

Environmental Aspects of Ship Breaking in Bangladesh: Realities and Way Forward

Hosnay Nasrin
Research Officer, BIMRAD

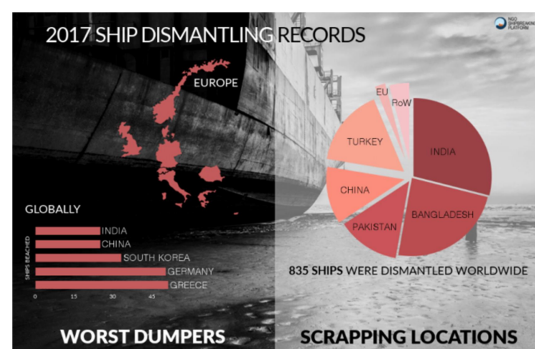


The bulk of ships that go out of service worldwide are scrapped in India and Bangladesh, followed by China, Turkey and Pakistan. Because of naturally favorable tidal conditions, these countries are successful in using beaching technique for ship breaking. Ship breaking industry plays a crucial role in the economies of South Asian countries. The main sources for purchase of unserviceable vessels are Russia, Bulgaria, Romania, Greece, Italy, Turkey, Japan, Singapore, South Korea, etc. Around 70% of ships are broken in South Asia. Unfortunately, most of the ships which are broken to be recycled are not handled in a safe manner for workers and in the right environment.

Ship breaking is basically a way of ship disposal involving the breaking of ship for extracting raw materials, mainly scrap, and selling or re-using its parts. Ship breaking activities are being practiced in the coastal areas of Bangladesh, especially in

Sitakundu of Chittagong and have gained importance in the macro and micro level economy of Bangladesh. Ship breaking activity holds potential as it creates economic opportunities for thousands of labours and contributes to the economic growth of regions in need of private sector investment. There are more than 50,000 people directly involved in this industry, and more than 200,000 people are involved indirectly. Ship breaking activity is of great importance in national economy as it saves a lot of foreign exchange by reducing the import of steel materials. The ship breaking activities exemplify both the potentialities and the dangers in an increasingly globalized economy.

History of Ship Breaking Activities in Bangladesh



In 1964, Chittagong Steel House bought the Greek Ship “M D Alpine” and scrapped it. In 1971, a Pakistani Ship “Al Abbas” was damaged by bombing and it was salvaged by a

Soviet Salvation Team & brought to the Fauzdarhat seashore. In 1974, the Karnaphuli Metal Works Ltd bought this as scrap, which was considered as introduction of commercial ship breaking in Bangladesh but was not recognised as an industry until the Labour Act recognized it as an “establishment” in 2006. Till now, this industry has already dismantled about 55% of end-of-life vessels of the world.

Impacts of Ship Breaking on Biodiversity and Coastal Community

Ship recycling is a challenging process, due to the structural complexity of the ships and the involvement of environmental, safety, and health issues. The coastal ecosystem including beach, surface and ground water, biodiversity, workers and local community, and air quality remains at risk during the ship recycling process and afterwards. Various refuse and disposable materials are being discharged and spill from scrapped ships and often get mixed with the beach soil and sea water which in turn has a negative impact upon our ocean, marine resources, coastal environment and



overall biodiversity as well. And this impairs ecological settings.

In terms of oceanic pollution, when a ship reaches shore, anchored for low tide, anti-foul paints mix with the seawater and harm micro-organisms. The dismantling process also blends the harmful materials of ships into the marine sediments that harm the seashore soil. The soil turns almost into metallic-soil, as the area is filled up with heavy metals containing petroleum hydrocarbons and bacterial contaminants deteriorating all the usefulness of the seashore. As a result the beach soil loses its binding properties and this accelerates the rate and the amount of shore erosion and increase the turbidity of sea water of the area. There are major river discharges from the Meghna, Muhuri, Karnaphuli and the Sangu into the Bay of Bengal close to the ship recycling zone and tidal influences on the shoreline. The problem mainly associates with the discharge of ammonia, burned oil spillage, floatable grease balls and metal rust (iron) and various other disposable refuse materials together with high turbidity of sea water. The high PH of seawater and soil observed may be due to the addition of ammonia, oils and lubricants.

Mangrove clearance has been carried out to expand the ship recycling yards that destroyed feeding, breeding and nursery ground for various marine, estuarine and freshwater fishery resources and also affected the distribution of floral and faunal biodiversity in the area. However, ship recycling is not an isolated activity in the Sitakunda coastal area. The other inputs will have their own impact on the local environment and should be distinguished from those for which ship recycling itself is likely

responsible. Untreated liquid waste from a ship breaking yard finds its way directly into the Karnaphuli River and Bay of Bengal, thereby endangering aquatic ecology.

It has been reported that large amount of hazardous materials are likely to accumulate in Bangladesh if the prevailing practices continue over the next 20 years. Incidence of much higher concentration of metal pollutants in sediments of Sitakunda was due to the presence of ship recycling yard. Ship scrapping activities pollute the soil and seawater environment in the coastal area of Fauzdarhat to Kumira of Chittagong, Bangladesh (Islam and Hossain 1986).

Intake of toxic oil and metallic substance by fish causes human health hazards. Disruption of biodiversity in the long run may destroy the suitability of human settlement. During the breaking/cutting period, accidental death sometimes occurs. Due to lack of proper sanitation and potable water, workers suffer from water borne diseases. As the sound pollution is a regular phenomenon during breaking, inhabitants of the adjacent areas live in a painful situation. On the other hand, social crime, abuse of drugs and illegal activities increase with an affluent society created in the ship breaking area. Expansion of the yard shrinks the area of the fishing villages. Ship recycling industry since long is famous for its unacceptable conditions for the workers and environment due to causing irreversible damage and pollution to the nearby local environment. Workers working in most of ship

recycling facilities are unaware of health and safety aspects like use of proper PPE (personal protective equipment), they are exposed to manifold hazardous substances. With no containment equipment, the facilities have nothing to identify or handle hazardous wastes or large spills which are a threat to marine ecology and environment where ships are recycled. The hazardous substances which are discharged during ship recycling can lead to pollution and permanent damage to the surroundings.

International Framework and Policy

There are several international frameworks and organisations like the Basel Convention (BC), the Hong Kong Convention, International Labour Organization (ILO), International Ship Recycling Association (I.S.R.A), and International Organization for Standardization (ISO), EU, etc that monitor safe ship recycling process. The Basel Convention 1989 is the main international legal mechanism to regulate the ship-breaking industry. The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009, covers the design, construction, operation and maintenance of ships, and preparation for ship recycling in order to facilitate safe and environmentally sound recycling, without compromising the safety and operational efficiency of ships. EU Ship Recycling Regulation No 1257/2013 aims both to ensure that the process of ship recycling doesn't pose any risk to the human health

and safety or to the environment. Bangladesh has clearly scope to improve upon this in order to ensure the regulations strictly followed by ship-breakers.

Bangladesh is also a party to Law of The Sea Convention 1982 which emphasizes the preservation of environment by adopting protective measures. Following the spirit of it, Bangladesh enacted the Environment Conservation Act 1995.

It has incorporated all the important directions mentioned in the convention. Under this act, the ship-breaking yards must take environmental clearance certificates by submitting an environment management plan. In Bangladesh most of the ship-breaking yards have neither any containment to prevent pollution of soil, air, marine and freshwater resources, nor the technology needed to ensure the environmentally safe management and disposal of hazardous wastes and materials. Whether the ship has come with harmful materials or not, the yards start dismantling the ship by gaining a so-called “no objection certificate” and “environmental clearance certificate.”

Way Forward and Concluding Remarks

It has been found that several ship breaking and recycling yards have no functional waste management system, which is a clear violation of the clearance certificate. But a ship breaking or recycling yard must keep some equipment functional like the oil-water separator, incinerator and facilities for temporary storage of

hazardous and non-hazardous waste materials. The ship breakers association should come forward to deal the issue. Relevant public and private agencies need to come forward to ensure safe ship recycling. For this at the primary stage it needs to carry out feasibility study, research works, awareness building of the stakeholders and moreover cooperation from ship breakers are highly expected. Ship recycling and breaking plans should be submitted by the ship-owners to the Department of Environment (DoE) under Ministry of Environment, Forest and Climate Change.

Bangladesh should comply with Basel Convention 1989 before importing any ship in the country by pre-cleaning ships in the exporting country. One-hull oil tanker ships should not be permitted to be imported as those are banned. Ships with excessive amount of persistent organic pollutants should not be imported. And shipyards must be regulated and visited regularly by the Department of Environment (DoE). Of course, ultimately all the agencies must be provided with logistics to effectively adhere to environment friendly ship-breaking norms.

India has advanced greatly and that is why they can present their ship breaking in the international seminar/conference on the basis of their research works on risk assessment and mitigation activities, action plan, workshops, documentations, etc. and everybody is convinced that India is moving towards green ship recycling. It is high time for Bangladesh to move forward to improve our negative

image through implementation of measures and projects that would come out from the research works on health, safety and environmental aspect related to ship breaking.

We need to seek cooperation from developed countries who dumped unused vessels, as well as international development partners in Bangladesh. Initiatives and implementations of regulations of the government agencies are crucial as well to protect our ocean and costal community from the adverse impacts of ship recycling. Still, we dream of a comprehensively framed ship-breaking industry. The Government of Bangladesh can adopt ship-breaking under the Recycling Rules 2011 and shape the national committee under it to regulate the import of ships, examine the ships, and to emphasize on proper disposal facilities of hazardous waste. Ministry of Industry along with Ministry of Environment, Forest and Climate Change may venture jointly to provide environmental clearance certificates, no objection certificates etc. Specific requirements should be given by the Ministry of Environment, Forest and Climate Change to provide all certificates to the ship-owners and yards.

IMO is implementing a project (SENSREC Phase II) in Bangladesh to enhance safe and environmentally sound ship recycling. The 19-month project is funded under a \$1.1 million

agreement with the Government of Norway. It focuses on building capacity within Bangladesh to develop a legal, policy and institutional reform roadmap towards accession to Hong Kong Convention and will train a variety of stakeholders. We should ensure that our breaking yards are maintaining at least a minimum standard in respect to health, safety and environmental issues and at the same time, we should move towards green ship recycling in order to upgrade our facilities in compliance with proposed international regulations. Green recycling does not necessarily mean that we have to follow dry docking instead of beaching. Rather, keeping the beaching intact, we can improve the situation by providing some common facilities which we are lacking now, like hazardous waste treatment and reception facility, bilge and ballast water treatment facility, training for the labor, awareness building of the stakeholders etc.

We also need some extensive research work regarding ship breaking industry of Bangladesh and run awareness building programmes so that we can identify and find need-based solution on the basis of the persisting problems of this industry. The educational and research institutes related to maritime affairs may come forward to serve this purpose together with the cooperation of government and development partners.