

Go green in ship recycling practices

Chattogram port's water is
100% safe: ReCAAP

PM office issues eight directives
for faster unloading



10-year mega-plan to save rivers
10 economic zones await for investment

ISSN 2617-6122

July 2019, Volume 04, Issue 02

CPA News

A Quarterly Publication of
Chattogram Port Authority



Chief Advisor

Rear Admiral Zulfikur Aziz, (E), psc

Editor

Zafar Alam

Board of Editorial

Rammya Rahim Choudhury

Md. Mominur Rashid

Md. Omar Faruque

Mahbub Morshed Chowdhury

Executive Editor

Tazul Haque

Senior Editors

Biplob Sarkar

Rajeev Ahmed

Contributors

Enamul Karim

Qazi Meraz Uddin Arif

Reporter

Omar Faroque Emon

Managing Editor

Monir H Khan

Public Relation

Mohammad Azizul Molla

Md. Shafiu Azam Khan

Photography

SM Shamsul Huda

Design & DTP

Toufique Ahmed

Uzzal Ahmed

Abida Hafsa

Manager

Habiba Yeasmin

Production Logistics

Habibur Rahman, Alia Ferdoushi

On behalf of CPA

Content Development, Design,
Printing & Publication:

Enlighten Vibes

House 04, Road 7/B, Sector 03
Uttara, Dhaka-1230, Bangladesh.

Ph: +880 1552 355 520

+880 02-48956748

Email: enlightenvibes@gmail.com

Editorial Communique

CPA News

Chattogram Port Authority

Bandar bhaban, Chattogram

Tel: 031-2510869

Email: bandarbart@gmail.com

Cover photo Courtesy

Sarah Whittaker

Editorial

Future awaits for green ship recycling industry

Around 90 per cent of global ship recycling activities are done in South East Asian countries. India, Bangladesh, China, Pakistan and Turkey are the main ship recycling destinations of the world. Recycling practice and process of local recycling yards of Bangladesh will be sustainable in future if proper guidance and professionalism can be ensured. This promising industry needs uninterrupted monitoring, balanced leadership, financing, guiding, motivation and wholehearted support from every corner at home and abroad. South Asia is undoubtedly the global centre for ship breaking and recycling of End of Life (EOL) ships. In this issue, our lead story thoroughly discusses the present condition of ship recycling industry of Bangladesh with a vision to the future.

The area where ships can safely wait to enter the port-channel and to lighter goods is called outer-anchorage. All commercial vessels from different ports of the world have to stay at the outer-anchorage of Chattogram port to unload goods. To ensure the scheduled draft of the port channel, the partial goods from the vessel has to be unloaded by means of lightering, i.e. by unloading the goods on smaller vessels. Big mother vessels unload all the goods in outer-anchorage. About half of the port's goods handling activities are done in the outer-anchorage and remaining handling is done at the port's jetty. Our second story highlights the outer-anchorage area and its contribution to safe and secure shipping, ship handling and goods handling in the Chattogram port.

In addition to these two articles, we have a story on ship handling operators in Panorama section. Besides, the News Bytes section will inform you of all the important maritime events and developments which occurred during the second quarter of this year.

It will be highly appreciated and we would be truly obliged if you send us your invaluable feedback and suggest new ideas for further improvement of this maritime magazine. Thank you for being with us all the while, and keep staying with us.

With thanks,

Zafar Alam

Editor

Ship recycling is a reverse engineering process of dismantling End of Life (EOL) ship to recover reusable materials in a safe and environment-friendly way. As per IMO guidelines, ship recycling means all associated operations including, mooring or beaching, dismantling, recovery of materials and reprocessing. Bangladesh possesses the largest ship recycling industry in the world.



Lead Story

Go green in ship recycling practices

News Bytes

12 Maritime infrastructure and business

- Chattogram port celebrates 132nd anniversary
- Chattogram port's water is 100 per cent safe: ReCAAP
- Chattogram port's revenue increased by 32 per cent
- PM proposes regional economic forum
- State Minister for Shipping is satisfied with the port operation
- NBR to install scanners at all ports
- Patenga Container Terminal to be launched in June next year
- PM office issues eight directives for faster unloading
- Govt. finalises a draft of 10-year mega-plan to save rivers
- Chattogram Customs House to launch e-Auction
- 12 companies are interested to build Matarbari LNG terminal
- 10 economic zones await for investment
- Japan and Bangladesh sign USD 2.5 billion agreement
- Bangladesh and South Korea sign MoU on port development
- Energypac to produce containers in 'Mirsarai Economic Zone'
- PM urges to stop throwing waste in the river

Outer-anchorage for maritime trade expansion

Horizon



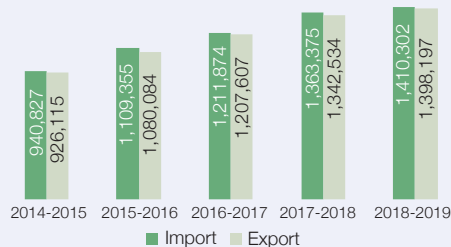
The area where ships can safely wait to enter the port-channel and to lighter goods is called outer-anchorage. All commercial vessels from different ports of the world have to stay at the outer-anchorage of Chattogram port to unload goods. To sail through the low draft of the port channel, the partial goods from the vessel has to be unloaded by means of lightering.

Statistics of Chattogram port (last 5 years)

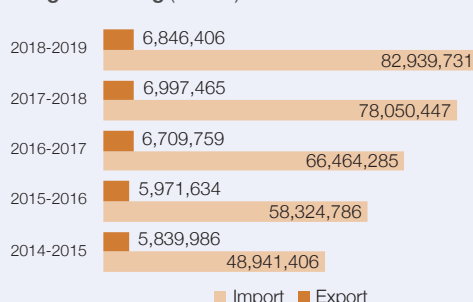


■ 2014-2015 ■ 2015-2016
■ 2016-2017 ■ 2017-2018
■ 2018-2019 (Jul-Dec 2018)

Container handling (in TEUs)



Cargo handling (in Tons)



Source: Chattogram Port Authority (CPA) website

Bangladesh Flag Vessel (Protection) Act, 2019 gets approval

News Bytes



More than half of Chattogram port's handling activities are done in the outer-anchorage areas and the rest is done at the port's jetty. Ship handling operators handle imported goods in the outer-anchorage. They handle about 45 per cent of a total container and cargo handling. If we only calculate the bulk handling, the total stake is about 75 per cent.



Go green in ship recycling practices

Dr Khandakar Akhter Hossain, PhD



The ship recycling industry is widely discussed in the context of Bangladesh. This sector once saw many entrepreneurs. Despite the international controversy and ups and downs, we still run one of the world's leading ship recycling industries. There are more than 100 registered ship recycling yards in Bangladesh, but exist only few dozens. The actual problem of this sector is the restrictive nature of mentality of the owner of local yards, as well as lack of ground information. Recycling practice and process of local recycling yards of Bangladesh will be sustainable in future if proper guidance and professionalism can be enforced. This promising industry needs uninterrupted monitoring, balanced leadership, financing, guiding, motivation and wholehearted support from every corner at home and abroad. South Asia is undoubtedly the global centre for shipbreaking and recycling of EOL ships. In Bangladesh, average 200 different types and size of obsolete ships with 2,000,000 Light Displacement Tonnage (LDT) are recycled annually in different local yards.

Ship recycling is habitually considered as the best means to dispose of a ship either at the end of her operational life or at any time as decided by the owner, regulatory bodies or law enforcement authority.

What is ship recycling?

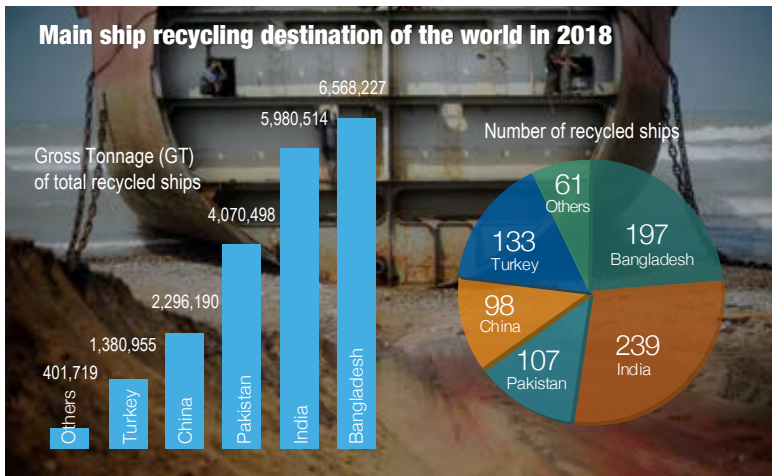
Ship recycling is a reverse engineering process of dismantling End of Life (EOL) ship to recover reusable materials in a safe and environment-friendly way. As per the International Maritime Organisation's (IMO) guidelines, ship recycling means all associated operations including, mooring or beaching, dismantling, recovery of materials and reprocessing. Bangladesh possesses the largest ship recycling industry in the world. Ships are normally removed from the fleet after EOL through a process known as ship scrapping; decommissioning of a ship; abandonment of a ship; shipbreaking; ship dismantling or (recent practice) ship recycling. Ship recycling is habitually considered as the best means to dispose of a ship either at the end of her operational life or at any time as decided by the owner, regulatory bodies or law enforcement authority.

Ship recycling around the world

Until the 1960s, shipbreaking activity was concentrated in industrialised

countries; mainly USA, UK, Germany, etc. During the 1960s and 70s, shipbreaking activities migrated to semi-industrialised countries like Spain, Turkey and Taiwan, mainly due to the availability of cheap labour and the existence of re-rolling steel market. But from the early 1980s, to maximise profits, ship owner's sent their EOL ship to the scrap-yards of India, China, Pakistan, Bangladesh, Philippines, Vietnam, etc.; where Safety, Health and Environment (SHE) standards are minimal and workers are desperate for work.

Around ninety per cent of global ship recycling activities are done in South East Asian countries. India, Bangladesh, China, Pakistan and Turkey are the main ship recycling destinations in the world. Besides Turkey, ship recycling activities are reported from isolated locations of Europe including the UK. The UK has only recently joined the ship recycling nation group. Very stringent environment and ship recycling regulations based on the principle of sound management are implemented in the UK. During the shipbuilding boom in the year 2005 onwards,



China had less focus on ship recycling industry and hence went down in recycling output. Cooperation between stakeholders of ship recycling industry is identified by the government as key to clean and efficient ship recycling in China. Advanced dismantling facilities, futuristic vision-based recycling policy, stringent laws and regulations and stakeholders' cooperative working model are reported to be the four pillars of the enterprising ship recycling industry in China. The recycling yards of Pakistan need distinct development and the country is using a combination of a manual and mechanical method for dismantling activities. The beaching is done by experienced hands in this field and minimum statutory inspection is carried out during beaching. Bangladesh with very low labour price, somehow viable regulation and favourable government policy, is flourishing subsequently. Due to high tidal difference available in local yards of Bangladesh, the country is suitable for the dismantling of big tankers and bulk carriers. European Union has taken some initiation to develop sustainable ship recycling facilities in European Countries (EC). Ship recycling facilities in Turkey is getting the maximum benefit out of these attempts undertaken by the European Union. Environmental and occupational controls are being exercised rigorously by the concerned government authorities.

Green ship recycling: a new way to dismantle ships

Recycling and reusing materials and items have become an important

requirement for the ship recycling industry. As a result, the shipbreaking method has also witnessed the recycling of the parts of the vessel. On the other hand, with the rise in consciousness towards the maritime environment, there have been numerous changes in the process, which have given rise to a new term, green ship recycling and that become very popular in the maritime arena. HKC for the Safe and Environmentally Sound Recycling of Ships, 2009 also strictly directed that vessels that are being recycled after their service lives should not pose any unnecessary risks to human health, safety and to the environment as a whole. Green ship recycling has been introduced across the world as a viable alternative to other methods of shipbreaking that makes negative effects on the environment. As a way of responsible ship recycling, this method reduces the amount of waste and also keeps the waste materials from shipbreaking out of the beaches, reducing its impact on the environment. However, there are several reasons which have made the concept of green ship recycling popular and meaningful. The main relevant benefits are: segregate those parts of the ship which are detrimental and unsafe to both marine and human lives; preserve marine environment by proper disposal of ship dismantling waste; reusing those parts of the ship that are important and can be reused effectively while making new ships as well as saving resources and most environment friendly way of ship recycling.

On the other side of the coin, the perfect green ship recycling is a

costly affair. But, viable green ship recycling with the merging of present usual practice (beaching method) in Asian countries is very much possible. The valuable components of a ship are reusable steel, aluminium, copper, silver, brass and some other metals. Since a major part of a ship's weight is in steel, the steel scrap from the vessel is being converted into bars and rods for several other uses. However, in addition to the metal that can be recycled, there are a number of the toxic components inside a vessel. These harmful substances include lead, asbestos, mercury and oil sludge, etc. The inefficient shipbreaking methods, especially those carried out on beaches unprofessionally than the dry-dock ship recycling facilities; allow unsafe disposal of these toxic and hazardous waste. But shipbreaking on beaches in a professional way may reduce hazardous waste up to 98%.

Ship recycling industry of Bangladesh

Bangladesh has the largest ship recycling industry in the world. Local shipbreaking yards are the prime source of raw material including steel plates, pipes, engines/generators, auxiliary machinery and other ships' components. About half of the steel of the total domestic use of Bangladesh comes from this ship recycling industry. Ship recycling is the main earning source for millions of people of South Asia, particularly for Bangladesh, Pakistan and India. It should be ensured that local ship recycling yards are maintaining a minimum standard in respect to the Health Safety Environment (HSE) issues. It is not necessary to follow dry docking instead of beaching; rather keeping the beaching intact, we can improve the situation by providing some common facilities and training, which we are somehow lacking now. There are more than hundred registered ship recycling yards located along the coastal belt at Chattogram of Bangladesh from where; only a few dozen are found active. This industry provides the country's main source of steel, creates huge (around half a million) employment and generates large amounts of revenues for the government. It is also contributing to the local shipbuilding industry extensively.

Ship recycling process consists of

About half of the steel of the total domestic use of Bangladesh comes from this ship cycle industry. From the early stage of civilisation, the people of this area are proud shipbuilders. Ship recycling is the main earning source for millions of people of South Asia, particularly for Bangladesh, Pakistan and India.

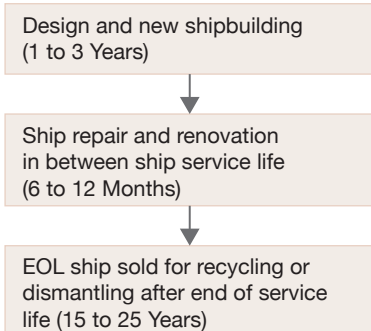


Workers at a ship recycling yard in Chattogram

various engineering operation and managerial activities in the ship recycling industry to dismantling and segregation of reusable and waste material from EOL ships as well as their storage, transportation and disposal. This is essential for understanding the entire process. There are few important commercial and technical operations are to be carried out well in advance to facilitate the objectives of recycling of EOL ships. Exact knowledge regarding these specific activities is vital for understanding and realising the ship recycling processes so that this can handle like a modern industrial business.

Here few factors play pivotal roles to decide the fate of the EOL ship. Those factors are EOL ship's value in the scraped market, the life of the ship, ship's hull and machinery condition, freight market status, economic life of the ship, demand of

The typical life of a new ship (usually 15–25 years)



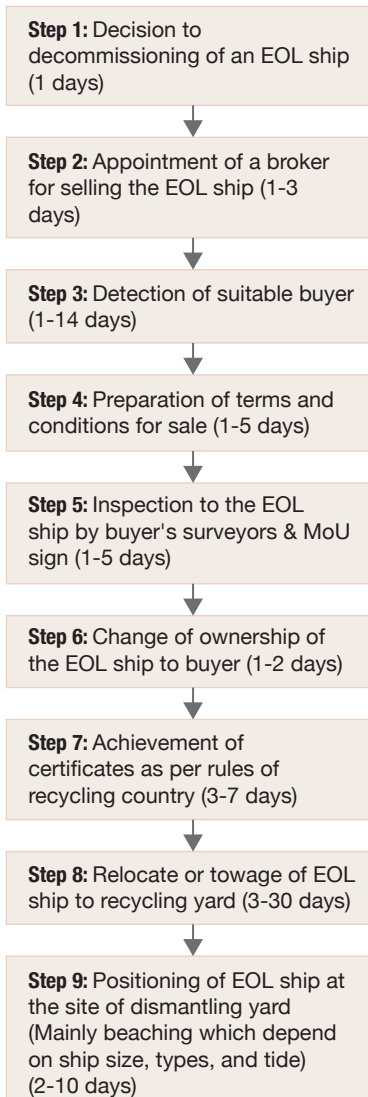
such ship's size and category, etc.

The EOL ship usually passes through different intermediate owners, before

The EOL ship usually passes through different intermediate owners, before reaching the last owner, who is responsible for towing the ship to the positioning site or close to yard for dismantling. As per Basel 2005 regulation, owners of decommissioned ships no more remain as ship owners as the ship ceases to be operational and becomes scrap.

reaching the last owner, who is responsible for towing the ship to the positioning site or close to yard for dismantling. As per Basel 2005 regulation, owners of decommissioned ships no more remain as ship owners as the ship ceases to be operational and becomes scrap. Intermediate owners of such EOL ships are called as ship recycling brokers. Whenever the ship owners decide to decommission their vessels, information is made available in global information platforms such as internet websites and maritime publications. Concerned ship recycling brokers approach the owners and transfer the ownership by paying the advance amount. Then the

Typical steps required to be accomplished to placing an EOL ship at the site of dismantling yards at Chattogram (usually total time required: 2–11 weeks)



broker invites quotation from possible buyers based on the highest bid offer from the dismantling site and other basics. A ship surveyor as a representative of the buyer will thoroughly inspect the vessel and give a report. The buyer pays the price to the owner based on surveyor's report. All these activities including arranging relevant certificates for transferring the vessel from a foreign owner to the end buyer treating the EOL ship as an imported commodity (or import) are the responsibility of the broker and he will arrange everything.

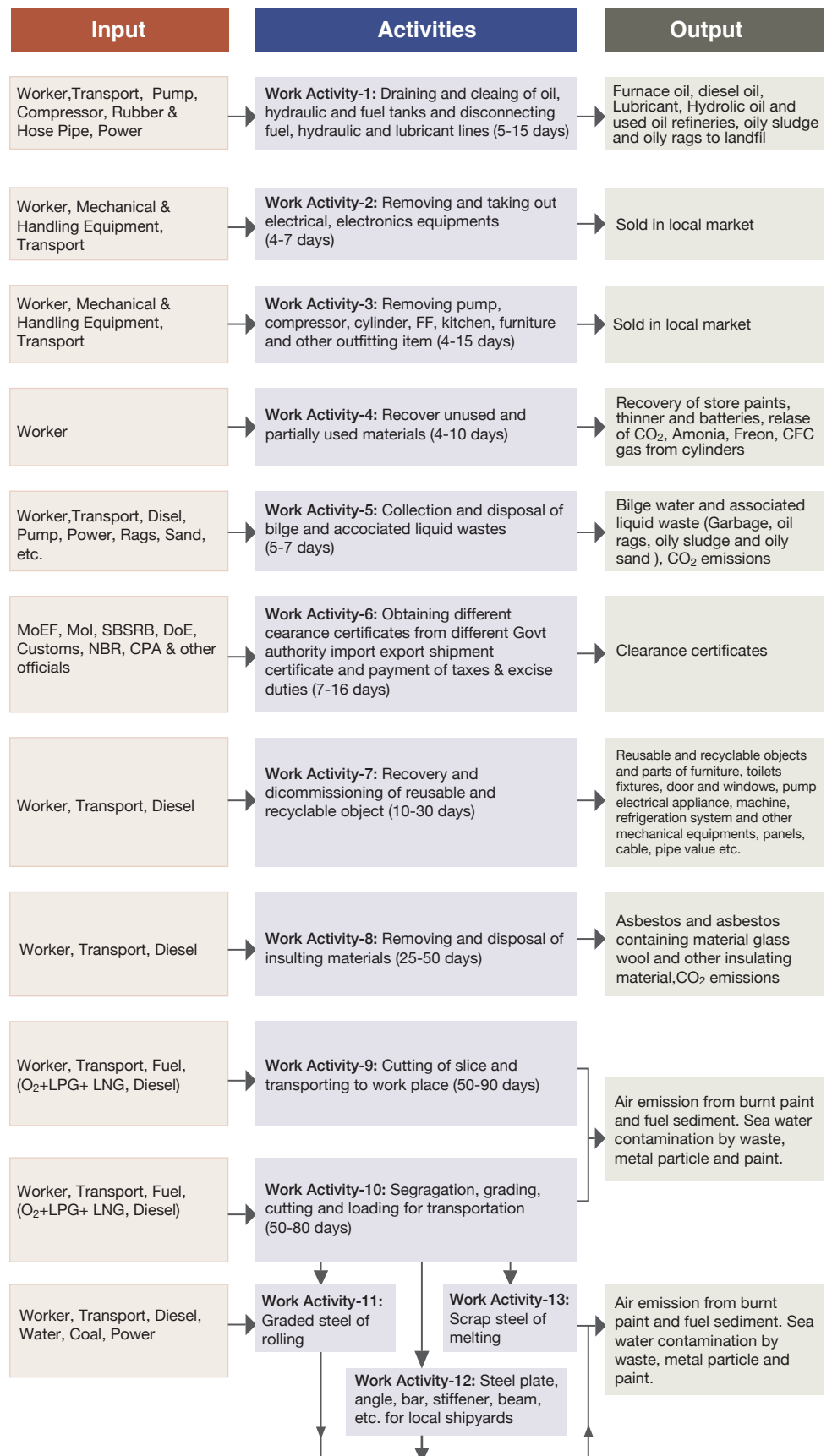
After arrival at the outer port, brokers of the ship-owner inform the recycling yard and port authority regarding positioning and placing of vessels at the anchorage area. In Bangladesh, outer anchorage area of Chattogram Port Authority (CPA) dedicated for placing of such EOL ships. The assessment and inspection team of the recycling yard makes a methodical check of various mandatory certificates regarding the import and export shipment and payment of taxes and excise duties to be produced by the owner before beaching the EOL ship. As per existing practice, one deck officer, one certified marine engineer and the master of the vessel must be present during the inspection and examination by the yard and port authorities. A detailed inventory of communication and navigation equipment used by the EOL ship is prepared. These are to be handed over to the wireless board or respective law enforcing agency of the recycler state immediately after completion of beaching. In Bangladesh, Bangladesh Navy (BN) acts as this authority and the custodian of those items. A comprehensive list of marine supplies and safety measures implemented on board are prepared by the yard and port authorities. After this, permission will be granted and the ship will be allowed to enter the beach either by towing or by its own propulsion. The grounding for dismantling begins with the submission of man entry certificate and hot work certificate from the explosive department to the recycling statutory authority operating from the recycling yard. All kinds of petroleum oils including inflammable gas in the fuel tank of the vessel have to be emptied and evacuated before starting of the cutting operations. The actual cutting starts after taking

written permission from the local port authority.

There are a few important steps involved in the ship recycling practices in the beaching method. It involves different engineering activities performed prior to shipbreaking and during dismantling, buffering, lifting, transporting, storing, inventory of reusable and waste material and disposal or landfilling of hazardous material. After beaching of EOT ship and completion of all formalities, yard workers use gas cutting torches (mainly) to dismantle the ship from the end facing the beach to the end facing the sea. The usual cutting operation sequence starts from the top to bottom and bow to stern of the EOL ship. Conventionally, large blocks are cut and allowed to fall down freely. Further dismantling of flat-lying block is done by using gas cutting again. The cutting and transportation activities continue till the dismantled item can be handled by worker mainly manually and sometimes by a small crane to nearby stack location. The handling and stockpiling are done mainly manually and sometimes by mechanical lifting procedures. With little exception, usually, no weight lifting calculation or lifting analysis is done prior to lifting. The dismantled hull steel and other machinery, equipment and items of an EOL ship are towed further inland by teams of men using winches simultaneously. Dismantled metal and items are sorted as per material type and size. Steel plates are mainly sold to re-rolling mills and local shipbuilding industry. Various machinery items are sorted and kept separately under the warehouse. If knowledge-based reverse engineering method is adopted in all dismantling activities; such as segregation of hull, deck, frame, outfit and machinery of EOL ship, it is very much possible to improve the overall performance of the ship recycling process.

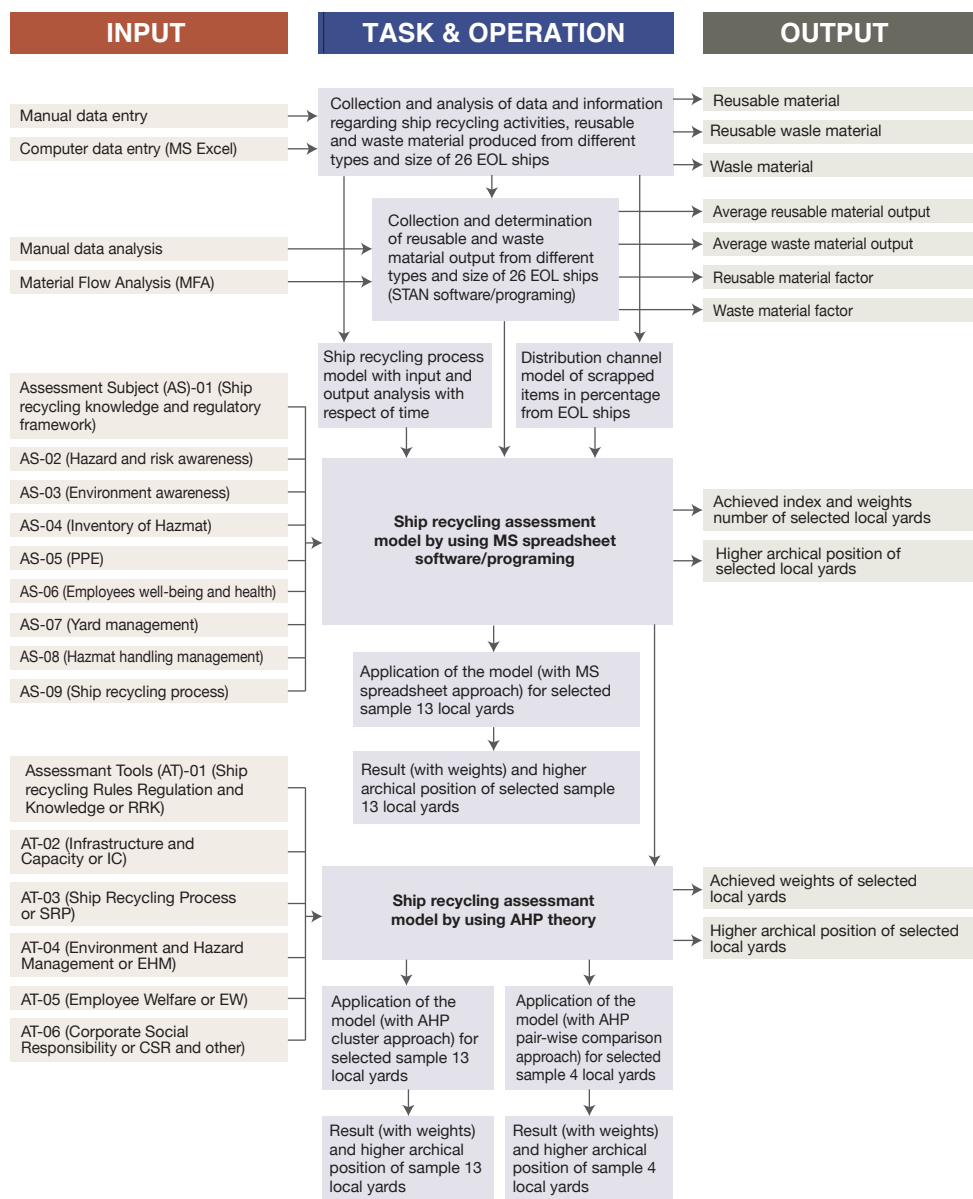
Again, there are ample scopes to improve in some places; such as optimum yard layout, infrastructure development, worker wellbeing improvement, following scientific procedures, using proper PPE, proper handling and management of waste materials, etc. in recycling yards of Bangladesh. Local yards need to follow the national and international

Developed ship recycling process model for local ship recycling yards (typical total time required 5.5–10.5 months)





Developed ship recycling assessment model for sustainable ship recycling industry in Bangladesh



for transporting the vessel within the yard premises is absent in the dry docking method. European countries and the United States practice dry docking method.

The reusable material output from local recycling yards

There are hundreds and thousands of line items found in a recycled ship. Division of reusable materials produced from EOL ships has given below.

Metal items

Plate (heavy), plate (light), brass, copper, MS pipe, nickel, G.I./bar, SS sheet, aluminum, zinc, hose pipe, hatch cover plate, tank cover, nut, bolt, washer, anchor, bar and angle, cast iron, shaft plate, chain and cable, SS Scrap, welding rod, other ferrous material including scraps.

Machinery equipment and accessories

Main engine, generator, gear box, shaft, propeller shaft, rudder, air compressor, CNG bottle, CO₂ bottle, pump, bearing, carburetor, condenser, radiator, water heater, heat Exchanger, AC plant and unit, evaporator, oil separator, reduction gear, engine head, mechanical tools, machinery spare parts, life boat, lifebuoy, life raft, life jacket, fire extinguisher, kitchen accessories, personal safety and protection equipment, etc.

Electrical items

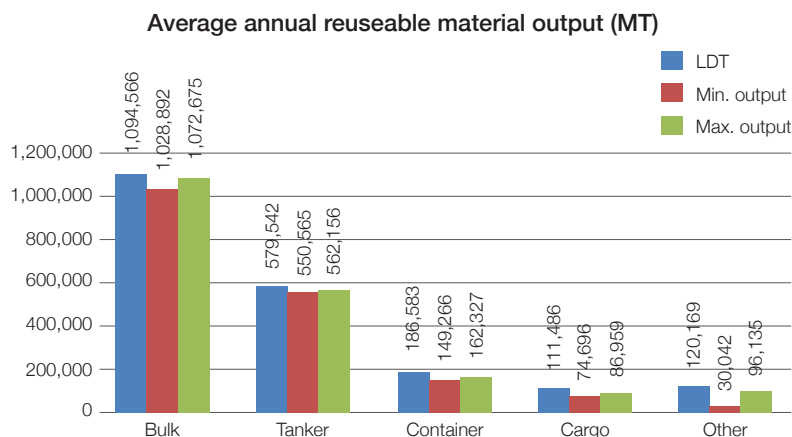
Electric cable, switchgear, transformer, motor, computer, electric goods, kitchen item, socket, plug, DVD/movie player, camera, communication set, navigation item/equipment (radar, GPS, eco-sounder, etc), washing machine,

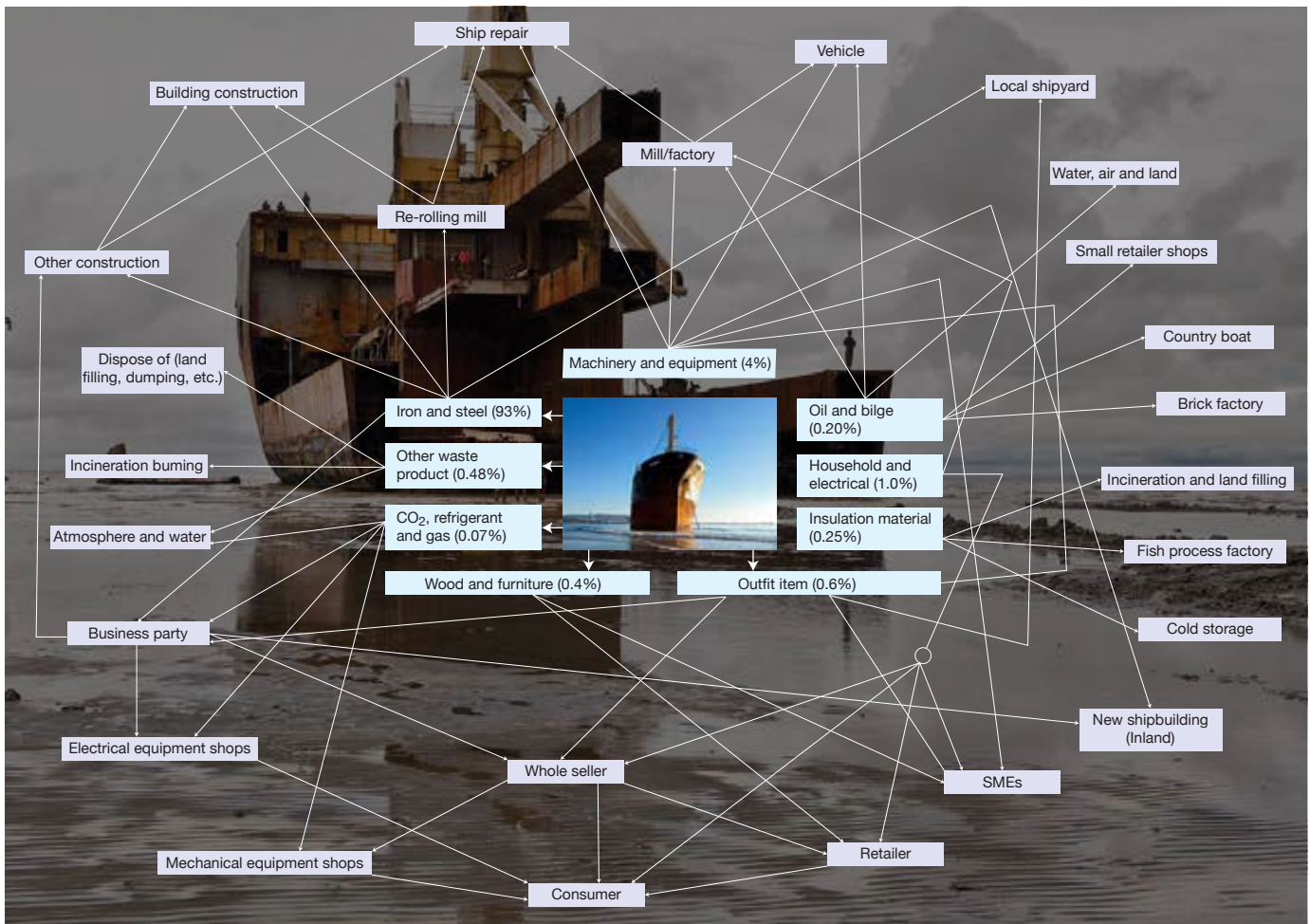
rule, regulation and guideline to improve the overall ship recycling process.

Beach method and dry dock method of ship recycling

Beach method is employed at shallow basins with long shelf bed where high tidal variations exist. Always beaching is done during high tide. The beached EOL ship gradually slides up to the recycling yard during successive high tides. Entire separation and recycling operations are done in the beach area available in the waterfront of the recycling yard. Beach method has been employed in all yards located in East Asian countries. The main difference between dry-docking method and beach method is the presence of a concrete barrier between the dismantled vessel and seawater. Progressive sliding

Average annual LDT against average annual reusable material output in MT for different types and sizes of recycled ships in local yards.





Distribution channel Model with percentage of different recycle and waste material produced from a typical EOL ship recycled in Chattogram

electric oven, TV, fan, electrode, pad/tab/mobile set, electrical and electronic spare parts, electrical and electronics tools, etc.

Outfit and other reusable items

Door/hatch, window/port hole, ladder, capstan/windless, crane, davit, trolley, winch, starting air bottle, gate valve, seawater line valve, freshwater line valve, fuel line valve, lubricant and hydraulic oil line valve, furniture, glass, toilet and sanitary equipment, etc.

The waste output from local recycling yards

As per Bangladesh Environment Conservation Act 1995, hazardous waste defines as, any waste which, due to its natural or physical, chemical, reactive, toxic, flammable, corrosive nature, on its own or when it comes into contact with other substances, may create harm to the environment or human health. Hazardous waste can be divided into two broad categories: organic material, e.g. polymers, and minerals (inert material), such as heavy

metals or asbestos. Hazardous waste that is organic in nature can be destroyed, i.e. the toxic compounds can chemically be altered and transformed into harmless products.

The waste material and substances come out from local recycling yards has been divided into six categories on the basis of HKC 2009 guideline and for easy compilation, estimation and weight calculation. During dividing such groups, the author has taken help from ship design and construction concept as a naval architect and also taken considerable help from a few works of literature. Division of waste material and substances produced from EOL ships are summarised below.

Group A: Asbestos and asbestos-containing waste, insulation material, etc. (including glass wool, ceramic wool, damping and other insulation materials, etc.).

Group B: Cementing material, ceramic rust and dust, iron rust, dust and scales, fire ash, incinerator ash, glass waste from

cathode ray tube, glass dust and particle, waste zinc residues, and other land-filled wastes, etc.

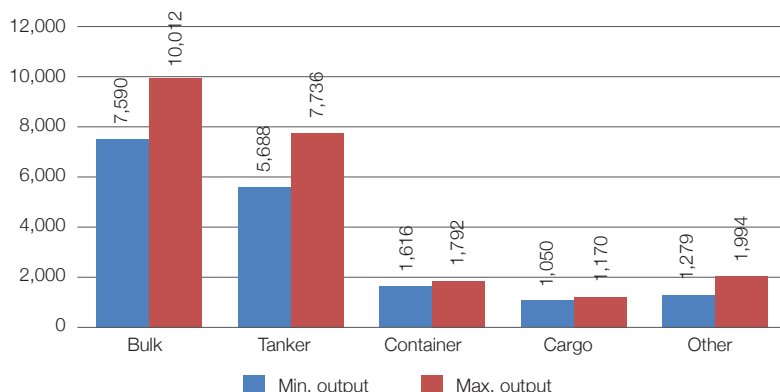
Group C: Combustion/burning waste, paint, coatings, hexavalent chromium compounds, pharmaceutical waste (like medicine), incinerated waste, etc. (which include polyvinyl chlorinated or PVC, polychlorinated biphenyl or PCB, polychlorinated terphenyl or PCT, polybrominated biphenyl or PBB, other polybrominated analogues, oil rags, sludge, plastic, rubber, textile, TBT, polyurethane foam or PUF, welding fumes, arsenic compound, etc.).

Group D: Bilge water, fuel oil, lubricants, hydraulic oil, organic solvents (both halogenated and non-halogenated, volatile organic compound, thinner), other mineral oil, microorganism and sediments, outdated chemical and other liquid waste, pesticides & insecticide sprays, etc.

Group E: Heavy metal, toxic metal, etc. (Lead, Mercury, Cadmium, Radioactive materials, etc.) which usually found in



Average annual waste output (MT)



Total average annual HazMat or Waste produced in MT from different types and sizes of EOL ships recycled in Bangladeshi local yards.

Due to lack of safety measures like measurement devices, safety suite, ventilation etc. serious accident occurs while working in a confined space. While cutting plates from cargo vessels, improper gas freeing and gas monitoring procedures can cause serious fire hazards. Minor accidents like brushing, broken bones while carrying heavy metals, cutting due to a sharp edge are often occurred every now and then in shipbreaking yards. Lack of first aid, emergency exit, emergency response and rescue is also common in the shipbreaking industry in Bangladesh.

Five key problems for the workers are,

- Injured workers get little treatment, less health coverage
- Actual overtime is not paid to the workers in appropriate time
- Necessary equipment, gears are not provided in time by the shipbreaking yards with some exception
- Workers don't receive their wages timely
- Improper rest, recreation and healthcare
- Poor job satisfaction and motivation

How to mitigate those challenges

For workers safety, regular training program shall be arranged by the shipbreaking yard. The training programme must include tasks like-

- Awareness and communication of information about hazardous materials
- Job hazard awareness, including handling and management of hazardous materials

battery, anodes, nut & bolt, connector, light fitting, thermometer, level indicator, coupling, bearing, fire detector sensor, communication & navigation equipment, alloys, soldering machine, cable insulation, motor & transformer components, computer screen, fire alarm, etc.

Group F: Ozone-depleting substances (ODS), compressed gas cylinder, firefighting liquid, other explosive nature waste, etc (which include CFCs, halon, Aqueous Film Forming Foam or AFFF, etc).

Here, group 'A' is known as asbestos and asbestos-containing waste; whereas group 'B' is known as landfill waste. On the other hand, group 'C' is known as incinerated waste. Again group 'D' refer to bilge waste. On the other hand, weight and amount of waste in the group 'E' and 'F' are very negligible.

Ship recycling challenges in Bangladesh

With lots of assets scrapping a vessel provides us tons of waste up to various asbestos, noxious substances, thousand litter oils; approximately about 1000 cubic metres of lasting oil too. In Bangladesh, vessels are scrapped on open beaches. As a result, harmful substances have easy access to the environment. Substances like Persistent Organic Pollutants (POP's), Asbestos are a threat to both human health and the marine environment. POP's are highly toxic chemicals that have a long term effect on the environment. These type of pollutants can be distributed easily and pose a threat by accumulating fatty tissue in living organisms i.e. human body, wildlife, marine environment. In some cases, POP's are the cause of death for many. In old ships, asbestos was

The prime cause of accident is the explosion of leftover gas and fumes in the tanks. Falling from high height is also one of the major accidents reported in shipbreaking yards. Workers intend to cut the side shells at first. This kind of practice results in falling off plates from high positions.

used as a heat insulator. Asbestos is said to be one of the lethal because it causes diseases like asthma, mesothelioma (rare cancer that affects the lining of the lungs), and the chest cavity. It should be noted that there is a synergistic effect between smoking and asbestos exposure, which creates lung cancer. Moreover, materials such as Polycyclic Aromatic Hydrocarbon (PAHs), Polyvinyl Chloride (PVC), Polychlorinated Biphenyl (PCB), heavy metals, poisonous paint i.e. Tributyltin (TBT) and some other harmful substances come in contact to the environment and pollute it. All these harmful elements are originated from shipbreaking yards.

The prime cause of accident is the explosion of leftover gas and fumes in the tanks. Falling from high height is also one of the major accidents reported in shipbreaking yards. Workers intend to cut the side shells at first. This kind of practice results in falling off plates from high positions.

Entire separation and recycling operations are done in the beach area available for ship recycling yard





For worker's safety, adequate training should be provided

- Personal protective equipment
- Fire protection and prevention
- Emergency response and evacuation
- Safety and health training
- Environmental awareness
- First aid awareness
- National rules and regulations
- International rules and regulations

Besides, shipbreaking yards should have functions like-

- Safe for entry criteria
- Safe for hot work procedure
- Safe for hot work criteria
- Proper health and sanitation programmes
- Careness about environmental issues
- Implementation of Govt. rules and regulations



handling and management, inventory and storing of hazardous waste, preventive environmental practices through environmental awareness in regular basis, making viable plan for worker good health, welfare and future, employ naval architect and technical personal in most of the recycling yards, ensure regular training and updated worker knowledge about modern technology and regulations, etc. As a result, few

Bangladeshi yards are at the door to achieve the standard of Statements of Compliance (SoC) with the Hong Kong Convention. One of the yards (PHP Recycling and Industry Ltd) already has achieved the SoC certificate this year.

Conclusion

The global ship recycling industry dismantles and recycles around 1,000 large ocean-going vessels per year. At present, South Asia is undoubtedly the global centre for shipbreaking and recycling. There are average 1,833,461 MT (minimum) and 1,989,252 MT (maximum) reusable materials have been collected annually from ship recycling industry of Bangladesh. Again, there are average 17,215 MT (minimum) and 22,702 MT (maximum) hazardous waste are produced annually from local recycling yards of Bangladesh. However, future ships will be safer and more environment-friendly. So the quantity of different HazMat or waste will be reduced in future. At the

Present leads to the future

At present, improvements have been observed in some important aspect/field of recycling process and practice in Bangladeshi few recycling yards. Those aspects/fields are: handling of hazardous wastes/materials, working in confined spaces and at heights, fire prevention and control, use of Proper Protective Equipment (PPE), cutting and removing paint from plate on hard standing floor, adequate and safe rest recreation shower and accommodation facility for worker, emergency evacuations and rescue plans, safe handling, entry process in confined spaces, asbestos

same time, it is hoped that the amount of reusable material comes out from the future EOL ships will be increased, refined as well as environment-friendly. As Bangladeshi recycling yards are working towards the compliant with the convention and regulations, it is hoped that the number of EOL ships coming to this country will increase in future.

Though perfect green ship recycling is a costly affair, sustainable or viable green ship recycling with the merging of present usual practice (beaching method) in Asian Countries is very much possible. Ultimately those countries are doing a great job as they are in fact doing recycling of obsolete old ships with good efficiency, but with less professional manner. It is, however, possible to comply HKC in the modified name of Statements of Compliance (SoC) and achieve approved standard by EU regulation by adopting viable and sustainable ship recycling process keeping beaching method intact. At present, few improvements have been observed in some important aspect/field of recycling process and practice in a few Bangladeshi yards. As a result, those Bangladeshi yards are going to achieve the SoC certificate with the Hong Kong Convention. Therefore, it is hoped that recycling practice and process of local recycling yards of Bangladesh will be sustainable at future. This promising industry needs continuous monitoring, balanced leadership, financing, guiding, motivation and wholehearted support from every corner from home and abroad. Bangladesh has a dazzling opportunity in ship recycling in the global market as a leader by the way of utilising skilled and low wage workforces and by handling the matter in a more professional way.

Developed model for recycling process and distribution channel of reusable and waste material will guide the yard owner, decision-maker and stakeholder efficiently to develop a sustainable ship recycling industry in Bangladesh.

Dr Khandakar Akhter Hossain, PhD

Member (Engineering), Chattogram Port Authority, Bangladesh

Though perfect green ship recycling is a costly affair, sustainable or viable green ship recycling with the merging of present usual practice (beaching method) in Asian Countries is very much possible. Ultimately those countries are doing a great job as they are in fact doing recycling of obsolete old ships with good efficiency, but with less professional manner.



▶▶ Chattogram port celebrates 132nd anniversary



The main driving force of the country's economy, Chattogram port celebrated its 132nd anniversary. To mark the anniversary, three-day long programmes were held. Rear Admiral Zulfikur Aziz, (E), psc, BN, chairman of the Chattogram Port Authority, inaugurated the three-day event by raising the national flag at the beginning of the port day on April 25, 2019. Board members, department heads and CBA leaders were also present. To celebrate the port day, the freedom fighters and members of the martyred families of Chattogram port were received with honour at the port training centre on 27 April 2019. At 12 pm, the traditional 'Mezban' of Chattogram was held at the Port Republic Club and Shaheed Fazlur Rahman Munshi auditorium for all the officials and employees of the port. A cultural programme was organised at the port high school and college grounds. Earlier on 24 April 2019, the port chairman exchanged views with the media at the Shaheed Fazlur Rahman Munshi auditorium. Later in the afternoon, a farewell reception was held for 21 officers who retired from the port in the last one year.

▶▶ Chattogram port's water is 100% safe: ReCAAP

Theft and robbery on foreign ships have dropped to zero within the boundary of port's water. No such crime was reported in the three months from January to March this year. The Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia, ReCAAP revealed this information in its first quarterly report of 2019.

▶▶ 10 economic zones await for investment

The government has set a target of establishing 100 economic zones within 2030 to accelerate trade and sustainable economic development. Bangladesh Economic Zones Authority (BEZA) is working to achieve this goal. Ten economic zones have already been built for investment. These ready for investment economic zones are Mongla Economic Zone in Bagerhat, Sri-hatta Economic Zone in Moulvibazar, Meghna Economic Zone in Narayanganj, Meghna Industrial Economic Zone, Aman Economic Zone and City Economic Zone, Abdul Monem Economic Zone in Munshiganj, Gazipur Bay Economic Zone, Karnaphuli Dry Dock Economic Zone in Chattogram and Kishoreganj Economic Zone.

▶▶ State Minister for Shipping is satisfied with the port operation



State Minister for Shipping Khalid Mahmud Chowdhury expressed satisfaction with the operation of Chattogram port. He visited the port for the first time in four months after taking charge as the State Minister for Shipping. During a meeting with senior officials in the conference room of Chattogram port on 20 May 2019, he said, "Chattogram port is the main driving force of the economy. The Prime Minister has made many plans and we have to come forward to implement them for the development of the port."

The Minister said, "Bangladesh will be a developed country by the year 2041. We have to work towards that goal. In addition, we will meet the SDG target before the year 2030."

▶▶ Japan and Bangladesh sign USD 2.5 billion agreement



Japan has signed USD 2.5 billion development assistance agreement with Bangladesh to further strengthen bilateral relations. The agreement was signed in the presence of Prime Minister Sheikh Hasina and Japanese Prime Minister Shinzo Abe at Japan's Prime Minister's office on 29 May 2019. The agreement was signed by the Economic Relations Department (ERD) Secretary of Bangladesh Monowar Ahmed and Japanese Ambassador to Bangladesh Hiroyasu Izumi.

The 40th ODA will assist Matarbari Port Development Project (1), Dhaka Mass Rapid Transit Development Project (Line 1), Foreign Direct Investment Promotion Project (II), Energy Efficiency and Conservation Promotion Financing Project (Phase 2) and Matarbari Ultra Super Critical Coal-Fired Power Project (V). Since 1972, Japan has provided Bangladesh with some USD 11.3 billion in ODA loans.

➤ Summit and JERA Asia ink deal for Matarbari energy project



On 29 May 2019, Bangladesh and Japan signed a deal which will initiate a large energy infrastructure project in Matarbari area of Cox's Bazar.

To achieve Sustainable Development Goals (SDG) by 2030 and "Vision 2041" set by the Prime Minister of Bangladesh Sheikh Hasina - Summit Corporation and JERA Asia signed a Memorandum of Understanding (MoU) at New Otani Hotel in Tokyo, Japan during her state visit to Japan.

Under this MoU, Summit and JERA Asia will initiate the energy infrastructure project that would include, among others, the capability of handling 20 million tons of bulk cargo per annum in Matarbari area in Cox's Bazar, Bangladesh.

Faisal Khan, Director of Summit Group and Toshiro Kudama, CEO of JERA Asia signed the MoU on behalf of the respective companies. The signing ceremony was held in the presence of Hon'ble Prime Minister Sheikh Hasina.

The project is expected to be functional within two years of signing the project agreement between Summit, JERA Asia and the Government of Bangladesh with an estimated investment of over USD 500 million.

Founder Chairman of Summit Group Muhammed Aziz Khan remarked, "This project of Summit with JERA Asia has the potential to save billions of dollars for Bangladesh for years to come by providing logistics and handling thus maintaining supply-chain more efficient enabling Bangladesh to achieve each of her visions."

➤ PM proposes regional economic forum

Prime Minister Sheikh Hasina on 22 April 2019 proposed formation of a regional economic forum with five Organisation of Islamic Cooperation (OIC) member states of South and Southeast Asian region, including Bangladesh and Brunei.

She made the proposal during her talks with Brunei Sultan Haji Hassanal Bolkiah at the Istana Nurul Iman, the official residence of the Sultan.

The Foreign Secretary, Md Shahidul Haque said the members of the forum of the proposed regional economic forum will be Bangladesh and the Maldives from the South Asia and Indonesia, Malaysia and Brunei from Southeast Asia.

In response to the proposal, the Brunei Sultan assured that he will 'favourably consider' the matter, the foreign secretary said.

➤ Chattogram port's revenue increased by 32 per cent

After paying the taxes, the revenue of Chattogram port has reached BDT 835 crore in the 2017-2018 fiscal year. Chattogram port's net income increased by 32 per cent in the last fiscal year. This information was obtained from the latest audited financial reports.

In the 2017-2018 financial year, the total revenue collection (including operational and non-operational sectors) of Chattogram port was BDT 2,661 crore and the operational expense was BDT 1,390 crore. As the income tax of the Chattogram port, BDT 436 crore was paid to the government. Excluding these two accounts, the net income of Chattogram port stood at BDT 835 crore.

In the 2016-2017 fiscal year, the total revenue came from Chattogram port was BDT 2,407 crore. From there, BDT 1,352 crore was spent as the operational cost. The port paid the govt. BDT 422 crore as taxes. As per calculation, the net income of the port was BDT 633 crore in the 2016-2017 financial year.

➤ Cargo terminals to be built in Pangaon and Ashuganj

Two cargo terminals will be built in Pangaon and Ashuganj to facilitate the transportation of fertilisers, wheat, maize, cement and other goods through the waterways. It was informed at a workshop held on 25 April 2019 at the BRAC Center, Mohakhali, Dhaka regarding the survey report on construction of two cargo terminals at Pangaon and Ashuganj. Bhola Nath Dey, Additional Secretary of the Ministry of Shipping, inaugurated the workshop. It was also informed at the event that the consulting firm had already prepared a master plan for both cargo terminals. In these two terminals, RCC jetty (four in each), terminal yards, terminal buildings, warehouse, truck parking yards, approach road, security walls, guest house, electric substations and pump station will be built as per the master plan.

➤ Bangladesh and South Korea sign MoU on port development



A Memorandum of Understanding (MoU) was signed between Bangladesh and South Korea to enhance bilateral cooperation in the development of the ports and the area under its jurisdiction. In the conference room of the Ministry of Shipping, the MoU was signed on 1 April 2019 in the presence of State Minister for Shipping Khalid Mahmud Chowdhury. Secretary of the Ministry of Shipping, Abdus Samad and Kim Young Su, Vice Minister of the Korean Oceanic and Fisheries Ministry, signed the MoU on behalf of their respective countries.



➤ Bangladesh Flag Vessel (Protection) Act, 2019 gets cabinet approval



The cabinet today gave final approval to the draft of 'The Bangladesh Flag Vessel (Protection) Act, 2019' with a provision for the vessels to carry 50 per cent cargos from the existing 40 per cent in a meeting held at the PMO with Hon'ble Prime Minister Sheikh Hasina in the chair.

"Drafts of two laws, 'The Bangladesh Flag Vessel (Protection) Act, 2019' and 'The Bangladesh Krira Shikhya Protishthan Ain, 2019' have got final approval of the cabinet," Cabinet Secretary Mohammad Shafiu Alam told a press briefing held at the secretariat.

"Three changes have been made in 'The Bangladesh Flag Vessel (Protection) Act, 2019' with provisions for the vessels to carry 50 per cent cargos from the existing 40 per cent; fixing 30 days for making an appeal by an aggrieved person and Taka 5 lakh as the highest administrative punishment in case of floating the law," he said.

The vessels registered with Bangladesh are called Bangladesh flag vessels, he continued.

Alam added that the government has turned the ordinance of 1982 into an act following an order of the Supreme Court.

➤ Govt. finalises a draft of 10-year mega-plan to save rivers

The government has finalised a ten-year draft megaplan for rivers around Dhaka and Karnaphuli river of Chattogram to get rid of illegal occupation and pollution. A draft of the plan was finalized at the committee meeting on 5 April 2019 at the secretariat. After the meeting, Mr Md. Tazul Islam, Minister, Ministry of Local Government, Rural Development and Cooperatives informed the reporters regarding the plan.

The Minister said, "The committee has already made a draft masterplan which we have approved in principle after necessary analyses and discussion. The meeting decided to form a working group. Now, the draft will be presented to the Prime Minister for her approval."

Regarding the mega-plan, he said, "The plan encompasses crash programmes as well as short, medium and long term plans. Our target is 10 years. Initially, the crash programme is ongoing. Rivers are being freed from illegal occupation, walkways will be built. After this, sanitation work will be started under the operation of WASA. To stop the contaminated water flow in the river, the mega-plan has the provision to fix the sewage lines in and around Dhaka."

➤ NBR to install scanners at all ports

National Board of Revenue (NBR) has decided to install scanners at all sea, river, land and airports to strengthen security as well as prevent the siphoning off money through export and import.

To this end, the revenue authority is going to procure 100 scanners by 2020, which would be installed at all ports gradually, officials said.

Talking to the news agency, Md. Gius Kamal, first secretary at Customs Modernisation and Project Management Department of NBR said, "We have taken the decision of installing scanners at all ports to avert any risk regarding security and revenue collection."

Revealing that the scanners would be collected by December 2020, he said, "At first seven scanners would be procured for Chattogram ports to look at in and outbound containers."

Among the 12 gates of Chattogram ports, at present, five gates have scanners.

Finance Minister A H M Mustafa Kamal after taking the office also directed to install scanners at all ports.

Scanning or Non-Intrusive Inspection (NII) refers to non-destructive methods of inspecting and identifying goods in transportation systems. It is often used for scanning of intermodal freight shipping containers.

The scanning system would also help to check import and export goods to prevent money laundering through invoicing or any other means.

Replying to a query, the Minister said different types of scanners are being used at ports to check containers. "So, scanners would be installed considering the requirement and necessity at each port."

➤ Patenga Container Terminal to be launched in June next year



"Patenga Container Terminal (PCT) of Chattogram port, which is in under construction phase, will be launched in June next year. The terminal will be able to handle three ships at a time." Rear Admiral Zulfikur Aziz, (E), psc, BN, chairman of the Chattogram Port Authority (CPA), said this during an exchange of views with the media on 24 April 2019. This CPA organised exchange of views with the media was held at the Shaheed Fazlur Rahman Munshi auditorium on the occasion of the 132nd anniversary of Chattogram port. During the occasion, the chairman of the port highlighted the progress regarding reduced waiting time and congestion, port's existing projects and future plans. Zafar Alam, a board member of CPA, and senior officials including Dr Khandakar Akhter Hossain, PhD, Member (Engineering) were present on the occasion.

➤ Chattogram Customs House to launch e-Auction



From July 2019, online auction (e-Auction) service will be launched at Chattogram Customs House. At present, the auction process of seized goods is done in a manual manner. The process is quite complex and time-consuming. With the launch of the online service, auction participants will be able to attend and submit their required documents from home. This will not only save time but at the same time, it will also ensure transparency and accountability throughout the process.

Customs officials say some legal procedures have to be followed for auctioning the seized goods. Customs law has a policy in place. In addition to this, some goods need approval to be obtained from the Ministry of Commerce for auction and it also requires time. When the e-Auction software is launched, the product list and tenders will be visible online. Those who wish to participate in the auction can apply without going to the customs office. Goods will be allotted to the highest bidder after completing the auction process online.

➤ 12 companies are interested to build Matarbari LNG terminal

According to a media report, a total of 12 companies have shown interest in building the country's first onshore liquefied natural gas (LNG) import terminal.

Bangladesh is turning to land-based LNG terminals as its first imports of the super-chilled fuel via a floating platform were delayed due to inclement weather and technical issues.

Rupantarita Prakritik Gas Company Limited (RPGCL), a part of state-owned oil and gas company Petrobangla, earlier this year had requested expressions of interest (EOI) from potential terminal developers for a land-based LNG regasification terminal at Matarbari in Cox's Bazar.

Twelve companies have submitted documents showing interest to build the terminal, two officials from RPGCL told the media.

The companies include Japan's Mitsui, South Korean utility KOGAS, and a consortium led by Summit Corp, a unit of Bangladesh's Summit Group, the officials said. Applicant companies include Mitsui of Japan, Kogas of South Korea and Petronet of India. A consortium led by Summit Corporation, the country's power sector, has also submitted interest cards for the construction of the terminal. The consortium of the summit consists of Japan's Mitsubishi and Zera. The main investor summit in the consortium. Beyond that, a French company has also applied.

➤ Canada shows interest in investing in Bangladesh



Canada has expressed interest to increase trade and investment in Bangladesh. This was stated by the Commerce Minister Tipu Munshi after a meeting with the Canadian Ambassador to Dhaka, Benoit Préfontaine, on 15 April 2019 at the Ministry of Commerce.

The Commerce Minister said, "There is a huge opportunity for investment in Bangladesh. The Bangladeshi government is giving special privileges to the investors besides developing a business-friendly environment. Canadian businessmen will benefit from investing in Bangladesh."

Canadian Ambassador said, "There is a huge demand for Bangladeshi products in Canada. Canadian businessmen are interested in investing in Bangladesh."

➤ Energypac to produce containers in 'Mirsarai Economic Zone'



On 11 June 2019, Energypac Power Generation Limited (EPGL) signed an agreement with Bangladesh Economic Zones Authority (BEZA) to avail land at Bangabandhu Sheikh Mujib Industrial City in Chattogram's Mirsarai for setting up a steel processing facility.

As per the agreement, BEZA will provide some 33 acres of land to the EPGL under a provision of a lease to facilitate the project which will mainly produce shipping containers.

BEZA will lease EPGL a piece of land at Bangabandhu Industrial City, Mirsarai Economic Zone for Energypac Steel Limited—a project which will draw a total investment of BDT 3,989 million from EPGL.

Once completed, Energypac Steel Ltd. will specialise in steel processing and manufacturing shipping containers, enhancing the capacity of Energypac alongside bringing in further excellence in steel engineering.

BEZA Executive Chairman (Secretary) Paban Chowdhury, BEZA executive members Md Harunur Rashid and Mohammed Ayub and Chairman of EPGL Engineer Rabiul Alam were present at the signing ceremony at BEZA office. Mohammed Ayub and Engineer Rabiul Alam signed the agreement on behalf of their respective organisations.



➤ New harbour station of Chattogram port is set to open at Matarbari



A new harbour station of Chattogram port is set to opening soon at Matarbari in Cox's Bazar. Chattogram Port Authority (CPA) is going to set up the station with its own financing to monitor the movement of ships and to provide security and necessary services. Initial work of the station will be started by launching a radio control room, which will be gradually upgraded to a full harbour station.

Earlier this year, the outer-anchorage area of the port was increased from 7 and a half nautical miles to 54 nautical miles. As a result, huge sea area has come under the control of the port. Apart from the ships arriving at Chattogram port, the station is being set up for ships which will be docked at under construction jetty and a floating LNG terminal in Maheshkhali. The station will also be used for the arrival of coal-carrying ships at Matarbari power station in the future. The port's existing VTMS (Vessel Traffic Management Information System) is also being expanded in phases. It will provide all the necessary services, including security, to the ships inside the port's water boundary.

➤ Gas supply begins from Summit floating LNG terminal



The first in the private sector and country's second floating LNG terminal built by Summit group has begun the gas supply to the national grid. From here, 500 million cubic feet of gas per day is being added

to the national gas transmission line. Earlier, on 20 April 2019, Summit's FSRU (Floating Storage and Regasification Unit) brought 138,000 cubic meters of LNG from Qatar into Bangladesh. The ship anchored at the floating LNG terminal of Summit Power International, six kilometres from the Maheshkhali coast of Cox's Bazar.

Summit Corporation owns 75 per cent and the remaining 25 percent owned by Japan's Mitsubishi Corporation. Summit entered into a 15-year charter agreement with Excelerate Energy for the FSRU Summit LNG. After 15 years, the Summit Corporation will hand over the terminal to Petrobangla on the basis of Build, Operate and Transfer (BOT) protocol.

➤ PM office issues eight directives for faster unloading

The Prime Minister's Office gave eight directives to the Chattogram port and Customs to make the process of goods delivery and unloading faster and more affordable. The office also identified seven barriers in import-export expense, the period of product discharge, the number of documents and the scrutiny process. The new targets have been formulated by comparing the highest average rates of time and expenditure with neighbouring countries. The Prime Minister's Office has asked the Chattogram port to work on three issues and the Customs House on five issues to overcome the obstacles. The working area of the stakeholders including shipping agents, C&Fs, freight forwarders has also been fixed. The directives also mentioned how to improve different sectors by setting a one-year deadline.

➤ PM urges to stop throwing waste in the river



To prevent water pollution, the Hon'ble Prime Minister Sheikh Hasina has urged all to stop throwing waste in the river. She made the call at a function organised by the Ministry of Water Resources on the occasion of 'World Water Day 2019' at the Bangabandhu International Conference Center in the capital on 11 April 2019.

The Prime Minister said, "I urge everyone that the waste discharge in the river must stop, especially by the mills and factories. Each industrial factory should have its own waste management system so that it does not pollute the river. Sea and river pollution has become a global problem."

Minister of State for Water Resources Zaheed Farooque MP presided over the occasion where Ramesh Chandra Sen, Chairman of the Parliamentary Standing Committee of the Water Resources Ministry and Deputy Minister AKM Enamul Hoque Shameem MP gave their valuable speeches on the occasion.



Find CPA News & Bandarbarata online at

ISSUU.COM

<https://issuu.com/enlightenvibes>

BANDARBARTA.COM



Ship handling operators Men in outer-anchorage

About 92 per cent of the country's EXIM trade is handled by Chattogram port. Many organisations are involved with the port in this huge operation that is directly related to the economic development of Bangladesh. Relentless efforts of those organisations are playing crucial roles in reviving Chattogram port along with the economy of a the country. Ship handling operators are the only major player in the process when goods handling is considered as the main function of Chattogram port. More than half of Chattogram port's handling activities are done in the outer-anchorage areas and the rest is done at the port's jetty. Ship handling operators handle imported goods in the outer-anchorage. They handle about 45 per cent of a total container and cargo shipment. If we only calculate the bulk handling, the total stake is about 75 per cent.

The port was built several hundred years ago on the banks of Karnaphuli river. Due to the water flow and tidal hassle, the cargo ship has to be operated according to the Karnaphuli river's situational characteristics. As the draft is low, large vessels (mother vessels) with the deep draft from different parts of the world have to stay in the outer-anchorage. In order to bring these vessels to the main jetty of the port and to make the ship lighter to sail through the low-depth Karnaphuli channel, ship handling operators are required to unload the partial or entire imported goods in the outer-anchorage. From here, goods reach the door of the importer by lighter ships. In addition to

Chattogram port's outer-anchorage, the ship handling process extends to Kutubdia and Matarbari. Like the port, it operates 24 hours a day in all seasons.

Ship handling operators are registered operators of Chattogram port. Through the tender process, ship handling operators are assigned for 5 years to do ship handling. At present, 30 companies are working to handle goods at Chattogram port's outer-anchorage. In line with the growth of the economy and the ongoing development activities of the country, the import volume has increased in Chattogram port in the last few years. Chattogram port is facing the challenge of handling such a large quantity of imports. Especially, imports of construction materials such as stone and other heavy machinery for infrastructure development, have increased. Besides the port, ship handling operators are performing an additional task to facilitate development projects. About three-quarters of the bulk or open goods is handled in the outer-anchorage. Not only the materials brought in for the development projects, but the ship handling operators are also regularly handling wheat, maize as well as other food grains, sugar, cement clinkers, scrap steel, coal and heavy machinery. Ship handling operators play a key role in handling and timely delivery of the heavy equipment brought for the Padma Bridge and nuclear power plant to specific destinations.

A particular procedure is followed to unload the goods at the port jetty,

similarly, there is a specific process to follow in order to unload goods in the outer-anchorage of the port. Ship handling operators largely handle imported goods. The volume of export goods handling is negligible. The importer first opens the LC for import. The shipping agent announces the import of goods by ship on behalf of the importer. Then the ship handling operators, designated by shipping agents, begin the process of unloading. Ship handling operators unload goods from mother vessel to lighter ships. Importer provides lighter vessels to ship handling operators. For this reason, the importer has to get the allocation of lighter vessels through the lighter vessel regulatory body, Water Transport Cell (WTC). Afterwards, Ship handling operators carry the equipment, workers and employees to the outer-anchorage on the importer provided lighter ship to handle and unload the goods. Upon arriving at mother vessel, the ship handling operator's supervisor makes contact with the ship's supervisor and captain to begin the unloading process. At this stage, it is checked whether the government customs duty and port charges have been collected. Then the importer and ship surveyor conduct the survey. When the survey is completed, mother vessel's crane and ship handling operators co-ordinately begin the unloading.

Registered ship handling operators of Chattogram port have the capacity to unload about 10-12,000 tons of goods daily. At present, because of the scarcity of lighter ships, the capacity is not being utilised fully. It is taking 18-20 days for ship handling operators to unload total goods from a mother vessel. Which decreases further depending on the lighter ship's availability. However, due to the convenience of unloading goods in the outer-anchorage area, imports can easily be transferred and delivered to different places of the country through the waterways. Goods, unloaded in the outer-anchorage of Chattogram port, are reaching the doorsteps of the importers, that means, at various river ports including Narayanganj, Nawapara, Khulna, Barishal and Bogra. On the one hand, money is being saved, and on the other hand, goods are reaching the destination in a fastest possible time

Ship handling operators are registered operators of Chattogram port. Through the tender process, ship handling operators are assigned for 5 years to do ship operation. At present, 30 companies are working to unload goods at Chattogram port's outer-anchorage.

CPA News Desk

Special thanks: AKM Shamsuzzaman Russell, Chairman, Bangladesh Ship Handling and Berth Operators Association.

Outer-anchorage for maritime trade expansion

Omar Farooq Emon



Bangladesh's economy has been in a positive direction for the last 6 years. In the meantime, economic growth has increased from 5.05 per cent to 7.86 per cent. The economy is growing with important indicators such as infrastructure development, foreign investment and growth in EXIM trade. In the fiscal year 2017-2018, USD 51.53 billion worth of goods were imported and exports brought USD 36.66 billion. About 82 per cent of this EXIM trade is transported through sea routes. Hence, the country's foreign trade depends on Chattogram and Mongla ports. Among these two port's, Chattogram port accounts for about 90 per cent of the maritime trade. Size of the economy of Bangladesh and the movement of Chattogram port-centric shipments both have increased more than ever before. In the fiscal year 2016-2017, total 3,092 cargo ships arrived at Chattogram port, whereas, 3,664 cargo vessels had arrived at the port in the 2017-2018 fiscal year.

The area where ships can safely wait to enter the port-channel is called outer-anchorage. All commercial vessels from different parts of the world have to stay in the outer-anchorage of Chattogram port to unload goods.

Due to the varying depth of tide-dependent Karnaphuli channel, the container and the cargo vessels have to enter the channel according to the draft recommended by the port authority. As a result, vessels of more than 9.5 meters draft cannot enter the channel of Chattogram port; they wait at the outer-anchorage.

The area where ships can safely wait to enter the port-channel is called outer-anchorage. All commercial vessels from different ports of the world have to stay in the outer-anchorage of Chattogram port to unload goods. To ensure the scheduled draft of the port channel, the partial goods from the vessel has to be unloaded by means of lightering, i.e. by unloading the goods on smaller vessels. Big mother vessels unload all goods in outer-anchorage. About half of the port's goods handling activities are done in the outer-anchorage and remaining handling is done at the port's jetty. And the stake in cargo

handling of outer-anchorage alone is about 70 per cent.

Alpha-Bravo-Charlie

From the mouth of winding and twisting trails of tides-dependent Karnaphuli river, the outer-anchorage of Chattogram port extends towards the west with a radius of 7.5 nautical miles.

Outer-anchorage has three anchorages or anchor areas. They are known as Alpha (A), Bravo (B) and Charlie (C). The northernmost part of the outer anchorage is the anchorage 'A'. The area between anchorage 'A' and anchorage 'C' is marked as anchorage 'B'. Those ships which are scheduled to enter Karnaphuli channel to unload goods in port jetties within 24 hours, wait at the anchorage 'B'. The southernmost part of outer-anchorage is anchorage 'C'. These three anchorages can accommodate more than one hundred ships. Of these, area Charlie can anchor 3 to 5 metre draft vessels, 8 to 9 metres draft

vessels can anchor in Bravo anchorage, and vessels with 10.50 to 12.50 metres draft can anchor in Alpha anchorage area. Because of the deep draft, most of the ship captains want to anchor vessels in Alpha anchorage. Vessels with the deepest draft (13 to 15 metres) anchor in the deep sea area of Kutubdia Island where the ship's draft was reduced by unloading goods into smaller or lighter vessels. Later, ships with reduced draft arrive at the outer-anchorage of the port.

Once the outer-anchorage area of Chattogram port had an area of 5 nautical miles from the coast. As the number of ship arrival in Chattogram port has been increasing every year, the port authority took initiatives in 2011 to expand the outer-anchorage area from 5 nautical miles to 7.5 nautical miles. Over the last few years, more than 3500 ships has been arriving in Chattogram port annually. CPA is planning to increase the outer-anchorage area of Chattogram port 6 times, from 7.5 nautical miles to 50 nautical miles as the part of a long-term plan to facilitate growing number of cargo vessels arriving for the LNG terminal around Matarabari, Japan International Cooperation Agency (JICA) supported ongoing Matarabari seaport project, Anwara Economic Zone and Mirsarai Special Economic Zone.

The soft, mud-rich sediments of the Chattogram port are naturally fragile. Ship pilots and sailors have to be careful to move and anchor in the outer-anchorage areas since strong tide of 6 to 7 nautical miles per hour can hamper ship movements. In particular, the CPA instructs not to

cross any other vessel during the tide, to keep the engine running, speed up to six nautical miles in urgent need, not to stop at the channel entrance, verify the anchor position after two or three tides, and anchor according to the recommended draft. To avoid accidents, pilots are instructed from port radio control to operate and take positions of vessels in outer-anchorage area. In addition, pilots have to keep in mind the effects of seasonal winds and the tendency of rapid climate change from May to October, such as storms, rains and cyclones.

Mother vessel and lighter vessel have to be positioned side by side in lightering process. In addition to keeping continuous contact between the two vessels, necessary arrangements are made to ensure uninterrupted lightering (mooring rope, older tire) so that no collision occurs between the mother vessel and the lighter vessel due to tides and waves.

Half of the goods are handled in the outer-anchorage!

Chattogram port has ranked 70th on the Lloyds list in container handling figures trailing world's hundreds of ports behind.

But while the statistics and growth of container handling are always discussed, Chattogram port handles a large amount of cargos, which is about half of the total handling.

And much of this cargo handling is done in the vast waters of the Bay of Bengal, far from people's vision. Millions of tons of goods are being unloaded from ship to ship (STS), even though the handling of goods

Bulk cargo and container handling statistics of last few fiscal years

Fiscal Year	Total bulk cargo and container handling (Metric ton)	Cargo handling in the outer-anchorage (Metric ton)	Percentage of goods handling in the outer-anchorage (%)
2013-14	4,72,98,547	2,11,29,760	44
2014-15	5,47,81,392	2,49,28,061	45
2015-16	6,42,96,420	3,08,46,242	47
2016-17	7,31,74,044	3,63,29,130	49
2017-18	8,50,47,912	4,39,89,322	52

or containers with cranes, and the movement of trucks, caravans, or lorries, are not visible like the port jetty.

We can understand it very well if we look at some comparative statistics. During the fiscal year 2017-2018, 85.47 million metric tons of goods were handled in Chattogram port. Out of this, 43.98 million tons of goods or 52 per cent of total handling were done in the outer-anchorage.

Among the products unloaded from outer-anchorage are wheat, corn, sugar, cement clinker, scrap steel and coal. In the last financial year, about 17 per cent of the imports of food grains such as rice, pulses and wheat was unloaded in outer-anchorage. In order to ensure food production and food security, country's major demand in fertiliser and oil is being met through the process of unloading in the outer-anchorage with lighterage ships and reaching to the farmers in remote areas of the country.

About 100 per cent of the imported coal for coal-based power projects is handled in the outer-anchorage. Continuous supplies of fuel, LNG and edible oils are ensured from Chattogram port's outer-anchorage as per the demand of the country. Outer-anchorage areas can be considered as the centre of energy supply of the country. At present, huge development projects are being implemented at public and private levels. Raw materials and machinery of almost all projects, including Padma Bridge, Rooppur Nuclear Power Project, Matarabari Terminal, 100 Economic Zones, Karnaphuli Tunnel and Metrorail, are handled in outer-anchorage of Chattogram port.

Among the products unloaded from outer-anchorage are wheat, corn, sugar, cement clinker, scrap steel and coal. In the last financial year, about 17 per cent of the imports of food grains such as rice, pulses and wheat was unloaded in outer-anchorage.

Lighter ships are going to mother vessels through Karnaphuli river channel to unload goods

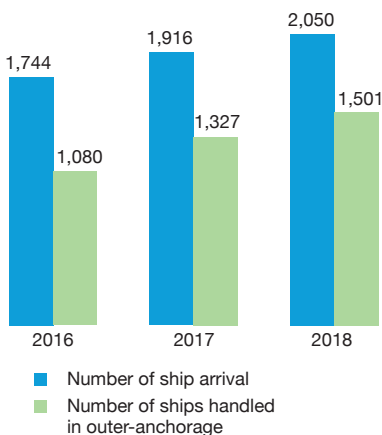


From January to November 2018, total 2050 bulk ships arrived at Chattogram port, among those, 1501 ships were handled in the outer-anchorage.

Ship to ship goods handling

Many companies are involved with the huge task of goods handling. With relentless hard work, the Chattogram port is constantly working to advance the economy. At the outer-anchorage, ship handling operators do the important job of goods handling just as the berth and terminal operators are handling the goods in the port jetty. 30 ship handling contractors of Chattogram port are working to handle the goods in the outer-anchorage. They are employed by the port for a period of five years. For handling, about 1,450 lighter ships/berges/tankers are working in the outer-anchorage of Chattogram port.

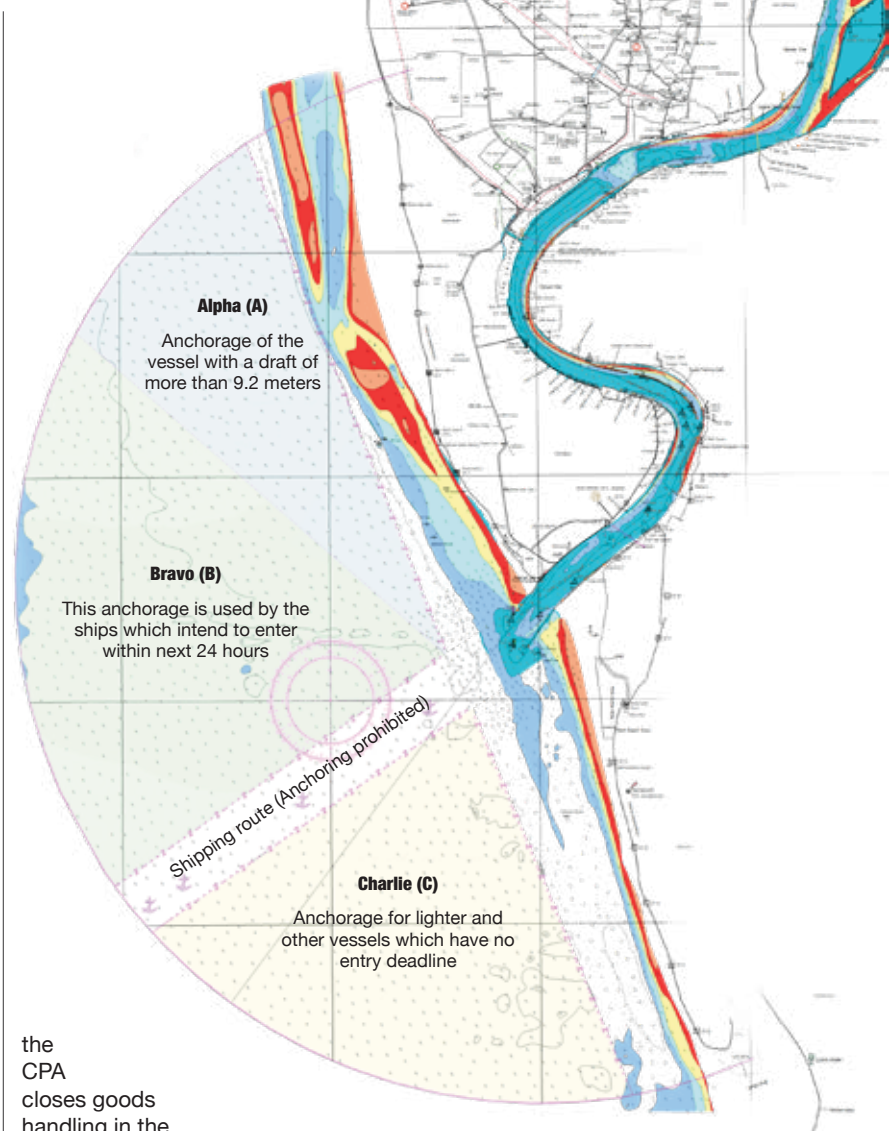
Ship arrival statistics



Ship handling operators are completely responsible for handling goods at the outer-anchorage. Shipping agents and ship handling operators have to present the latest information on mother vessel and lightering at the berthing meeting. Customs, port's DTM (Operations) and Marine Division coordinate the entire process. DTM (operation) office also confirms about the revenue received from lightering.

Like the jetties of the port, in the winter, summer or rain, 24-hour handling activities are carried out in the outer-anchorage areas. However, when the sea appears rough during the monsoon season,

Ship handling operators are completely responsible for handling goods at the outer-anchorage. Shipping agents and ship handling operators have to present the latest information on mother vessel and lightering at the berthing meeting.



the CPA closes goods handling in the outer-anchorage. There is a specific procedure to be followed to handle the goods at the port jetty, similarly, there is a specific procedure for handling in outer-anchorage. To unload goods at the outer-anchorage, one has to pay taxes to customs authority and comply with the port rules and regulations. Mainly, imported goods are unloaded in outer-anchorage of Chattogram port. The volume of export handling is absolutely negligible. The shipping agent announces the import declaration on behalf of the importer. The shipping agent designated ship handling operator then begins the process of unloading the goods from a ship.

Importer provides lighter vessels to ship handling operators. For this, the importer has to get the allocation of the lighter vessel from the lighter vessel regulatory organisation

named as 'Water Transport Cell (WTC). Upon arriving at the mother vessel, located in the outer-anchorage area, the supervisor of the ship handling operator contacts the cargo ship's supervisor and the captain of the ship to begin the handling process. After conducting the survey work by the importer and ship surveyor, unloading begins. There are usually two ways to unload the goods from a ship in the outer-anchorage area. One of these is to pay the river dues of the port against the customs out pass bill of entry and unload the goods directly to the lighter vessel. And the other is the goods unloading in specific lighterage vessel via the 'Greenboat Note' against the customs guarantee under the supervision of the PO



Authorities can monitor all vessels located at Chittagong port channel and 7.5 nautical miles of outer-anchorage of the port with VTMISS facility

onboard and later, the final unloading and delivery is done through the 'Blue Boat Note' against the customs out pass.

The WTC is working to deliver imported goods from mother vessels anchored in the outer-anchorage of Chattogram port to the jetty of the port or by boat in remote areas of the country. The WTC is contributing significantly by reducing the waiting time for mother vessels in the outer-anchorage. Besides, the organisation plays a pivotal role to enhance the goodwill of Chattogram port. The WTC ensures the supply of lighters and tankers through a committee under the supervision of the Department of Shipping. The estimated capacity of the lighter vessels varies from 800 to 3,000 metric tons.

Imported goods which are unloaded on lighter vessels in outer-anchorage of Chattogram port not only reach the Sadar ghat lighter jetty but also reach the remote areas of the country, such as Narayanganj, Faridpur (C&B), Barishal, Noapara, Baghbari, Nagarbari, Ghorashal, Ashuganj, Bhairab, Mirpur.

Parallel to the economic growth of the country, it is important to increase the number of lighter vessels for transporting goods. If the remote area ports under BIWTA are

not modernised, no effective result in handling in outer-anchorage will be seen. At present, the government has taken various initiatives to modernise the country's ports and increase the number of lighter vessels. Besides, building and leasing lighter jetties to private importers, the Chattogram Port Authority (CPA) has taken initiatives to expand the outer-anchorage of the port for uninterrupted handling. As a result, handling becomes more dynamic. To bring efficiency and dynamism in handling, the installation of a 'storage berge' in outer-anchorage is in the study phase. On the other hand, the Petroleum Corporation of Bangladesh has taken initiative to supply fuel and LNG through pipeline according to a special scheme of the government. This will bring dynamic change in fuel transportation. Also, this will bring a breakthrough in energy transport from outer-anchorage.

Safe and secure outer-anchorage

Chattogram port channel and the outer-anchorage is safe and secure for the movement of local and foreign ships. The number of criminal activities has dropped significantly due to the constant monitoring of the law enforcing agencies, regular patrols and constant contact between a ship

and port control room. And such improvement in security has made it a safe port, and at the same time, it increases the brightness of overall port image.

10 incidents of stealing or attempted theft on a commercial ship occurred in 2015, but in 2016 the number dropped to 2. Among those two incidents, one attempted theft was foiled by the law enforcement agency. Although the number of theft was increased in 2017, it dropped to 4 in the first six months of 2018. The statistics of theft was featured in a report of ReCAAP, an international organisation that works to prevent piracy, robbery and stealing. However, in the annual ReCAAP report, these incidents of Chattogram port were mentioned as piracy or robbery, but the fact is, those were the cases of petty theft like stealing ship oil, parts or goods. In fact, there have been only three cases of armed robbery in the last 10 years from 2007 to 2018. None of those armed robbery claimed hostages or casualties. The ReCAAP report praised the improving security environment of Chattogram port. According to ReCAAP report, Bangladesh is in a better position than neighbouring India, China, Indonesia, Malaysia, Vietnam and Philippines. The report also indicates that Indonesia is the most vulnerable country among others in terms of security and safety of ships.

If crime increases in the outer-anchorage areas, negative impacts on the movement of foreign ships also increases. Due to this negative impact, extra shipments cost are imposed on the transportation of goods and domestic EXIM traders face bitter consequences. Coast Guard, Bangladesh Navy and Chattogram Port Authority are constantly working to prevent piracy in our sea. Chattogram port is implementing Level-1 of International Ship and Port Facility Security Code or ISPS code. Vessel Traffic Management Information System (VTMIS) is being upgraded to reduce the number of accidents, thefts or robberies in outer-anchorage area. The purchase of surveillance ships and helicopters is also planned. When these are done, the fishing vessels will also come under constant surveillance. Apart from the outer-anchorage, a process is ongoing to put all the

Vessel Traffic Management Information System (VTMIS) is being upgraded to reduce the number of accidents, thefts or robberies in outer-anchorage area. The purchase of surveillance ships and helicopters is also planned. When these are done, the fishing vessels will also come under constant surveillance.



The port has experienced and skilled pilots who carry out the important task of safely piloting 15 to 20 ships a day

installations within the port limit including river mooring, jetties, and terminals under security surveillance. And a rapid response berth has been set up near the quay number 15 to reach the site of incident within 10 minutes if the Navy and Coast Guard receive a complaint of theft or robbery.

VTMIS: Nonstop surveillance

If we talk about the outer-anchorage of Chattogram port, we have to shed a light on the technology being used in its overall management.

Vessel Traffic Management Information System (VTMIS) was introduced at Chattogram port in 2014 to promote international standard safety and seamless shipping. This system is an important part of the modernisation of Chattogram port. After the introduction of VTMIS, the capacity and efficiency of the port has been increased manifold. The system is being used in ports of developed countries such as Belgium, the United States and Singapore. VTMIS is run by following the International Naval IMO and the SOLAS

Vessel Traffic Management Information System (VTMIS) was introduced at Chattogram port in 2014 to promote international standard safety and seamless shipping. This system is an important part of the modernisation of Chattogram port.

Convention. Due to this modern technology-based system, the port authority is now able to monitor all vessels located within 7.5 nautical miles of Chattogram port channel and the outer-anchorage. Container ships or cargos come under the watch of the VTMIS right after entering in the outer-anchorage. According to the rules, vessels confirm their arrival by VHF communications with the port's radio control. The port radio control stores the required information such as drafts, volumes, quantity of cargos or containers, etc., and directs the ship's captain to anchor the ship in a specific location of the outer-anchorage.

Due to the VTMIS, vessel movements have come under the control of the port and incidents like collision, theft or robbery are reduced. Shipping operations have come under the watch in spite of heavy rains and dense fog when handling is prohibited at the outer-anchorage. Under the direction of the Deputy Conservator (DC) of the port's marine division, officers and staff carried out all

activities for the movement, control and piloting of the vessels in the outer-anchorage.

There are two control stations and four radar stations at Chattogram port for the management and operation of VTMIS. One is the port building control station and the other is the Patenga point control station. Four radar stations are Patenga Point Radar Station, Gupta Point Radar Station, Ruby Cement Radar Station and Sadarghat Radar Station. Equipped with the CCTV camera, day-night camera system, VHF radio system and Automatic Identification System (AIS), the VTMIS can identify the movement of every ship from the control station. The range of a radar used in each of these stations is 20 nautical miles. Besides, the range of 6 long view cameras is 16km, and for 9 medium view cameras, the range is 5km. There are also 7 very powerful cameras at different points in the channel. The control station conducts visual surveillance from Patenga Point to a distance of 5 km. Currently, work is ongoing to extend it 16km.

VTMIS allows to see the entry of foreign ships in outer-anchorage of Chattogram port. Besides, detailed information of a ship, its movement and its distance to the nearest ship can be obtained with the help of VTMIS from the station. VTMIS also informs about the right time for sailing and gives advance warning if there is a risk of accident.

Additionally, a ship's entry and departure in port's channel, information on the exact time of handling in outer-anchorage and coordination for information sharing are managed by the VTMIS. At the same time, ships have to send information about the goods handling and confirmation of proper anchoring to the control room. VTMIS's audio and video recording facilities have brought a breakthrough in the investigation of the accident. In addition to that, it helps the port to take fastest and effective measures in any accident. VTMIS is also effective in controlling access of unpermitted ships to port's channel. The Outer Anchorage Cell has recently been formed to reduce accidents. The function of this cell is to take necessary measures and surveillance to prevent any accidents in outer-anchorage area.

The ship's arrival at Chattogram port's terminal through the Karnaphuli channel is naturally complex. Due to the tide, depth or draft does not remain the same in a day. Although draft or depth of Karnaphuli river depends on season, 5 to 5.5 metres draft can be found on an average and the impact of high tide increases it 4-5 metres. The suitable time for sailing is high tide. There are two curves in the Karnaphuli channel resembling English letter 'S'. One is called Gupta curve and the other is Naval curve. Due to the narrow channel it

is quite risky to cross two ships at once. As the river runs with a powerful current, it is quite difficult to steer the vessel through a particular direction. So, a ship's movement has to be very careful in this channel.

Piloting

For this reason, the port authority has made piloting compulsory for vessel movement from the outer-anchorage to port's channel. Only the port-employed pilots sail ships on this channel. The port has experienced and skilled pilots who carry out the important task of safely piloting 15 to 20 ships in a day. The berthing is scheduled for the next two days according to a specific list made at the port berthing meeting with the traffic department and the marine department. According to the schedule, skilled pilots sail the ships from the outer-anchorage to the jetty and from the jetty to the outer-anchorage during the high tide.

A major source of revenue

The port's outer-anchorage is a major source of income throughout the year. River dues and port dues are the main sources of income of Chattogram port. These river dues and port dues are the means of collecting fees from various ships which stays within the port limit.

In the fiscal year 2016-2017, the port earned revenue of BDT 1,393,692,000 from port dues, though in the previous fiscal year the amount was 1,244,286,000. It also collected BDT 2,370,612,000 from rivers dues in the 2016-2017 fiscal year. And the previous year the collected amount was BDT 2,075,809,000 from river dues.

The port cannot charge a fee if the goods are lightered outside the port

The port cannot charge a fee if the goods are lightered outside the port limit. On the other hand, the Chattogram port is expanding its outer-anchorage which means the port limit is now expanding. As a result, revenue earning from the outer-anchorage will be increased.

limit. On the other hand, the Chattogram port is expanding its outer-anchorage which means the port limit is now expanding. As a result, revenue earning from the outer-anchorage will be increased.

Scene is changing

There is no alternative to Chattogram port for achieving Bangladesh's development goals and to maintain the country's economic growth. Imports and exports are constantly increasing due to the growing trade volume. Various development-oriented projects are ongoing across the country. Imports are also increasing to meet the demands of these projects. Apart from a set of development programmes, medium and long-term development projects, construction of 100 economic zones are in the pipeline. Besides, the pressure of imported necessary raw materials and equipment for Padma bridge construction project, Karnaphuli Tunnel, Metrorail, construction of the Rooppur nuclear power plant, coal-fired power plant, and the construction of LNG terminal is increasing in Chattogram port.

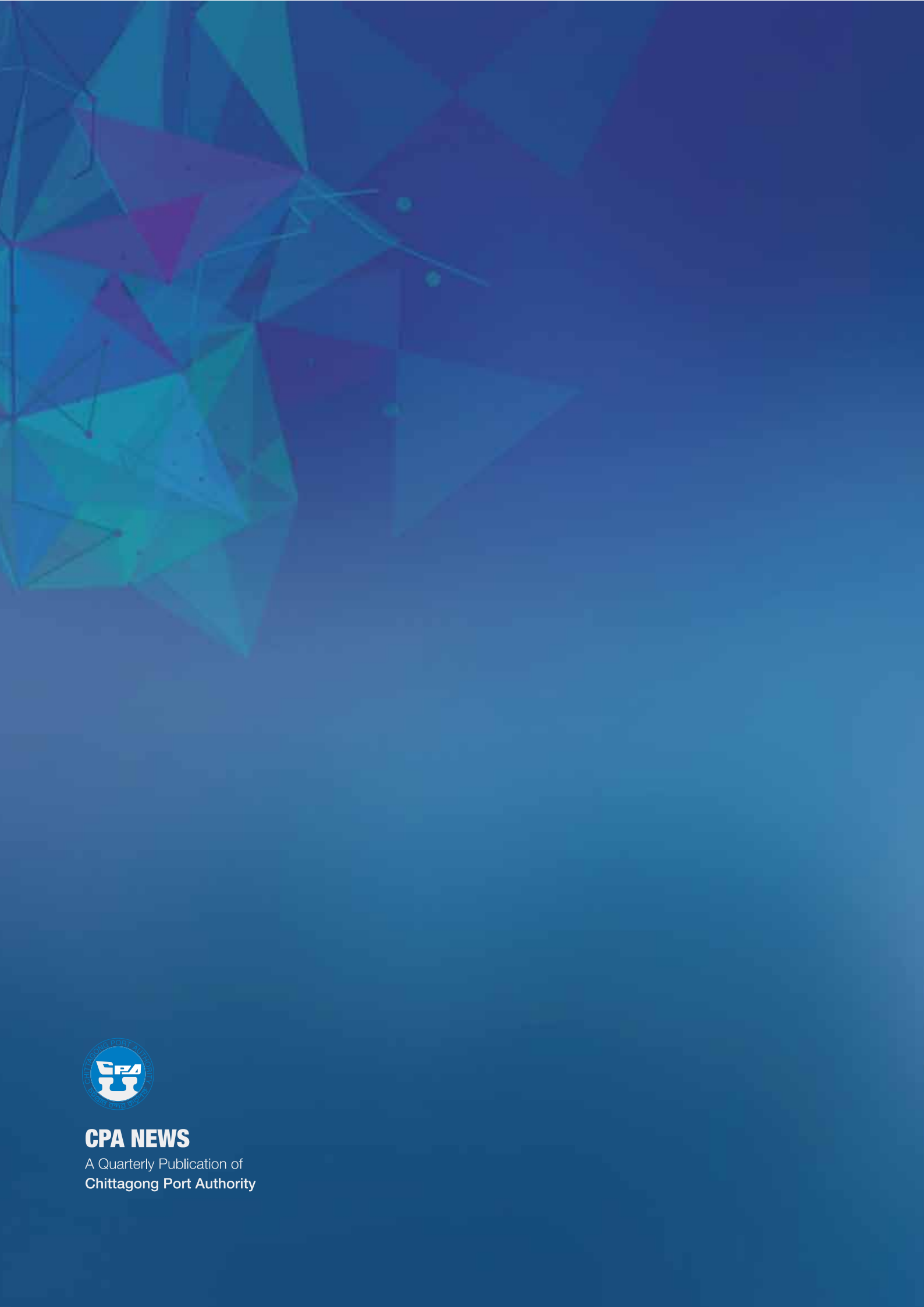
Naturally, ship handling operations are also expanding at the outer-anchorage of the port. It is taking preparation to handle this pressure with renewed capacity. At the same time, the landscape of it is also changing.

Omar Faroque Emon
Reporter, *Bandarbarta & CPA News*

Gratitude: Md. Khudrat-e-Khuda, Deputy Traffic Manager, Md. Atul Hakim Siddique, Assistant Harbour Master and Md. Gausul Azam Russell, Pilot, Chittagong Port Authority.

Most of the imported goods are unloaded from mother vessel to lighter vessels and shipped to different parts of the country





CPA NEWS

A Quarterly Publication of
Chittagong Port Authority