADAR, CCTV camera, Day-Night Camera System, VHF radiotelephony and Automatic Identification System (AIS) to keep track of vessel movements and provide navigational safety in a limited geographical area.

In brief VTMIS enables the port to:

- Ensure safe movement even in dense fog and in rains
- Alert vessels at the port and outer anchorage to possible danger
- Reduce waterways accident risks
- Prevent entrance of undeclared and unexpected vessels in the port

*VTMIS systems mainly use RADAR, CCTV camera, Day-Night Camera System, VHF radiotelephony and Automatic Identification System (AIS) to keep track of vessel movements and provide navigational safety in a limited geographical area.*

## VTMIS: Making the Chittagong port more safe and efficient

VTMIS is a newly introduced techno-based surveillance and monitoring system at the Chittagong Port ensuring safety of all naval vessels in the Karnaphuli channel from the outer anchorage up to the Shah Amanat Bridge

**Commodor Shaheen Rahman**

(g),ncc, psc, bn

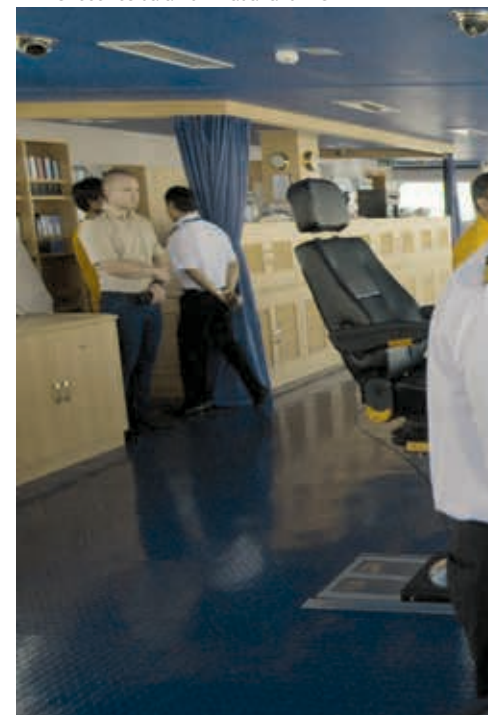


24/7 monitoring of naval vessels at port

- Advise pilots about safe navigation
- Take immediate measures to fight piracy
- Stay updated on the details of vessels moored at the outer anchorage
- Keep video evidence of vessel movement

became enhanced, anti-piracy measures became quicker & more effective, investigation of maritime accidents became easier.

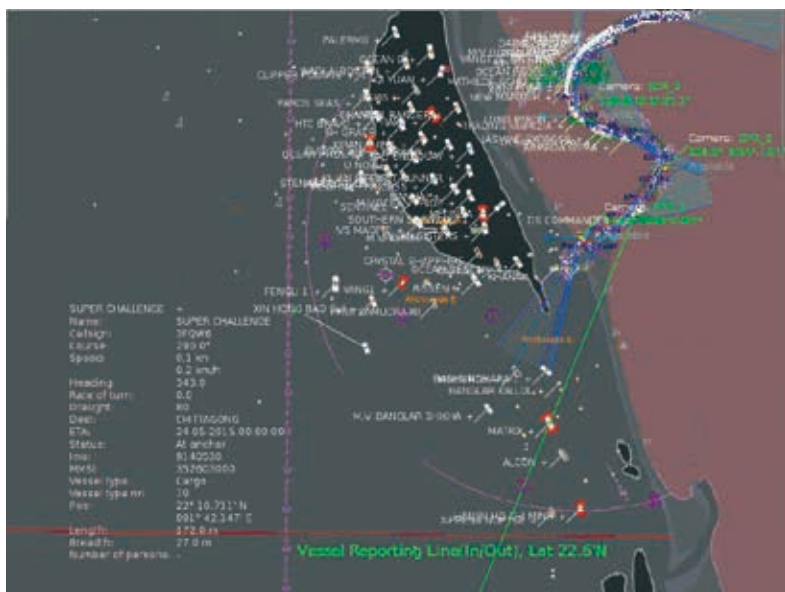
VTMIS receives data from Radar and AIS



### How it works

The Vessel Traffic Management System gathers target data from RADARs and AIS, integrates these data and presents target data overlaid on electronic navigation charts.

The purpose of any VTMIS is to provide the operator with a clear and concise real-time scenario of vessel movements and interactions in the surveillance area in order to support on-duty decisions. The VTMIS helps not only monitoring maritime traffic but also the system guides the pilots & vessels for safe ship handling. Due to VTMIS the ship movement during restricted visibility (rain, fog) became easier and possibility of maritime accidents reduced, maritime security



Screen Shot: Reporting of a vessel

The VTMIS system uses multiple components (hardware, software, sensors) and provides basic functionality, interfaces and integration capabilities such as:

- Multi sensor processing (Radar, AIS, RDF, CCTV, Meteo)
- Advanced radar and data processing
- User-friendly Traffic Display System, GIS centric
- Integrated recording & replay (data/voice)

- Vessel Traffic Management System (VTMIS = VTS + Database)

- Traffic simulation tools for training purposes

#### VTMIS of Chittagong Port Authority

The system has two control stations, each having four consoles, server stations etc.

- Bandar Bhaban Control Station.
- Patenga Point Control Station.

The system collects information from four RADAR stations, which have

- Five RADARs (Range: 20 nautical mile/36km)
- Nine Day/Night Camera. (Range: 5 km)
- Automatic Identification System (Range: 20 nautical mile/36km)
- Wireless VHF Communication System (Range: 20 nautical mile/36km)
- Meteorological sensors
- Microwave link

#### Upgradation and expansion of VTMIS

In the existing system the port has a maximum range of cameras with 5km from the Patenga Point. This range appeared inadequate for better video surveillance and monitoring the full outer anchorage area. For this, presently the up gradation of the system is going on. Another 10 cameras shall be installed to cover full outer anchorage area that is 16km from the Patenga Point. Also LASER illuminated at night time will perform to provide information on 24 hours weather condition.

The VTMIS has increased the capacity and efficiency of the Chittagong port tremendously. As a VTMIS-equipped port it is treated as a modern and safer port now. For the stakeholders - ship owners, importers, exporters etc. - feel safer and confident as it is very easy for them to have access to information regarding the ships at the port. The insurance cost is also reduced for ships calling at the port as available safety-related service is of high quality. Thus, the Chittagong port is gradually stepping ahead in the global standard while maximizing its safety and efficiency.

- Commodor Shaheen Rahman: Member (Marine and Harbour), Chittagong Port Authority.

*In the existing system the port has a maximum range of cameras with 5km from the Patenga point. This range appeared inadequate for better video surveillance and monitoring the full outer anchorage area. For this, presently the up gradation of the system is going on*

Ensure safe movement





## We dream together and make them come true

Rear Admiral M. Khaled Iqbal, BSP, ndc, psc joined as the Chairman of Chittagong Port Authority (CPA) on 29 March 2016. Before joining CPA he was the Commander of BN Fleet of Bangladesh Navy in Chittagong. He also attains a number of professional degrees and training in different types of war ships and strategies from abroad during his service tenure. After joining CPA the new visionary Chairman has shared his thoughts about modernizing the port in line with the Government's Vision 2021. He has also elaborated his future planning in light of the Strategic Master Plan 2043 for Chittagong port.

### What is your feeling about the celebration of Port Day?

Chairman: It is the 129th Port Day and the Chittagong Port Authority is proud to celebrate the 25th of April as its birthday. I would like to mention here the historical background of the Port Day.

During the period of British-India, the importance of Chittagong port as an outlet for the North-Eastern regions was growing rapidly, so the government enacted the Port Commissioner's Act, in 1887 and a Trust was constituted. But it was enforced on 25 April 1888 and its affairs were administered by an officer who held the combined appointment of the Port Officer and the Collector of Customs. Thus Chittagong has transformed from a harbour to a port from this day. We proudly celebrate it as the Port Day.

The Port has undergone many changes since then. Despite many constraints the port continues to cope with changing patterns of the trade and creates facilities to

meet the market demands. The container traffic growth of Chittagong Port is about 12%. Thus its contribution to the national economy is remarkable. To meet the challenges of globalization and liberalization of world trade and economy, Chittagong Port has undertaken many ambitious projects to enhance its capacity, improve efficiency and quality of services and also to develop adequate facilities to turn itself into a world class regional port. In the course of time it has become number one among 79 ports in Asia.

At present CPA is capable of handling 98% of containers coming in the country and 92% of the maritime trade is done through this Port. This is also a proud occasion for us as the Port has handled 2m TEUs in 2015 and the target is achieved well before the deadline. In between 2007 and 2015 container handling increased by more than twice in number. Up to December 2015 the Port handled 20,24,000 TEUs. This is how the Port grew over time.

I feel an immense pleasure to lead these success stories and I am confident this port will continue to celebrate this special day with new achievements in the future.

### As the Port is going through some dynamic changes, what would be your future planning as the Administrator? Which facilities needed to be included in the next five years?

Chairman: Chittagong port is the principal port of Bangladesh and therefore has very special role to play in the national development process. The responsibilities of the Chittagong port are to render necessary facilities and services in proper and efficient



handling of export-import cargo of sea-borne trade.

The process of trade liberalization and globalization in the eighties has resulted in greater mobility of goods and services across the international borders. The subsequent shift in manufacturing activities towards countries with comparative economic advantages has presented new challenges. Many developing countries are aspiring to expand their manufacturing bases and stimulate domestic economics through improved global linkages in trade and commerce. Bangladesh is also seeking to explore more opportunities to further expand international economic activities for sustainable development.

In this perspective as the Administrator of the CPA, I am committed to achieve our Government's vision 2021. For the next five years I would emphasise on four to five fast act projects and issues-

Increase number of quay (jetty) – we will construct new service jetties at the New Mooring Container Terminal (NCT), Patenga Container Terminal (PCT), Karnaphuli Container Terminal (KCT), Laldia Multipurpose Terminal and at the Bay Terminal. Moreover, we will do major repairs to the existing jetties.

Increase number of yards – we would construct overflow yard at PCT and yard near the Karnaphuli Export Processing Zone (KEPZ). Off-dock yard would also be constructed at the Bay Terminal.

Introducing contemporary equipment in the port, like Ship-to-Shore (STS) Gantry Crane, Rubber-tyred Gantry Crane (RTG), Straddle Carrier (SC), Forklift etc. Moreover, various service vessels like High Power Tugs, Pilot boats etc. would also be added.

Conduct a study for the port to assess its climate vulnerability and take necessary adaptation measures as per future need.

Take some measures as an attempt to convert the Chittagong Port as a Green Port in near future.

**What actions you are going to initiate immediately to improve the efficiency of Port operations as per the Strategic Master Plan 2043?**

Chairman: There is no doubt that to meet the country's trade objectives, we have to improve

efficiency of maritime gateways and make this port more responsive to commercial needs of exporters, importers and carriers. To improve the capacity of the port, which will support and maintain sustainable economic growth in the country, in 2013 a Strategic Port Master Plan has been developed for the next 30 years. We already have undertaken some studies to find out the challenges to keep the port active day and night round the year. Under those studies several challenges would be addressed immediately-

- Modernize the port in line with the future planning to keep a growth rate of at least 12 percent
- Create an efficient, highly skilled and motivated workforce
- Expand jetty and berthing facilities and reduce turn-around time for ships
- Control the standard of the navigational channel for safe navigation
- Improve the drainage system of the Karnaphuli river by effective dredging and increase facilities for easy entrance and direct anchorage in jetties to vessels with more than 9.5 metres in draft
- Expansion of hinterland linkage and introduce river connectivity along with road and rail transportation
- Improve the working capacity of the port by modernizing its activities and also by more use of digital technology
- Take measures for operating a environmental-friendly port

**What is your plan to improve the handling capacity of the port for the future?**

Chairman: Statistics shows that there is an increasing demand of container handling capacity, which will have to be covered by a new terminal that has to be completed by 2023. The highest need will be between 2033 and 2037 when additional handling capacity of around 2.8m TEUs per year is required. This value represents the capacity that has to be provided by a new container terminal.

Therefore,  
The

*To meet the country's trade objectives, we have to improve efficiency of maritime gateways and make this port more responsive to commercial needs of exporters, importers and carriers.*

Chittagong Port Authority (CPA) is planning to invest in one of its largest and ambitious projects – the Bay Container Terminal (BCT). It is to be built on an area of 900 acres on Patenga coastline. The terminal with all modern port facilities will allow big ships which now cannot anchor at the Port. That means, LOA (Length Over All) restrictions due to the navigability of the river will no longer apply and transportation cost will also reduce dramatically. Moreover, natural breakwater system, good channel, good road and rail connectivity would be available at the Bay Terminal.

**What benefits Bangladesh could gain from coastal shipping?**

Chairman: Bangladesh could be greatly benefited from coastal shipping keeping in mind the future limitations of roads and railways. To add a new horizon to the transportation of export and import goods through waterways, the CPA jointly with the Bangladesh Inland Water Transport Authority (BIWTA) have constructed an Inland Container River Terminal at Pangaon, Dhaka. At present it has an annual storage capacity of 30,000 TEUs with a potential of 1,16,000 TEUs. The major objective of this river-based terminal is to ease the pressure of cargo movement on the Dhaka-Chittagong highway and railway corridors by transporting around 40 percent containers at a cheaper carrying cost from Chittagong and Mongla Port. It would also lessen the load on

Chittagong port that would help it to handle more containers. It will also help reducing emission of carbon as less vehicle on the highway.





“Considering today’s global environment it is imperative to upgrade the efficiency of Chittagong port keeping in view of the visions set for the port as a regional hub to meet future challenges”

#### How would you evaluate the prospects and challenges of Blue Economy in Bangladesh?

Chairman: Blue Economy in a layman’s term means an ocean-based economic system. It is a demand of time for economic well-being of Bangladesh which could be achieved through efficient use of the country’s sea resources like fisheries, aquaculture, renewable blue energy, oil, gas, submarine mining and increased yet safe sea borne trade.

Naturally, this concept of blue economy can be developed by increasing the facilities of our port. Considering today’s global environment it is imperative to upgrade the efficiency of Chittagong port keeping in view of the visions set for the port as a regional hub to meet future challenges. Handling of both cargo and container is helping maintain a remarkable growth of the port every year coupled with the handling of vessels. Moreover, transportation of cargoes in international maritime trade has been changing rapidly to containerization from break bulk system. Our port has achieved a milestone in container handling and it is growing over time. And we are rapidly modernizing ourselves in terms of facilities and capacities to optimize its benefits. Thus we are preparing ourselves to complement the requirements for blue economy in Bangladesh. There is no doubt that Bangladesh would be highly benefited if it can ensure safe and secure passage of ships.

*India invited more than 5000 delegates from around the globe and provided a platform for participation, engagement and interaction from 42 countries. More than 80 eminent speakers from across the globe deliberated and shared their vision and experience and interacted with the audience on various aspects of maritime sector in 13 thematic sessions and 3 special sessions*

## Highlighting Port-led Development



CPA News Desk

The first Maritime India Summit (MIS 2016) was held in Mumbai from 14-16 April hosted by the Shipping Ministry of India in an effort to boost port-led development in the country. South Korea was the partner country for this summit. Shipping Minister of Bangladesh Shahjahan Khan along with the CPA chairman Rear Admiral M Khaled Iqbal, BSP, ndc, psc, and other dignitaries were invited as honourable guests from Bangladesh.

The summit highlighted the role of port-led development like port modernization, marine tourism and cruise shipping, dredging, ship building-ship repair-ship recycling, renewable energy in ports, inland water transportation, hinterland connectivity and multimodal logistics. In the inaugural session the Prime Minister Narendra Modi released a National Perspective Plan of Sagarmala project under which the country plans to develop 10 port-based Maritime Clusters focussing on key industrial sectors and develop smart port cities at major ports starting with Kandla and Paradip ports. India is also planning to convert Colachel at Tamil Nadu and Dahanu at Maharashtra as new Greenfield Ports.

The focus sessions in the summit on maritime states highlighted the investment opportunities. Besides, there were sectoral seminars on ship building and ship repair, skill development through maritime education, inland waterways development, cruise shipping and lighthouse tourism, fisheries development and maritime security. As the partner country South Korea highlighted its strength as a Maritime Nation especially in ship building, maritime technology, port-led development, maritime financing and maritime security.

An exclusive CEOs Forum of select industry leaders, chaired by the Indian Shipping Minister Nitin

Gadkari, was held to deliberate on the potential and growth opportunities of the Indian Maritime Sector. India hopes that these discussions, suggestions and learning from various similar developments in many countries would help in implementing a sustainable roadmap for the country’s maritime sector. The Shipping Ministry has also established an Investment Facilitation Cell in Indian Ports Association to follow up on these opportunities with potential investors.

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The 3-day exhibition organized during the Summit also drew response from 197 exhibitors including 81 international companies, 80 Indian private sector companies and 36 Government owned entities. The Summit showcased around 240 projects from ship building, ship repair and ship recycling aspects, which presented investment opportunities of around US\$ 66 billion during the next five years. India is expecting to create employment opportunities of approximately 10 million jobs over the next ten years.

On the side-lines of this Summit, India held high-level bilateral meetings with 12 participating countries.

Sources: Maritime India Summit 2016 Brochure; Business Standard, India



## Coastal Shipping: Bangladesh-India to utilize potentials of waterways

Opening of coastal shipping between two neighboring countries would further multiply movement of cargo, radically reduce transportation cost and develop connectivity for future bilateral cooperation

CPA News Desk

In an attempt to increase the number of Indo-Bangla container traffic, Bangladesh has sent its first ship to India on 23 March 2016 under coastal shipping agreement. The MV Harbour-1, an 82-metre long multipurpose container vessel with a capacity of carrying 170 containers as well as bulk cargo, sailed from the Chittagong Port to the Krishnapatnam Port of Chennai, India.

It is the first vessel which obtained permission from departments of shipping of Bangladesh and India to operate under the Coastal Shipping Agreement signed during the Indian Prime Minister Narendra Modi's Bangladesh visit in June 2015.

Under the agreement, Bangladeshi vessels will call at Indian coastal ports of Kolkata, Haldia, Paradip, Vishakhapatnam, Kakinada, Krishnapatnam and Chennai while ports of call in Bangladesh will be

Chittagong, Pangaon ICT, Narayanganj, Ashuganj, Paora, Khulna and Mongla.

Shipping Minister Shajahan Khan inaugurated container vessel service between the two countries at the port's New Mooring Container Terminal (NCT) on March 15. While addressing as the chief guest, the minister had expressed his optimism that the newly launched bilateral coastal shipping service would boost trade between the two neighboring countries by reducing freight time and cost and easing immense pressure on land ports.

The two neighbours had a container cargo of 40,000 TEU in 2013, 40,000 in 2014 and 62,000 in 2015. The Minister further said, the idea of a sub-regional grouping between Bangladesh, India, Nepal and Bhutan is getting shape through this coastal shipping.

Beginning of a new era



*Bangladesh-India Coastal Shipping Agreement was first signed in 1972 between the then Bangladeshi Prime Minister Bangabandhu Sheikh Mujibur Rahman and Indian Prime Minister Indira Gandhi.*



MV Harbour-1, multipurpose container vessel

Bangladesh usually imports onion, rice, lentils, cotton, industrial raw materials and machinery from India. According to the Indian industry sources there is a huge potential to import jute and textile products and export fertilizers, foodgrains, seafood, assembled products and project cargo between the two countries.

Bangladesh will be greatly benefited from coastal shipping agreement keeping in mind the future limitations of its roads and railways. As part of expansion of hinterland linkage and introducing river connectivity along with road and rail transportation for carrying export-import goods, the CPA jointly with the Bangladesh Inland Water Transport Authority (BIWTA) have constructed an Inland Container River Terminal at Pangaon, Dhaka. The terminal has an annual storage capacity of 30,000 TEUs with a potentiality of 1,16,000 TEUs.

Introducing the Indo-Bangla feeder service will also help landlocked Indian seven sister states to have supplies in less time by transporting cargo by road from Chittagong once the bridge is built over Feni River. Moving commodities from Krishnapatnam, India to Chittagong or Pangaon, Dhaka would cut the delivery time from 25-30 days to 7 days.

Besides, utilization of this route will help the transportation cost of a container coming down to US\$ 35 from US\$ 90, reducing almost two-thirds of the cost. Feeder cargo services with other ports of India will be introduced soon aimed at minimizing the transportation costs of imports and exports consignments.

Bangladesh-India Coastal Shipping Agreement was first signed in 1972 between the then Bangladeshi Prime Minister Bangabandhu Sheikh Mujibur Rahman and Indian Prime Minister Indira Gandhi.



Once reputed for ship breaking Bangladesh has recently emerged as a ship building and exporting nation. Ship building engineering, also known as naval engineering, is an engineering discipline dealing with the design, construction, maintenance and operation of marine vessels and structures. At present, Bangladesh has more than three hundred small shipyards and workshops which are mostly privately owned. About 70% of them are located in and around Dhaka and Narayanganj alongside the bank of Buriganga, Shitalakhya and Meghna. About 20% shipyards of Chittagong division are on the Karnaphuli river & 6% are on the Poshur river in Khulna division. The remaining 4% are located in Barisal division. These yards have capacity in building and repairing of inland and coastal vessels, up to 3,500 DWT (Deadweight tonnage).

The government-owned Khulna Shipyard was made in the 1950s. It has been being run by the local engineers and staff since 1967. It became vibrant when the Bangladesh Navy took over the management in 1999.

The history of indigenous ship building in Bangladesh goes back a long way. It began with wooden-bodied passenger vessels having two decks and gradually improved to steel-body construction of multi-deck passenger carriers in the 1980s as the passenger transportation in riverine route peaked.

History reveals that Chittagong port was the best centre of building ocean-going vessels in 14th, in the mid 15th and even in the 17th century. European traveller Caesar Frederick described Chittagong as the centre of building ocean-going vessels in the mid 15th century. In the 17th century the entire fleet of ships of the Sultan of Turkey was built in Chittagong. British Navy also built vessels in Chittagong for the battle of Trafalgar in 1805.

With the passage of time that glory of shipping faded away. But a small group of visionary professional entrepreneurs has revived that glory. Consequently, privately owned shipyards are fulfilling almost 100% demand of inland vessels and crafts. At present, all inland and coastal ships are constructed and repaired locally in Bangladeshi shipyards. There are 9,056 inland vessels, 75 coastal vessels and 6,245 fishing vessels registered with Department of

## Bangladesh: An Emerging Private-sector Ship Building Nation

Back in the 15th century, Chittagong port built the entire fleet of ships for the Sultan of Turkey. British Navy also built their ships here for the famous battle of Trafalgar in 1805. Considerably after a long break, Bangladesh is back on the track yet again and has attained international recognition with the private-sector ship-building enterprise over the last few decades.

### Salma Rahman Shuvra

Shipping and almost all these vessels are home-built.

They are now building a number of diversified types of vessels and the product range covers marine structure, water craft as well as steel fabrication of reasonably complex nature. They are now producing multipurpose ocean and inland container vessels including double-decker passenger vessels, troops carrying vessel, cargo coaster, dry cargo ships, tourist ship, pleasure craft/yacht, hospital ship, water taxi, pilot boat, speed boat, crane boat, fast patrol boat, tugs, ro-ro ferry, pontoon, landing craft, supply barge, self propelled barge, large deck barges, deck loading barge, dredging barge, oil tanker, deep water fishing trawler, floating workshops, supply ships, hydrographic survey boat, inspection craft, bi-metal ships, off-shore living modules, dredger etc.

The industry has attained a capacity to manufacture ships of 10,000 DWT and the companies are expanding their facilities to upgrade them up to 25,000 DWT. More than 1,50,000 skilled and semi-skilled workers are employed in this labour intensive sector. Two million people are related directly or indirectly with the industry.

Though the ship building industry in Bangladesh has emerged enormously in the past few years, at present only a few shipyards are capable of building international standard sea-going vessels. By introducing modern ship building in the country they have attained international recognition for Bangladeshi as a ship building and exporting nation. Of them Western Marine Ship Yard Ltd. (WMSHL), Ananda Shipyard & Slipways Ltd. (ASSL) and High Speed Ship Building & Engineering Co. Ltd. have been leading the way in

*The industry has attained a capacity to manufacture ships of 10,000 DWT and the companies are expanding their facilities to upgrade them up to 25,000 DWT. More than 1,50,000 skilled and semi-skilled workers are employed in this labour intensive sector. Two million people are related directly or indirectly with the industry.*



producing vessels for overseas buyers. At the moment they are working to expand their facilities to build bigger vessels.

Traditional ship building nations like China, Japan, South Korea and Singapore are not interested now to build new ships less than 20,000 DWT as they are going for larger container ships, bulkers and tankers. But there is a great demand in the world market for these kinds of certain sized vessels. Experts say, more than 50% of the world's ships are more than 20 years old and need replacing. Due to high construction cost in the developed nations, buyers are now eyeing on the Asia-Pacific region for cost effective ship building. This changing market demand for small and medium-sized vessels has brought an opportunity for Bangladesh to penetrate and serve the world market.

Bangladesh-made ships entered into the global market when ASSL, led by the first woman entrepreneur in this sector, exported the first ship 'Stella Maris' to a Danish company in May 2008. Afterwards, it delivered six ships to the Mozambique government. The company, commenced in 1983 in Narayanganj, so far has constructed about 350 ships of different sizes. For her contribution in diversified export in building and exporting ships, the MD received the National Export Trophy

(Gold) 2009-2010 from the Hon'ble Prime Minister Shaikh Hasina.

Another company WMSHL started its journey in 2000. It has developed a shipyard in the eastern bank of river Karnaphuli in Chittagong and has built more than 60 ships for coastal and inland use. The company was awarded a National Export Trophy (Gold) for 2010-2011 by the Government for its extraordinary contribution in export sector.

Whereas, Highspeed Shipbuilding & Engineering Co., having its own shipyard in Narayanganj, made 10 dry cargo carriers and oil tankers varying from 2,000-4,000 DWT for Japan under a joint venture agreement. In 1979, it supplied two multipurpose type container ships to Bangladesh Shipping Corporation (BSC) each having a DWT of 16,500 under Bangladesh-Japan joint venture cooperation for the first time.

Consequently, Bangladesh is now earning foreign currency by exporting sea-going vessels. Bangladeshi yards have already manufactured and exported ferries, cargo vessels, patrol vessel and ocean-going multi-purpose ships for countries including Denmark, Germany, Finland, Netherlands, Mozambique, Maldives, Tanzania & Kenya. Several contracts have been signed to build and deliver about 50 sea-going vessels in future. After Europe, East Africa and Pacific 'Made in Bangladesh'

*Bangladeshi yards have already manufactured and exported ferries, cargo vessels, patrol vessel and ocean-going multi-purpose ships for countries including Denmark, Germany, Finland, Netherlands, Mozambique, Maldives, Tanzania and Kenya. Several contracts have been signed to build and deliver about 50 sea-going vessels in future. After Europe, East Africa and Pacific 'Made in Bangladesh' ships are now into South America.*

ships are now into South America.

It is just a beginning for Bangladesh compared to the ship building giants like China, Japan and South Korea, but the country hopes to grow continually in terms of workforce advantages. As a developing country it has more potential in terms of geophysical condition, infrastructure, training institute, forward and backwards linkage industries, statutory quality control etc.

Bangladesh is keen to expand its range of exportable goods and the country's budding exportable ship building industry will be a key element in achieving that goal. According to a World Bank report in 2012 Bangladesh can capture 1% of the US\$ 167b global shipbuilding market that's worth US\$ 1.6b.

The government has taken some measures in the recent years to promote the industry. After listing itself, any ship builder will have to pay only 5% corporate tax in the National Board of Revenue. The government hopes the move will help to create more jobs and lead to raise its export earnings massively.

As ship building is labour-intensive, the country can easily utilize its young population for developing such industry. It already has comparatively a lower cost of human inputs than India and China.

Country	Labour cost (in US\$)
Bangladesh	0.50
India	1.00
China	3.00
Singapore	6.00
Japan	12.00
France	13.00
Norway	14.00
Finland	15.00

Source: Annual Report of MARTEC 2010

Besides, there are possibilities of introducing white colour jobs in this sub-sector. There are quite a many engineering universities under Public and Private sector producing graduates of various disciplines, such as engineering, industrial production, metallurgy, management, finance & marketing.

Though Bangladesh is lagging far behind from the major ship building nations, considering the present growth in the global ship building market Bangladesh can catch up to the course.

- Salma Rahman Shuvra:  
Contributor, CPA News

Ship built by Western Marine Shipyard Limited (WMSL) Bangladesh passing Portishead Point off the coast of Somerset, England. Courtesy of Marinetransit.com



## Maritime Sector & Maritime Cluster

**M**aritime sector deals with ocean related matters. The maritime sector comprises of the shipping industry, shipping or maritime transport as well as associated all organizations/actors such as ports, suppliers, equipment manufacturers, ship building, ship breaking, ship brokers, maritime lawyers, financial institutions etc.

Maritime Cluster is a new concept, which is the platform of maritime organizations/activities that are interrelated, geographically concentrated, specially linked by commonalities and complementarities.

The objective of maritime cluster is to figure out the economic weight of the organizations at national scale. Actually the cluster concept tries to put into the frame a business environment and considers the possibilities of the development. Again the relative role and importance of sectors differ within a cluster.

Generally, the main core sectors in maritime clusters are shipping companies, ports, maritime manufacturing (ship building including cruise, ferry, dredger etc.), consultancy, offshore activities etc.

Maritime transport is one of the main facilitators of the world trade of goods and is thus of great importance to economics worldwide. So, maritime cluster is one of the tools to support the integrated maritime policy of a nation or region.

A cluster is defined by Professor Michael Porter (1988): "Clusters are geographical concentrations of interconnected companies, specialized suppliers, service providers, in related industries and associated institutions (for example, universities, standard agencies and trade associations) in particular field that compete but also cooperate."

The significance of a maritime cluster to a region or country depends on its connections to the rest of the economy. Demand and supply links, the so-called factor conditions interlink the maritime sectors within a cluster according to the Porter's Diamond Model (Porter, Michael E 1990).

So for the maritime cluster it is important to have that demand and supply links between the players for the maritime cluster as the growth in one sector induce the growth of other sectors as well. The demand sectors make the capital investments and

*Chittagong is not only the commercial capital of the country but it is also a maritime hub of the cluster organizations (sea port, ship building industries, ship breaking industries, marine academy, navy & coast guard etc. being located here).*

## The Role of Maritime Cluster in Enhancing the Strength and Development of Maritime Sectors of Bangladesh

Halima Begum

Maritime Cluster is a new concept, which is the platform of maritime organizations/activities that are interrelated, geographically concentrated, specially linked by commonalities and complementarities

spending, which drive economic growth, profitability and future competitiveness in a cluster. The main demand generating sectors are ports, shipping and offshore activities while the supply sectors of maritime cluster- ship building, marine equipment, dry docking, trained & skilled personnel etc. depend upon demand from other parts of the cluster. Therefore, the economic significance of maritime cluster can be derived from the direct and indirect economic impact in terms of employment and contribution to GDP as the value and demand created in the maritime cluster trickles down through the over all economy in the form of investments and the supply chain and consumption, which creates further jobs and demand, so that the total economic importance of maritime activities in national and regional economy is even larger.

Maritime activities are not the jobs at sea, but rather the derived employment and economic activities on shore also.

### Maritime Cluster and Bangladesh Economy

The researcher did not find the concept of Bangladesh maritime cluster in any policy document. All the building stones for the maritime cluster within the business environment of Bangladesh are very much in existence. Ports, shipping, ship building, ship breaking, navy, coastguard, seafarers, surveyor, ship owning, manning, ship management, training institute, inland shipping, dry dock, bunkering etc. can be considered as being the most observable sectors in the maritime sector of Bangladesh.

The links between those maritime sectors are weak. Maritime



administration, Ports, Shipping, Marine Academy, Inland Waterways etc works under the aegis of Ministry of Shipping. For dry docking, ship building & ship breaking affairs lie under the Ministry of Industry while Coast Guard & Navy falls under the Ministry of Defense. Ministry of Fisheries and Livestock controls the fisheries.

In Bangladesh port is the core sector, which facilitates the cluster organizations. Maritime cluster organizations are situated at the southern part of the county due to the geographical location of the Bay of Bengal. Again Chittagong is not only the commercial capital of the country but it is also a maritime hub of the cluster organizations (sea port, ship building industries, ship breaking industries, marine academy, navy & coast guard etc. being located here). About 18 private Inland Container Depots have been established within 22 km of Chittagong port. Chittagong Export Processing Zone (CEPZ), Karnaphuli Export Processing Zone (KEPZ) and Korean Export Processing Zone are also situated near the port.

Considering the port facility, industries relevant to cement, fertilizer, refinery, silo etc. have been established within the port limit. So, there are a number of companies active in different maritime business sectors located in Bangladesh. The European Cluster observatory distinguished a number of sectors, which together make up the maritime cluster. Almost all of these maritime sectors are represented in Bangladesh.

The macroeconomic indicators are shown in Table-1

Indicators	2011-12
GDP growth rate (%) Constant price	US\$ 6.32b
Import	US\$ 35.516b
Export	US\$ 12.834b
Remittance	US\$ 12.834b
Revenue Income	US\$ 11b (Tk. 947.54b)

Table-1 Economic Indicators Source: Bangladesh Economic Review 2012, Economic Adviser's Wing, Finance Division, Ministry of Finance, Government of the People's Republic of Bangladesh, May 2013

Statistics reveals that the economy of Bangladesh is heavily dependent on international trade where maritime ports play the key role as 92% international trade (in volume terms) are transported by sea i.e. maritime sector. The average Maritime Dependency Factor (MDF) is about 35% and about 40% annual revenue

of the govt. comes in the form of import and export tax plus Value Added Tax (VAT).

Agriculture, industry, infrastructure sector are all greatly dependent on maritime sectors. Even import of essential food items like edible oil, lentils, wheat and rice, are extremely dependent on maritime transportation. About 80% export and 100% import materials of garment sector, which contribute about 76% of the export earnings, are transported through the seaports. 100% Petroleum Oil and Lubricant (POL), cement clinker, edible oil, a large percentage of essential fertilizer and agricultural seeds are imported through this sector. Maximum EPZs and industries are established centering the two seaports; that is why the Dhaka-Chittagong and Dhaka-Mongla corridor contribute 30% to GDP.

Maritime sector is also a good source of earning foreign currency. Ports, shipping companies, dry dock, ship building industries, officers and crews working in foreign vessels, marine consultants and surveyors, freight forwarders, shipping agents etc. fetch about US\$ 1.5b per annum.

Table- 2 Contribution of Maritime Sector

Economic Factors	Economic value (Conservative Estimation)
Employment	0.3m people directly involved
Value Added	US\$ 2.5b
Foreign Currency	US\$ 1.5b
Corporate & other Tax	US\$ 550m

### Way forward

The economic contribution of the sea related sectors and the clusters in Bangladesh are the followings:

- The average maritime dependency factor of Bangladesh is about 35%.
- The maritime sector provides direct employment to about 0.3m people out of which 20% white color and 80% blue color workers
- This sector earns on average about US\$ 1.5b foreign currency per annum
- The largest maritime sectors in terms of added value are inland transportation, seaports, ship building and ship breaking
- Seafarers, marine technicians, naval architects/engineers, surveyors and

*Maritime sector is globalized, capital-intensive, tech-savvy, very specialized, highly competitive and volatile where entrepreneurs' capacity and skilled workforce plays the major role.*

academicians earn a good amount of foreign currency

- Agriculture, Energy, Industry etc sectors are directly dependent on seaport
- Private initiatives have shown the major key force in the development of shipping, ship building and ship breaking sectors
- There is huge employment opportunity for women in shore-based maritime jobs. Besides, women entrepreneur are also coming up in establishing various business in the maritime sector of Bangladesh.

Maritime sector is globalized, capital-intensive, tech-savvy, very specialized, highly competitive and volatile where entrepreneurs' capacity and skilled workforce plays the major role. So human resource is considered a crucial factor for the sustainable development of the maritime sector, vis-à-vis on the other hand government policy support is also equally important.

Therefore, considering the value added maritime sector for the compounding economic growth of Bangladesh, the government needs to implement a comprehensive maritime policy interfacing all the maritime clusters as identified.

- Ms. Halima Begum, Senior Training Officer (Operation), Chittagong Port Authority.

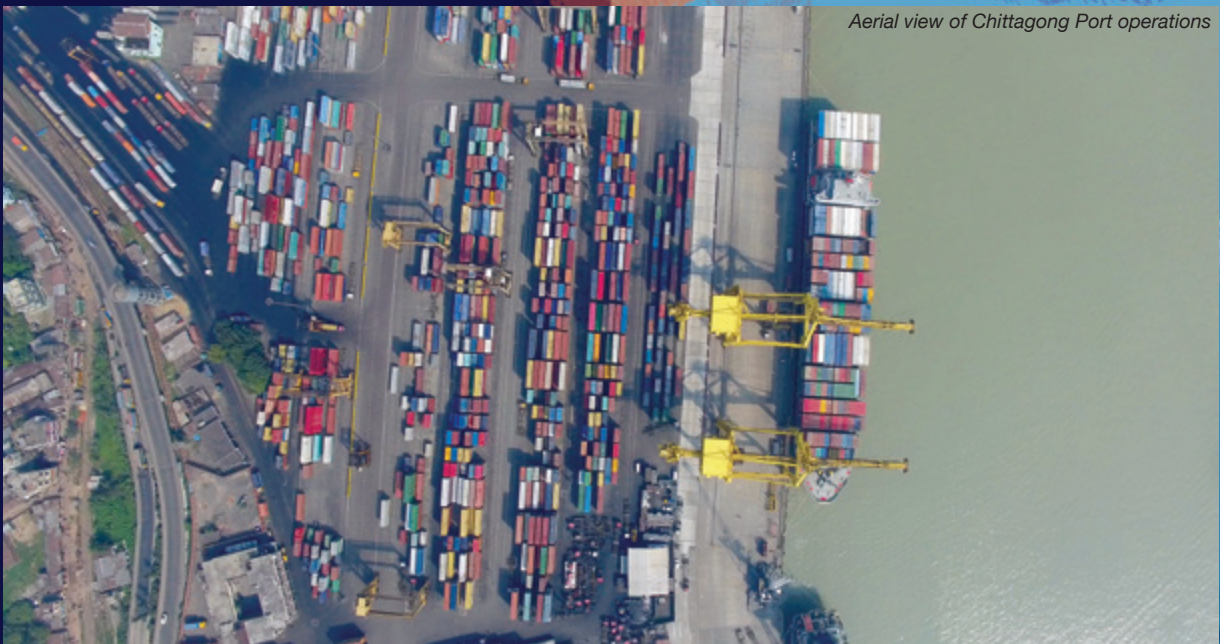




## CPA NEWS

A Quarterly Publication of  
Chittagong Port Authority

April 2016 Vol 01, Issue 01



*Aerial view of Chittagong Port operations*