A Classic Case of "Waste Dumping" or a Latent Opportunity: Alang-Sosiya and the Making of the World's Largest Shipbreaking Yards

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Introduction

16 March 2005 was the date of the hush-hush departure of the ro-ro ship, Kong Frederik IX, from Danish territorial waters on the pretext of carrying trailers.[1] En route, the ship was renamed Frederik so that its owners, who allegedly stated that it would be put in further service as a cargo ship in the Middle East, could evade responsibility. Built in Denmark in 1954 by Helsingor Skibsvaerft & Maskinbyggeri-Helsingor, the 6,592-ton Frederik raised the flag of its new registry, South Korea. On 15 April 2005, Connie Hedegaard, then-Danish Minister for the Environment, faxed a letter to A. Raja, then-Indian Minister of Environment, Forest, and Climate Change (MoEFCC), that stated,

> [t]he specific reason to address you now is a vessel–Kong Frederik IX [using the old name of the ro-ro ship by then renamed Frederik]—that left Denmark […] the ship is now transiting in the Suez, and it is on its way to the Red Sea. […] The ship is now bound for the West-Indian coasts to be dismantled and it could arrive in India within a week. Therefore the information given by owners etc. could be false.[2]

Hedegaard went on to emphasise that Kong Frederik IX was 51-years old and was carrying asbestos, which served as insulation in the machinery.[3]

Citing the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, article 2 paragraph 1, and the Danish national legislation on waste, she reminded A. Raja, 'The ship must be characterised as waste as the owners intend to dispose of it.'[4] Both India and Denmark were signatories to the Basel Convention, an international treaty that had been effective from 5 May 1992, and that had been specifically designed to reduce the trans-boundary movements of hazardous waste from developed to developing countries through prior informed consent. The Danish Minister reasoned that, in accordance with the Basel Convention, the 'transboundary movement of hazardous substances without prior notification should be deemed as illegal traffic of waste.'[5] In her closing statement, she positively asserted that Denmark and India were fighting against the transboundary movement of hazardous waste in distinct ways. Therefore, she persuaded A. Raja to 'co-operate in this case by denying the ship to be dismantled in India–and refer the ship to return to Denmark to be stripped of the hazardous waste [asbestos in this case].'[6]

On 28 April 2005, a few days after receiving the faxed letter, much to the disappointment of Hedegaard, A. Raja responded without mincing words:

> As you are aware, India is a party to the Basel Convention since 1992 and has strengthened the national legislation [on] Hazardous Wastes management notified in 1989 to ensure compliance of our obligations under the Convention. We have determined that the ship cannot be classified as 'Wastes' within the scope of Act 2.1 of the Basel Convention.[7]

He reassured Hedegaard by pointing out that the local state agencies monitoring the shipbreaking activities in Alang had inspected the vessel: '[T]here is no objectionable hazardous material on the ship […] There are only in-built insulation material which are part of the structure of all ships […] I would like to assure you that India has adequate capacity to ensure environmentally sound disposal of the said ship.'[8] Before ending the letter, Raja updated Hedegaard on the status of Frederik, which Jupiter Ship Management, a Mumbai-based ship scrapping company, had acquired by then. It was renamed Riky (misspelled Ricky in the letter) and was beached on 23 April 2005, in Alang.[9]

Despite the cautionary warning by Hedegaard regarding asbestos in the ship's machinery and a request to return the fugitive ship to Denmark, the arrival and beaching of Riky in Alang paved the way for a

larger environmental backlash against India by local environmentalists and international non-governmental organisations such as the Basel Action Network (2005). They argued that, by accepting the ship for demolition, India had set the wrong precedent of non-compliance with the international legal principles that the Basel Convention laid down and violated its own domestic laws on hazardous waste management. But the MoEFCC, the principal government agency that dealt with the oversight of environmental and forestry policies in India, explicitly conveyed two things by accepting the fugitive ship Riky for demolition. Firstly, as an importing country, India had the power to evaluate its environmental "goods" and "bads". Secondly, by refusing to acknowledge Riky as waste and defending shipbreaking activities at Alang in Gujarat as resource recovery activities, even at the cost of being seen as acting arbitrarily, especially to the environmental non-governmental organizations, the MoEFCC followed a path that Indian ministers had already trodden throughout the 1990s at various international negotiation meetings of the Conference of the Parties (COP) to the Basel Convention.

This article explores the birth of shipbreaking yards in different parts of India such as Darukhana, Mumbai in 1912, Sachana, Jamnagar in 1977, and Alang, Gujarat in 1983. It demonstrates how the inception of the shipbreaking yards in India is intricately connected to the changing geographies of waste disposal in the 1970s and the 1980s. What the rest of the world saw as a classic case of waste "dumping", shipbreakers saw as a latent opportunity. As ship dismantling facilities closed in Western countries followed by Southeast Asian countries, other ship demolition markets opened up in South Asia. Within a matter of a few years since its birth, Alang became a favorite destination for end-of-life vessels. The article focuses on how India's domestic policies on importing obsolete vessels for scrapping were in tandem with the shift in global waste flows. By doing so, it scrutinises the convoluted image of Alang as a passive recipient of waste from the Global North. It elaborates on how India was and has been very much a part of this voluntary waste trade despite being a signatory to political regulatory systems governing the hazardous waste trade, for instance, the Basel Convention.

Unpromising alternatives for ship disposal at hand and Alang shipbreaking yards in the making in the 1980s

Seafaring vessels are the biggest of all man-made moving objects. The average commercial lifespan of vessels is 25 to 30 years, after which time maintaining them effectively and operating them profitably

becomes uneconomical for their owners. The operational period can also be shortened by a sudden economic or financial crisis. The reasons for dismantling a ship, therefore, are many and varied. Age is one of the most frequent, and overcapacity in tonnage, changing regulations concerning shipbuilding and operations, insurance constraints are some of the other reasons why ships are sold for scrapping.

Ship owners in the past have resorted to different ways of getting rid of their unseaworthy vessels. For instance, they abandoned them at shores or ports with lax regulations, intentionally sank the vessels to build artificial reefs, in rare cases even attempted to auction vessels online, or converted the vessels to serve purposes not initially intended, like floating hotels, restaurants or storage units for further use at sea. Some of these disposal methods retained the obsolete ships within their national boundaries, while others relocated the burden of handling this mobile "waste" to "somewhere else". In fact, the problem of safely dismantling any gigantic man-made structure is not an easy one to deal with. In the following pages, I will briefly discuss each of these ship disposal methods before elaborating on the shipbreaking method in detail.

Abandonment of ships is and has been in the past one of the most frequently chosen alternatives for disposal when there is no other plausible way in sight to get rid of them. For instance, when the ship owners go bankrupt, or when the vessel breaks down and requires unaffordable repairs to remain operational[10], or due to changing regulations concerning shipbuilding and operations. A daily magazine article reported that since the early 1980s, on the Bay of Nouadhibou, Mauritania, in north-western Africa an estimated of 300 or more unserviceable ships have been abandoned by ship owners making the former trading port infamously known as the world's largest graveyard for ships (Atlas Obscura 2015). In the last three decades, following the nationalisation of the Mauritian fishing industry, both national and Western ship owners deserted their unseaworthy vessels in the shallow waters of the Bay of Nouadhibou harbor instead of properly disposing of their vessels in a scrapyard. The ship owners did so for a small service fee to the local government authorities struggling with limited economic opportunities and corruption (ibid.). By abandoning their vessels, ship owners are able to circumvent legal, financial, and other responsibilities associated with their vessels.

A study titled "Disposal Options for Ships" for the U.S. Navy explored alternative options for disposing of a backlog of federal naval ships over the next twenty years (Hess et al. 2001). Since maintaining 358 of their inactive Navy and U.S. Maritime Administration (MARAD) ships turned

out to be a very costly affair for the federal government. In 1998, the Clinton administration had imposed a moratorium on the export of government ships for overseas scrapping due to stricter environmental and labor concerns (Cohen 2005, 245). One of the most plausible alternatives suggested by the authors of the study was sinking these redundant naval vessels in the U.S. territorial waters. By sinking these ships, they could potentially be used for building artificial reefs (Hess et al. 2001). This practice of sinking vessels to create an artificial reef, a marine habitat, or as a site for recreational divers is known as reefing. However, the hefty costs associated with decontaminating the vessels before sinking them because of the toxic substances like asbestos, polychlorinated biphenyls (PCBs), and tributyltin (TBT) found inside their bodies led to skepticism about the viability of reefing as a go-to option for ship disposal in the U.S.

In August 2003, a geriatric aircraft carrier, Minas Gerais (1944-2004), appeared for sale on eBay via a shipbroker with an unmissable headline, '[B]ritish aircraft carrier for sale on eBay (for real).' The shipbroker in the advertisement reassured his prospective buyers, 'we are a ship-broker, not an arms dealer', before elaborating on why the ship was a must-buy and an ultimate sea going statement (Tweedie 2004). Minas Gerais, a Colossus-class aircraft carrier, previously also known as HMS Vengeance, was built during the Second World War by Swan Hunter shipbuilding company for the United Kingdom's Royal Navy. In 1956, it was purchased by Brazil for nine million dollars. After serving 42 years in the Brazilian Navy, it was the world's oldest operational aircraft carrier at the time of its decommissioning on 16 October 2001.

Ship enthusiasts made several attempts to save the vessel as it was put up on sale. The British naval associations attempted to bring the ship back and preserve it as an attraction in the United Kingdom. Minas Gerais was even offered to the Argentine Navy but was rejected due to its poor maintenance and high repair costs. Eventually, after several failed attempts to auction the vessel off, a Hong Kong Shipping Company made a bid for two million dollars to convert it into a museum ship with shops and a bar. In August 2003, its auction advertisement on eBay was eventually removed, which had reached a bid of nearly four million dollars at the time, as it violated rules against selling military ordnance in terms of service (ibid.). Later, a local auction in Rio de Janeiro also failed to sell the ship. Subsequently, in 2004, the 60-years old Minas Gerais containing over 16 thousand tons of high-quality steel was sold to Indian shipbreakers and towed from Brazil to Alang for scrapping (Trevithick 2019).

Figure 1, Minas Gerais (A-11) Naval ship of Brazil. © Navy of Brazil, Wikimedia Commons, 18 November 2007.

However, some unseaworthy ships are fortunate enough not to share the fate of Minas Gerais, and ship enthusiasts save them from coming under the hammer of the army of workers at the shipbreaking yards in time. For instance, some decommissioned ships are preserved because of their relevance to the national histories of their respective countries. Therefore, they are refitted and converted to have them play roles they were not supposed to when they were first built at the shipyards. They become permanently moored hotels or restaurants or storage units for further use at sea. The ship Queen Elizabeth 2, a decommissioned cruise liner of the British company, Cunard Line, is a case in point. As of 25 February 2021, the promising advertisement on the company's website read,

> [A] one-of-a-kind entertainment, hospitality and tourist destination, and home to the first and only floating hotel in Dubai. Experience true British heritage and history with a visit to one of the world's most celebrated ocean liners, now permanently docked in the new marina at Dubai's Port Rashid in the United Arab Emirates (UAE).

In 2008, after 39 long years of service, Queen Elizabeth 2 took its last journey as a cruise liner from Southampton, England, to Port Rashid, Dubai. Following a long waiting period of ten years, it was glamorously transformed into a floating hotel with 215 rooms, restaurants, bars, and various forms of entertainment opportunities onboard were made available. Historian Michael Stammers warns against the reuse of vessels in this manner. He points out transforming vessels into hotels or restaurants (for leisure purposes) is not the easiest thing to do because aging vessels have worn-out electronic and ventilation systems. Large

amounts of asbestos remaining in the engine room are potentially hazardous, and the local licensing and fire prevention authorities may make expensive demands from the ship owner (Stammers 2004, 71). Therefore, in comparison to these alternate methods of ship disposal, such as abandonment, sinking of vessels to build artificial reefs, reconversion into restaurants or museums, and auctioning vessels online, the scrapping of obsolete vessels remains ship owners' first choice for the disposal of unwanted fleets in the market.

Shipbreaking a term commonly used in South Asian countries is defined as the process of dismantling a vessel's structure for scrapping or disposal whether conducted at a beach, pier, dry dock or dismantling slip (Demaria 2010, 250). It includes a wide range of activities, from removing all types of machinery and equipment to cutting down the sturdy ship's body. As steel, substituted timber, and wrought iron were used extensively as the main construction materials for shipbuilding from 1885 onwards, the market for scrap developed gradually (Stammers 2004, 92). The prevailing consensus among various stakeholders of the shipbreaking industry has been that the scrapping of end-of-life vessels enables the reuse of valuable materials because it reduces the need for the mining of iron ores and precious metals, greenhouse emissions, and pollution. It undoubtedly remains a major supplier of second-hand steel and goods in the emerging economies of South Asia. Recycling of metals started as a wartime initiative to recover materials in the U.S. and Europe (Ram 2018, 32). For instance, one ton of recycled steel saves 2,500 lbs. of ore, 1000 lbs. coal, and 40 lbs. limestone. It demands 26 per cent of the energy required to produce virgin steel from iron ore (ibid.).

The existing bone of contention between environmentalists and shipbreakers over the years has been about the toxic substances found inside the sturdy steel bodies of ships. Vessels built before the 1970s, in particular, were built of substances ranging from asbestos, heavy metals, PCBs, TBT, chlorofluorocarbons (CFCs) and radioactive materials. But owing to their harmful occupational effects on shipyard workers and the adverse impact on the environment, these substances were progressively banned from being used in the shipbuilding industry in the Global North. Some of the materials such as asbestos, heavy metals, PCBs and TBT were identified as human carcinogens. The list of what is hazardous or toxic in a ship continues to change over time, and today's modern ships have an operational time span of 25-30 years. Therefore, the target in terms of what is hazardous, or toxic continues to move, case in point, the ban on asbestos, TBT, and PCBs in the U.S. owing to adverse impacts on the workers' health at the shipbuilding yards.[11]

Moreover, there have been sustained conversations between environmentalists and shipbreakers about how shipbreaking activities are conducted on the open beaches of South Asian countries, namely, India, Bangladesh, and Pakistan; the prevalent working conditions of the migrant workers; and the negative repercussions for the local eco-systems.

The shipbreaking industry was first developed in the U.S., the U.K., and Japan during the Second World War since a huge number of ships had been damaged and there was an urgent demand for steel. In the 1970s to the 1980s, it moved to less-industrialised European countries such as Spain and Italy. Shipbreaking centers also relocated to Southeast Asia: initially to Taiwan and South Korea. In the 1980s, more than 73 per cent of all tonnage had been beached in Taiwan; a decade later, in 1990, only one ship of 2,373 gross tons was scrapped (Lloyd's Register of Shipping 1980, 8). Scholar Tadayoshi Terao has analysed how the flourishing Taiwanese ship recycling market that existed for almost 20 years started collapsing in the 1990s. He suggests a confluence of factors for the market's collapse—increasing competition from China, a strong entrant in the global ship demolition market from 1984; pollution from the metal recovery industry, which became a social and environmental menace; and the final nail in the coffin, the government's import ban on mixed metal scrap, which went into effect in 1993 (Terao 2008).

According to the Lloyds casualty returns data (a marine classification society based in London) of the 1990s, after the collapse of the Taiwanese ship breaking market, India appeared to be the only destination capable of demolishing larger vessels (Lloyd's Register of Shipping 1990, 6). Alang had entered into the global ship demolition market by scrapping five ships in 1983. Julie McElroy-Brown suggests that there may be a correlation between the opening of Alang shipbreaking yards in Gujarat and a sharp increase in the percentage of export of obsolete ships from the U.S. for scrapping in the following eleven years (McElroy-Brown 2006, 5). Within a span of seven years after Alang's inception, the largest ship of the 1990s, the Panamanian flag ore/oil carrier Walcott of 69,788 gross tons, was demolished in Gujarat (Lloyd's Register of Shipping 1990, 6). By 1991, India, Bangladesh, and Pakistan were the new leading shipbreaking countries taking 70 per cent of all tonnage demolished worldwide (ibid.).

By 1999, 2,453 ships had been broken in Alang with a cumulative tonnage of 17,265,250 metric tons (Research Foundation for Science vs. Union of India and Anr on 6 September, 2007, Writ Petition (civil) 657 of 1995, Supreme Court). Scholars have explained this constant shift of

the centers of demolition from developed to developing countries in various studies (Haldar & Dutta 2017, 1; Clapp 1994; Sinha 1998; Demaria 2010; Frey 2015). They argue that the shipbreaking industry moves and relocates to wherever it is easiest to externalise social and environmental costs. The rising demand for steel in developing domestic markets, lax environmental regulations, lack of awareness about the hazards of toxic waste present inside the vessels, and a cheap workforce have complemented and further strengthened this relocation from the Global North to the Global South.

The unmaking of end-of-life vessels in Alang

One might wonder how Alang and the adjoining north-east village of Sosiya commonly referred to as Alang-Sosiya in north-western India ended up being home to the world's largest shipbreaking industry.[12] The answer lies partly in Alang's significant geographical advantages, which include a proximity to main eastbound trade routes, high tidal range, a 15-degree slope that makes it easier for ships to run aground, and a rocky bottom surface. These characteristics have played a significant role in its development as one of the world's largest shipbreaking yards. With the beaching of a Russian dry cargo ship, the M. V. Kota Tenjong, on February 13, 1983 shipbreaking commenced here as a full-time activity. Shipbreaking industry in Alang began 39 years ago and still remains largely labor-intensive and dependent on the entrepreneurial spirit of shipbreakers who bid for end-of-life vessels in the global ship demolition market and workers who break these unwanted vessels and add value to them.

An estimated 45,000 ocean-going ships currently operate on the world's seas, and an average of 700 ships are sent for demolition every year (International Federation for Human Rights 2002). Before the birth of Alang shipbreaking yards, scrapping activities began around the 1910s, near Haldia in Kolkata and Darukhana in Mumbai. Darukhana is located on the eastern waterfront of Mumbai and is famously known for its small-scale shipbreaking activities, repair works, and ironwork industries. The word *Darukhana* literally translates as "gunpowder factory" and the place is named after the flourishing gunpowder factory and warehouse in the area mostly used by the British in the 1790s (Ramann 2014). However, in the 18th century with the creation of the Mazgaon dockyard the fate of the area eventually changed and since then this place has been known for its shipping related activities. The shipbreaking industry, in particular, began in Darukhana in 1912 with a workforce of approximately 6,500 people. A total of 19 plots were established by the Mumbai Port Trust (MPT) for the demolition of small and medium size end-of-life vessels.

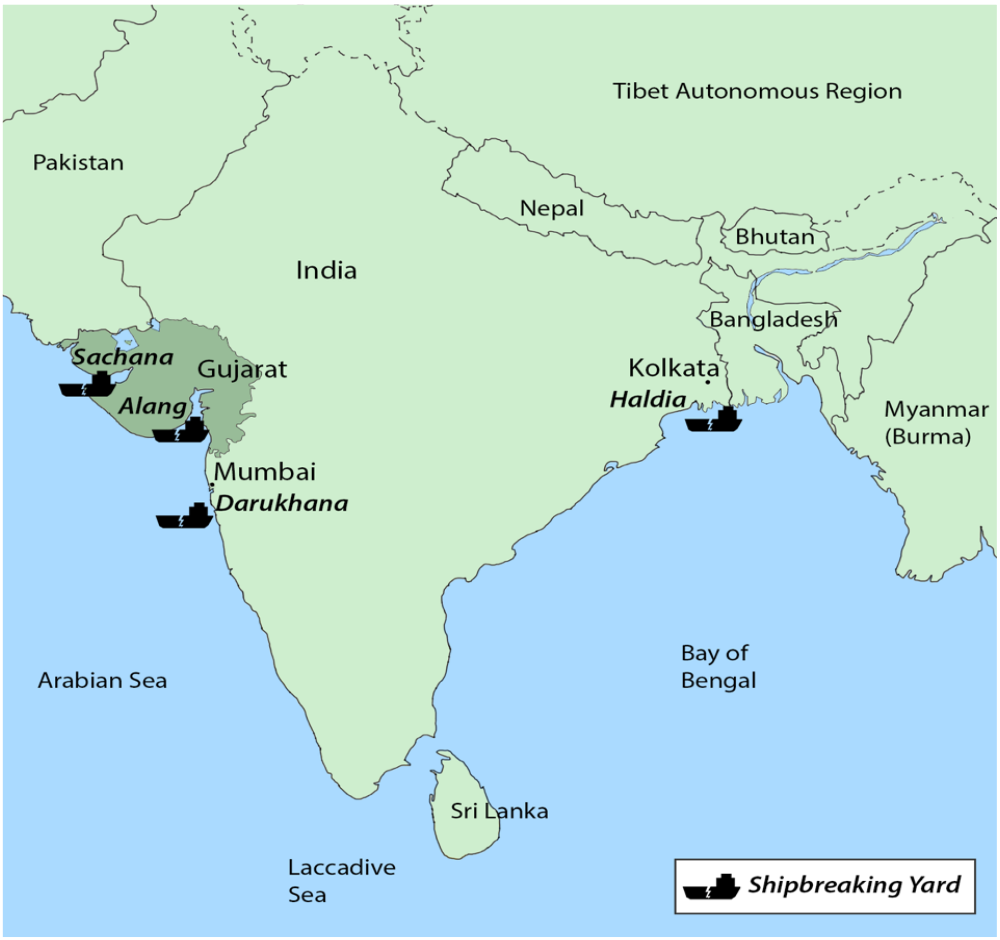

Figure 2, Shipbreaking ports in India. © Christina Lennartz, 2021.

Subsequently, in 1977, shipbreaking operations also began in Sachana shipbreaking yards with the establishment of 18 plots in Jamnagar district in Gujarat. These yards, like the Darukhana yards, also handled the demolition of small and medium-sized obsolete vessels weighing up to 5,000 metric tons. The importance of the shipbreaking industry as a potential source of raw material for re-rolled steel largely used in local construction industries was recognised as early as 1978, as a result of which the import of obsolete ships for scrapping was accelerated by the government (Gujarat Maritime Board 2016). In 1978, the Government of India recognised shipbreaking as a manufacturing industry, and an initial fund of 250,0000 rupees was allocated to the further growth of the industry (International Federation for Human Rights 2002). Approximately 1252 hectares of land related to the shipbreaking industry has been declared as notified area vide government resolution in early 2000s (Gujarat Maritime Board 2016).

Figure 3, Ship repair work in progress at Darukhana shipbreaking area. © Ayushi Dhawan, 15 May 2018.

The birth of Alang shipbreaking yards in 1983 at the Gulf of Khambhat is regarded almost as an accidental discovery by Captain N. Sundaresan, a maritime barrister and Port officer of Bhavnagar (a small city 50 kilometers away from Alang) who had heard about the grounding of a ship very close to Alang in the 1970s. Subsequently, he conducted feasibility studies with government officials because he believed that the grounding location was suitable for shipbreaking and port activities (Alang Info, n.d.). In 1980, when the ship M. V. Lempa beached far from shore at one of the Sachana shipbreaking plots, creating unnecessary trouble for the shipbreaker Mansoor Taherbhai, Alang was proposed as a better alternative for ship demolition activities by Sundaresan (ibid.). With the inception of Alang shipbreaking yards in 1983, one of the oldest shipbreakers, Shivlal Dathawala , currently the owner of the Kamdar and Associates shipbreaking company, plot no. 3 (Shivlal Dathawala, interview with author, 3 June 2018) working at Darukhana at the time, had started hiring workers from there, and he succeeded in his efforts by bringing 13 workers to Alang to scrap ships (ibid.).

While the fledgling shipbreaking industry in Alang had made its place in the global scrap market by the 1990s, the shipbreaking operations in the Sachana shipbreaking yards in Jamnagar, on the other hand, were shut down in 2012 by the Gujarat High Court following a dispute on whether a portion of the land fell under the Marine National Sanctuary, posing a threat to the aquatic flora and fauna present there, or the Gujarat Maritime Board (GMB), the nodal agency governing shipbreaking activities in Gujarat established by the Government of Gujarat in 1982 under the Gujarat Board Act, 1981 (Krishna 2011). The Maritime

Board ensures the presence of necessary infrastructure requirements for ship scrapping companies: acquisition of land; planning and allotment of plots to shipbreakers; and the provision of water, electricity, roads, and communications. Likewise, the Darukhana shipbreaking yards in Mumbai are suffering a somewhat similar fate as the Sachana ship-breaking yards from the beginning of 2014. Alang shipbreaking yards have handled the maximum demolition tonnage imported by India to date, and obsolete ships coming for demolition to Darukhana have greatly reduced in number, which results in only four or five plots remaining active at any given point in time in Mumbai.[13]

Therefore, there have been sustained conversations among the members of MPT and state government officials about relocating the shipbreaking industry from Darukhana to an alternative site in Mumbai or elsewhere in the country. State officials have argued that as the crowded metropolitan city crawls under its own weight, it is imperative to deconcentrate residential areas from the existing industrial activities in Darukhana (Naik 2015; Mumbai Port Trust Land Development Com-mittee 2014). Vidhyadhar V. Rane, the secretary of the MPT Dock and General Employees Union, has been fighting on behalf of the informal migrant workers of Darukhana who are against the relocation of the shipbreaking industry to an alternate site because it will lead to a definite loss of livelihood opportunities for them (Vidhyadhar V. Rane, interview with author, 23 May 2018). Since Alang began shipbreaking, it has beached a total of 7,891 vessels, representing 62.40 million metric tons of light displacement tonnage (LDT), and the industry is continuing to grow (Gujarat Maritime Board n.d.).[14]

All kinds of foreign end-of-life vessels, including large supertankers, ocean liners, crude oil tankers, ro-ro ships, animal carriers and container ships, make their final journeys to these yards. Alang and Darukhana shipbreaking yards also handle domestic ship scrapping tonnage on a regular basis.[15] The shipbreaking industry undoubtedly remains a great source of revenue for the state of Gujarat as it generates large quantities of re-rollable steel and accounts for two–three per cent of the country's total steel output.[16] Historian Deborah Breen (2011) notes similarly in Bangladesh's case, re-rolled steel from scrapped ships provided up to 80 per cent of the steel used in the local construction industry in the last two decades of the twentieth century.

As soon as one sets foot in the city of Bhavnagar in Gujarat, a difference can be felt in the surroundings. Marine fittings, machinery, different kinds of electrical items, spare parts and all kinds of knick-knacks related to seafaring vessels can be seen hanging on both sides of the road as far as the eye can see. This visual sight is followed by a

heightened sense of a strong burning smell from oxy-acetylene torches and the thunk of hammers ringing in one's ears as one enters Alang. From a distance, vessels at various stages of their dismantling processes are visible. These range from ships being stripped of their fittings to a ship whose nose is being cut auspiciously, denoting that the salvaging process has just begun, half-broken ships and the skeletal remains of a vessel lying along the coast awaiting a few final steps before it disappears from sight. Shipbreaking yards are a mirror of the global economy because when the economy is robust ships sail and the shipbreakers receive lesser vessels for demolition and vice-versa.

A large number of spatial and sectoral clusters of small industries have historically existed in the state of Gujarat, for instance, manufacturing of brass-parts and components in Jamnagar, diesel engines and components in Rajkot, the salt industry in Saurashtra, chemical clusters in Vapi and Ankleshwar, plastic spectacle frames and other plastic products in Vadodara, and diamond cutting industries in Surat (Awasthi 2000, 3187-89). Historian Makrand Mehta gives an account of the illustrious history of the port of Khambhat (earlier known as Cambay), an important trading center on the north-western coast of India from the 6th until the 16th century. During the Gujarat Sultanate period (1403-1572), Mehta (2015, 133) suggests Cambay developed into a large town—a city harbouring a variety of artisans, overseas merchants' brokers, *angadias* (courier), and administrative personnel, including customs officials. The contemporary landscape of Alang that came into existence due to the birth of the shipbreaking industry in the early 1980s is uncannily similar to the city of Cambay in the Sultanate period.

Alang and the nearby village of Sosiya undeniably have a microcosm of their own—shipbreaking plots on either side of the road protected by barbed fences, long solid doors, and security guards diligently manning them at all times of the day. The shipbreaking plots gradually grew both in size and number as more uneconomical ships came to the shores for scrapping. The Russian dry cargo ship M. V. Kota Tenjong, which kick-started the shipbreaking industry, was demolished near the Alang lighthouse in 1983. The foundation of plot number one along with other subsequent plots has been subsequently laid near it. Hundreds of ships are broken simultaneously at the Alang and Sosiya plots that are located next to each other on both sides of the road for a stretch of approximately ten kilometers. Next, as one walks past these shipbreaking plots, they see the topmost parts of the colossal steel-hulled ships peeping out of the guarded doors, suggesting that demolition work is in progress inside. These seafaring giants are made immobile by their

captain by steering them toward the shores at high tides for scrapping purposes.

Meanwhile, the captain and the crew onboard the ship return to their home countries in case they have a foreign nationality as soon as their ship is successfully beached, and all formalities are finished on paper. The seemingly impenetrable ship lies behind on the beach in a vulnerable state as the army of workers starts preparing for its demolition. In addition, the beached ship never really leaves the site even after it is fully demolished, as toxicants and other substances released in the process of dismantling are absorbed in the local economy, the surrounding environment, and the bodies of the workers. The third most visible entity in Alang is the migrant workers working arduously in the plots. Around 30,000 workers come from different states of India seeking employment at the shipbreaking yards and undeniably form the backbone of the industry.[17] The voluntary migration of the workers has resulted in changes to the demographics of this coastal village, which was earlier populated primarily by farmers and fishermen (Demaria 2010, 256).

In fact, migrant workers are the backbone of India's urban economy; they can be seen as delivery boys and drivers in small and large construction industries, factories, hotels, and restaurants. The labor force majorly comprises permanent and circular migrant workers within the country. Permanent migrant workers, such as skilled workers, stay at the workplace for more than a year and go to their home villages for a short period of time. Circular migrant workers, such as unskilled workers, stay at a place for a shorter period of time depending on the work they are involved in and return to their villages after earning wages for around three to five months (Rajan & Sumeetha 2019, 4-5). There has been a long history of dependency on migrant workers for the running of different professions in the late 19th and early 20th century India. For instance, as historians Amanda Lanzillo and Arun Kumar (2022) have pointed out, perfume-making firms essentially relied on workers who migrated seasonally across the country, purchasing wood and flowers in the regions where they grew better and selling them to firms that distilled, refined, and distributed the perfumes.

Similarly, a more recent example of the COVID-19 pandemic highlights a strong dependency on migrant workers and the consequences of reverse migration on the shipbreaking industry. During the first wave of the COVID-19 pandemic, at least 75 per cent of the labor force in Alang returned to their hometowns because of a nationwide lockdown declared by Prime Minister Narendra Modi which came into effect from March 22, 2020. Gradually, after a few months, as the plots reopened

for scrapping, the industry was brought to a standstill because of the absence of a majority of the workforce. The shipbreakers were forced to hire unemployed workers from the diamond-cutting industry located in the Saurashtra region of Gujarat, and these workers were obviously untrained to work at the shipbreaking yards, compounding the existing problems. In addition, the shipbreakers asked the central government officials to bring back the workers willing to return to work from their hometowns via especially operated *shramik* (labor) trains (Khanna 2020).[18] The agriculture and informal sectors account for most of the Indian economy. A study conducted in 1999-2000 found that, of the country's labor force of 397 million, only 7 per cent was employed in the formal economy. The informal sector plays a crucial role in the Indian economy, providing income opportunities to over 360 million individuals (Medina 2007, 198).

Sites of ship demolition per se, especially, in South Asian countries, have frequently been described in scholarly studies and in the main-stream media as "toxic hotspots", "pollution haven", "peripheral zones" or "sacrifice zones" (International Federation for Human Rights 2002). Moreover, some scholars, for instance, have refrained from calling the Alang shipbreaking yards "yards". They have argued that it would be 'misleading to describe them as "yards" or any term that might connote an industrial, port-like or constructed facility' and have preferred to refer to these 'highly informal locations' as "facilities" (Pandya et al. 2011, 85). However, these descriptions are disrupted when one looks beyond them and attends to the existing microcosms in and around the shipbreaking yards.

End-of-life vessels that arrive in Alang for scrapping are primarily sold on the basis of weight to shipbreaking companies by two methods, either directly or through cash buyers.[19] Shipbreaker bids for a ship in U.S. dollars for a shipbreaking contract, and if the price of steel falls in between buying and scrapping of the ship shipbreaker loses money. Ships are bought by shipbreakers through a letter of credit in foreign currency from nationalised banks present in the country (Baldev Ship Breakers And Ors. Etc. vs Jt. Chief Controller Of Imports ... on 22 October, 1992, AIR 1993 Guj 61, Gujarat High Court). A letter of credit is a banking instrument that guarantees payment from the buyer to the seller. It typically has a maturity period of six months. The estimated cost of an end-of-life vessel imported by a shipbreaker generally varies from two to seven crore rupees (269,809-944,522 dollars) depending on the vessel's tonnage. Prior to 1989, shipbreakers could not directly bid for end-of-life vessels; only the Metal Scrap Trade Corporation (MSTC), a canalising agency owned by the government, dealt with the

task of importing obsolete foreign vessels into the country and allotted the ships to shipbreakers on a "first come, first serve" basis. However, given a change in the government's import policy in 1989, the MSTC ceased to be a canalising agency for the importation of obsolete vessels from January 1990. With this liberalised import policy in action from the 1990s, Alang shipbreakers with valid licenses could directly purchase end-of-life vessels sold by ship owners in the global demolition market (Baldev Ship Breakers And Ors. Etc. vs Jt. Chief Controller Of Imports ... on 22 October, 1992, AIR 1993 Guj 61, Gujarat High Court).

There is a legislative framework in place to regulate the shipbreaking industry. Government departments such as the Gujarat Maritime Board (GMB), Gujarat Pollution Control Board (GPCB), Explosives Department (PESO) (consulted for oil tankers), Customs Department and Atomic Energy and Research Board (AERB) (consulted if there are radioactive materials onboard) inspect the vessel and issue relevant certificates, and only then can the scrapping process begin to take place (Captain Sudhir Chadha, the then-Port Officer, Gujarat Maritime Board, interview with author, 31 May 2018). Once the vessel arrives at the Alang anchorage, which is located in the middle of the Arabian sea, officials from the Customs department board a tug to inspect it before allowing its entry into the Alang territorial waters. After the vessel is accepted for ship scrapping all the radio and communication equipment that is present inside the ship is destroyed by the workers to prevent its further re-use by unauthorised personnel, due to national security concerns. Radio and communications equipment worth millions of rupees is hammered down into small pieces so that it cannot be reassembled again by any unauthorised personnel and is returned back to the ship owner (Barve 2013).

Once the vessel is beached and pulled closer to the shore, the engine is shut down, anchors are dropped to the seabed and electricity onboard the ship is cut off completely. All operations after the beaching process of the vessel take place directly on the plots located along the coast of Alang. Recent estimates suggest that there are currently around 153 plots in operation which are generally leased to shipbreakers by the GMB for ten years (R. M. Ram Patel, Vice-President Alang Sosiya Ship Recycling and General Workers' Association, interview with author, 1 June 2018). GMB has developed 167 plots, 88 plots are in the Alang area (southern part of the yard) and 79 are in Sosiya area (northern part of the yard).

Before the dismantling process starts, a ship's fuel tanks are drained to prevent any accidental explosions onboard. An army of workers then go onboard the ship to remove the uncontaminated oil products and

consumables. This is followed by the stripping of ships' fittings, which include electronics, furniture, cooking ware, machinery, wiring, plumbing and many other items that are later sold in second-hand markets located close to the yards. Only after this step does the actual salvaging process start, with an auspicious cut being made on the nose of the ship using oxy-acetylene torches. Further openings are made in the hull of the ship. These serve two purposes: they allow more light into the vessel and also act as escape routes for workers in an event of accidental fire. The ship is then cut piece by piece; the workers begin dissecting the front portion and gradually work their way towards the very end. Even the most impregnable and sturdiest ships are torn down in a matter of months by the arduous labour of workers assisted by a variety of tools and machines such as sledgehammers, acetylene torches, winches and cranes (Kot 2004; Rane 2014).[20]

Female workers are also frequently employed in the plots by the shipbreakers both in Gujarat and Mumbai. However, their work is restricted by gender, and it is often relegated to picking and transporting objects from one point to another, which are immediately stripped from the ships after it is beached at the shoreline to make them ready for demolition. In addition, women are also seen running small stalls/ eateries on the roads of Alang and Darukhana shipbreaking yards. The arduous labor of scrapping ships forces the shipbreaking industry to be structured along the gendered lines, and the majority of workers are men.

The time taken for the complete demolition of a ship at the Alang shipbreaking yards depends entirely on the type of vessel in question. For instance, an oil tanker takes comparatively less time to scrap than a passenger liner as the latter has a more complex inbuilt structure than the former. At Alang, an average ship of 40,000-60,000 LDT is broken in approximately three to five months and the metal scrap generated during the ship demolition is sold every month to the re-rolling mills nearby. Workers from different parts of the country migrate to Alang in search of better employment opportunities. Historian Geetanjoy Sahu (2014, 55) states that since a majority of workers at shipbreaking yards are migrants, no database has been created or maintained indicating the total number of workers employed in individual plots. This problem is further complicated by the availability of ships for demolition at a particular yard at a given moment in time; workers tend to switch employers quite often depending on the availability of ships and immediate requirements at the plots.

Depending on their skills and experience, migrant workers are very often categorised into *mukadams* (supervisors guiding the process of ship demolition), gas cutters (people who cut the body of the ship and work on top of the ships and at the plots), winch and crane operators, loaders (people who load plates of steel on the trucks) and yard cleaners (people who ensure that the area stays clean to avoid any accidental mishaps). They are paid daily wages according to these classifications. During the field work in summer 2018, a gas-cutter's wage was around 800 rupees (11 dollars), compared to a yard cleaner who earned around 200 rupees (3 dollars). In comparison to the yard workers, a rickshaw puller, for instance, would have to work more than a week or two to earn the same amount of money. Apart from direct employment, the Alang yards create indirect employment opportunities for tens of thousands of workers employed in downstream industries, such as re-rolling mills, oxygen plants and the real estate market, thereby contributing to the economic growth of the country.

Shipbreakers argue that 97 per cent of a ship's contents are recyclable. Before the dismantling process, materials that are extracted from the carcass of the ship, like ferrous objects, non-ferrous objects, wood, glass, plastic, machinery and other equipment, are neatly separated out and sold in second-hand markets. Larger sheets of steel are sent to re-rolling mills where they are converted into rods and bars and then supplied to local construction industries. Other materials such as loose asbestos, metallic waste, plastic scrap, glass wool, and broken glass, which are often deemed as having no commercial value and are categorised as residual wastes, end up periodically in a state-owned Treatment, Storage, and Disposal facility (TSDF) in Ahmedabad.

In hindsight, for the Alang Auto & Gen. Engg. shipbreaking company that scrapped the Riky in Alang discussed at the beginning of the article, the Danish ship was a sought-after source of ferrous and non-ferrous scrap, precisely 6,592 gross metric tons. For traders at second-hand markets, the 51-year-old ship's body was a rusting carcass that contained great quality reusable fittings. On 27 September 2005 after the scrapping of the Riky, the state agencies in charge of shipbreaking activities in Alang—GMB, GPCB, and Central Pollution Control Board (CPCB)—stated in a joint report to the MoEFCC that the Riky contained 335 kg of hazardous wastes like asbestos and paint chips, which were among the inbuilt insulation materials present in all end-of-life ships. In addition, the ship contained 2,005 kg of non-hazardous wastes (Venkatesan 2005).

The politics of classifying waste in the Conference of the Parties (COP) to the Basel Convention Meetings

The shipbreaking industries were established in Mumbai, Gujarat, and other port cities of India before the Environmental Protection Act was enacted in the country. In 1986, the Environmental Protection Act came into force after a loud public outcry in response to the 1984 Bhopal gas disaster.[21] Before the incident in Bhopal, there were separate environmental legislations for the abatement of pollution, which remained poorly implemented at best. They included the Industries (Development and Regulation) Act, 1951; the Water (Prevention and Control of Pollution) Act, 1974; and the Air (Prevention and Control of Pollution) Act, 1981. With the enactment of the Environmental Protection Act, the MoEFCC was recognized as the nodal agency for the planning, promotion, coordination, and oversight of environmental and forestry policies in India. Under the Environmental Protection Act, the Hazardous Wastes (Management, Handling, and Transboundary Movement) rules were formulated in 1989.

In the same year, on March 22, the Basel Convention was adopted by the Conference of Plenipotentiaries in Basel, Switzerland, in response to a public outcry to the dumping of hazardous waste in various parts of developing countries from the 1970s. The convention aims to protect human health and the environment against the adverse effects of the generation, transboundary movement, and management of hazardous waste through prior informed consent. The United Nations Environment Programme (UNEP) was established as the secretariat of the Basel Convention. By 1992, the Conference of the Parties (COP) meetings to the Basel Convention began to take place at regular intervals so that the implementation of the Basel Convention could be advanced through the decisions taken in these meetings.

On 3-4 December 1992, 35 parties along with members from non-parties, representatives from intergovernmental organizations, and non-governmental organizations gathered at the First Meeting of the Conference of the Parties (COP 1) at Piriapolis, Uruguay. The underlying premise of the meeting was that '[o]ne should not kill one's neighbor, whether by poison or by any other means' (United Nations Environment Programme 1992, 1). Between 1986 and 1988, 3.5 million tons of hazardous waste had been shipped, mainly from industrial countries, to Africa, the Caribbean, Latin America and also regions in Asia and the South Pacific (ibid.). As a result, agitated developing countries (G77) that had witnessed themselves that waste follows the path of least resistance aligned themselves together for negotiation purposes on the environment.

Representatives from developing countries that were a party to the Basel Convention argued that they would not become victims of the toxic trade imperialism and opened the issue of a total ban on the movement of hazardous waste regardless of its purpose from the Global North to the Global South. For instance, Arunoday Bhattacharjya, head of the Indian delegation during COP 1, openly denounced the dumping of hazardous waste in India when he said, '[Y]ou industrial countries have been asking us to do many things for the global good—to stop using your CFCs. [N]ow we are asking you to do something for the global good—keep your own waste.'[22]

India had become a signatory to the Basel Convention on 24 June 1992. The goal of this two-day meeting in Uruguay was the proper implementation of the procedural matters related to the Basel Convention. The then-executive director of UNEP, Dr. M. K. Tolba, asserted that global cooperation among nations, transparency, and assistance to developing countries in terms of technology transfer for the management of hazardous waste would gradually result in attaining the objective of the Basel Convention: the minimisation of the generation of hazardous wastes as well as the environmentally sound management of whatever waste is produced as close to the point of generation as possible. The G77 representatives strongly believed that the industrialised countries would accept the proposal of a total ban on the transboundary movement of hazardous waste by the Second Meeting of the Conference of the Parties (COP 2) (United Nations Environment Programme 1992, 57).

From 21 to 25 March, 1994, the Second Conference of the Parties (COP 2) took place in Geneva, Switzerland. Sixty-four parties, along with members of nonparties attending as observers, representatives from intergovernmental organizations, and industrial and nongovernmental organisations, convened. The issue of the ban of exports of all hazardous wastes from OECD to non-OECD countries not only for final disposal but also for recovery and recycling operations was the main topic of discussion among the working group members. The terms "OECD" and "non-OECD" were used during the Basel negotiation meetings instead of "industrialised" or "developing" countries to emphasize the economic distinction of the poorer recipient countries (Agarwal et al. 2001, 86).

The position of the G77 countries was further consolidated with support from China and many Central and Eastern European countries, such as Hungary, Slovakia, Croatia, Slovenia, Ukraine, Poland, Czech Republic, Estonia, Latvia, and Romania. These countries had been recipients of hazardous waste from Western waste traders, especially after the fall of the Berlin Wall (ibid.). It was decided during the meeting

to immediately prohibit all transboundary movement of hazardous waste from OECD to non-OECD countries for final disposal and to phase out and prohibit all transboundary movement of hazardous waste destined for recycling or recovery operations from 31 December, 1997.

Devanesan Nesiah, then-G77 chair from Sri Lanka, stated, '[w]e will not negotiate on [the] ban itself. That is our final position. We will negotiate only on the starting date' (ibid, 85). Countries like the United States, Australia, Japan, and Canada increasingly scrambled for support against the unfaltering pro-ban group. The then-Australian representative expressed her reservations on the idea of including the export of hazardous waste from the Global North to the Global South for recycling and recovery operations. In defense of the recycling operations carried out in the Global South, she argued that '[e]nvironmentally sound recovery of waste, subject to the Basel Convention, had the potential to reduce the quantity of residuals, which would otherwise go to final disposal, and could yield economic advantages' (United Nations Environment Programme 1994, 10). However, contrary to this argument, many representatives from developing countries stated that 'much of the hazardous waste supposedly exported for recycling was, in fact, intended for final disposal' (ibid.).

Before the Third Conference of the Parties (COP 3) meeting was scheduled in Geneva in September 1995, where the ban amendment would come into effect, the opponents of the ban amendment began increasing pressure on the developing countries in private negotiation meetings and increasingly lobbied for a partial ban so that the waste trade exports for recycling and recovery operations would continue. Officials from the MoEFCC reported that U.S. and Australian representatives had urged the Indian government to drop their support for the ban (Leonard & Rispens 1996, 30). The shared common thread of pro-environmentalism among G77 countries began to weaken as India reacted positively toward this increasing pressure from the developed countries. Other countries like Brazil, the Philippines, and South Korea followed suit.

Consequently, during the COP 3 meeting, MoEFCC's position changed, and it strongly lobbied for a partial ban. Kamal Nath, then-Indian environment minister, argued in favor of recycling: 'We are against environmentally unfriendly recycling. We are not against the movement of waste, provided the recipient has adequate equipment, facility and the proper process to deal with it.' (ibid.) Similarly, a few representatives present in the meeting reasoned against the proposed ban by indicating that 'some countries have the possibility to safely recycle hazardous wastes and that it was therefore necessary to consider

carefully any proposal in relation to the ban on export of wastes for recycling' (United Nations Environment Programme 1995, 11). In this five-day meeting, the advocates of the opponents of the ban had metamorphised hazardous waste into a recyclable commodity which could provide much-needed valuable resources by reducing primary production needs and at the same time equip people with income-generating opportunities.

In June 1991, the newly elected Prime Minister of India Narasimha Rao faced shrinking foreign currency reserves and massive international debts. This forced his regime to accept the liberalization of the economy, with partial opening to multinational corporations (Fisher 2018, 223). With the opening of the economy, there has been greater integration with global markets, which has led to an increase in the extraction industry, whether it is for biomass; the mining industry for coal iron ore bauxite; the intensification of the use of ecological infrastructure such as soil, water, and air; or the depletion of biodiversity (Rao 2020, 10). India was desperate for resources to fuel its fast-growing economy after the economic liberalization in 1991, it had established the recycling of imported waste as a legal business, from banned chemicals to phased out lead batteries to metal scrap, shipped from industrialised countries like Australia, Canada, the U.S., U.K. and Germany.

As the negotiations between different member states were still in progress regarding the ban amendment to the Basel Convention, from 1994 to 1995, Greenpeace International in a report highlighted that the Indian Ministry of Commerce allowed the importation of hazardous waste and scrap into the country for the purposes of recycling and their reuse as raw materials. Under the newly amended import policy of India, recyclers were allowed to independently import waste with valid licenses (Baldev Ship Breakers And Ors. Etc. vs Jt. Chief Controller Of Imports ... on 22 October, 1992, AIR 1993 Guj 61, Gujarat High Court). The import of waste for extracting value from "wasted" resources was closely linked to the idea of development of the emerging economy, as it led to the creation of employment opportunities for informal workers, provided raw materials, and directly fed into the growing appetite for raw materials of small- and large-scale metal industries, in addition to bringing foreign exchange along with it. In 1997, the Indian Non-Ferrous Metals Manufacturers Association emphasising on the importance of imported scrap estimated that almost half of the country's metal industries procured its raw materials from scrap recycled in some 5,000 plants which employed half a million people (Baldev Ship Breakers And Ors. Etc. vs Jt. Chief Controller Of Imports ... on 22 October, 1992, AIR 1993 Guj 61, Gujarat High Court).

By 1999, the issue of monitoring and regulation of illegal traffic of waste to the Global South had shifted and was now fixated on environmentally sound management of waste on the disposal site. From 6 to 10 December, 1999, the Fifth meeting of the Conference of the Parties (COP 5) took place in Geneva. The Basel Convention initiative, which had started really small with just 35 parties, had gradually grown over the years. This meeting in Geneva was special for two reasons, firstly because it was the tenth anniversary of the Basel Convention and secondly because the Protocol on Liability and Compensation of Damage Resulting from Transboundary Movements of Hazardous Wastes and Their Disposal was finally adopted after years of negotiation among different member states. Moreover, Greenpeace was happy to see the lurking issue of shipbreaking that involved trade in hazardous waste in the form of end-of-life vessels addressed in this meeting.

A year before COP 5, in 1998, Claire Tielens Greenpeace's toxic trade campaigner from Netherlands, expanding on the organization's strategy on the topic of shipbreaking, wrote,

> [S]hipbreaking is another example of toxic trade since these ships contain hazardous substances. As such, they are toxic products, that are covered by the Basel Ban. Despite the Ban, they are exported from OECD to non-OECD countries. We need to lobby, especially at EU level, to make sure the Basel Ban does not become a paper tiger, but is implemented, also in the case of toxic products like old ships.[23]

However, the Indian Ministry of Environment felt strongly against the shipbreaking industry being brought under the ambit of the Basel Ban. It feared that 'if the proposal gets through, it could have far-reaching consequences on India's shipbreaking industry.'[24] The MoEFCC hoped to get support from the neighboring shipbreaking nations such as Pakistan and Bangladesh during the negotiation meeting because it believed that the Basel Convention was not the right forum for discussing the topic of shipbreaking; the International Maritime Organization (IMO) should have been considered instead. IMO is a United Nations Agency headquartered in London that regulates global shipping and strives to prevent maritime pollution by ships. The then-Indian Minister of Environment and Forests, T. R. Baalu, argued in defense of recycling operations in developing countries, he said,

> The [b]an amendment does not explicitly take into account the ability of the member states to process wastes in an environmentally sound manner. Till date, there is no consensus on the criteria to be adopted to judge if a particular process or technology for disposal or recycling could be categorized as environmentally sound. (Baalu 1999)

Baalu pointed out that the assumption that all Annex VII states (comprising the European Community [EC], OECD, and Liechtenstein) are capable of environmentally sound management of hazardous waste needs to be reviewed. During the meeting, he rooted for local recycling industries of India and asserted against the idea of the ban on export of waste for recycling purposes. He noted,

> [T]he advantages of recycling vis-à-vis simple disposal both in environmental and economic terms needs no reiteration. As far as recyclable metallic wastes are concerned, it is well recognized that recycling is far more energy efficient as compared to the primary route […] The ban amendment which imposes a blanket ban on the movement of recyclable wastes to non-Annexe-VII countries, may come in the way of technology upgradation of recycling industry in non-Annexe-VII countries. This would not be conducive to environmentally sound management of wastes which is the primary objective of this Convention.[25]

As a result of these discussions, the Technical Working Group (TWG) was asked to analyze the issue of shipbreaking and present a report during COP 6.

Conclusion

The birth of shipbreaking yards in India which has been at the center of this article, offers a useful story for constructing a better understanding of why such "toxic hotspots", "peripheral zones" or "pollution havens" exist to begin with. Explanations have been offered in the common media discourse that "someone has to do it"; such explanations entail that the arrival of obsolete vessels for scrapping in the territorial waters of any South Asian country—be it India, Bangladesh, or Pakistan— from the Global North is a classic case of "waste dumping", "negative externalization", or "toxic waste colonialism". These explanations have often failed to capture the complexities and agency that have existed and still exists at the receiving end. More often than not, the struggle to obtain valuable resources in the emerging economies is explained as a sheer conflict between the growth of the economy and the protection of the environment, and of course, the former wins most of the time. However, this explanation makes the recipient (case in point, shipbreaking yards) a passive receiver of end-of-life vessels and a victim of environmental injustice, which, as we have seen, is not the case.

This article focuses on how India's domestic policies on importing obsolete vessels for scrapping were in tandem with the shift in global waste flows. The inception of Alang shipbreaking yards after leading ship demolition centers in Southeast Asia shut down because of increasing environmental and labor concerns, the politics of classifying waste by

Indian ministers among others as hazardous or non-hazardous at the Conference of Parties negotiation meetings, the backtracking from a pro-environmental stand to a pro-business stand as the ministers defended the businesses of both small- and large-scale recycling industries operating in the country, and the citing of how thousands of job opportunities are created by importing waste scrap all represent the dilemma and agency of the recipients dealing with the hazardous waste trade at the local, national, and international levels. By elaborating on India's domestic policies on importing obsolete vessels and the shift in global waste flows, I have argued that India was and has been very much a part of this voluntary waste trade despite being a signatory to political regulatory systems governing the hazardous waste trade, for instance, the Basel Convention.

Endnotes

[1] "Ro-Ro" is an acronym for "roll-on/roll-off". Ro-Ro ships are vessels that are used to carry wheeled cargo across oceans. For an introduction to different types of ro-ro ships and their stowage capacities, see Kantharia (2019).

[2] Connie Hedegaard to A. Raja, 15 April 2005, "Riky", inventory number ARCH03089, File no. 2849, Greenpeace, International Institute of Social History, Amsterdam, the Netherlands.

[3] Asbestos refers to a group of six naturally occurring fibrous silicate minerals. It has been widely used in ships because of its fire-resistant and insulation properties. Its use was banned in many countries in the Global North in the 1980s. Exposure to asbestos through the inhalation of fibers in the air causes fatal diseases like lung cancer, mesothelioma, and asbestosis.

[4] Connie Hedegaard to A. Raja, 15 April 2005.

[5] Connie Hedegaard to A. Raja, 15 April 2005.

[6] Connie Hedegaard to A. Raja, 15 April 2005.

[7] A. Raja to Connie Hedegaard, 28 April 2005, "Riky", inventory number ARCH03089, File no. 2802, Greenpeace, International Institute of Social History, Amsterdam, the Netherlands.

[8] A. Raja to Connie Hedegaard, 28 April 2005.

[9] The method used for shipbreaking in Alang (and in other South Asian countries) is known as the beaching method. Ships are run aground at high tide, leaving them stranded at low tide. It is an irreversible process, and, after beaching, a ship cannot run on its own power. Local and international environmental organizations have criticized this method of demolishing vessels on open beaches through beaching. They have argued that, during scrapping, toxic contaminants from end-of-life ships leach into the terrestrial and marine ecosystems.

[10] For an introduction on why ship owners often reject decisions regarding ship repair and embrace scrapping of vessels as an option instead, see Dhawan (2021).

[11] Michael Carter to Marcelo Furtado, 8 August 2000, "IMO (MEPC) Correspondence Group on ship recycling", inventory number ARCH03089, File no. 1341 III, Greenpeace, International Institute of Social History, Amsterdam, the Netherlands.

[12] Alang shipbreaking industry is the world's largest, followed by Aliağa shipbreaking industry in Turkey, Chittagong shipbreaking industry in Bangladesh, and Gadani shipbreaking industry in Pakistan.

[13] Tadri in Karnataka, Malpe in Karnataka, Baypore in Kerala, Cochin in Kerala, Azhical in Kerala, Valinokan in Tamil Nadu, and Vizag in Andhra Pradesh are some of the other shipbreaking yards located in India. These shipbreaking yards only handle domestic ship scrapping tonnage.

[14] Light Displacement Tonnage (LDT) is a measure expressed in metric tons and represents at best the scrap value of the ship. It is the actual weight of the ship excluding cargo, fuel, ballast water, stores, passengers and crew.

[15] Some of the most prominent examples of domestic naval ships demolished in Alang and Darukhana shipbreaking yards include INS Viraat in 2020, the longest serving warship in the Indian Navy, and INS Vikrant in 2014, an ex-aircraft carrier of the Indian Navy, which played a key role during the Indo-Pakistan War of 1971.

[16] "Shipbreaking in Asia: Unregulated trade contributes to concentration of dangerous activities in developing countries", 7 May 2019, Toxics/Shipbreaking 1999 IV, inventory number ARCH03089, File no. 1340, Greenpeace, International Institute of Social History, Amsterdam, the Netherlands.

[17]P.S. Nagarsheth, 23 June 1999, "Paper presentation by P.S. Nagarsheth, President-Iron Steel Scrap & Shipbreakers Association of India at the 1st Global Ship Scrapping Summit 1999 at Amsterdam on 23.6.1999: What should be done from a shipbreaker's perspective", inventory number ARCH03089, File no. 1341 II, Greenpeace, International Institute of Social History, Amsterdam, the Netherlands.

[18] On May 1, 2020 the Indian Railways began operating "*Shramik* Special" trains to transport migrant workers, pilgrims, tourists, students, and other people stranded at different places due to a nationwide lockdown, see Khanna (2020).

[19] The ship owner may sell the ship directly to a shipbreaking company by taking charge of its transportation to the final destination (in this case the shipbreaking yards), or preferably sell it through a broker. Alternatively, a ship owner may sell the ship to a "cash buyer" company such as GMS or the Wirana Shipping Company. These companies buy the ships and resell them to shipbreakers.

[20] These documentaries vividly explore shipbreaking along the beaches of Alang, showing how workers break dilapidated vessels from the Global North, live with and dispose of hazardous wastes and transform these geriatric vessels into scrap metal that is further used in downstream industries, in turn benefiting the local economy of India, see Kot (2004); Rane (2014).

[21] The Bhopal gas disaster, known as India's largest chemical industrial disaster, happened on the intervening night of December 2–3, 1984. Around 30 tons of a lethal chemical, methyl isocyanate (MIC), spewed out of a malfunctioning storage tank of the Union Carbide India Ltd. (UCIL) pesticide plant. Union Carbide Corporation was a multinational parent company based in the U.S., and UCIL was its Indian subsidiary. Within the first few weeks of its occurrence, the Bhopal gas leak killed and injured thousands of workers and people living in the vicinity, see Eckerman (2005).

[22] "Raising awareness on Basel Convention", 2000, Toxics/Shipbreaking, inventory number ARCH03089, File no. 1342 II, Greenpeace, International Institute of Social History, Amsterdam, the Netherlands.

[23] Claire Tielens to Clo, 5 October 1998, "Shipbreaking–Strategy", Toxics/Shipbreaking, inventory number ARCH03089, File No. 1339, II, Greenpeace, International Institute of Social History, Amsterdam, the Netherlands.

[24] Satyen Mohapatra, 10 December 1999, "Ship-Breaking in Troubled Waters", Toxics/Shipbreaking, inventory number ARCH03089, File no. 2839, Greenpeace, International Institute of Social History, Amsterdam, the Netherlands.

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