Implementing the International Law on Ship Recycling: Is India on Target or Off Target?

Tony George Puthucherril* & Akash Anand Dubey**

For a long time, despite the notorious operating conditions of its ship-recycling yards affecting both human lives and the environment, India was the epicenter of the shipbreaking industry. Due to judicial activism, the enactment of new rules and regulations, projects for infrastructural improvement and stricter implementation, however, the winds of change have begun blowing over these yards in recent years. The highlight of these changes was India ratifying the IMO-sponsored Hong Kong Ship Recycling Convention (HKC) and enacting the Recycling of Ships Act to domesticate the terms of the HKC. India has slowly but surely moved away from traditional shipbreaking practices and adopted a more humane and environment-friendly shipbreaking culture. While these initiatives should be a cause to attract more obsolete tonnage to India's shores, the reality has been the opposite. India has been overtaken by Bangladesh, where the ship-breaking conditions remain rudimentary and underregulated.

Given the deeply entrenched international dimensions of the shipbreaking industry, this paper examines the international law on the subject—which includes the HKC, the Basel Convention and the European Union Ship Recycling Regulation—to understand why India's experiments to reform ship-recycling practices have yet

* Professor of Law and Co-Director, Centre for Environmental Law and Climate Change, Jindal Global Law School, O.P. Jindal Global University, India. Email: tonygeorge00@gmail.com.

** Maritime Lawyer, High Court of Bombay, India. B.A,. LL.B. (Hons.), Batch of 2021, Jindal Global Law School, O.P. Jindal Global University, India. Email: aadubey97@gmail.com.

to yield their desired results. It analyzes India's recent initiatives against this extant international law and concludes that the incongruence between those legal instruments must be sorted out so they do not veer off course. This remedy will ensure a level playing field where India's initiatives will be fruitful and, more importantly, lead to greater accountability and transparency that will also help create a sustainable ship-recycling culture.

TABLE OF CONTENTS

I. NTRODUCTION 259
II. SECURING SUSTAINABILITY IN INDIA'S RECYCLING YARDS: THE CASE OF *ALANG–SOSIYA* SHIP BREAKING YARD (ASSBY) 264
A. Cracking the Judicial Whip 271
1. Labour Rights as Human Rights 277
2. Protecting the Environment 283
B. Discussion 290
III. THE INTERNATIONAL LAW ON SHIP RECYCLING: FROM BASEL TO HONG KONG 292
A. The Basel Convention 293
B. The Hong Kong Ship Recycling Convention 297
C. The EU Ship-Recycling Regulation 300
D. Discussion 303
IV. INDIA'S LEGAL FRAMEWORK FOR SUSTAINABLE SHIP RECYCLING 305
A. Discussion 315
V. TRUDGING TOWARDS SUSTAINABLE SHIP RECYCLING: IS INDIA ON TARGET OR OFF TARGET? 318
VI. CONCLUSION 331
APPENDIX: TABLE 1 334
APPENDIX: TABLE 2 338

I. INTRODUCTION

As long as a ship's hull is strong and steady and can glide through the oceanic waters, withstand the howling winds and swells, and carry goods and people to ports far and wide, it is an object of awe and pride. With age, the ship experiences fatigue. It loses its vitality and is rendered unfit to endure the formidable oceanic currents and crosscurrents.[1] At that point, the ship is generally dispatched to South Asia's beaches for its last rites.[2] The ship is "beached," and during its "wake," it rests peacefully on its assigned burial site. After that, it is ripped apart, torn down, and the last drop of economic value is squeezed out from the morass of steel. The salvaged parts, machinery, and equipment are auctioned, sold, recycled, or reused.

An activity that is as old as shipbuilding, shipbreaking is the process of dismantling a ship's structure for scrapping or disposal.[3] Generally carried out on a beach, pier, dry dock, or a dismantling slip, it encompasses many steps, including cutting down the structure, removing all gear and equipment, and recycling its infrastructure.[4] Theoretically, the breaking of decrepit ships pro-

1. *See* Jan Hoffman, *Decarbonizing Maritime Transport: Estimating Fleet Renewal Trends Based on Ship Scrapping Patterns*, UNCTAD TRANSP. & TRADE FACILITATION NEWSL., (Feb. 25, 2020), https://unctad.org/news/decarbonizing-maritime-transport-estimating-fleet-renewal-trends-based-ship-scrapping-patterns; Oskar Sundelin, The Scrapping of Vessels–An Examination of the Waste Movement Regime's Applicability to Vessels Destined for Scrapping and Potential Improvements Made in the IMO Draft Convention on Ship Recycling (Spring 2008) (L.L.M. thesis, University of Gothenburg) (on file with the University of Gothenburg), https://core.ac.uk/download/pdf/16323129.pdf (The average age of vessels of all types scrapped worldwide is 30 years, which is largely impacted by the freight market, i.e., in times of higher freight, the vessels are kept in operation for maximum utility).

2. *See* EUR. CMTY. SHIPOWNERS' ASS'N., ECSA VISIT TO INDIAN SHIP RECYCLING FACILITIES 16 (2019), https://www.ecsa.eu/sites/default/files/2019-05/C-10965%20Annex%201%20-%20ecsa%20ship%20recycling%20india_2019-%20final%20report%20may%202019_0.pdf [hereinafter ECSA REPORT] (Bangladesh, India, Pakistan, and even China makes it to the list of the biggest ship recyclers in the world).

3. Amit B. Mahindrakar et. al, *Ship breaking Industry in India: Assessment of Opportunities and Challenges*, J. AIR & WASTE MGMT. ASS'N., 1, 1 (2008).

4. PRODIPTO GHOSH, MINISTRY OF ENV'T & FOREST, REPORT OF THE COMMITTEE OF TECHNICAL EXPERTS ON SHIP BREAKING ACTIVITIES (2006), § 1.4 (unpublished report)(on file with authors) [hereinafter TEC].

motes sustainable development.[5] By balancing the difference between newly built ships and discarded ones, the industry plays a pivotal role in practically maintaining an equilibrium between the various sub-markets within the shipping industry.[6] Moreover, recycling saves natural resources and the energy needed for producing the hull and other components, and it minimizes the carbon and pollution footprint.[7] Nevertheless, how the ship's breaking occurs and the attendant consequences raise serious concerns regarding this industry's capability to facilitate and promote sustainability.[8]

In its modern configuration, shipbreaking as an industry evolved during the war years in the U.S., the UK, and in Japan, when there was a dire need for steel.[9] Recycling the discarded hull made immense economic sense.[10] Due to the increased realization of ship dismantling's environmental and social dangers, the industry soon migrated to less industrialized countries like Spain, Italy, and Turkey.[11] By the 1970s, there was a growing realization that the industry should be pushed to the developing world because these countries provided an ideal environment for its growth in terms of increased demand for scrap steel, lesser demolition costs,

5. Vessel components such as steel, furniture, and equipment have high reuse value. *See* ECSA REPORT, *supra* note 2, at 16. The shipbreaking industry is a major supplier of steel to the local markets, preventing the need for mined iron ore, the extraction of which consumes energy and negatively impacting the environment. *See id*. The complete process of shipbreaking, recycling and selling of valuables is aimed at sustainably decommissioning the vessel providing maximum profits to the stakeholders while causing a lesser impact on the environment, forming a "circular economy"; See *id*. at 9, 15–16.

6. Thanasis Karlis et al., *Ship Demolition Activity. An Evaluation of the Effect of Currency Exchange Rates on Ship Scrap Values*, 66 SPOUDAI J. ECON. & BUS. 53, 53–54 (2016) (discussing the balance between the supply and demand in the shipping industry).

7. GUJARAT MAR. BD., REP. SER. NO. 11.S2.2015.EE.2205, ENVIRONMENTAL IMPACT ASSESSMENT & ENVIRONMENTAL MANAGEMENT PLAN: PROPOSED UPGRADATION OF EXISTING SHIP RECYCLING YARD AT ALANG SOSIYA, GUJARAT, FOR UNDERTAKING SAFE AND ENVIRONMENTALLY SOUND SHIP RECYCLING OPERATIONS 28 (2016) (India) [hereinafter EIA].

8. *See id*. at 36–37.

9. *See* PUTHUCHERRIL, *infra* note 25.

10. Federico Demaria, *Shipbreaking at Alang–Sosiya (India): An Ecological Distribution Conflict*, 70 ECOLOGY ECON. 250, 253 (2010) (discussing the history of the shipbreaking industry).

11. *See id.*

and a minimal regulatory environment.[12] At first, the industry moved to countries like Taiwan and Korea.[13] The industry persisted with its migratory patterns and soon anchored itself in third-world countries like China, India, Bangladesh, Pakistan, the Philippines, and Vietnam.[14] Among these countries, the industry found a highly favorable environment on South Asia's beaches—namely in India, Bangladesh, and Pakistan—that helped it survive and thrive.[15] High tidal ranges, gentle sloping, and rocky bottom beaches assisted the vessels in beaching, thereby saving capital costs in constructing the necessary infrastructure to accommodate the ships and the cutting process.[16] The abundant cheap labour; spiraling demand for steel; lax environment, conservation, and pollution control standards; inept bureaucracies; and a lack of enforceable laws ensured that South Asia would remain the epicenter of this industry.[17]

Among the South Asian countries, India was the undisputed shipbreaking industry leader for a long time. Its shipbreaking industry is concentrated primarily in the *Alang* coastline in Gujarat State, which was notorious for its miserable conditions that resulted in a denial of human rights and widespread environmental contamination.[18] According to official statistics, there were, apart from the contamination of the local marine environment, 470 fatalities in the Indian shipbreaking yards between 1983 and 2013.[19] Due to the Supreme Court of India's persistent interven-

12. *See* PUTHUCHERRIL, *infra* note 25.

13. *See id.*

14. GEETANJOY SAHU, TATA INST. OF SOC. SCI., CHALLENGES FOR THE IMPLEMENTATION OF WORKERS' RIGHTS IN HAZARDOUS INDUSTIRES: A CRITICAL ANALYSIS OF ALANG-SOSIYA SHIP BREAKING YARD, BHAVNAGAR, GUJARAT FROM 1983-2013 4 (2014) (on file with authors) [hereinafter TISS REPORT].

15. ECSA REPORT, *supra* note 2, at 16.

16. TISS REPORT, *supra* note 14, at 5-6; *see generally* EIA, *supra* note 7, at 59–66 (discussing the environmental setting of the areas in and around *Alang* Ship Recycling Yards).

17. TISS REPORT, *supra* note 14, at 4.

18. *See id.*

19. *Id.* at 57 (Although inquiries relating to injuries and death at the ship recycling facilities are not made public in India, this data was obtained through a Right to Information application filed before the Gujarat Steel Industrial Safety & Health Department. This data reveals that between the years 1983 and 2013, approx. 460 prosecutions were initiated against the

tion through a continuing mandamus[20] and its resultant initiatives, however, several changes were affected to the shipbreaking practices in the yards at *Alang*. The situation now is much better, even though it may be far from ideal. New rules and regulations and stricter oversight have facilitated changes and related developments.[21] These efforts to move towards sustainable ship recycling culminated in 2019 when India enacted its Recycling of Ships Act.[22] India also became the fifteenth State to accede to the International Maritime Organization's Hong Kong Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (HKC).[23]

Almost three years have elapsed since the Recycling Act entered India's statute book, and the government of India brought out the Recycling of Ships Rules in 2021.[24] These developments raise a pertinent question of whether these legislative experiments could help secure the sustainable operation of the recycling yards. Has this law facilitated the streamlining of procedures and processes in an industry often described as "one of the most dangerous [jobs] in the world?"[25] Is India on or off track toward sustainable ship recycling? This article analyses these questions in the context of India's shipbreaking industry. It also examines the challenges in operationalizing this framework given that India is the only country in South Asia and among the prominent ship-

employers. However, only a handful of them were successful. No employers were convicted for violating labour laws, which led to the death of workers).

20. *See, e.g.*, Research Foundation for Science, Technology and Natural Resource Policy v. Union of India, Writ Petition (Civil) No. 657 of 1995 (2012), Order of July 6, 2012, Indian Supreme Court (India).

21. *See* P. Manoj, *Alang swept by winds of change*, MINT (Oct. 26, 2016, 1:32 AM), https://www.livemint.com/Opinion/BAKow8rJYIJnq1CFDiVGnN/Alang-swept-by-winds-of-change.html.

22. Recycling of Ships Act, 2019 (India).

23. *India Accession Brings Ship Recycling Convention a Step Closer to Entry Into Force*, INT'L MAR. ORG. [IMO] (Nov. 28, 2019), https://www.imo.org/en/MediaCentre/PressBriefings/Pages/31-India-HKC.aspx#:~:text=the%20IMO%20Assembly.-,India%2C%20one%20of%20the%20world's%20five%20major%20ship%20recycling%20countries,and%20environmentally%2Dsound%20ship%20recycling.

24. Recycling of Ships Rules, 2021(India).

25. TONY GEORGE PUTHUCHERRIL, FROM SHIPBREAKING TO SUSTAINABLE SHIP RECYCLING: EVOLUTION OF A LEGAL REGIME 34 (David Freestone ed., 2010).

recycling giants apart from Turkey to have ratified the Convention and have legislation that gives effect to its terms.[26]

The second section of this paper discusses the evolution and salience of the shipbreaking industry in India. It will explain why the industry exists in specific locations along India's coastline and examines concerns, including the labour and ecology that catalyzed change in the recycling yards. On several occasions, India's Supreme Court, one of the most influential Constitutional Courts,[27] and its National Green Tribunal (NGT)[28] have played a pivotal role in ensuring that the scrapping yards operate responsibly. It is primarily because of these interventions that the ball was set in motion to create a legal framework for sustainable ship recycling. Accordingly, the relevant jurisprudence will be analyzed. The third section will discuss international law on sustainable ship recycling. The focus will be on the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal 1989,[29] the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships,[30] and the European Union Ship Recycling Regulation, 2013.[31] The inter-relationship between these three legal instruments and how they promote sustainable ship recycling will be discussed. The fourth section will examine the salience of India's regulatory framework on the subject. It will analyze the Ship Breaking Code

26. IMO, *supra* note 23.

27. Aparna Chandra et al., *The Supreme Court of India: An Empirical Overview of the Institution*, *in* A QUALIFIED HOPE: THE INDIAN SUPREME COURT AND PROGRESSIVE SOCIAL CHANGE 43–76 (Gerald N. Rosenberg et al. eds., 2019).

28. *See* National Green Tribunal Act, 2010 (India) (The National Green Tribunal set up under the said legislation is a specialized forum designated to provide effective and expeditious disposal of cases related to the environment, conservation of forests and other natural resources, and enforcement any legal right relating to the environment).

29. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, 1673 U.N.T.S. 57 [hereinafter Basel Convention].

30. Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, IMO DOC SR/CONF/45 (May 15, 2009) [hereinafter HKC].

31. Commission Regulation 1257/2013, of 20 November 2013 on Ship Recycling and Amending Regulation 1013/2006 and Directive 2009/16/EC, 2013 O.J. (L 330) 1 [hereinafter EU SRR].

(Revised), 2013 and the Recycling of Ships Act, 2019 and how they implement the HKC. Lastly, in the fifth section, the discussion will examine the challenges that need redressal as India trudges towards sustainable ship recycling by utilizing this regulatory framework. The key argument there is that efforts must be expended at the international level to ensure that the operational focus of the ship-recycling industry as a whole should be on the HKC and that it musters the requisite ratifications to enable it to come into force. Any inconsistencies and delays may render it difficult for countries like India to sustain and capitalize on existing efforts to secure sustainable ship recycling and may result in the squandering of these efforts.

II. SECURING SUSTAINABILITY IN INDIA'S RECYCLING YARDS: THE CASE OF *ALANG–SOSIYA* SHIP BREAKING YARD (ASSBY)

The history of the shipbreaking industry in India dates to the early 1980s. During that time, shipbreaking in India was limited to breaking small barrages and small-sized ships.[32] One of the yards that helped germinate India's shipbreaking industry was the *Darukhana yard* near Mumbai in Maharashtra State, where operations began in 1979.[33] In the meantime, the Union Government adopted several policy decisions to facilitate its growth. Studies by the Metal Scrap Trade Corporation and the Gujarat State Government led this industry's situs to be shifted to *Alang*, in Gujarat.[34] In 1982, the State of Gujarat established the Gujarat Maritime Board,[35] India's first autonomous State maritime board.[36] It is responsible for monitoring all the ports in the State of Gujarat. Subsequently, it was given the responsibility to oversee the development of the ASSBY.[37] In 1982, the State Government released funds for the industry's development after deliberations with ship recyclers and the Gujarat Chamber of Commerce and Industry.[38]

32. TISS REPORT, *supra* note 14, at 5.
33. *Id.*
34. *Id.*
35. The Gujarat Maritime Board Act, 1981 (India).
36. *See generally*, *Overview,* GUJARAT MAR. BD., https://gmbports.org/overview (providing a brief overview of the board's history and its objectives).
37. EIA, *supra* note 7, at 2.
38. TISS REPORT, *supra* note 14, at 6.

Geographical factors facilitated the migration of this industry to *Alang*, which is situated 220 kms. south of Ahmedabad, the largest city and former capital of the Gujarat state. Firstly, the beaches at the ASSBY fall in the high tide zone. The highest tides extend up to ten meters,[39] perhaps the highest in India.[40] These high tides facilitate the beaching process. Secondly, ASSBY is located on the western coast of the Gulf of Cambay (*Khambat*), offering natural and geographical protection to the yards from the high tides during the monsoon season.[41] Thirdly, the coast at *Alang* is titled toward the sea,[42] providing a long dry area that facilitates beaching.[43] Fourthly, the seabed dries up quickly regardless of monsoons; hence it is easier to handle and access materials and equipment.[44] Fifthly, *Alang's* sparsely populated coastal area has fewer merchant ships and fishing boats.[45]

As providence would have it, a cyclone drove the "*MV Kota Tenjong"* onto the beach at *Alang* on February 13, 1983.[46] Soon the local population was rummaging through the ship and salvaging anything of economic value. Since then, the recycling industry has evolved; presently, the ASSBY is the world's largest. This ship-recycling yard presently stretches over ten kilometers and is divided into 167 plots, out of which eighty-eight plots are in *Alang* (the southern part).[47] The remaining seventy-nine plots are in the *Sosiya* area (the northern part).[48] All the plots have a uniform

39. Aditi Mitra et al., *Circulation in the Gulf of Khambhat—A Lagrangian Perspective*, 8 J. MARINE SCI. ENG'G 1, 1-2 (2019) (discussing the tidal ranges at the Gulf of Khambhat).

40. *Id.* at 1.

41. EIA*, supra* note 7, at 61 (discussing the nature of waves around the yards).

42. *Id.* at 60 (discussing sea conditions and the shoreline morphology).

43. Hrudanand Mishra, *Analysis of Alang Ship Breaking Yard, India*, 64 ECON. AFFS. 417, 419 (2019).

44. *Id.*

45. *Id*.

46. EIA, *supra* note 7, at 3.

47. *Id*. at 31; *see* JAPAN INT'L COOP. AGENCY, PREPARATORY SURVEY ON THE SHIP RECYCLING YARD IMPROVEMENT PROJECT IN INDIA: FINAL REPORT (draft) (July, 2017), https://www.jica.go.jp/english/our_work/social_environmental/id/asia/south/india/c8h0vm00009ulddw-att/c8h0vm0000bfqat9.pdf [hereinafter JICA] ("130 ship recycling companies are leasing yards from GMB.").

48. EIA, *supra* note 7, at 31.

length of forty-five meters.[49] The widths of the plots vary from thirty meters to 120 meters.[50]

Each plot or assembly line holds as many ships as can reasonably fit into the plot as they await disposal.[51] Vessels of all kinds sit on these yards. They range from bulk barriers to chemical or oil tankers, cargo vessels, and passenger ships. Generally, these yards can break down regular Cape Size Vessels of 80,000–175,000 Deadweight tonnage (DWT).[52] In 2010, however, the vessel, "Seawise Giant"—a 564,763 DWT Ultra Large Crude and Carrier and the largest vessel ever built-in terms of DWT—was broken down at *Alang*.[53] The yards can recycle over 400 ships annually, leading to the recovery of nearly four million tonnes per year (Mt/yr., where 1 tonne = 1000kg) of materials that are mostly re-rollable steel.[54]

According to the NGO Shipbreaking Platform,[55] approximately 763 sea-going commercial ships and offshore units were sold to shipbreaking scrap yards worldwide in 2021.[56] Although hit by the COVID-19 pandemic and related lockdowns,[57] almost 75% of

49. *Id.*

50. *Id.*

51. Mishra, *supra* note 43, at 419-20 (explaining the distribution of plots at the *Alang* Ship Recycling Yards).

52. EIA, *supra* note 7, at 32 (DWT, i.e. Deadweight Tonnage, is a measure of the vessel's capability to carry cargo, fuel, fresh water, ballast water, passengers, and crew.).

53. *Id.*

54. MINISTRY OF MINES, INDIAN MINERALS YEARBOOK 2018 (PART-II: METALS AND ALLOYS): IRON & STEEL AND SCRAP 17 (57th ed., 2019).

55. The data gathered is based on the annual global reports presented by the NGO Shipbreaking Platform. *See Annual Lists of Scrapped Ships*, NGO Shipbreaking Platform, https://shipbreakingplatform.org/annual-lists/ (last visited Mar. 15, 2023). The credibility and the veracity of the reports are uncertain as the shipbreaking yards do not have a transparent record system. The authors have tried to calculate an approximate average taking into account reports on their website available for the years 2012 to 2021.

56. NGO SHIPBREAKING PLATFORM, 2021 ANNUAL LIST OF SCRAPPED SHIPS WORLDWIDE (EXCEL), https://shipbreakingplatform.org/resources/annual-lists/ (providing an extensive list of vessels sold to ship recycling yards worldwide in the year 2021) [hereinafter NGO SHIPBREAKING PLATFORM 2021]

57. P. Manoj, *Lockdown Halts Ship Recycling at Alang*, HINDU BUS. LINE (Mar. 31, 2020), https://www.thehindubusinessline.com/economy/logistics/lockdown-halts-ship-recycling-at-alang/article31219210.ece; Maulik Pathak, *Alang Goes Against the Tide Amid Covid Crisis*, TIMES OF INDIA (July 8, 2020, 04:40 PM IST), https://timesofindia.indiatimes.com/city/ahmedabad/alang-

these vessels' gross tonnage was dismantled primarily on the beaches of Bangladesh, India and Pakistan.[58] These numbers suggest that South Asia is the epicenter of the shipbreaking industry. In 2021, India dismantled more than 27% of the total world count.[59] It stood second on the list behind its neighbor Bangladesh, which dismantled more than 33% of the reported recycled vessels' total global count.[60] Almost all the scrapping was done at ASSBY.[61] According to the reports, India dismantled at least 200 ships per year on average between 2012–2021.[62] Approximately 495 ships were dismantled in 2012, which was the highest yearly total.[63] Recycling many vessels is not accounted for, and the data related to these yards are not easily accessible. An approximate share of more than 90% of the national count of the number of recycled vessels came to *Alang*.[64] The remainder is minor shipbreaking that happens in yards situated on the shores of Mumbai (Maharashtra), Kolkata (West Bengal), *Azhikkal* (Kerala), and *Sachana* (Gujarat).[65]

Regarding the vessel's "last voyage," plans are initiated when the ship-recyclers buy the ship directly from the owners or

goes-against-the-tide-amid-covid-crisis/articleshow/76822272.cms (explaining that, because of the nationwide lockdowns, the number of workers employed at the yards also reduced from almost 20,000 to 5,000).

58. *See* NGO SHIPBREAKING PLATFORM, 2020 ANNUAL LIST OF SCRAPPED SHIPS WORLDWIDE (EXCEL), https://shipbreakingplatform.org/resources/annual-lists/ (last visited Mar. 15, 2023) [hereinafter 2020 LIST] (providing an extensive list of vessels sold off to ship recycling yards worldwide in the year 2020); *see also* P. Manoj, *Despite the Pandemic, Alang Beached 187 Ships for Recycling*, HINDU BUS. LINE, (Apr. 08, 2021), https://www.thehindubusinessline.com/economy/logistics/despite-the-pandemic-alang-beached-187-ships-for-recycling/article34265432.ece.

59. 2020 LIST, *supra* note 58.

60. *Id.*

61. *Id.*

62. *Id.*

63. NGO SHIPBREAKING PLATFORM, 2012 ANNUAL LIST OF SCRAPPED SHIPS WORLDWIDE (EXCEL), https://shipbreakingplatform.org/resources/annual-lists/ (providing an extensive list of vessels sold off to ship recycling yards worldwide in the year 2012).

64. *Id.* According to the data available, *Alang* witnessed an average of approximately 250 vessels per year between the years 2012 and 2021. *See Annual Lists of Scrapped Ships*, *supra* note 55.

65. *See Annual Lists of Scrapped Ships, supra* note 55.

through a brokerage.[66] After offloading any remaining cargo, the vessel heads to the waters near the shipbreaking yard.[67] Upon completing a desk review and physical inspection, the ship sails to the plot allotted to it in the ASSBY for beaching.[68] These "plots" are small parcels of land that are owned by the Gujarat Maritime Board and auctioned and leased to private recyclers for several years.[69] Beaching involves crashing the ship onto the beach at full speed by using its propulsion power during high tides.[70] The idea is to push the ship inland as much as possible. If the vessel cannot power itself to sail, tugs tow the ship onto the yard.[71] The beaching process stations the ship permanently, rendering the vessel incapacitated and never to float again.[72] During the low tide, the ship settles on the tidal mudflats.[73] Thereafter, the breaking occurs.[74]

Because the ships are rarely pre-cleaned, the possibility of a worker's exposure to hazardous materials during the cutting-down process increases.[75] Before beaching and tearing the ship down, oily wastes, chemicals and other dangerous substances are often dumped into the sea.[76] This dumping can severely contaminate marine waters and related ecosystems.[77] Once the ship's belly is cut open, a series of hazardous substances detrimental to the marine and coastal environment are exposed.[78] These substances also pose significant health hazards to local people and workers who

66. PUTHUCHERRIL, *supra* note 25, at 20, 32.

67. Ship Breaking Code (Revised), 2013, § 3.2 (India), https://shipmin.gov.in/sites/default/files/1157392371CBCODErevised201310022017_0.pdf.

68. *See id.* ch. III.

69. *Id.* § 1.3(s).

70. *Id.* § 3.3; *see also* EIA, *supra* note 7, at 172 (discussing extensive methods of shipbreaking, including the beaching method).

71. Ship Breaking Code (Revised), 2013, § 3.3 (India).

72. *See id.*

73. Demaria, *supra* note 10, at 252.

74. EIA, *supra* note 7, at 172.

75. PUTHUCHERRIL, *supra* note 25, at 33

76. *E.g.*, Express News Service, *"SILK Dumps Waste in Sea*," NEW INDIAN EXPRESS, (June 7, 2014, 10:09 AM), https://www.newindianexpress.com/states/kerala/2014/jun/07/SILK-Dumps-Waste-in-Sea-622210.html (discussing an incident of dumping of toxic waste into the sea from the shipbreaking yard at Azheekkal, Kerala, India).

77. PUTHUCHERRIL, *supra* note 25, at 36-37.

78. TEC, *supra* note 4, § 2.

manually use tools such as hammers, gas torches, crowbars and their raw power to tear down the ship's carcass. Firstly, the ship is taken apart by "*battiwala*," or the workers that cut it with oxygen torches powered by liquid petroleum (LPG) gas cylinders, who are assisted by their helpers.[79] Then the "*malpani*" cuts down the heavy iron plates, and the "*jodiwala*" carry them from the cutting site and loads them into the trucks.[80] Along with these plates, other dismantled components—like those used to steer the ship, equipment, utensils, and furniture—are also removed and carted off to the markets.[81]

Amidst this process, other labourers also play essential roles in taking down the ship, including the "*godadiwalas*" or asbestos workers.[82] At one time, asbestos was a shipping-industry favorite because of its heat resistance and fireproofing properties. It was historically used in ship construction and is found in parts like gaskets, pipes, bulkheads, and walls. Asbestos's true nature was revealed in due course, and, despite legal bans to keep it out of ships, it continues to be used and will not go away soon.[83] Asbestos is harmful to human beings only when it is airborne and inhaled. Undisturbed asbestos-containing insulation does not significantly increase a seamen's exposure to airborne asbestos. However, the situation is drastically different when the ship is torn down because the process releases asbestos fibers from previously safe, confined spaces. A single exposure to even a tiny quan-

79. PUTHUCHERRIL, *supra* note 25, at 35.

80. *See* INT'L METALWORKERS' FED'N, STATUS OF SHIPBREAKING WORKERS IN INDIA–A SURVEY 7 (2006). (discussing the nature of employment and composition of workforce at *Alang*).

81. *See* EIA, *supra* note 7, at 172.

82. PUTHUCHERRIL, *supra* note 25, at 35; *see also* TEC, *supra* note 4, § 2.6 (discussing studies conducted by National Institute of Occupational Health on occupational hazards at *Alang*).

83. Asbestos has been banned from vessels since mid-2002. However, given its efficiency in heat resistance and insulation, it is almost impossible to replace asbestos. Several countries such as China, the USA, or even the EU do not have complete ban over the use of asbestos. Instead, a limited amount is allowed in materials. Since many vessels originate from these countries, it is impossible to have them free of asbestos, even when on paper they are "asbestos free."

tity can lead to mesothelioma.[84] Asbestos-related conditions are terminal and incurable.[85] Studies indicate that shipbreaking workers exposed to asbestos fibers released into the air during the dismantling have developed esophagus, trachea, bronchus, and lung cancers. [86]

The problems posed by the shipbreaking industry do not end with hazardous chemicals and asbestos; instead, they are only one aspect of the issues that destabilize the realization of sustainable ship recycling at *Alang*. Many workers perform their duties with inadequate and poor-quality protective gear and clothing but, for a long time, had no protection at all.[87] Having been pushed to the periphery and treated as a "completely replaceable commodity,"[88] the workers are primarily internal migrants from India's remote and impoverished areas.[89] They are often illiterate, intensely poor, and unaware of their rights.[90] Previously, the workers were primarily unorganized.[91] They had little bargaining power, which rendered them invisible to the law.[92] They were bereft of all legal entitlements, such as the right to form trade unions. They were also not provided with safe working conditions, fixed operating hours, health and safety, labour welfare, insurance, or pensions.[93] In sum, inadequate safety systems, archaic disposal methods, and the lack of preventative measures resulted in the violation of labour rights, workers' deaths, and incapacity. It was es-

84. TEC, *supra* note 4, § 2.6.1(a) (Notes that exposure to all kinds of free asbestos can lead to occurrence of cancer of lung and pleura, i.e., mesothelioma).

85. *Id.*

86. Wei-Te Wu et al., *Cancer Attributable to Asbestos Exposure in Shipbreaking Workers: A Matched-Cohort Study*, 10 PLOS ONE 1, 10 (2015), Doi: 10.1371/journal.pone.0133128.

87. TISS REPORT, *supra* note 14, at 59 (discussing the accounts of the workers who agreed to have received safety equipment at the start of their jobs but are taken back after a few days).

88. *Id.* at 60; *see also* PUTHUCHERRIL, *supra* note 25, at 34.

89. *See* TISS REPORT, *supra* note 14, at 12 (discussing the profile of migrant workers who usually originate from the Indian States of Uttar Pradesh, Odisha, Bihar, Jharkhand and West Bengal, where unemployment levels are comparatively higher than other States).

90. *Id.*

91. *Id.*

92. *Id.* at 71.

93. *See id.* at 12-31, 71.

timated that the average annual incidence of fatal accidents in the shipbreaking industry from 1995 to 2005 was 2 per 1000 workers.[94] Simultaneously, the all-India incidence of fatal accidents during the same period in the mining industry, one of the most accident-prone industries, was 0.34 per 1000 workers.[95]

In such a scenario, the international media turned its attention to the horrid working conditions at *Alang*. A series of media exposé highlighted how unscrupulous entrepreneurs in the First World made a windfall of profits by transferring their negative externalities onto the Third World without any legal or moral compunction, practically thumbing their nose at International Environmental Law principles as the polluter pays.[96] Some domestic NGOs also highlighted the plight of the shipbreakers across India and initiated writ petitions before the Supreme Court[97] and the National Green Tribunal to discipline the shipbreaking industry.[98]

A. *Cracking the Judicial Whip*

As the above developments were unfolding, the Supreme Court of India was incidentally hearing a writ petition relating to the importing of hazardous and toxic wastes from industrialized countries into India under the guise of recycling, thereby reducing India to a dumping ground for toxins.[99] Contrary to the usual adversarial nature of litigation, this continuing mandamus was a "litigation to protect the environment from contamination on ac-

94. TEC, *supra* note 4, § 2.5.1(a).

95. *Id.*

96. *E.g.,* NFB, *Shipbreakers*, YOUTUBE (June 22, 2017), https://youtube/5jdEG_ACXLw; Vice, *The Ship Breakers of Bangladesh: VICE INT'L*, YOUTUBE (Feb. 10, 2015), https://youtube/JU0DxdAhdsA; Murali Krishnan & Shantanu Guha Ray, *India's Wide Use of Asbestos Brings Dire Warnings*, INT'L CONSORTIUM OF INVESTIGATIVE JOURNALISTS (July 21, 2010), https://www.icij.org/investigations/dangers-dust/indias-wide-use-asbestos-brings-dire-warnings/.

97. *E.g.,* Research Foundation for Science, Technology and Natural Resource Policy v. Union of India, MANU/SC/3651/2007 (India).

98. *See generally* JICA, *supra* note 47, at 6 (discussing the role of foreign organizations and NGOs in pushing the Gujarat Maritime Board to enact appropriate regulations on ship recycling).

99. Research Foundation for Science, Technology and Natural Resource Policy v. Union of India, Writ Petition (Civil) No. 657 of 1995 (2012), Order of July 6, 2012, Indian Supreme Court (India).

count of dump[ing of] hazardous wastes . . . , which would ultimately result in the destruction, not only of the environment but . . . in particular, the fragile marine biodiversity."[100] The Supreme Court initially focused on implementing the Basel Convention and addressing the dumping of hazardous wastes and the failure of authorities to appreciate the situation's gravity.[101] The Supreme Court constituted a High Powered Committee (HPC), and fourteen issues were referred to it on which it was to give recommendations.[102] Out of the fourteen, the last dealt with ships' decontamination before their export to India for breaking.[103] The HPC came up with its comprehensive report. It contained eighteen recommendations on shipbreaking.[104] The Supreme Court accepted these recommendations and directed that shipbreaking operations could only be permitted if there was strict adherence to these safeguards, the precautionary principle, and the Central Pollution Control Board Guidelines on Shipbreaking (1997).[105] The activity was then carried out based on this patchy framework until the adoption of the Ship Breaking Code.[106]

Even though France decommissioned the "Clemenceau" aircraft carrier in 1997, it was on the look-out for an appropriate scrap yard. In 2005, France decided to send the Clemenceau to *Alang*. Because this aircraft carrier contained large quantities of asbestos and toxic waste and, given the primitive nature of scrapping at *Alang*, a series of public protests compelled France to recall the ship while en route to India.[107] By then, the Supreme Court of India became aware of the matter,[108]and, given the re-

100. Research Foundation for Science, Technology and Natural Resource Policy v. Union of India, MANU/SC/0528/2012, ¶ 34 (India).

101. *Id.* ¶¶ 1-2.

102. Research Foundation for Science, Technology and Natural Resource Policy v. Union of India, MANU/SC/1349/2003, ¶ 9 (India).

103. *Id.* ¶ 9(14).

104. *Id.* ¶ 54.2.

105. *Id.* ¶ 43.

106. *See generally* Research Foundation for Science, Technology and Natural Resource Policy v. Union of India, MANU/SC/3651/2007, ¶ 6–8 (India) (discussing the HPC guidelines and reiterating the need for a separate comprehensive code).

107. Conseil d'Etat [CE Sect.] [Board of State], Feb. 15, 2006, Rec. Lebon 288801 (Fr.), https://www.legifrance.gouv.fr/ceta/id/CETATEXT000008238043/.

108. Research Foundation for Science, Technology and Natural Resource Policy v. Union of India, Suo Motu Con. Petition 155/2005 (India).

curring nature of these disputes, it created a Committee of Technical Experts (TEC) to investigate the infrastructural capability of the yards at *Alang*.[109] The TEC identified the hazards and the recommended processes for anchoring, beaching, and breaking ships.[110] It also issued recommendations for occupational safety and health, workers' welfare, environmental monitoring, and the appropriate methods for handling hazardous wastes and materials.[111]

The Supreme Court accepted the report and applied its recommendations to ship-breaking activities across coastal India.[112] During the hearing, the petitioner argued before the Supreme Court that there was a need for additional precautions on decontamination.[113] It was suggested that before an end-of-life ship leaves a foreign port, it should mandatorily carry a certificate that the ship was de-contaminated. Given the practical difficulties in implementing this suggestion, the Court rejected it.[114] Even without this certificate, the Supreme Court held that the authorities could verify whether the ship was contaminated at the anchorage stage.[115] If so, it could be sent back.[116] The Court held it was desirable for India's Government to formulate a comprehensive Code that incorporated the TEC recommendations.[117] Until then, the Gujarat Maritime Board, the State Pollution Control Board, the Customs Department, the National Institute of Occupational Health, and the Atomic Energy Regulatory Board were to oversee

109. Research Foundation for Science, Technology and Natural Resource Policy v. Union of India, MANU/SC/3651/2007, ¶ 1 (India) (refers to a court order dated Feb. 17, 2006, constituting a technical committee of experts for the situation in *Alang*, with respect to the Clemenceau fiasco); *see TEC*, *supra* note 3.

110. TEC, *supra* note 4, § 2.

111. *See id.* §§ 4-6.

112. Research Foundation for Science, Technology and Natural Resource Policy v. Union of India, MANU/SC/3651/2007, ¶ 6 (India).

113. *See id.* ¶ 6.

114. *Id.*

115. *Id.*

116. *Id.*

117. *Id.* ¶ 8.

the implementation of the recommendations.[118] The Union finally formulated a Ship Breaking Code after another six years.[119]

To secure the constitutional right to live in a clean and healthy environment, India's apex Court immersed itself in ensuring that ship scrapping occurs more responsibly.[120] The next extremely problematic ship to reach India's waters was the "Blue Lady." Formerly the SS Norway, the Blue Lady was a luxurious passenger liner built in France.[121] Standing sixteen floors tall, it had 1400 rooms as well as restaurants, cinemas, health clubs, and shops.[122] Once the vessel outlived its utility, it was registered as a barge under the Bahamas flag before being sent to *Alang*.[123] Despite concerns expressed by NGOs regarding toxic substances on board, the Supreme Court finally allowed the ship to be beached at *Alang* on humanitarian considerations.[124]

The Supreme Court again tasked the TEC to investigate issues related to the recycling of the Blue Lady.[125] The TEC recommended the recycling so long as the process followed the plan submitted by the recycler and was subject to regular monitoring.[126] Even though there were apprehensions regarding radioactive substances on the ship, they proved to be unfounded.[127] The two critical concerns finally boiled down to the presence of asbes-

118. Research Foundation for Science, Technology and Natural Resource Policy v. Union of India, MANU/SC/3651/2007, ¶ 8 (India).

119. *See* Ship Breaking Code (revised), 2013 (India).

120. *See* Research Foundation for Science, Technology and Natural Resource Policy v. Union of India, MANU/SC/0013/2005, ¶¶ 29–33 (India); *see also infra* text accompanying notes 398–99.

121. Research Foundation for Science, Technology and Natural Resource Policy v. Union of India (*The Blue Lady Case)*, MANU/SC/7894/2007, ¶ 2 (India).

122. *Id.*

123. *Id.*

124. *See id.* ¶¶ 2, 14 (The Court's decision to allow the breaking of "Blue Lady" was also influenced by the fact that beaching is an irreversible process. Since the vessel was already beached, it was considered okay for the vessel to be broken down as long as it complied with the standards).

125. Press Trust of India, *Blue Lady Allowed to Dock at Alang*, HINDUSTAN TIMES, (Aug. 2, 2006, 3:44 PM), https://www.hindustantimes.com/india/blue-lady-allowed-to-dock-at-alang/story-SmWtrxDPW0PIkVMBVXv4uN.html (The Supreme Court along with the TEC consented to the Gujarat Maritime Board, allowing the vessel to be broken down at *Alang*).

126. *The Blue Lady Case*, MANU/SC/7894/2007 at ¶ 7.

127. *Id.,* ¶ 6.

tos and polychlorinated biphenyls (PCBs).[128] Since the PCBs could not be recycled, the TEC report suggested they be dumped into landfills.[129] As far as the asbestos was concerned, the vessel did not contain asbestos as cargo; instead, it was in panels and insulation (85% of the asbestos) and could be reused.[130] Only when the ship was dismantled would the asbestos emerge.[131] Accordingly, the TEC recommended asbestos disposal by the recycler based on the Dismantling Plan.[132] The TEC also directed that the workers and other employees be provided with appropriate respiratory protection and that there be air monitoring, leak tests, negative pressure checks, and provisions for gear, including whole-body coveralls, gloves, safety shoes, helmets, and safety goggles.[133]

The next major ship to "beach" before India's Supreme Court was the "Oriental Nicety," which had been previously known as the "Exxon Valdez" before the infamous oil tanker became a bulk carrier.[134] The owner approached the Supreme Court to seek permission to beach it at *Alang* for dismantling.[135] The Gujarat Maritime Board, the Gujarat Pollution Control Board, the Customs Department, the Explosives Department, and the Atomic Energy Regulatory Board inspected the ship and found no hazardous or toxic substances.[136] There was also no discrepancy in the documents submitted for desk review.[137] Accordingly, the ship was certified fit for breaking. However, The Research Foundation, an environmental NGO, contested that certification.[138] It argued that none of the Basel Convention safeguards had been complied with while permitting the Oriental Nicety to enter India's territorial

128. *Id.* ¶ 12.
129. *Id.*
130. *Id.* ¶¶ 11, 13.
131. *Id.* ¶ 14.
132. Research Foundation for Science, Technology and Natural Resource Policy v. Union of India (*The Blue Lady Case)*, MANU/SC/7894/2007, ¶¶ 13, 14 (India).
133. *Id.* ¶ 13.
134. Research Foundation for Science, Technology and Natural Resource Policy v. Union of India, MANU/SC/0604/2012, ¶ 1 (India).
135. *See id.*
136. *Id.* ¶ 8.
137. *Id.*
138. *Id.* ¶¶ 8-9.

waters.[139] For instance, under the Basel Convention, the export country was required to inform the importing country's government of the ship's movement and that the ship was non-hazardous and non-toxic.[140] In the instant case, such information was neither given nor was the ship certified to be free from hazardous and toxic substances.[141] Nevertheless, the Supreme Court concluded that because the concerned authorities had inspected the ship and granted the permissions, it could be assumed that the carrier was free from hazardous substances apart from those that were part of its superstructure and would be exposed only at actual dismantling.[142] On this basis, the Court permitted its beaching and dismantling.[143] The shipowner was directed to comply with all requirements, and the concerned authorities were to dispose of the toxic waste embedded in the ship at the owner's expense.[144]

As a result of judicial oversight, several measures were effectuated, including overhauling the infrastructural and institutional systems available at the ship-breaking facilities at *Alang*. Simultaneously, the Gujarat Maritime Board was taking measures to upgrade the ASSBY comprehensively.[145] Several laws were made applicable to the operations at *Alang*. In 2015, a major project funded by the Japan International Cooperation Agency (JICA) was initiated to expand the existing yard, improve waste collection and disposal, and create more safety protocols and amenities for workers.[146] As part of the project, the Gujarat Maritime Board

139. *Id.* ¶ 9.

140. Basel Convention, *supra* note 29, art. 6.

141. Research Foundation for Science, Technology and Natural Resource Policy v. Union of India, MANU/SC/0604/2012, ¶ 9 (India).

142. *Id.* ¶ 12.

143. *Id,* ¶¶ 12-13.

144. *Id,* ¶ 13.

145. *See* EIA, *supra* note 7.

146. *See* JICA, *supra* note 47 (The project had five components. Component 1 sought to upgrade 167 existing ship recycling plots (70 in Phase-I and 97 in Phase II). The second component was directed at providing a hazardous-material-removal pre-treatment facility, which involved the construction of two dry dock facilities for pre-cleaning ships. Component 3 was directed to create a waste oil treatment system and a new incinerator at the Treatment Stabilization and Disposal Facility (TSDF) site. Component 4 is related to the improvement of labour welfare (providing housing and hospital facilities, community centre and community school). The final component sought to create additional plots).

conducted an Environment Impact Assessment of the yard, which brought out several factual realities.[147] Then, in 2017, the JICA also conducted a survey.[148] Since the ASSBY is virtually out of bounds for laypersons, this paper relies on these reports and supplements them with several others, including the one prepared by the Tata Institute of Social Sciences (TISS), to analyse how environmental protection and workers' rights are secured at *Alang*.[149] In addition, this paper also relies on newspaper articles and judicial decisions.

1. Labour Rights as Human Rights

As an industry with human labour as its foundation, ship-recycling facilities must provide mandatory labour protection. As pointed out earlier, the workers are usually unskilled migrant labourers from States like Orissa, Bihar, Uttar Pradesh, and Jharkhand and were for a long time deprived of job security, hygienic work conditions, sanitation, and medical facilities. Several legislations and rules are now being implemented to better their working conditions. Consequently, with time, greater awareness, and stricter implementation, things are moving in the right direction. This section will discuss certain factual realities and concerns relating to the health and safety of the workers and their families at Alang. At this juncture, it must be pointed out that the labour policies in India underwent drastic changes in 2019 and 2020. The Government of India introduced the Code on Wages, 2019; the Industrial Relations Code, 2020; the Code on Social Security, 2020; and the Occupational Safety, Health and Working Conditions Code, 2020. These four codes effectively replaced twenty-nine archaic legislations that regulate labour.[150] However, these Codes have yet to come into effect as of December 2022.

Several workers have died agonizing deaths in these ship recycling yards, a testimony to the poor implementation of the law.[151] The authorities often hide the number of deaths and accidents at these yards, underscoring the need for transparency. Be-

147. EIA, *supra* note 7.
148. JICA, *supra* note 47.
149. TISS REPORT, *supra* note 14.
150. *See infra* Table 1.
151. TISS REPORT, *supra* note 14, at 57.

tween 2011 and 2015, as per the Gujarat Maritime Board's Environmental Impact Assessment for Proposed Upgradation of ASSBY, 26% of the fatal accidents were caused by fire and explosion, 19% due to falling from heights, and 17% of fatal accidents were from workers being struck by falling objects.[152] According to a Right to Information petition filed against the Gujarat State Industrial Safety & Health Department, the total number of deaths reported between 1983 and 2013 was 470.[153] The Committee of Technical Experts appointed by the Supreme Court in the Blue Lady case[154] revealed that the average annual incidents of fatal accidents in 2006-07 were 2 per 1000 workers, which was much more than the mining industry.[155] The workers also suffer from serious health issues. The National Institute of Occupational Health (NIOH) carried out x-rays on ninety-four workers, and fifteen of them displayed early conditions of asbestos poisoning due to prolonged exposure to the deadly substances, which demonstrates the negligence at *Alang*.[156] The families of workers who succumb to accidents get very little compensation or none at all.[157]

The workers at *Alang* did not have access to standard contracts that regulate their service; instead, their employment was based on their employers' whims.[158] Wages were decided at the beginning of the month and were often very different at the time of payments per the employer's discretion.[159] The fear of losing jobs kept the employees from questioning the legality of their

152. EIA, *supra* note 7, at 154-55.

153. TISS REPORT, *supra* note 14, at 57.

154. *The Blue Lady Case*, MANU/SC/7894/2007; *see* TEC, *supra* note 4.

155. TEC, *supra* note 4, § 2.5.1(a).

156. *Id.* § 2.6.1.

157. *See* JICA, *supra* note 47, at 249 (According to the JICA Social Survey, a few workers informed the surveyors that the compensation for injury is usually meagre or delayed and sometimes does not get paid at all. These compensations are within the scope of the Employee State Insurance (ESIC) coverage, under which medical benefits can be received by paying the insurance premiums. In case the workers are uninsured or if the treatment was performed in a non-ESIC registered hospitals, medical expenses are usually paid by workers first and then refunded by the yard owner).

158. Hrudanand Mishra, *Role of Minimum Wages Act in World's Largest Ship Breaking Industry*, 6 EPRA INT'L J. ECON. & BUS. REV. 18, 20 (2019).

159. *Id.*

wage rates.[160] Moreover, wages at ASSBY are much less than the minimum wage mandated by the law on minimum wages, and the labourers were paid monthly based on attendance.[161] With unionization at *Alang*, however, this situation has changed for the better.

Securing fair wages, improving work and living conditions, establishing reasonable working hours, promoting individual and collective welfare, and ensuring industrial democracy are some of the many objectives of trade unions.[162] The right to form a trade union is fundamental under article 19(1)(c) of the Constitution.[163] Trade union members have the right to meet, have mobility rights, discuss grievances, propagate their views, and hold property.[164] *Alang's* workers are represented by Alang Sosiya Ship Recycling & General Workers Association (ASSRGWA). While the ASSRGWA was established on November 11, 2005, it only secured official recognition after 2006.[165] The ASSRGWA has engaged in collective bargaining since then. In one such instance, it pushed the Ministry of Labour and Employment of the Government of Gujarat to include the shipbreaking industry in the Schedule to the Minimum Wages Act, which rendered the workers at ASSBY eligible to enjoy the benefits under this law.[166]

Reports and surveys vary regarding the wage structure at ASSBY. The JICA survey of 2017 reports that skilled workers such as *mukadam* (Plot Supervisor/Team Leaders) and winch op-

160. *Id.*

161. *Id.*

162. *See generally* Binoy Joseph et al., *Labour Welfare in India*, 24 J. WORKPLACE BEHAV. HEALTH 221 (2009).

163. India Const. art. 19(1)(c); *see also infra* Table 1 (Industrial Relations Code, 2020 reforms and amalgamates the Trade Union Act, 1926, the Industrial Disputes Act, 1947, and the Industrial Employment (Standing Orders) Act, 1946 into a single Code to streamline the relations between employers and employees).

164. *See* The Trade Unions Act, 1926, No. 16 (India).

165. Geetanjoy Sahu, *Workers of Alang-Sosiya: A Survey of Working Conditions in a Ship-Breaking Yard, 1983-2013*, 49 ECON. & POL. WKLY. 52, 57-58 (2014); *see also History: The Untold Story of ASSRGWA*, ALANG SOSIYA SHIP RECYCLING & GEN. WORKERS ASS'N [ASSRGWA], https://www.assrgwa.in/history.html (last visited Dec. 12, 2022).

166. *See* ASSRGWA, *supra* note 165.

erators earn around INR 15,000 (approx. USD 221) per month.[167] Safety Officers with educational backgrounds earn almost INR 17,000 (approx. USD 250.47) to INR 20,000 (approx. USD 294.67) per month.[168] Unskilled workers, such as *battiwalas* (Gas Cutters), earned around INR 10,000 (approx. USD 147.33) per month.[169] In contrast, the wages of other unskilled workers, such as *malpani* (Non-ferrous metal segregation) and *jodiwalas* (Steel Plate handlers), are contingent on their years of experience. They can range from INR 8,000 (approx. USD 117.86) to INR 10,000 (approx. USD 147.33).[170] These workers toil continuously for days, yet they are denied minimum wages, bonuses, overtime compensation, rest days, wage slips, and gratuities.[171]

As mentioned, the majority of the workers are migrant labourers, and some have families. Out of 85% of the married workers, only 23% live with families.[172] The families are also involved in the industry with women employed as unskilled workers or as house-help in nearby areas.[173] Due to the adverse publicity, several ship-recycling companies now ensure housing in the labour colonies and provide certain social benefits. However, most migrant workers in *Alang* live in huts, shacks, self-made wooden houses, and rented shanty dwellings[174] without proper access to electricity, ventilation, or sanitation.[175] Given that they live very close to the toxic environment in the yard, their physical and mental development have been hampered, particularly that of their children. Furthermore, the cultural differences between migrant workers who arrive from different regions and social backgrounds make life inconvenient in the labour colonies.[176] In 2014, the GMB set up only six toilets and twelve stand post bathrooms at *Alang*,

167. JICA, *supra* note 47, at 245; Press Release, Reserve Bank of India, RBI Reference Rate for US $ (Dec. 21, 2016) (For reference, the corresponding rate for the U.S. Dollar against the Indian Rupee was USD 1 = INR 67.8724 dated Dec. 21, 2016).

168. *See* JICA*, supra* note 42, at 245.

169. *Id.*

170. *Id.*

171. *See supra* text accompanying notes 157–62.

172. INT'L METALWORKERS' FED'N, *supra* note 80, at 11.

173. *Id.*

174. JICA*, supra* note 47, at 249.

175. INT'L METALWORKERS' FED'N, *supra* note 80, at 4.

176. JICA*, supra* note 47, at 295.

and those facilities needed to service 35,000 workers.[177] The situation has not improved. Drinking water is also not easily accessible. The authorities at *Alang* provide a 5000-liter tank per day, which is not sufficient for the large number of workers employed and leaves the workers with no choice but to buy water from the nearby village.[178]

Even today, eradicating child labour in India is a critical human rights issue.[179] India's Constitution prohibits the employment of children below the age of 14 in factories, mines, and other hazardous industries. The Child Labour (Prohibition and Regulation) Act, the Children's (Pledging of Labour) Act, and the Factories Act, prohibit and regulate the employment of children.[180] The 2011 Census points out that of 260 million children aged 5 to 14 years, approximately 10 million were employed. Of that number, 26% of the children were cultivators, 33% were agricultural labourers, and 36% were "other workers."[181]

At ASSBY, the labour now falls between 20 and 45 years of age, even though the industry was once notorious for employing children.[182] No reports suggest that these yards employ young children. However, the point of debate now is the lack of accessibility to education for the workers' children. There are three schools in *Manar* village and two in *Sosiya.*[183] They provide pri-

177. Sahu, *supra* note 165, at 53.

178. *Id.*; *see also* INT'L METALWORKERS' FED'N, *supra* note 80, at 4.

179. *See* Jose Vattakuzhy, *India's 75th year of independence, not free of child labours!*, TIMES OF INDIA (June 12, 2022, 3:38 PM), https://timesofindia.indiatimes.com/readersblog/unorganisedworkers/indias-75th-year-of-independence-not-free-of-child-labours-43340/; *see also* A. M. Jigeesh, *Centre has no new data on child labour*, THE HINDU (July 12, 2022, 09:47 AM), https://www.thehindu.com/news/national/centre-has-no-data-on-child-labour-since-nclp-was-merged-with-samagra-shiksha-abhiyan/article65631877.ece.

180. The Child Labour (Prohibition and Regulation) Act 1968, No. 61, § 3 (India); Children's (Pledging of Labour) Act, 1933, No. 2, § 3 (India); The Factories Act,1948, No. 63, §§ 67-77 (India).

181. INT'L LAB. ORG. [ILO], FACT SHEET: CHILD LABOUR IN INDIA 2 (2017), https://www.ilo.org/newdelhi/whatwedo/publications/WCMS_557089/lang—en/index.htm (International Labour Organization archive database of publications in PDF format; free access; based on the Census conducted by India in 2011).

182. TISS REPORT, *supra* note 14, at 27; PUTHUCHERRIL, *supra* note 25, at 20, 35.

183. JICA*, supra* note 47, at 293.

mary and middle-school education.[184] Article 21-A of the Indian Constitution promises free and compulsory education for children aged 6 to 14 as a fundamental right.[185] Governmental plans like the *Samagra Shiksha Abhiyan*, the National Commission for the Protection of Child Rights Guidelines, and the Integrated Child Development Service as well as the Right of Children to Free and Compulsory Education Act of 2009 have made education accessible to migrant children.[186] Despite these initiatives, the right to education is practically denied at *Alang*. Nearly 9% of the children are illiterate;[187] while around 30% of the workers lacked basic literacy,[188] only 3% had higher secondary qualifications or were graduates.[189] The workers cannot educate their children because they lack sufficient finances. Because there is a limited scope of quality education at *Alang*,[190] migrant workers are often forced to send their children to schools at far-off places, which forces them to spend more.[191] Children of migrant workers often find themselves unable to keep pace with a different regional language and an alien curriculum.[192] The migrant children face apathy and

184. *Id*.

185. India Const. art. 21-A.

186. *See* Ministry of Women and Child Development, Annual Report, 2021-2022 25 (2022) (India), https://wcd.nic.in/annual-report (India's Ministry of Women and Child Development archived database of the Annual Reports in PDF format; free access); *see also* UNITED NATIONS CHILDREN'S FUND REGIONAL OFFICE FOR SOUTH ASIA, A MAPPING OF EARLY CHILDHOOD DEVELOPMENT STANDARDS AND GOOD PRACTICES: LESSONS FOR SOUTH ASIA 40 (2019), https://www.unicef.org/rosa/reports/mapping-early-childhood-development-standards-and-good-practices (UNICEF South Asia archived database of the Reports in PDF format; free access); *see also* Sarah Iype & Sanjana Rajmohan, *Ensuring education for migrant children*, THE NEW INDIAN EXPRESS, (July 22, 2022, 7:20 AM), https://www.newindianexpress.com/opinions/2020/jul/22/ensuring-education-for-migrant-children-2173081.html.

187. INT'L METALWORKERS' FED'N, *supra* note 80, at 20.

188. JICA, *supra* note 47, at 243.

189. INT'L METALWORKERS' FED'N, *supra* note 80, at 19.

190. *See supra* text accompanying notes 183–84.

191. *See* Navya PK, *For almost 15 million migrant children, education remains a luxury*, CITIZEN MATTERS, (Jan. 17, 2019), https://citizenmatters.in/school-education-children-migrant-labour-rte-9811.

192. *See* Umi Daniel et al., *A Healthy and Safe Environment for Young Migrants at Urban Indian Worksites*, *in* CHILDREN OF SEASONAL MIGRANT WORKERS 27 Teresa Morena & Margaret Mellor eds., 2013), https://bernardvanleer.org/publications-reports/children-of-seasonal-migrant-workers/ (the study conducted in 2013 assesses the situation of seasonal mi-

mistreatment from school teachers because of their "alien-ness" and stereotypes about them and their places of origin.[193]

Each plot has its own Safety Officer assisted by one or more safety supervisors. In addition, GMB has a Safety Department at *Alang* manned by several Safety Officers who supervise the plots' Safety Officers.[194] Presently, all workers have to undergo a three-day pre-employment safety training course. There is a Red Cross Mission Hospital that provides primary medical treatment. However, the facilities are not adequate for severe injuries. Ambulances are available around the clock at ASSBY for evacuation. The employer bears treatment costs.[195]

2. Protecting the Environment

The Shipbreaking process produces several hazardous and non-hazardous substances; not all are recyclable. These substances include scrap wood, plastic, paper, rubber, glass wool, sponge, PVC pipes, oil, heavy metals, paints, cement, asbestos, and radioactive waste.[196] Technically, there are three disposal methods: first, decontaminating the vessel before exporting it to the shipyard; second, having an on-site environmentally safe management system as the HKC recommends; and third, dumping pollutants into the environment, the most practiced and disputed method.[197] For a long time, these substances were discharged into the soil and the sea, affecting aquatic life and diversity. Fishing communities and villagers of the nearby region have directly or indirectly witnessed the ecological changes due to the callous dumping by the yards.[198] With the implementation of new measures, including the relevant laws, there has been a drastic and perceptible change.[199]

grant workers' children in Indian cities and suggested that only 17% of the migrant children in the country were actually in school, only 5% of them had the privilege of preschool education, and that these children are often alienated from government schemes).

193. PK, *supra* note 191.

194. Ship Breaking Code (Revised), 2013 (India), §§ 6.1, 6.3, 7.14.11 (Safety Officers and Supervisors are appointed to ensure safety in hazardous processes per the provisions of the Factories Act).

195. JICA, *supra* note 47, at 6, 243, 248.

196. Demaria, *supra* note 10, at 253.

197. *Id.* at 253-54.

198. *Id.* at 256.

199. *See* EIA, *supra* note 7, at 104-05 tbl. 3.37, 153.

Among the various environmental legislations that India has enacted over the years, the Environment (Protection) Act, 1986 is the most pivotal.[200] Under this law, the Central Government can notify and enact rules and set emissions and discharge standards.[201] So pervasive are the rule-making powers available to the Central Government under this statute that it can enact rules on any and every conceivable aspect relating to the "environment."[202] Consequently, the EPA is referred to as an "umbrella legislation." Several such enacted rules and the EPA itself apply to and protect the environment at ASSBY.[203]

Regarding the collection and disposal of hazardous substances, which is the primary bone of contention at *Alang*, they are carried out per the standard operating procedures prescribed in the Hazardous Waste Management Rules, 2016.[204] Accordingly, almost all the yards are equipped with temporary storages to segregate and store hazardous and non-hazardous wastes.[205] The stores are segregated into different types like asbestos, paint chips, batteries, and glass wool and then packed in leak-proof

200. Environment (Protection) Act, 1986 (India) (the United Nations Conference on Human Environment held in Stockholm in 1972 led to the 42nd Amendment to the Indian Constitution, introducing responsibilities on part of both the State and the citizens to protect and improve the environment. As a result, the Wildlife Protection, 1972 was enacted. In 1974, the Water (Prevention and Control of Pollution), was passed, followed by the Air (Prevention and Control of Pollution) Act in 1981. In 1986, as a consequence of the Bhopal Gas Leak Tragedy of 1984, the government introduced the Environment (Protection) Act. The Act was introduced to prevent such disasters from happening again, to prevent and reduce environmental pollution, and to provide authorities with adequate power to take strict action against perpetrators).

201. *Id.* §§ 3(2)(iv), 25 (lists the standards for emission or discharge of environmental pollutants from the industries processes); sched. II (lists the general standards for discharge of effluents and their maximum limits of concentration allowed); and sched.VI (lays down the general standards for discharge of Environmental Pollutants).

202. *See id.* § 3(1)-(2).

203. *See infra* Table 1.

204. Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 (India).

205. *See id.* at r. 8, 16(2).

packaging.[206] Although done with due care, there are chances of mishandling, resulting in leakages.[207]

After segregation, the hazardous wastes are collected by authorized agents in designated vehicles and disposed of at the Industrial Waste Disposal Facility (Treatment, Storage, and Disposal Facilities or TSDF).[208] The TSDF has an incinerator with a capacity to process five tonnes a day, a landfill with a capacity of 70,000 m^3 for hazardous wastes, and a landfill for 30,000 m^3 for municipal solid waste. There is also an effluent treatment plant that can process 30 m^3 of effluents per day.[209] Both landfills have impervious linings, and there are arrangements to collect leachate.[210] The TSDF has a fleet of dedicated vehicles for waste transportation from the plots to the TSDF.[211]

Presently, asbestos removal is carried out by a team of specially trained workers wearing full-body protective clothing and face masks.[212] The removal is done under supervision. Before removal, the asbestos is wetted, and only non-abrasive tools are used. Once removed, the asbestos is packed into leak-proof labelled containers and stored temporarily before being dispatched to the TSDF with proper documentation for disposal.[213] At the TSDF, the asbestos waste is dumped into a special masonry pit in the hazardous waste landfill. Each layer of asbestos waste (stored in leak-proof bags) inside this pit is cemented over to ensure complete immobilization.[214]

206. JICA, *supra* note 47, at 32; *see also* EIA, *supra* note 7, at ch. 4 (more detailed discussion on the proper storage and handling of those, and other, types of materials).

207. JICA, *supra* note 47, at 211-12 (despite asbestos wastes being contained in leak-proof bags throughout the transportation and solidification treatment processes, the JICA surveyors detected asbestos at disposal sites. The surveyors presumed that there may have been accidental leaks through tears during one of the processes or there may have been error during the analysis of the sample site).

208. *Id.* at 32 (discussing how Gujarat Environment Protection & Infrastructure Ltd., a privatized authorized agency, collects the hazardous and non-hazardous waste from each yard).

209. *Id.* at 36.

210. EIA, *supra* note 7, at 33.

211. *See supra* text accompanying notes 207-08.

212. *JICA, supra* note 47, at 273.

213. EIA, *supra* note 7 at ES (Executive Summary) 5-6.

214. *Id.* at 124.

Certain kinds of combustible wastes are burned in incinerators, and the ash is dumped into landfills.[215] The rest of the waste materials are treated. Usable oil is sold, and the rest is turned into treated water and used for industrial purposes. The remainder of the sludge also ends up in landfills. While ships' ballast water is exchanged per the IMO's Ballast Water Management Convention,[216] the bilge water is pumped out to *Alang* TSDF's for further treatment.[217]

Another set of rules applicable at *Alang* is the Solid Waste Management Rules, 2016.[218] It restricts "waste generators" by imposing duties regarding solid waste management. The yard operators have to segregate the generated wastes into three separate streams—biodegradable, non-biodegradable and hazardous wastes—and store them in suitable bins.[219] Likewise, under the Construction and Demolition Waste Management Rules, 2016, waste generators must segregate their wastes and prevent littering.[220] Large waste generators that generate more than 300 tonnes in a month must submit waste and environment management plans and secure approvals from the local Authority.[221] At *Alang*, there is compliance with these rules.[222]

Plastics are omnipresent. On average, dismantling a vessel generates 70 to 200 kgs. of plastic. The yards rely on incinerators to dispose of that plastic.[223] The Plastic Waste Management Rules, 2016 aims to regulate plastic waste and impose the duty to dispose of it carefully on the waste generating establishments.[224] Batteries can also cause a threat to the environment if recovered

215. *Id.* at 129.

216. International Convention for the Control and Management of Ship's Ballast Water and Sediments, Feb. 13, 2004, 3282 U.N.T.S. 92 (entered into force Sept. 8, 2017) [hereinafter Ballast Water Management Convention].

217. EIA, *supra* note 7, at 87.

218. Solid Waste Management Rules, 2016 (India).

219. *Id.* at r. 4(1)(a).

220. Construction and Demolition Waste Management Rules, 2016, r. 4(1), 4(4) (India).

221. *Id.* at r. 4(3).

222. *See* EIA, *supra* note 7, at ch, 4.

223. JICA, *supra* note 47, at 34; EIA, *supra* note 7, at ES-6.

224. Plastic Waste Management Rules, 2016, pmbl. (India).

from ships and left untreated.[225] The Batteries (Management and Handling) Rules, 2001, was enacted to ensure that the discarded lead acid batteries are disposed of safely and the recycled batteries are environmentally safe.[226] Similarly, the E-Waste (Management and Handling) Rules, 2016 regulates the E-Waste that may be generated by a ship.[227] However, it is reported that the TDSF cannot handle batteries and E-waste that are transferred to other waste management facilities.[228]

The wholesomeness of water at the yards and its surrounding environs is a major cause of concern. National water pollution standards are determined by the Water (Prevention and Control of Pollution) Act 1974 and its subsidiary Water (Prevention and Control of Pollution) Rules, 1975.[229] These laws seek to prevent and control water pollution and maintain and restore the "wholesomeness" of water.[230] Under the Act, the Central and State Pollution Control Boards have several designated powers, including taking samples and monitoring and recording water bodies' health.[231] The authorities can direct and order the stakeholders to restore the water body's health and, in case of non-compliance, penalties ensue.[232] Schedule II of the Environment (Protection) Rules, 1986 sets out the general discharge standards for effluent discharge.[233]

225. *See* PUTHUCHERRIL, *supra* note 25, at 17 (discusses that toxic elements such as lead and mercury expose the workers and their family members to the risk of lead poisoning, which can affect the victim physically and can also cause physical and mental developmental issues with children).

226. *See* The Batteries (Management and Handling) Rules, 2001 (India).

227. E-Waste (Management and Handling) Rules 2016 (India).

228. *See* EUR. COMM'N DIRECTORATE-GENERAL FOR THE ENV'T [ECDGE], *Inspection of a Ship Recycling Facility in India: Site Inspection Report 003*, at 2 (2019) [hereinafter ECDGE 2019] (the report is a result of inspection conducted at the Priya Blue Industries Pvt. Ltd., located at ASSBY by the European Commission, following the facility's application for inclusion in the European list of ship-recycling facilities. With regards to heavy metals such as lead acid batteries, the surveyors were told that these metals are transported by licensed trucks to approved and authorised vendors for disposal outside the yard. Since the evaluators did not inspect these sites, they could not confirm compliance).

229. Water (Prevention and Control of Pollution) Act, 1974 (India); Water (Prevention and Control of Pollution) Rules, 1975 (India).

230. Water (Prevention and Control of Pollution) Act, 1974 pmbl., (India).

231. *Id.* § 21.

232. *Id.* § 25.

233. Environment (Protection) Rules, 1986, sched. II (India).

This standard lays down the limits for the discharge of polluting effluents into inland surface water, public sewers, lands for irrigation, and marine coastal areas. Schedule I prescribes the standards for the discharge of "treated effluents" from Effluent Treatment Plants (ETPs). Apart from these, the Central Pollution Control Board establishes various norms to regulate and monitor effluents and emissions.[234] The Environment (Protection) Rules 1986 also enlists seawater standards.[235] The water quality criteria are specified based on their types of uses and activities to determine their suitability for a particular purpose. Various factors are considered while determining that suitability, such as pH, oxygen levels, floating matter, and suspended solids.

A water-quality test of seawater at ASSBY suggested that that seawater was most suitable for "Industrial Cooling, Non-Contact Recreation and Aesthetics."[236] Due to strong currents, rough sea weather, and high turbidity, most pollutants are washed away, and the water is reasonably clear, rendering the sea water near ASSBY conducive to propagating aquatic species and helping restore the natural system.[237] Regarding groundwater, at *Alang* and *Mathavda*, two villages around ASSBY, the groundwater quality test revealed that the water was unsuitable for drinking owing to excessive dissolved solids and hardness.[238] On the other hand, the groundwater quality test at *Sosiya* and *Kathava* villages found the water appropriate for consumption.[239] The groundwater quality varies from season to season. In the monsoons, the chances increase of receiving more pollutants through soil infiltration and the rise in the groundwater level. Similarly, the soil quality survey at ASSBY detected relatively higher levels of heavy metals like lead and cadmium and organic pollutants such as PCBs. These pollutants have lessened soil fertility.[240]

234. *Id.* at r. 3.
235. *Id.* at sched. I.
236. EIA, *supra* note 7, at ES-3.
237. *See id.*
238. *Id.*
239. *Id.*
240. *Id.* at 88-90.

As a whole, the air quality in India is notorious.[241] At Alang, the primary air pollutants are dust and nitrogen oxide (NOx) generated by the burning of Liquefied petroleum gas (LPG) and the use of diesel by trucks, cranes, and other diesel-powered machinery.[242] The incinerator also generates nitrogen oxide and sulphur dioxide.[243] The Air (Prevention and Control of Pollution) Act and Air (Prevention and Control of Pollution)(Union Territories) Rules, empower the Central and State Pollution Control Boards to implement nationwide schemes and programs for air pollution prevention and control.[244] The National Ambient Air Quality Standards, 2009 provides acceptable norms and standards for "Industri- "Industrial, Residential, Rural and Other Areas" and "Ecologically sensitive areas."[245] The Environment (Protection) Rules provide standards for incinerators involved in disposing of hazardous wastes, which apply to the TSDF at ASSBY.[246]

For a long time, waste was openly burnt. This practice has now stopped.[247] Samples collected from nearby villages and the work zone near the TSDF indicated the presence of sulphur dioxide, carbon monoxide, nitrogen dioxide, and particulate matter PM10 and PM2.5.[248] The tests suggested that the air quality at both villages and work zones (including the TSDF) was within the norms. However, in some areas of the ASSBY, the air quality exceeded Indian standards and the WHO ambient air quality guidelines.[249]

241. *See* Aastha Ahuja, *World Air Quality Report 2021: 63 Indian Cities In 100 Most Polluted Places On Earth*, NDTV (Mar. 24, 2022), https://swachhindia.ndtv.com/world-air-quality-report-2021-63-indian-cities-in-100-most-polluted-places-on-earth-67358/ (providing no Indian city met the required standards and 10 Indian cities were listed in the top 15 most polluted places of the world).

242. EIA, *supra* note 7, at ES-7.

243. *Id.*

244. Air (Prevention and Control of Pollution) Act, 1981 (India); Air (Prevention and Control of Pollution) (Union Territories) Rules, 1983 (India).

245. Ministry of Environment and Forests, F.No –Q-15017/43/2007-CPW (Notified Nov. 16, 2009) (India)3.

246. Environment (Protection) Rules, 1986, sched. I (India).

247. EIA, *supra* note 7, at ES-7.

248. *Id.* at ES-3.

249. *See* JICA, *supra* note 47, at 208-10, tables 11-10, 11-11; *see also What are the WHO Air quality guidelines? Improving health by reducing air pollution*, WORLD HEALTH ORG. [WHO] (Sept. 22, 2021), https://www.who.int/news-

Noise levels change over shorter periods and may even differ over small distances. Noise Levels were continuously read for 24 hours at ASSBY and surrounding areas .[250] The sampling sites were Alang Fire Station and a few neighbouring villages. A few readings exceeded the stipulated noise levels while others did not.[251] In the villages, the noise levels satisfied both day (55 dB) and night (45 dB) time standards for residential areas.[252]

B. *Discussion*

By dismantling obsolete and decommissioned ships to reuse resources that have gone into the building of these ships, the ship-recycling industry ensures a second life for the resources. Recycling steel and other objects of value lessens the need for mining, an environmentally destructive activity. The ship-recycling industry is a major supplier of steel and is a significant contributor to several developing countries' economies, particularly those in South Asia. In this sense, the ship-recycling industry contributes immensely to the circular economy[253] and is a critical element of sustainable development. However, given the adverse effects of existing ship-recycling practices and procedures, the industry's contribution to sustainable development is seriously called into question. The ship-recycling industry in India has resulted in unac-unacceptable loss and injury to human life and contamination of marine and terrestrial environments. Therefore, if sustainability in the ship-breaking yards was to be genuinely achieved, a process correction was imperative. Given the legislative and executive apathy over this matter, India's Supreme Court (as in several other issues) took upon itself the task of carrying out this course correction.

room/feature-stories/detail/what-are-the-who-air-quality-guidelines (providing information on WHO's air quality guidelines).

250. EIA, *supra* note 7, at 87.

251. *Id.* at 88; Noise Pollution (Regulation and Control) Rules, 2000 (India).

252. JICA, *supra* note 47, at 224.

253. EUR. COMM'N DIRECTORATE-GENERAL FOR THE ENV'T, SHIP RECYCLING : REDUCING HUMAN AND ENVIRONMENTAL IMPACTS 3 (2016), https://data.europa .eu/doi/10.2779/80138 (discusses the role recycling of ships has in reducing mining and its environmental impact, which creates a circular economy that aims to minimise waste and infinitely recycle these materials).

After globalization and the opening of its economy, India is on track to fast economic growth.[254] However, this economic growth is lopsided, and much of India's population lives below the poverty line.[255] Unemployment is endemic, and there is a large-scale denial of equal opportunity, which violates several constitutional guarantees. Shipbreaking as an industrial activity is critical for India as it helps generate revenue, creates employment, and conserves resources.[256] Because of those reasons, the underlying attitude of the Supreme Court towards shipbreaking was not to suggest discontinuing this activity despite its dangers; instead, the Court wanted the continual operation of this industry subject to strict and proper regulation. To accomplish this objective, the Supreme Court created the TEC. It was mandated to develop a "state-of-the-art" mechanism to protect workers by suggesting hazard-preventive measures and recycling plans. Serious doubts have been expressed regarding the nature of the judicial process in the recycling cases, but, in all fairness to the Supreme Court, it must be emphasized that the ship-recycling industry depends considerably on the vagaries of the international market. If national regulation is strict, it would immediately spell the doom of this industry, and it would readily migrate to other areas where the regulation is limited or non-existent.

Such a course of action would jeopardize the economy by leading to the employment of the unskilled labourers who readily find employment in the recycling yards. It is on the realization of these commercial realities that the Supreme Court sought to balance development with human and environmental concerns in the

254. MORGAN STANLEY, *Why This is India's Decade* (Nov. 8, 2022), https://www.morganstanley.com/ideas/investment-opportunities-in-india (discusses how the Indian economy is set to surpass the Japanese and German economies to become the third largest economy by 2027).

255. Samrat Sharma, *Around 22% Indians live below poverty line; Chhattisgarh, Jharkhand fare worst*, FIN. EXPRESS (Sept. 21, 2019, 6:15 PM), https://www.financialexpress.com/economy/around-22-indians-live-below-poverty-line-chattisgarh-jharkhand-fare-worst/1713365/.

256. *See* Nirmala Sitharaman, Minister of Finance, Gov't of India, Budget 2021-2022 ¶ 66 (Feb. 1, 2021) (providing that India has acceded to the Hong Kong Convention, approximately 90 yards were HKC compliant, and the recycling yard capacity would be doubled from 4.5 million Light Displacement Tonnes (LDT) by the year 2024, which could potentially produce an additional 150,000 jobs).

manner it did, and it even went so far as to not deprecate beaching even though it is one of the primary factors that contaminate the marine environment.[257] Nevertheless, due to the timely intervention and oversight by the Supreme Court, the winds of change began to blow over India's ship-recycling yards and resulted in a series of infrastructural changes and the creation of institutional structures to ensure oversight. Finally, as will be seen in the subsequent discussion, these efforts culminated with India adopting the Hong Kong Convention and enacting the Recycling of Ships Act, 2019.

At the same time and buoyed by these changes, a few ship-recycling facilities like Priya Blue, known for breaking the notorious Blue Lady, applied for inclusion in the European List of ship-recycling facilities.[258] There were two on-site inspections, and the facility apprised the authorities that it had invested in upgrading its infrastructure to comply with the EU Ship Recycling Regulation. However, the evaluators concluded that there were several shortcomings. They found fault with the ship-recycling-facility plan and the practice of demolishing the ship's hull in the intertidal zone.[259] Other points of contention related to the lack of compliance with labour laws, the absence of an environmental monitoring plan, and the lack of adequate medical facilities.[260] Consequently, Priya Blue could not make it to the EU list. The same is the case with all other yards at *Alang*, raising the question of whether the changes at *Alang* are merely cosmetic or genuine and deep-rooted. This aspect will be probed further in Part V of this article.

III. THE INTERNATIONAL LAW ON SHIP RECYCLING: FROM BASEL TO HONG KONG

The International law on ship recycling is a patchwork of several important legal instruments that are both hard and soft. It includes the international but general Basel Convention, the in-

257. *The Blue Lady Case*, MANU/SC/7894/2007 at ¶ 11.

258. ECDGE 2019, *supra* note 228, at 1 (The European Commission DG Environment contracted DNV GL to conduct a site inspection of the recycling facility owned by Priya Blue Industries Pvt. Ltd).

259. *Id.* at 8-9.

260. *Id.* at 2, 33-34.

ternational and specific HKC (yet to come into force), and the regional European Union Ship Recycling Regulation (EU SRR). Apart from those basic instruments, the regime is bolstered to a large extent by the International Labour Organization's guidelines termed, the "Safety and Health in Shipbreaking: Guidelines for Asian Countries and Turkey";[261] the European Union Waste Shipment Regulation (EC) 1013/2006,[262] which transposes the Basel Convention and the Basel Ban Amendment into European Union law; and the IMO Guidelines on Ship Recycling.[263] Since the Basel, the HKC, and the EU SRR are the most significant, an overview of the normative content of these instruments is provided below.

A. *The Basel Convention*

For a significant period, the primary international instrument that dealt with the issue of ship recycling was the Basel Convention. Responding to several incidents of hazardous waste dumping in third-world countries that led to the loss of life and the destruction of ecosystems and property, the United Nations Environment Programme (UNEP) established a working group in 1987 to draft a global treaty to regulate the transboundary movement of hazardous wastes.[264] The Basel Convention text was finally adopted in 1989 and came into force in 1992.[265] Despite the Convention not forbidding or restricting the recycling, its focus is on providing a set of flexible regulatory principles—including environmental justice, sustainable development, environmentally sound management, the promotion of public health and safety, and international cooperation—to establish ground rules for that field.[266] The Convention has three goals: 1) minimize hazardous waste genera-

261. Int'l Lab. Org. [ILO], *Safety and health in shipbreaking: Guidelines for Asian countries and Turkey*, (Mar. 01, 2004), https://www.ilo.org/safework/info/standards-and-instruments/codes/WCMS_107689/lang—en/index.htm.

262. Council Regulation 1013/2006 of 14 June 2006, on shipments of waste, 2006 O.J. (L 190) 1 (EC).

263. *See id.*

264. Tony George Puthucherril, *Two decades of the Basel Convention*, *in* ROUTLEDGE HANDBOOK OF INTERNATIONAL ENVIRONMENTAL LAW 297 (Erika Techera ed., 2012).

265. *Id.* at 297; *see also* Basel Convention, *supra* note 29.

266. *Id.* at 298.

tion, 2) dispose of hazardous and other wastes as close as possible to their source of generation, and 3) minimize the transboundary movement of hazardous and other wastes in a manner consistent with their environmentally sound management.[267]

The term "hazardous wastes" is defined broadly in the Basel Convention. Hazardous wastes are those included in Annex I. Annex III broadens the definition to include wastes with properties that include flammability, explosivity, toxicity, and ecotoxicity.[268] Wastes not included in these definitions may still be regarded as hazardous wastes if so designated under the national law of the party of export, import, or transit.[269] Interestingly, radioactive wastes and wastes generated by a ship during regular operations and governed by the International Convention for the Prevention of Pollution from Ships (MARPOL) 73/78 are excluded from its purview.[270]

The Basel Convention identifies five natural or legal actors who can transport hazardous wastes, namely the "generator,"[271] the "exporter,"[272] the "carrier,"[273] the "importer,"[274] and the "disposer."[275] These entities operate in a broad framework where the main drivers are the States of export,[276] import,[277] and transit.[278] Exports are allowed only where the exporting State lacks the technical know-how and capacity for sound disposal or when the waste is needed as a raw material for recycling or recovery in the State of import.[279]

In all circumstances, the State of export is entirely responsible for ensuring the Environmentally Sound Management (ESM) of the hazardous waste; this responsibility cannot be passed to the

267. *Id.*
268. Basel Convention, *supra* note 29, at annexes I,4 III.
269. *Id.* art. 1(1)(b).
270. *Id.* art. 3,4.
271. *Id.* art. 2(18).
272. *Id.* art. 2(15).
273. *Id.* art. 2(17).
274. *Id.* art. 2(16).
275. *Id.* art. 2(19).
276. *Id.* art. 2(10).
277. *Id.* art. 2(11).
278. *Id.* art. 2(12).
279. *Id.* art. 4(9).

importing or transit State.[280] Additionally, if the exporting party thinks the waste will not be handled according to ESM principles at the intended location, it must forbid the export.[281] The Convention prohibits the unlawful trafficking of hazardous wastes and lays forth procedures for re-importation if the disposal contract is broken.[282]

There are elaborate regulatory procedures based on the principle of prior informed consent that allow the importing State to analyze the nature of the risks associated with an import.[283] These include the "notification document,"[284] the "movement document,"[285] and some specific information to be provided to the importing State.[286] The Convention further stipulates that the hazardous wastes intended for transboundary movement should be packaged, labelled, and transported in line with international standards.[287]

Since the adoption of the Basel, environmentalists and many developing nations have decried it. This dissatisfaction is because they believe the Basel did little more than cast a cloak of legitimacy onto a commerce stream that dehumanizes people.[288] At the same time, several emerging nations believed that outright criminalization would unfairly deny these nations the economic benefits that the recycling business could provide.[289] Nevertheless, the Basel BAN was adopted at the second COP in 1994.[290] It effectively outlaws the export of hazardous waste from the OECD (Organization for Economic Co-operation and Development) for disposal to non-OECD nations. Several governments, including India, vehe-

280. *Id.* art. 4(10).
281. *Id.* art. 4(2)(e).
282. *Id.* art. 8.
283. *Id.* art. 6.
284. *Id.*
285. *Id.* at annex V B.
286. *Id.* art. 6, annex V A.
287. *Id.* art. 4(7)(b).
288. Puthucherril, *supra* note 264, at 302.
289. *See id.*
290. See BASEL CONVENTION, *The Basel Convention Ban Amendment*, U.N. ENV'T PROGRAMME, http://www.basel.int/Implementation/LegalMatters/BanAmendment/Overview/tabid/1484/Default.aspx.

mently resisted the Basel BAN Amendment, which came into force only in 2019.[291]

Despite the benevolence of the Basel Convention, its application to ship recycling has always been challenging. The main issue is definition-related, which is, namely, whether ships may be considered wastes under the Basel Convention.[292] This categorization depends on whether there is a clear showing of purpose. Accordingly, whether the ship is waste will depend on whether the owner or the management company "intends" it to be waste. The shipowners avoid the Convention by claiming that a ship is not a waste because it has only built-in waste.[293] It is challenging to infer purpose without proof. It is even more challenging to understand this purpose given that ships may frequently carry cargo even if they are making their final voyage to be broken. In other words, it may be exceedingly difficult to pinpoint when a ship

291. See BASEL CONVENTION, *Amendment to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*, U.N. ENV'T PROGRAMME, http://www.basel.int/Countries/StatusofRatifications/BanAmendment/tabid/1344/Default.aspx, (last visited Apr. 4, 2023) (providing a list of 103 countries that have ratified the Basel BAN Amendment, which does not include India); see Int'l Pollutants Elimination Network (IPEN), The Basel Ban Amendment And Implications For India 4-5 (2020), https://ipen.org/sites/default/files/documents/ban-basel-fact-sheet-v2_3-india-en.pdf, (providing that Basel BAN Amendment did not come into force until 2019 and that non-parties are still obligated to respect the amendment); *see Basel Ban Amendment becomes law*, DownToEarth (Sept. 10, 2019), https://www.downtoearth.org.in/news/waste/basel-ban-amendment-becomes-law-66651#:~:text=Published%3A%20Tuesday%2010%20September%202019&text=The%20Ban%20Amendment%20prohibits%20all,)%20to%20non%2DOECD%20countries., (providing the Basel BAN Amendment went into effect in 2019 when Croatia became the 97th state to ratify it); see generally, Kimberly A. Breitmeyer, *Australia's Opposition to the Basel Ban Amendment on the Export or Hazardous Wastes: When Will Australia Stop Stalling and Ratify the Amendment?*, 9 Ind. Int'l & Comp. L. Rev, 537, 550-552 (1999) (discussing how countries such as the United States and Australia resisted the BAN Amendment because it was easier for them to export hazardous materials to developing countries willing to accept them at much lower costs).

292. Ishtiaque Ahmed, *The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal: A Legal Misfit in Global Ship Recycling Jurisprudence*, 29 WASH. INT'L L. J. 411, 427-428 (2020).

293. *See* PUTHUCHERRIL, *supra* note 25, at 80 (discusses the case of "Riky," in the context of the European Waste Management framework wherein the vessel was not considered to be "waste" as long as the shipowners had not declared their intention to discard the vessel).

transitions from being "a ship" to "waste." These factors revealed the unsuitability of the Basel Convention for the ship-recycling process and prompted the International Maritime Organization to develop and adopt the Hong Kong Convention.

B. *The Hong Kong Ship Recycling Convention*

The legally-binding 2009 HKC sets out a normative framework that addresses the environmental, occupational health, and safety issues integral to ship recycling.[294] From its text, the Convention clearly focuses on two core risks: first, the environmental risk, and second, those relating to occupational health and safety. Accordingly, it provides for controls and enforcement measures from two perspectives: the first applies to ships during their life cycle, and the second details standards for operating ship-recycling facilities. Given their far-reaching nature and associated uncertainties, the HKC understandably makes the precautionary approach its central pillar.[295] The Convention states that State Parties must "be conscious" of the precautionary approach in Principle 15 of the Rio Declaration.[296]

The HKC's 21 articles enumerate the basic principles for safe and environmentally sound ship recycling. However, the heart of this Convention is its annex that is entitled, "Regulations for Safe

294. *See also* Int'l Mar. Org. [IMO] Res. MEPC.196(62) (July 15, 2011), https://wwwcdn.imo.org/localresources/en/OurWork/Environment/Documents/RESOLUTION%20MEPC.196(62).pdf; Int'l Mar. Org. [IMO] Res. MEPC.210(63) (Mar. 2, 2012), https://wwwcdn.imo.org/localresources/en/OurWork/Environment/Documents/210(63).pdf; Int'l Mar. Org. [IMO] Res. MEPC.211(63) (Mar. 2, 2012), https://wwwcdn.imo.org/localresources/en/OurWork/Environment/Documents/211(63).pdf; Int'l Mar. Org. [IMO] Res. MEPC.269(68) (May 15, 2015), https://wwwcdn.imo.org/localresources/en/OurWork/Environment/Documents/02-1%20RESOLUTION%20MEPC%20269(68)%20IHM%20Guidelines.pdf; Two further guidelines have been developed and adopted to assist States in the implementation of the Convention after it enters into force: Int'l Mar. Org. [IMO], Res.MEPC.222(64) (Oct. 5, 2012), https://wwwcdn.imo.org/localresources/en/OurWork/Environment/Documents/RESOLUTION%20MEPC.222(64)%20Survey%20and%20Certification%20Guidelines.pdf; and Int'l Mar. Org. [IMO] Res. MEPC.223(64) (Oct. 5, 2012), https://wwwcdn.imo.org/localresources/en/OurWork/Environment/Documents/RESOLUTION%20MEPC.223(64)%20Inspection%20Guidelines.pdf.

295. HKC, *supra* note 30, at pmbl.

296. *Id.*; U.N. Conf. On Env't and Dev., *Rio Declaration on Environment and Development*, UN Doc. A/CONF.151/26 (vol. I), 31 ILM 874 (Jun. 14, 1992), at principle 15.

and Environmentally Sound Recycling of Ships." It specifies "the main technical requirements" in four chapters that relate to ship design, construction, survey, certification, operation, and recycling.[297] The annex is further supported by appendices that set out further technical details.[298] The Convention also refers to guidelines to be developed by the IMO.[299]

The HKC applies to "ships,"[300] the parties' "ship recycling facilities,"[301] and only activities like scrapping and storage in the recycling yard. It does not extend to other activities in the recycling chain.[302] The Convention identifies certain actors in the ship-recycling process. The first is the "Administration," which is the flag State,[303] and then there is the State where the recycling facilities are situated.[304] In addition, the recycling company,[305] the shipowner,[306] and workers[307] also have obligations to discharge.

The flag state has to adopt effective measures to ensure that ships that fly their flag comply with the requirements in the HKC,[308] including preparing the inventory of hazardous materials (IHM) and carrying out surveys and related certifications.[309] The HKC requires a new ship to carry on board an IHM specific to it and verified by the flag State or an authorized person.[310] The IHM must list the hazardous materials in the ship's structure or equipment as well as their location and approximate quantity. This obligation even extends to existing ships.[311] Both new and existing ships must maintain and update the IHM.[312] As mentioned, ships are subject to a series of surveys and certifications.

297. HKC, *supra* note 30, at annex.
298. *Id.* at apps. 1-7.
299. *See id.* arts. 8, 13(1)(4).
300. *Id.* art. 3(1)(1).
301. *Id.* art. 3(1)(2).
302. *Id.* art. 2(10).
303. *Id.* art. 2(2).
304. *See id.* art. 2(3).
305. *Id.* art. 2(12).
306. *Id.* at annex, regul. 1.8.
307. *Id.* at annex, regul. 1.12.
308. *Id.* art. 4(1).
309. *Id.* art. 8.
310. *See id.* at annex, regul, 5.1.
311. *Id.* at annex, regul. 5.2.
312. *Id.* at annex, reguls. 5.3, 5.4.

Before a ship is placed in service or before the IHM is issued, an initial survey is undertaken. Thereafter, there are renewal surveys and additional surveys.[313] Lastly, there is the final survey. If the surveys are successfully completed, the administration or any person or organization authorized issues the International Ready for Recycling Certificate.[314]

Each party under whose jurisdiction a "ship recycling facility" operates must ensure that such facilities are authorized by establishing mechanisms for that authorization to occur.[315] Once established, the authorization is valid for a period not exceeding five years,[316] and generally, the ship-recycling facility must be designed, constructed, and operated in a safe and environmentally sound manner to earn that authorization.[317] Parties must develop a domestic legal framework for ship-recycling facilities.[318] They should also have "management systems, procedures and techniques" that do not pose health risks to the workers or to the populations living in the vicinity of the recycling yard.[319]

The HKC requires authorized ship-recycling facilities to prepare a "Ship Recycling Facility Plan,"[320] an "Emergency Preparedness and Response Plan,"[321] and a "Ship Specific Ship Recycling Plan."[322] They must also provide for worker safety and training,[323] ensure that there is safe and environmentally sound removal of hazardous materials from certified ships,[324] and put in place procedures to prevent spillage or emissions to safeguard human health and the environment.[325]

Even though the ship owner is the one who initiates the process of recycling, the most important obligation imposed on this

313. *Id.* at annex, regul. 10.1.2.
314. *Id.* at annex, regul. 11.11.
315. *Id.* at annex, regul. 15.2.
316. *See id.* at annex, regul. 11.
317. *Id.* at annex, regul. 15.1.
318. *Id.* at annex, regul. 15.
319. *Id.* at annex, regul. 17.
320. *Id.* at annex, regul. 18.
321. *Id.* at annex, regul. 18.5.
322. *Id.* at annex, regul. 9.
323. *Id.* at annex, regul. 18.4.
324. *Id.* at annex, regul. 20.
325. *Id.* at annex, regul. 19.4.

entity by the HKC is that the shipowner must provide the necessary information to the ship-recycling facility to prepare the ship-specific Ship Recycling Plan (SRP).[326] The HKC also imposes certain obligations on the Port State. A Port State that is a party to the HKC can prohibit or restrict the installation or use of hazardous materials on ships while in its ports, shipyards, ship-repair yards, or offshore terminals.[327] It can also inspect a ship at any port or offshore terminal for a valid IHM or the International Ready for Recycling Certificate.[328]

Interestingly, the HKC recognizes the Basel Convention as essential to ship recycling.[329] Still, once the HKC comes into force, it—being a specialized Convention created and adopted to regulate the unique features and characteristics of the ship recycling industry—will presumably displace the application of the otherwise "general" Basel in the ship-recycling industry. Once it comes into force and State parties enact legislation to domesticate its normative prescriptions and begin implementing the legal requirements, the underlying objective of the HKC, in short, is to remove the uncertainty that characterizes the working of the Ship Recycling Industries and eventually pushing them towards sustainability. However, the HKC does have flaws. The most critical omission is that it does not contain provisions that forbid the beaching method given that beaching and the inability to contain spillage that are the root causes of environmental and human rights violations. Despite this omission, the HKC does emphasize cooperation and technology transfer.[330]

C. *The EU Ship-Recycling Regulation*

It is estimated that Europeans enjoy beneficial ownership of approximately 40% of the world's merchant fleet tonnage;[331] among these numbers, however, only a fraction fly an EU Mem-

326. *Id.* at annex, regul. 8.4 & 9.1.

327. *Id.* at annex, regul. 4.

328. *Id.* art. 8.

329. *Id.* at pmbl., annex, regul. 3.

330. *Id.* arts. 1(3), 1(4).

331. *See* U.N. CONF. ON TRADE AND DEV. [UNCTAD], HANDBOOK OF STATISTICS 2022 76-77 (2022), https://unctad.org/webflyer/handbook-statistics-2022 (discussing state fleet ownership including commercial vessels of 100 GT and above).

ber-State flag.[332] Despite this vast number, out of a whopping total of 763 vessels worldwide that were sold to recycling yards in 2021, only a handful of 37 vessels were recorded to have been dismantled in the EU-approved recycling yards; the remaining 726 were scrapped elsewhere with the majority occurring at South Asian beaches.[333] These overwhelming numbers thus render critical the EU and the developments in that region in regard to the sustainability of the ship-recycling industry in South Asia and thereby enhances the relevance of the European Union Ship Recycling Regulation, 2013[334] (EU SRR) even though it is only a regional instrument. Adopted by the European Parliament and the Council of the European Union (EU) in 2013,[335] the EU SRR essentially seeks to enhance the safety and protection of human health and the marine environment in the Union throughout a ship's life cycle by ensuring that hazardous wastes are subject to environmentally sound management.[336] The regulation applies to all ships greater than 500 gross tonnages[337] that fly the flag of an EU country and to vessels with non-EU flags that call at an EU port or anchorage.[338] It sets out responsibilities for shipowners[339] and recycling facilities[340] in the EU[341] and other countries.[342]

One of the first measures included in the EU SRR is that it prohibits or restricts the installation or use on ships of the hazardous materials referred to in Annex I.[343] To enforce this measure, the EU SRR requires that both new and existing ships as well as those heading for recycling[344] have an inventory of hazardous

332. *See id.*
333. NGO SHIPBREAKING PLATFORM 2021, *supra* note 56.
334. EU SRR, *supra* note 31.
335. *See id.*
336. *Id.* art. 1.
337. *Id.* art. 2(2)(b).
338. *Id.* art. 2.
339. *Id.* art. 6.
340. *Id.* arts. 13-15.
341. *Id.* art. 14.
342. *Id.* art. 15.
343. *Id.* art. 4.
344. *See id.* art. 5(2) (The obligation in relation to new ships is mandatory, but in relation to existing ships and those going for recycling, the compliance requirement is toned down to the standard of "shall comply, as far as practicable").

materials that identify those materials[345] in the structure or equipment of the ship and provides their location and approximate quantities.[346] To satisfy the relevant IMO guidelines, this inventory must show that the ship complies with the prohibitions or restrictions relating to installing or using hazardous materials on the ship.[347] In addition, the ship owner must minimize cargo residues[348] and ship-generated wastes before recycling,[349] hold a ready-for-recycling certificate,[350] and ensure that tankers arrive at the ship recycling facility in a ready-for-hot-work condition.[351]

The EU SRR also calls for developing a ship-specific ship-recycling plan,[352] subjecting the ship to a series of surveys[353] that end with a final survey,[354] issuing and endorsing of certificates,[355] and providing a port State jurisdiction.[356] Another notable feature of the EU SRR is that ships flying the EU's flag must be recycled at facilities on the European list of approved ship-recycling facilities.[357] For inclusion in the European List, ship-recycling facilities must comply with the requirements enumerated in article 13.[358] One of the primary conditions for inclusion is that the facility must operate from built structures.[359] Even ship-recycling facilities in third countries can be included in the European List.[360] To achieve this end, a ship-recycling company that owns the facility that intends to recycle ships flying an EU Member State's flag

345. *Id.* art. 5(1) (at least those referred to in annex II).
346. *Id.*
347. *Id.* art. 5.
348. *Id.* art. 6(2)(b).
349. *Id.*
350. *Id.* art. 6(2)(c).
351. *Id.* art. 6(3).
352. *Id.* art. 7(1).
353. *Id.* art. 8(3).
354. *Id.* art 8(7).
355. *Id.* art. 9.
356. *Id.* art. 11.
357. *Id.* art. 6(2)(a).
358. *Id.* art. 13.
359. *Id.* art. 13(1)(c).
360. *Id.* art. 15; *see also id.* art. 14 (deals with authorization of ship-recycling facilities located in a Member State).

must apply to the European Commission for inclusion in the European List[361] and comply with article 13.

Even though the EU SRR aims to facilitate the ratification of the HKC by establishing guidelines for managing ships and ship-recycling facilities[362] and is modelled mainly on the specific obligations imposed by the HKC, the EU SRR establishes stricter safety and environmental regulations than the HKC. The stricter criteria established by EU SRR are evident from their disapprobation of beaching, downstream toxic waste control, and focus on labour rights.

D. *Discussion*

It was expected that the cumulative application of the three instruments—namely, the Basel Convention, the EU SRR, and the HKC—would lead to the improved management of end-of-life ships and thereby reduce the human and environmental costs involved with substandard scrapping. The Basel Convention seeks to decrease the generation of hazardous wastes, limit their transboundary movement, and establish a framework to regulate the permissible transboundary activity of hazardous wastes in line with the Prior Informed Consent (PIC) procedure. While the ship-recycling industry may to a large extent be subject to the regulatory principles in the Basel Convention, their application has specific practical difficulties. As identified above, questions can arise regarding the identity "State of Export" and whether a ship on its last voyage is hazardous waste? These questions remain unsolved and thus increase the relevance of the IMO-sponsored HKC. Moreover, under customary international law, deviations and exceptions from general laws by emerging special laws are justified so long as the special properties of the special laws' subject matter are similar to that of the general laws.[363]

The primary objective of the HKC is to ban substandard ship-recycling practices by providing a standard and global template for ship recycling and a level playing field to enable the ship-

361. *Id.* art. 15(1).

362. *Id*, art. 1.

363. Martti Koskenniemi *Documents of the Fifty-Eighth Session*, [2006] 2 Y.B. Int'l L. Comm'n 18, U.N. Doc. A/CN.4/SER.A/2006/Add.1 (Part 1/Add.2), https://digitallibrary.un.org/record/3968802?ln=en#record-files-collapse-header.

recycling industry to operate sustainably. To that end, the HKC deals with 1) the design, construction, operation, and maintenance of ships;[364] 2) preparing ships for their final voyage to a recycling facility;[365] and 3) the authorization of ship recycling facilities.[366] Two core features of the HKC include the preparation of an inventory of all hazardous materials by the ship owner and, based on this inventory, the development by the ship-recycling facility of a "Ship Recycling Plan" that specifies how the ship is to be recycled. While the shipping industry hails the HKC as the blueprint for sustainable ship recycling, several environmental NGOs criticize the Convention. They argue that the HKC merely casts a cloak of legitimacy on current inhumane practices and conditions. Importantly, it does nothing to do away with beaching, a major bone of contention in the realizing of sustainable ship recycling in South Asia.[367]

While the HKC comes forth as an international legal instrument that prescribes newer rules to suit the requirements and realities of the ship-recycling industry despite the lapse of thirteen years since its adoption, it is yet to come into force. For it to come into effect, twenty-four months should have passed since its ratification by at least fifteen States whose combined merchant fleet constitutes not less than 40% of the gross tonnage of the world's merchant shipping.[368] Furthermore, during the preceding ten years, these States' combined annual ship recycling volume should not be less than 3% of the gross tonnage of their combined merchant shipping.[369] As of this writing, India and Turkey are the on-

364. HKC, *supra* note 30, at annex, ch. 2, pt. A.

365. *See id*. at annex.

366. *Id.* art. 6.

367. *See* Press Release, Int'l Fed'n for Hum, Rts., New "Ship Recycling" Convention Legalises Scrapping Toxic Ships on Beaches, (May 15, 2009), https://www.fidh.org/en/issues/globalisation-human-rights/economic-social-and-cultural-rights/New-ship-recycling-convention (arguing the Hong Kong Convention legitimizes the beaching method, fails to uphold the Basel Convention, fails to substitute hazardous waste materials with alternatives, and fails to promote funding mechanisms to ensure the application of the polluter pays principle).

368. HKC, *supra* note 30, art. 17.

369. *Id.* art. 17(1)(3).

ly ship-recycling majors to have ratified the HKC.[370] The inability of the IMO to bring the HKC into force has considerably dented the relevance of this instrument.

Against this uncertainty, the regional EU SRR was fashioned to facilitate the early adoption of the HKC amongst other things.[371] The regional central feature of this legal instrument that emanates from the EU is its insistence that ships that fly the flag of a European Member State will be recycled only in facilities on the European List. The EU SRR is based almost entirely on the perspective requirements of the HKC, especially the rules governing the inventory of hazardous waste and the requirements relating to the approval of ship-recycling facilities. However, it goes beyond the standards laid down by the HKC; for instance, it tries to ensure that ship-recycling facilities comply with stringent requirements, particularly those regarding recycling practices, their recycling infrastructure, and the removal of hazardous materials.[372] Thus, the EU SRR is comparatively a sterner regime.

The most critical omission in the HKC and the EU SRR is that both are grounded on flag-state jurisdiction. This grounding helps ship owners bypass the requirements imposed by both instruments if the end-of-life ships are re-flagged to "flags of convenience" (FOCs). Furthermore and as will be discussed in Part V, the incongruence and dichotomy in terms of their scope and the rigor of these instruments' prescriptions can have far-reaching consequences with some potentially bringing the international legal regime on ship recycling to virtually nothing.

IV. INDIA'S LEGAL FRAMEWORK FOR SUSTAINABLE SHIP RECYCLING

As a federal Sate, India's Constitution, *via* its three lists, distributes legislative power between the Centre and the States.[373]

370. INT'L MAR. ORG. [IMO], STATUS OF THE TREATIES 552-53 (Oct. 18, 2022), https://wwwcdn.imo.org/localresources/en/About/Conventions/StatusOfConventions/Status%202023.pdf.

371. EU SRR, *supra* note 31, at pmbl. ¶ 5.

372. For example, in comparison to the HKC, the EU SRR has set up additional requirements for the preparation and scope of the IHM on board ships either flying the flag of a Member State or a flag of a third country. In addition to the thirteen substances present in the appendix of HKC, two more have been added in the EU SRR.

373. India Const. 7th sched.

The Union List, or List I, deals with subjects that fall within the exclusive domain of the Union.[374] The State List, or List II, sets forth all the subjects in the exclusive domain of the State legislatures.[375] The Concurrent list, or List III, contains matters over which the Union and the States can legislate, but this list is subject to the principle of supremacy of Union laws over State laws.[376] While India is often described as a federal State in principle, it definitely tilts towards centralization, which leads many to remark that it would be more or less accurate to represent India as a quasi-federal State.[377]

The framework for shipbreaking was unconsolidated for a long time and lay scattered between the federal and State levels of Government,[378] which is an important reason why the industry was characterized by gross mismanagement. Several legislative entries in the Seventh Schedule to the Constitution are relevant to shipbreaking. Regarding the Central Government's power to determine and administer policy on shipbreaking, that power is based on the following legislative entries: the power to legislate on matters like major ports,[379] maritime shipping and navigation,[380] industries,[381] inter-State trade and commerce,[382] trade and commerce with foreign countries, import and export across customs frontiers, territorial waters, and the definition of customs frontiers.[383] Even the States have responsibility over shipbreaking given that the Constitution provides that the States determine matters relating to land,[384] gas and gas works,[385] public health and sanitation**,** hospitals, and dispensaries.[386]

374. *Id.* 7th sched., list I.
375. *Id.* 7th sched., list II.
376. *Id.* 7th sched., list III.
377. S.R. Bommai v. Union of India, MANU/SC/0444/1994, ¶ 24.
378. *See infra* notes 379-92; *see also infra* Table I, which lists out all the major laws applicable to the ship recycling industry in India.
379. India Const. 7th sched., list I, entry 27.
380. *Id.* 7th sched., list I, entry 25.
381. *Id.* 7th sched., list I, entries 7, 52.
382. *Id.* 7th sched., list I, entry 42.
383. *Id.* 7th sched., list I, entry 41.
384. *Id.* 7th sched., list II, entry 18.
385. *Id.* 7th sched., list II, entry 25.
386. *Id.* 7th sched., list II, entry 6.

There are several subjects over which the Parliament and States have concurrent legislative powers, and many are relevant to shipbreaking. Technically, both the Union and the States can legislate matters that include minor ports,[387] boilers,[388] price control,[389] social security and social insurance, employment, and unemployment,[390] matters relating to labour welfare,[391] trade union, and labour disputes.[392] If a dispute arises between the regulatory scheme of a Union law and a State law on any subject contained in that list, the Union legislation prevails.[393] The Union has also been endowed with all important residuary power of legislation.[394] Thus, several statutes, rules, and regulations that emanate from both levels of Government complicate the legislative landscape given the complex nature of those legislative relations and the fact that both the Union and States with shipbreaking yards are empowered to legislate.

Another constitutional dimension relevant to shipbreaking is the scheme on environmental protection. As it stood, the Constitution did not include any provisions relating to environmental protection. Under the influence of the Stockholm Conference on the Human Environment, 1972, the Constitution was amended to incorporate articles 48A[395] and 51A(g),[396] and certain subjects like forestry, wildlife, and bird protection that were in the State List were transferred to the Concurrent List so the Union could also provide laws on these subjects.[397] All these changes considerably enhanced the power of the Union to legislate on environmental matters. Furthermore, through judicial interpretation, India's activist Supreme Court has made article 21 more robust so that it

387. *Id.* 7th sched., list III, entry 31.
388. *Id.* 7th sched., list III, entry 37.
389. *Id.* 7th sched., list III, entry 34.
390. *Id.* 7th sched., list III, entry 23.
391. *Id.* 7th sched., list III, entry 24.
392. *Id.* 7th sched., list III, entry 22.
393. *Id.* art. 254.
394. *Id.* art. 248.
395. *Id.* art. 48A, *amended by* The Constitution (Forty-second Amendment) Act, 1976.
396. *Id.* art. 51, *amended by* The Constitution (Forty-second Amendment) Act, 1976.
397. *Id.* 7th sched., list III, entries 17A, 17B, *amended by* The Constitution (Forty-second Amendment) Act, 1976.

now guarantees to all persons the fundamental right to live in a clean environment.[398] Therefore, any activity polluting the environment and making living unhealthy violates article 21 and thus invites judicial scrutiny and redressal.[399]

Under India's Constitution, its Parliament has also been conferred the exclusive power to legislate on foreign affairs, including all matters that bring the Union into relation with any foreign country.[400] Treaty-making and its implementation are subjects that fall to the Union. Article 253 provides the Union Parliament the legislative ability to pass laws even on matters on the State list and to implement any treaty, agreement, or Convention with a foreign country or any decision made at any international conference, association, or other body. Accordingly, India has ratified several international environmental law and shipping law instruments, including the United Nations Convention of the Law of the Sea 1982,[401] the Basel Convention,[402] and the MARPOL 73 /78.[403] India supported these maneuvers domestically by enacting legislation to give effect to the terms of these international instruments.[404]

Although India is not a signatory to the Vienna Convention on the Law of Treaties (VCLT), the Supreme Court has recognized the customary status of the VCLT.[405] India upholds several principles of customary international law, and among them is Art 31

398. Vellore Citizens Welfare Forum v. Union of India and Ors., MANU /SC/0686/1996, ¶ 16.

399. Subhash Kumar vs. State of Bihar and Ors., MANU/SC/0106/1991 (India), ¶ 6 (the Supreme Court of India acknowledges that the art. 21 of the Indian Constitution includes the right of enjoyment to pollution-free water and air for full enjoyment of life. In case anything endangers or impairs that quality of life in derogation of laws, a citizen has recourse under art. 32).

400. India Const. art. 253.

401. U.N. Convention on the Law of the Sea [UNCLOS], Dec. 10, 1982, 1833 U.N.T.S. 397, https://treaties.un.org/Pages/showDetails.aspx?objid=0800000280043ad5&clang=_en (India signed the Convention on the date of conclusion and ratified on June 29, 1995).

402. Basel Convention, *supra* note 29 (India signed the Convention on March 15, 1990 and ratified it on June 24, 1992).

403. IMO, *supra* note 370, at 112-77.

404. *E.g.,* Merchant Shipping Act, 1958 (India) (Parts XIA & XIB of the Act implement MARPOL 73/78 annexures).

405. Ram Jethmalani v. Union of India, MANU/SC/0711/2011 (India), ¶ 60.

of the Vienna Convention, which provides broad guidelines for treaty interpretation.[406] The Indian courts have always been inclined towards the principles of *pacta sunt servanda* and embraced the general rules of interpretation of a treaty contained in the VCLT and thereby ensure good-faith compliance.[407] India's Supreme Court has also supported the domestication of these international instruments. For instance, it has been held that the Basel Convention effectuates fundamental rights guaranteed under art 21.[408]

Before the Recycling of Ships Act 2019 and the Recycling of Ships Rules 2021, the ship-recycling industry in India was regulated primarily by the Ship Recycling Code, 2013 (revised in 2016), which was put in place because of judicial strictures.[409] The Ship Breaking Code of India, 2013, was enacted by the Ministry of Steel, and it applied to all shipbreaking yards.[410] In 2014, the ministerial responsibility for this industry was transferred from the Ministry of Steel to the Ministry of Shipping, underscoring its maritime dimensions.[411] Subsequently, the Ministry of Shipping revised the Shipbreaking Code in 2017 and rechristened it the

406. *See id.*; Vienna Convention on the Law of Treaties, art. 31, May 23, 1969, 1155 U.N.T.S. 331.

407. *See* Vivek Sehrawat, *Implementation of International Law in Indian Legal System*, 31 FLA. J. INT'L L. 97, 111-117 (2019) (discusses how the Indian Courts through their pronouncements have clarified that the international treaties might be read into the existing Indian law to extend their protections).

408. Research Foundation for Science, Technology and Natural Resource Policy v. Union of India, MANU/SC/3651/2007, ¶ 15.1 (article 21 of the Indian Constitution guarantees the right to life and personal liberty to all persons, except to those instances arising out of procedures established by law).

409. Ship Breaking Code (Revised), 2013 (India).

410. *Id.* § 8.3.9.

411. TE Raja Simhan, *Ship-breaking industry shifted from Steel to Shipping Ministry*, THE HINDU BUS. LINE (Aug. 03, 2014, 9:56 PM), https://www.thehindubusinessline.com/economy/logistics/Ship-breaking-industry-shifted-from-Steel-to-Shipping-Ministry/article20834167.ece; Mridula Chari, *Decision to make Shipping Ministry responsible for ship breaking could save lives*, SCROLL.IN (Aug. 13, 2014, 8:50 AM), https://scroll.in/article/674095/decision-to-make-shipping-ministry-responsible-for-ship-breaking-could-save-lives.

Shipbreaking Code (Revised), 2013 (SRC).[412] However, the Code had several drawbacks and was considered incomplete.[413]

Around the time the Shipbreaking Code was revised in 2017, India—as a member of the International Maritime Organisation and based on its leading status in the global ship-recycling industry—participated in the diplomatic conference held in Hong Kong in 2009 that was attended by delegates from sixty-three countries and led to the adoption of the HKC.[414] India found it expedient to accede to the HKC and ratified it. Subsequently, it was found necessary to have a new and appropriate legal framework modelled on the HKC to deal with the issues relating to the recycling of ships. Accordingly, India enacted the Recycling of Ships Act, 2019 (RSA) that regulates ship recycling by setting specific standards and laying down the statutory mechanisms to enforce these standards.[415] Under section 42 of the RSA, India has also promulgated the Recycling of Ships Rules, 2021, which supersedes the SRC, 2013.[416] Together, the RSA and its Rules now form a comprehensive Code on ship recycling in India. The ensuing discussion sets out some of their salient features.

The RSA applies to ships registered in India[417] and all ship-recycling facilities in India.[418] Ships entering India's ports, shipyards, offshore terminals, territorial waters, or the EEZ fall within its regulatory scope.[419] Even though warships, naval auxiliary ships, and those used for government-related non-commercial service have been brought within its ambit,[420] they are excluded from the terms of chapter III, entitled "Requirements for Ships."[421] Section 2 provides definitions. "Hazardous material" is "any sub-

412. Ship Breaking Code (Revised), 2013 (India).

413. *See* Mazyar Ahmed, *Ship Recycling in India- Environmental Stock Taking*, 6 INDIAN L. REV. 1, 4-5 (2022).

414. *See* HKC, *supra* note 30.

415. Recycling of Ships Rules, 2021(India).

416. Recycling of Ships Rules, 2021 (India), pmbl.

417. *See id.* r. 2; Recycling of Ships Act, 2019 (India), § 1(3)(b).

418. Recycling of Ships Act, 2019 (India), § 1(3)(e); *see* Recycling of Ships Rules, 2021 (India), r. 2.

419. Recycling of Ships Act, 2019 (India), § 1(3)I.

420. *Id.* § 1(3)(d).

421. *Id.* ch. III (However, per the proviso to section 5, the Central Government may notify appropriate measures to ensure that such ships are demolished as far as practicable in a manner consistent with the RSA).

stance that has the potential to harm any human being, other living creatures, micro-organisms, property or the environment."[422] "Ships" are "vessel[s] and floating structure[s] of any type, operating or having operated in the marine environment, including submersibles, floating craft, floating platforms, self-elevating platforms, and floating storage units."[423] Workers, ship owners, ship recyclers, ship-recycling facilities and ship-recycling plans are also statutorily defined.

An essential feature of this law is that it provides for the National Authority for Ship Recycling, which is responsible for administering, supervising, and monitoring all ship-recycling activities.[424] The Central Government also designates the "Competent Authority" to perform prescribed duties within a geographical area or an area of expertise.[425] The Central Government also has certain powers and functions to perform.[426]

The RSA's regulatory scheme operates at three levels: 1) laying down requirements for ships, 2) authorizing ship-recycling facilities, and 3) exercising oversight over the ship-recycling process. Regarding the requirements concerning ships, the RSA prohibits installing or using hazardous materials that the Central Government has not permitted on ships.[427] However, certain classes or categories of ships may be exempted from this requirement.[428] Furthermore, ships are also subject to a series of surveys: initial, renewal, additional, final, and other surveys and related certifications.[429] The National Authority or any person or organization au-

422. *Id.* § 2(1)(e).

423. *Id.* § 2(1)(k).

424. *Id.* § 3; *Directorate General of Shipping notified as National Authority for Ships Recycling*, PRESS INFO. BUREAU (Oct. 15, 2020, 1:46 PM), https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1664703 (noting that in 2020, the Central Government notified the Directorate General of Shipping (DG Shipping) as National Authority for Recycling of Ships and will set up office in Gandhinagar, Gujarat. The DG Shipping is a statutory maritime authority under the Ministry of Ports, Shipping, and Waterways that ensures implementation and enforcement of maritime conventions, shipping policies, and legislations and also represents India at the IMO).

425. Recycling of Ships Act, 2019 (India), § 4.

426. *Id.* ch. VIII.

427. *Id.* § 6(1), 42(2)(b).

428. *Id.* § 6(1) (proviso).

429. *Id.* § 7.

thorized by the Central Government can carry out these surveys.[430] Moreover, existing and new ships must possess and maintain a "Certificate on Inventory of Hazardous Materials."[431] To obtain this certificate, the owner of new and existing ships must apply to the National Authority.[432] Once issued, the certification must be adequately maintained, renewed, and updated throughout the ship's operational life to reflect new installations that contain hazardous materials and any relevant changes to the ship's structure and equipment.[433] The National Authority can cancel or suspend the certificate for non-compliance with the certificate's particulars.[434] The certificate can also be cancelled if the inventory of hazardous materials is not properly maintained or updated, the ship is transferred to another flag,[435] or the survey is not completed within the specified time.[436]

All ship-recycling facilities have to be authorized.[437] The ship recycler must seek this certificate from the Competent Authority or a recognized organization.[438] To obtain that certificate, the ship recycler must prepare a "ship recycling facility management plan" and apply it to the Competent Authority,[439] who then holds an inquiry. Once satisfied that the applicant has complied with all the legal requirements and maintains the specified equipment, the Competent Authority grants the authorization certificate, which is valid for five years.[440] If the applicant is found to be in non-compliance, the Competent Authority rejects the application after recording the reasons for the rejection.[441] The Competent Authority can inspect a ship-recycling facility and suspend or cancel the authorization whenever necessary.[442] It can also undertake an

430. *Id.* § 7(1).
431. *Id.* § 8.
432. *Id.* § 8(1).
433. *Id.* § 8(3).
434. *Id.* § 10(i).
435. *Id.* § 10(ii).
436. *Id.* § 10(iii).
437. *Id.* § 11.
438. *Id.* § 11, 12.
439. *Id.* § 12(1).
440. *Id.* § 12(8).
441. *Id.* § 12(7).
442. *Id.* § 13(1).

annual audit of all ship-recycling facilities to ensure compliance and then forward that audit to the National Authority.[443]

Concerning ship recycling, the RSA provides that a shipowner who intends to recycle their ship must apply to the National Authority for a "ready for recycling certificate."[444] This certificate is issued after the successful completion of the survey and is valid for three months.[445] If the ship's condition does not correspond with the particulars of the ready-for-recycling certificate, it loses its validity.[446] The shipowner must also give to the Maritime Rescue Co-ordination Centre and the Competent Authority advance notice of the date of the ship's arrival, submit the necessary documentation, keep the ship clear of cargo residues, and minimize fuel oil and wastes on board.[447] In the case of a tanker, its owner must also fulfill the conditions that relate to safe-for-entry or safe-for-hot work.[448] The Competent Authority grants permission for recycling only after physically inspecting the ship.[449] Once the ship recycler receives a copy of the consent to recycle the ship, it shall issue acceptance to the shipowner and notify the Competent Authority.[450] Thereafter, the shipowner de-registers the ship.[451]

To recycle the ship, the ship recycler must prepare a ship-recycling plan per the guidelines issued for different categories of ships by the National Authority.[452] The ship-recycling plan must receive the approval of the Competent Authority,[453] which may refuse permission if the plan does not comply with the guidelines.[454] Ship recyclers must ensure the safe and environmentally sound removal and management of hazardous materials and comply with the requirements relating to basic infrastructure facili-

443. *Id.* § 12(10).
444. *Id.* § 16(1).
445. *Id.* § 16(2).
446. *Id.* § 16(3).
447. *Id.* § 19(1)(i).
448. *Id.* § 19(2).
449. *Id.* § 20(1).
450. *Id.* § 20(4).
451. *Id.*
452. *Id.* § 17.
453. *Id.* § 17(1).
454. *Id.* § 17(2) (proviso).

ties.[455] The ship recycler should ensure that no damage is caused to the environment due to the recycling activities and must take all necessary measures to protect the environment.[456] In the case of an oil spill in the facility, the ship recycler must take remedial action.[457] If the ship recycler does not comply with those stipulations, the recycler is liable to pay environmental damages and clean-up costs.[458] In addition, the ship recycler must maintain adequate measures for emergency preparedness and response;[459] provide adequate safety, health, training, and welfare measures for workers;[460] and provide individual or comprehensive insurance coverage for regular and temporary workers.[461] Once a ship is recycled, the ship recycler submits a completion statement to the Competent Authority,[462] who subsequently reports it to the National Authority.[463]

The National Authority, the Competent Authority, or any authorized officer can search the ship-recycling facility at all reasonable times.[464] The purpose of such a search is to inquire whether an offence has been committed at the facility.[465] The Authority can examine any record, register, document, equipment, or other material object and seize it as evidence of the commission of an offence under the RSA.[466]

The National Authority can also inspect any ship at reasonable times in any port or within India's waters. This inspection is limited to verifying whether there is an inventory of hazardous materials or a ready-for-recycling certificate on board.[467] The National Authority can dismiss, exclude, or detain the ship if it fails to carry valid certificates or if there is non-compliance with the

455. *Id.* § 21.
456. *Id.* § 22(1).
457. *Id.* § 22(2).
458. *Id.* § 22(3).
459. *Id.* § 14.
460. *Id.* § 15(1).
461. *Id.* § 15(2).
462. *Id.* § 23.
463. *Id.* § 24.
464. *Id.* § 27(1).
465. *Id.*
466. *Id.*
467. *Id.* § 28.

control measures for hazardous materials.[468] The ship can be detained until the situation is rectified.[469] Specifically, the Central Government has the power to make rules to effectuate the various provisions of the RSA. These rules can be on matters like the survey of ships, the Competent Authority's duties, and the ship recycler's liability for environmental damage.[470] With the prior approval of the Central Government, the National Authority can make regulations that are consistent with the RSA and the rules made thereunder.[471] These regulations can be on subjects like preparing the ship-recycling-facility management plan, the ready-for-recycling certificate, the certificate of authorization for the ship-recycling facility, and the conditions that relate to safe-for-entry or safe-for-hot-work.

Interestingly, the rules made by the Central Government and the regulations made by the National Authority must be laid before each House of India's Parliament. [472] Both Houses can modify the rule or the regulation or agree that it shall have no consequence.[473] If any difficulty arises in giving effect to the RSA, the Central Government can make provisions consistent with the RSA to remove the difficulty. All such orders must also be laid before each House of Parliament.[474]

A. *Discussion*

The enactment of the RSA was termed "a hallmark moment in Indian maritime history."[475] This law is part of an ongoing process of economic reforms initiated by India's current national Government to make India a $5 trillion economy.[476] Currently, India

468. *Id.*
469. *Id.* § 28(2).
470. *Id.* § 42.
471. *Id.* § 43.
472. *Id.* § 44.
473. *Id.*
474. *Id.* § 46.
475. Namita Tewari, *India eyes 60 per cent share of global ship recycling business; higher GDP contribution: Mandaviya*, THE ECON. TIMES (Dec. 25, 2019, 12:08 PM), https://economictimes.indiatimes.com/industry/transportation/shipping-/-transport/india-eyes-60-per-cent-share-of-global-ship-recycling-business-higher-gdp-contribution-mandaviya/articleshow/72964082.cms?from=mdr.
476. *Id.*

recycles around 300 of the 1,000 ships demolished annually.[477] Countries like Japan, the U.S., and the European Union do not send their ships for recycling to India unless they are re-flagged.[478] India specifically enacted the RSA to change that scenario to attract at least 60% of the global ship-recycling business and emerge as a prime destination for recycling. India's bureaucratic circles expect that the law will help create and support an environment where the contribution from ship-recycling activities to the country's GDP will generate additional employment opportunities.[479] The general impression is that this law will help place these yards on a trajectory that targets better regulation and compliance with the international law on ship recycling, eventually leading to responsible shipbreaking and attracting more shipowners to these yards in the long-run.[480]

The RSA, which is modelled on and gives effect to the HKC,[481] aims to ensure that when the ships are recycled after the end of their operational lives, they do not pose any unnecessary risk to the environment or human health and safety. The following are some of the salient features of the RSA that make this legislation important: the prohibition on installation or use of hazardous materials on ships; surveys and related certification; inventory of hazardous materials and their maintenance; the ready-for-recycling certificate; the ship-recycling plan; authorization of ship-recycling facilities; the ship-recycling-facility management plan; an annual audit of ship-recycling facilities; emergency preparedness and response measures; obligations on the recycler to provide adequate measures for safety, health, training and welfare of workers, including insurance; application of the

477. *Id.*

478. *See infra* notes 490-500.

479. Sitharaman, *supra* note 256.

480. G Seetharaman & Prerna Katiyar, *Can a new ship-recycling law help India regain its status as the world's top dismantler of vessels?*, THE ECON. TIMES (Dec. 22, 2019, 2:34 PM), https://economictimes.indiatimes.com/industry/transportation/shipping-/-transport/can-a-new-ship-recycling-law-help-india-regain-its-status-as-the-worlds-top-dismantler-of-vessels/articleshow/72918468.cms?from=mdr.

481. For more details, *see infra* Table II, which provides a broad overview of the inter-relationship between the Hong Kong Convention, the EU Ship Recycling Regulation, Recycling of Ships Act, 2019, and Recycling of Ships Rules, 2021.

polluter-pays principle;[482] and search and seizure. Another noteworthy feature of this law is that while defining applicability in Section 1, the Act extends to ships within India's Exclusive Economic Zone (EEZ) for pollution control.[483]

The RSA has drawbacks, however. As it stands, the National Authority and the Competent Authority are bureaucrats. There is no provision for a multi-member regulatory body that involves ship owners, ship recyclers, and, more importantly, the shipbreakers and the representatives of local communities who live in and around these yards. The overtly bureaucratic structure of the regulatory authorities and their exclusionary nature may prove counterproductive to finding sustainable solutions to an issue that involves economic, environmental, and human-rights concerns. Another drawback is that the RSA permits the National or Competent Authority to enter and search the recycling facility at all reasonable times.[484] Given that the ship-recycling yards at *Alang* are notorious for their opacity, the surprise element in search and seizure should not be compromised if violations are to be detected and suitable action taken against the offenders. However, this critical element is lost by specifying that search and seizure can occur only during reasonable times. Section 29(1) is also a controversial provision. It empowers the Central Government to exempt any vessel or any class of vessels or any ship-recycling facility or ship recycler from the RSA or any requirement prescribed thereof if the circumstances of the case allow the compliance to be disregarded.[485] Such sweeping and unbridled discretionary powers granted to the Central Government without also prescribing standards for how those powers should be exercised in a given context may prove problematic. Applying the polluter-pays principle in the RSA also leaves room for improvement as the pollution fines and penalties lack sufficient deterrence. Despite these drawbacks, the Recycling of Ships Act, 2019 clearly aims to establish a regulatory trajectory in accord with internationally accepted principles, some of which are key to sustainable ship recycling.

482. Recycling of Ships Act, 2019 (India), § 22.
483. *Id.* § 1(3)(c).
484. *Id.* § 27.
485. *Id.* § 29.

One of the critical determinants of regulatory effectiveness is how well the system it creates secures its policy objectives. Based on India's experience in environmental and human-rights matters, there have often been dramatic regulatory failures due to inadequate compliance. These inadequacies often lead to calls for more regulation. However, adding more laws and rules to the statute book is not always ideal unless the issue of compliance with existing legal frameworks is addressed. Therefore, if India truly is to benefit from the RSA, it is essential that, notwithstanding its defects, the emphasis should be on overcoming implementational challenges to secure substantial and not merely formal compliance with the law.

V. TRUDGING TOWARDS SUSTAINABLE SHIP RECYCLING: IS INDIA ON TARGET OR OFF TARGET?

The shipping industry is enormous and complex in its current state. As of January 2022, the top five vessel-owning countries are Greece, China, Japan, Singapore, and Hong Kong SAR (Special Administrative Region of the People's Republic of China).[486] The top five ship-owning states account for 53% of world fleet tonnage.[487] Approx. 40% of the global commercial shipping fleet is owned by EU shipowners, and the Greeks are at the top of that list.[488] The ten largest container shipping companies in the world (by twenty-foot-equivalent (TEU) capacity) are MSC-Mediterranean Shipping Company (Swiss-Italian), APM-Maersk (Danish), CMA CGM Group (French), COSCO Shipping lines (Chinese), Hapag-Lloyd (German), Evergreen Line (Taiwanese), ONE-Ocean Network Express (Japanese), HMM (South Korean), Yang Ming Marine Transport Corporation (Taiwan) and ZIM-Zim Integrated Shipping Services Ltd. (Israel).[489]

Ninety-four percent of global shipbuilding, in terms of tonnage, was in China, the Republic of Korea, and Japan (2021).[490] In terms of ship recycling, Bangladesh (33.2%) and India (27.5%)

486. UNCTAD, *supra* note 331, at 77.

487. *Id.*

488. *Id.*

489. *Alphaliner TOP 100*, AXS MARINE (Dec. 22, 2022), https://alphaliner.axsmarine.com/PublicTop100/.

490. UNCTAD, *supra* note 331, at 76.

accounted for the most significant portion of the world's gross tonnage. Pakistan (15.5%) stood third on the list, leaving Turkey, China, Europe, and the rest of the world responsible for the remaining share.[491] For over twenty years, 96% and 99% of all recycled tonnage have gone to just five countries: India, Bangladesh, Pakistan, China, and Turkey. The top five recycling States have recycled an average of 98% of all tonnage recycled in the world.[492]

Despite this overwhelming predominance of the EU in the shipping sector, only 22% of the ships fly an EU Member State's flag.[493] Over 73% of the world's fleet is registered in a nation other than the one in which the beneficial ownership is located.[494] According to the UNCTAD, as of January 2022, Panama, Liberia, and the Marshall Islands are the top three FOCs with the maximum number of vessels registered with their flags.[495] Once a ship outlives its usefulness and the owner decides to scrap it, a great number of those ships change their flag. In 2014, nearly 40% of all end-of-life ships broken up on beaches in South Asia were reflagged.[496] Only 7.7% of all beached ships were still flying the EU's flag, although the EU still owned 32% of them.[497] The NGO Shipbreaking Platform reports that almost half of the ships sold to South Asia in 2021 had changed their flags to a black-listed one just weeks before hitting the beach and at least seventeen of those flag changes enabled the owners to circumvent the EU SRR.[498]

491. NGO Ship Breaking Platform, *The Toxic Tide: 2021 Shipbreaking Records*, https://www.offthebeach.org; *see also* NGO SHIPBREAKING PLATFORM, *supra* note 55.

492. *See* IMO, *supra* note 23.

493. NGO SHIP BREAKING PLATFORM, WHAT A DIFFERENCE A FLAG MAKES: WHY SHIP OWNERS' RESPONSIBILITY TO ENSURE SUSTAINABLE SHIP RECYCLING NEEDS TO GO BEYOND FLAG STATE JURISDICTION 23 (2015), https://shipbreakingplatform.org/wp-content/uploads/2022/01/FoCBriefing_NGO-Shipbreaking-Platform_-April-2015_compressed.pdf.

494. *Id.* at 8.

495. UNCTAD, *supra* note 331, at 77.

496. NGO SHIP BREAKING PLATFORM, *supra* note 493, at 15.

497. *Id.* at 25; *see also 2018 Shipbreaking Records: Flags of Convenience*, NGO SHIP BREAKING PLATFORM, https://shipbreakingplatform.org/wp-content/uploads/2019/01/Flags-of-convenience.pdf.

498. *Press Release – Platform publishes list of ships dismantled worldwide in 2021*, NGO SHIP BREAKING PLATFORM (Feb. 02, 2022), https://shipbreakingplatform.org/platform-publishes-list-2021/

The above data is particularly revealing. It identifies the complex the nature of the ship-recycling industry. The top ship-building States and the top owning States rarely own or operate end-of-life ships and recycle them. Ultimately, a group of notorious flags, dubious companies, and sub-par recycling yards assume responsibility for cleaning the world of obsolete vessels.[499] Consequently, real polluters can effectively bypass liability, avoid clean-up costs, and transfer the negative externalities onto third-world countries and subaltern communities and thereby raise environmental justice questions.[500]

India has always had to compete with its neighboring countries to attract more tonnage for recycling. For many years, the industry was characterized by minimal or no regulation, which enabled the ship owners and the recycling companies to reap a windfall of profits.[501] The environmental and human costs associated with shipbreaking were thrust upon the local communities and the workers at the shipbreaking yards.[502] With increasing outrage at the international level and adverse publicity over accidents and fatalities, India imposed on its ship recyclers "green passports" and "gas free for hot work certificates."[503] These initiatives create more responsibilities in accordance with the Interna-

499. NGO SHIP BREAKING PLATFORM, *supra* note 493.

500. *See* Tony George Puthucherril, *Protecting the Marine Environment: Understanding the Role of International Environmental Law and Policy*, 57 J. INDIAN L. INST. no. 1, Jan.-Mar. 2015, at 48, 71.

501. John F. Sawyer, *Shipbreaking and the North-South Debate: Economic Development or Environmental and Labor Catastrophe*, 20 PENN ST. INT'L L. REV. 535, 536 (2002).

502. PUTHUCHERRIL, *supra* note 25, at 39-40.

503. *See* Research Foundation for Science, Technology and Natural Resource Policy v. Union of India, MANU/SC/1349/2003, ¶ 12, 13 (the Apex Court refers to a 2001 notification issued by the GMB that mandated possession of gas free for hot work certificates by the ships or else permission to beach would be denied. The Court strictly maintained that in case there were any explosions, irrespective of the possession of certification, the matter should be dealt strictly by cancelling the plot holder's license and prosecute the Explosives Inspector for issuing incorrect certificate. The Court also makes it mandatory for the ships to possess an inventory of hazardous waste (IHM) or "green passports." No breaking permissions were to be given unless the inventory is presented).

tional Maritime Organization Guidelines[504] and the Basel Convention. More recently, India enacted its ship-recycling law.[505] By adopting these measures, India hoped to secure an upper hand in responsible shipbreaking and attract more obsolete tonnage. Contrary to those expectations, however, India lost the tonnage to Bangladesh in every instance.[506] While these reforms helped clean up India's yards to a large extent, they also enabled Bangladesh to upstage India and emerge as number one in terms of the number of ships dismantled.[507]

Between 2012-2021, India, on average, dismantled at least 200 ships per year.[508] In 2012, approximately a record 495 ships were dismantled.[509] In 2021, the NGO Shipbreaking Platform reported that 763 sea-going commercial ships and offshore units were sold to shipbreaking yards around the globe.[510] More than 76% of these vessels' gross tonnage was dismantled primarily on the three beaches of Bangladesh, India, and Pakistan.[511] These numbers suggest that South Asian countries are the undisputed giants in shipbreaking. India also dismantled approximately 27% of the total world count in 2021,[512] which placed it second on the list.[513] Almost all the scrapping in India was done at ASSBY. At the same time, Bangladesh surpassed India to emerge as the number one by dismantling nearly 33% of the total global count of reported recycled vessels.[514]

504. Int'l. Mar. Org. [IMO], Res. A.962(23), U.N. Doc A 23 (Dec. 05, 2003), https://wwwcdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/AssemblyDocuments/A.962(23).pdf.

505. IMO, *supra* note 23.

506. *See* P. Manoj, *Gujarat govt to restore Alang's top ship recycling yard status*, MINT (Apr. 08, 2008, 10:29 PM), https://www.livemint.com/Politics/Xk58goL3PAyRN6A5mPiIcK/Gujarat-govt-to-restore-Alang8217s-top-ship-recycling-yar.html (notes that *Alang* lost its top spot to Bangladesh due to taxation and regulatory reasons. With no steel production in Bangladesh and high steel prices locally, Bangladesh could offer higher prices for dismantling time-expired ships).

507. *Id.*

508. *See supra* notes 55-65.

509. NGO SHIPBREAKING PLATFORM, *supra* note 63.

510. Press Release, NGO Ship Breaking Platform, *supra* note 491.

511. *Id.*

512. *Id.*

513. *Id.*

514. *Id.*; *see also* NGO SHIPBREAKING PLATFORM 2021, *supra* note 56.

Another factor contributing Bangladesh's rise is that it depends entirely on the shipbreaking industry for steel reserves. It, therefore, has to offer a higher per-tonnage price for vessels to satisfy its need to attract them.[515] Due to the critical nature of the ship-recycling industry to its economy, Bangladesh faces less pressure to act "responsibly." The abundance of cheaper labour and lax oversight ensures that costs are reduced at every possible turn so that profit margins are not affected and thus give its shipbreaking industry a competitive edge. In contrast, India is not overdependent on the ship recycling-industry for its steel like Bangladesh. This sector contributes only 1.5% of the total tonnage of steel consumed.[516]

The global economic meltdown has also significantly affected the industry's viability in India.[517] The Ship Recycling Industries Association of India points out that there was less demand for steel from the real-estate sector due to the worldwide collapse, which caused the recyclers great concern.[518] The recyclers also fear competition from another of India's neighbors, China, who can supply finished products at much lower prices.[519] The recyclers find themselves in a quandary in an uncertain market where China sell their finished products at raw materials prices. Therefore, India's recyclers are finding it hard to sustain its ship-recycling industry.[520]

In recent years, many ship recycling facilities at *Alang* have begun implementing new procedures and management systems to upgrade their yards and have applied to classification societies for

515. Shamsuddin Illius, *Bangladesh pays the highest price for global scrap ships*, THE BUS. STANDARD (Dec. 20, 2020, 11:30 AM), https://www.tbsnews.net/economy/bangladesh-takes-lead-global-scrap-ship-prices-167800 (reports that, in 2020, Bangladesh offered the best price for the scrapped ships due to huge local demand for scraps or raw materials of steel factories. Bangladesh paid $400 for containers, $390 for tankers, and $380 for bulk carriers per LDT).

516. Seetharaman & Katiyar, *supra* note 480.

517. Vijaysinh Parmar & Kalpesh Damor, *Slowdown sinks Alang's ship-breaking industry*, THE TIMES OF INDIA (Dec. 09, 2015, 2:03 AM), https://timesofindia.indiatimes.com/india/slowdown-sinks-alangs-ship-breaking-industry/articleshow/50099200.cms.

518. *Id.*

519. *Id.*

520. *Id.*

their accreditation.[521] Even though the upgrading of facilities involves financial investments, the idea was that this would translate to more profits in the long-term as the statements of compliance with HKC would result in a steady flow of end-of-life ships that required responsible scrapping.[522] Due to these improvements, several yards now comply with the HKC standards.[523] The classification societies in India have also classified these yards as compliant with the EU SRR.[524] Under the EU SRR, however, the certifications from these classification societies have no value unless these yards are included in the European list of approved ship-recycling facilities after the required due diligence.[525] The EU-adopted list of approved ship-recycling facilities is updated regularly. As of April 2022, forty-six yards from across the world find a place in the list; Yet, as seen earlier, none are from India or the entire South Asian region.[526] In other words, India's yards do not comply with the strict prerequisites mandated by the EU Ship Recycling Regulation (EU SRR). Consequently, India and its littoral neighbors cannot attract tonnage from the European Union (EU) unless they are reflagged.

As opposed to the HKC, the EU SRR indirectly prohibits "beaching" as a practice.[527] Factually, according to Art. 13(1)(b) of the EU SRR, recycling activities must be conducted upon *built structures,* and there must be environmentally sound management.[528] Since beaching, as the name suggests, occurs on a beach

521. *E.g.*, *Ship Recycling*, IRCLASS, https://www.irclass.org/marine/ship-recycling/ (Indian Register of Shipping which offers classification and certification to Ship Recycling Facilities as per HKC and EU SRR; the website offers a list of certified facilities).

522. EUROPEAN COMMUNITY SHIPOWNERS' ASSOCIATION [ECSA], ECSA VISIT TO INDIAN SHIP RECYCLING FACILITIES ALANG-SOSIYA, 25–27 FEBRUARY 2019 4 (2019), https://www.ecsa.eu/sites/default/files/2019-05/C-10965%20Annex%201%20-%20ecsa%20ship%20recycling%20india_2019-%20final%20report%20may%202019_0.pdf.

523. *See Ship Recycling*, *supra* note 521.

524. *Id.*

525. EU SRR, *supra* note 31, art. 15.

526. Commission Implementing Decision (EU) 2022/691 of 28 April 2022 amending Implementing Decision (EU) 2016/2323 establishing the European List of ship recycling facilities pursuant to Regulation (EU) No 1257/2013 of the European Parliament and of the Council, annex, 2022 O.J. (L 128) 84.

527. *See* EU SRR, *supra* note 31.

528. *Id.* at art. 13(1)(b).

without built structures, it falls foul of the EU SRR mandates.[529] Moreover, because the EU SRR stipulates that EU-flagged ships may be recycled only at EU-authorized yards that meet the requirements of the regulation,[530] many vessels, unless reflagged to a FOC, are unable to recycle at the yards at the South Asian beaches that do not fulfill the standards laid down by the EU SRR.

Among the different methods available to break ships—like "berthing,"[531] "dry-docking,"[532] the "slip-way" method,[533] and, finally, the "air-bag" method—[534]beaching is the most common in South Asia because it requires minimum infrastructure and investment. It is reported that of the total global dismantled shipping tonnage in 2015, 78% of it was beached with European owners accounting for around one-third of that total.[535] German and Greek owners head the list with respective figures of 74% and 87% of their disposed-of vessels beached.[536] Despite the centrality of beaching to the ship-recycling industry, it is the least environmentally friendly with its high polluting potential because it is practically impossible to contain pollutant spillage.[537] Since the beaching happens in the inter-tidal zone that is characterized by the

529. Eva Sinemus, *Convenient shipbreaking: shortcomings of environmental obligations for EU ship owners and possible solutions*, NORWEGIAN CTR FOR THE LAW OF THE SEA BLOG (Dec. 3, 2021), https://site.uit.no/nclos/2021/03/12/convenient-shipbreaking-shortcomings-of-environmental-obligations-for-eu-ship-owners-and-possible-solutions/.

530. EU SRR, *supra* note 31, arts. 13, 15.

531. JICA, *supra* note 47, at 250 (here, the ship is berthed along quays and broken. Hazardous material is removed at a berthing).

532. *Id.* (Hazardous Material is pre-removed at a dry docking area and then beached as usual or the complete process of dismantling occurs at a dry-dock station).

533. *Id.* (the ship is winched onto dry land over a concrete/masonry slipway and cut up on dry land).

534. Mathesh B & Satheesh Babu P K, *Energy Consumption for Ship Dismantling through Beaching Method*, IOSR J. MECH. & CIVIL ENG'G 64, 65 (2016) (Here, the ship is winched onto dry land over a slipway made of inflatable marine rubber bags).

535. EUR. COMM'N DIRECTORATE-GENERAL FOR THE ENV'T, *supra* note 253, at 3.

536. *Id*.

537. Mohmmed Shahnawaz, The effective enforcement of national ship recycling regulations in India (May 11, 2017)(MA dissertation, World Maritime University) (on file with World Maritime University), https://commons.wmu.se/all_dissertations/568, at 37.

shifting and soft wet tidal sand, it is almost impossible to bring heavy cranes and other equipment to work alongside the hull to lift heavy-cut sections. It also becomes challenging to bring in response equipment—including fire-fighting vehicles, ambulances, and cranes—to assist or remove persons injured while cutting down the hull.[538] Employing any alternative method instead would involve considerable capital investment, which the South Asian ship recyclers and the countries that house them may find challenging.

EU ship owners have found ingenious ways to bypass the legal walls erected by the EU SRR. Central to the shipping industry is the concept of a flag state. It is an essential prerequisite that a vessel be registered with a country and fly its flag before it sails and operates legally. In other words, the vessel must be registered with a *flag state*.[539] The concerned flag state inspects to ensure the vessel maintains satisfactory standards, carries several certificates, and grants registration thereafter.[540] Because the flag states are responsible under the UNCLOS for the ships flying their flags,[541] they are expected to exercise exclusive jurisdiction and control,[542] which extends to administration, technicalities, and even social matters. The idea is to maintain a "genuine link" between the vessel and the flag state.[543] This link requires flag states to form competent maritime administration to ensure compliance with these requirements. Even though these flag states' local laws regulate these vessels in the open sea and thus allow the ship to enjoy flag-state benefits such as tax, certification, and security,[544] the flag states are also obligated to ensure compliance with relevant international law.

538. Conservation Action Trust and Ors. v. Union of India and Ors., MANU/GT/0305/2020 (India), ¶ 20 (the National Green Tribunal evaluated the previous TEC reports along with those presented before the Tribunal in this matter, came to a conclusion that "Beaching" does not harm the environment in and around *Alang*, and thus allowed the practice to continue).

539. UNCLOS, *supra* note 401, art. 91.

540. *Id*. art. 94.

541. *Id.*

542. *Id.* art. 92.

543. *Id.* art. 91(1).

544. *See* art. 94.

With globalization and the sharp increase in shipping, open registries have developed. This development has led the industry to move away from traditional maritime flags—i.e., those States that limit their registers only to their nationals. Flag registries with minimum nationality requirements, also known as "flags of convenience" (FOCs), allow vessel owners to reduce costs by offering lower taxes, fees, and more manageable regulatory burdens.[545] FOC registries render an essential public and commercial function. They have facilitated the growth of the shipping industry with UNCTAD reporting that approximately 70% of commercial ships are registered under FOCs.[546] However, there have been concerns about whether there is a "genuine link" between the FOCs and the vessel.[547]

Most of these FOC registries are operated by privately-owned companies that are situated through its agents *outside* the actual flag state.[548] The spoils are shared between these companies and the concerned States. Owners whose ships are destined for scrapping exploit this loophole to escape the strict EU SRR regulations and indulge in "flag hopping." They sell their vessels to a cash buyer who reflags the ship to a non-EU state and sells it to one of the yards at the South Asian beaches. FOCs such as Saint Kitts and Nevis, Comoros, Palau and Tuvalu, and, to a lesser extent, Togo, Tanzania, Saint Vincent and the Grenadines, and Sierra Leone are mainly used to reflag end-of-life ships destined for scrap yards.[549] These flags have a poor implementation record of international maritime standards. However, they are the industry favorite for vessel owners who want to sell their vessels to recycling yards to maximize profits.[550] By registering the end-of-life ships with these FOCs, the shipowners who enjoyed the beneficial ownership can wash their hands of any responsibility, and the new owners can conceal themselves behind the regulatory and jurisdictional maze. They can save expenses and get around laws that

545. NGO SHIP BREAKING PLATFORM, *supra* note 493.

546. UNCTAD, *supra* note 331, 77-78.

547. *See* Moira L. McConnell, *ITLOS and the tale of the tenacious 'genuine link'*, *in* THE DEVELOPMENT OF THE LAW OF THE SEA CONVENTION: THE ROLE OF INTERNATIONAL COURTS AND TRIBUNALS 193 (Øystein Jensen ed., 2020).

548. NGO SHIP BREAKING PLATFORM, *supra* note 493, at 10.

549. *Id.* at 13.

550. *Id*. at 2.

speak to environmental protection and workers' rights.[551] The actual financial risks associated with compliance get diffused in the process.

In such a scenario where the EU dominates the shipping market and EU-owned or EU-flagged vessels comprise almost 40% of the global fleet, India's ship recyclers may find themselves at a considerable disadvantage because they cannot attract European tonnage unless it is reflagged. While this issue is also the same with India's competitors in South Asia, Bangladesh and Pakistan have yet to ratify the HKC. Since India, as a party to the HKC, has to enforce the terms of this Convention, it has put in efforts to secure compliance with the HKC by investing effort and capital to refurbish the yards.[552] Consequently, the prices that India's shipbreakers can offer for obsolete tonnage are less than what Bangladesh and Pakistan can offer, and India's shipbreakers are increasingly beginning to feel the pinch.[553] They believe that the level playing field formerly available to them vis-à-vis the ship recyclers in Bangladesh and Pakistan has been disturbed and puts them at a severe disadvantage.[554] Eventually, the ship scrappers in India might be elbowed out of the ship-recycling market. These fears may prove a dampener and disincentivize India from continuing to comply with and investing in developing a sustainable ship-recycling culture.

While India is on track to secure compliance with the HKC, the inconsistencies in the different legal regimes at the international level that apply to ship recycling could potentially derail India's efforts and push it to move backwards. If India has to stay afloat in the global ship recycling business, it must find a way to

551. *Id.*

552. *See Number of Recycling Facilities Having Hong Kong Convention Statement of Compliance*, HELLENIC SHIPPING NEWS, May 10, 2021, https://www.hellenicshippingnews.com/number-of-recycling-facilities-having-hong-kong-convention-statement-of-compliance/, (discussing that the ship recycling facilities based in India started investing heavily to develop the infrastructures to comply to the HKC guidelines.)

553. *See supra* text accompanying notes 499–505.

554. *See* Avinash Nair, *Despite 50 per cent of yard lying idle, Sonowal says State plans to double Alang ship-breaking capacity*, THE INDIAN EXPRESS (Sept. 13, 2022, 5:23 AM), https://indianexpress.com/article/cities/ahmedabad/despite-50-per-cent-of-yard-lying-idle-sonowal-says-state-plans-to-double-alang-ship-breaking-capacity-8147441/.

access that market segment. One possible way to do so would be an agreement between the EU and India under Article 11 of the Basel Convention[555] that would allow the EU-flagged ships to enter the Indian beaches for recycling.[556] However, such a practice could lead to indeterminacy because Basel is essentially unsuited to regulate the ship-recycling business.[557] Moreover, there is no guarantee that the EU would be willing to enter into a bilateral agreement with India.

Even though the IMO-spurred HKC is essential to securing sustainable ship recycling, the dichotomy between the HKC and the EU SRR over beaching and other standards must be sorted out. Measures must be adopted to correct the apparent discrepancy and ensure normative equivalency as regards the requirements mandated by the HKC and the EU SRR. Either the HKC adopts stringent standards akin to the EU SRR, or the EU SRR must be re-fashioned to be in tune with the realities recognized in the HKC. These changes are important because, even though the EU SRR was designed to facilitate HKC's early ratification, the inconsistency has led to the opposite result. Almost thirteen years have elapsed since the adoption of the HKC, and it looks like it will not soon come into force.[558]

Alternatively, putting up dry docks at the recycling yards on South Asian beaches for recycling may need to be actively pursued. The costs of creating such dry docks are significant.[559] For

555. Basel Convention, *supra* note 24, art. 11 (enabling the Parties to the Convention to enter into bilateral, multilateral, and regional agreements to trade in waste and scrap covered by the Convention).

556. Amitabh Kumar, the Director General of Shipping, India proposed the same to the EU*; see also* Nair, *supra* note 554.

557. *See supra* text accompanying notes 291–92.

558. *See* Ballast Water Management Convention, *supra* note 216; *see* Nairobi International Convention on the Removal of Wrecks, May 18, 2007, 3283 U.N.T.S. 1 (entered into force Apr. 14, 2015); Maritime Labour Convention, Feb. 23, 2006, 2952 U.N.T.S. 1 (entered into force on Aug. 20, 2013); International Convention on the Control of Harmful Anti-Fouling Systems on Ships, Oct. 05, 2001, 56215 U.N.T.S. 1 (entered into force Sept 2008).

559. *E.g.*, *Shri Nitin Gadkari to lay the foundation for India's largest Dry Dock at Cochin Shipyard tomorrow*, PRESS INFO. BUREAU (Oct. 29, 2018, 3:54 PM), https://pib.gov.in/newsite/PrintRelease.aspx?relid=184442 (noting the construction of a 310m-long dry dock in Kochi, Kerala, India, destined for shipbuilding and repairs, cost around Rs 1799 crores (approx. USD 220 million). Despite the investment, this dry dock may not be able to accommodate the modern Panamax cargo vessels that are usually 400m long. Rather, this

example, after a detailed survey of the yards at *Alang* in 2017, the Japan International Cooperation Agency (JICA) agreed to loan USD 76 million to upgrade the recycling yards in *Alang* to make it more environmentally friendly.[560] It was estimated that the project's total cost was USD 111 million. The remainder would have to be borne from taxes and fees by the Government of Gujarat and the Union Ministry of Shipping.[561] Despite the challenges involved in ensuring the funds, the human and environmental benefits are enormous.

To introduce dry docks for ship recycling and comply with EU standards, what is needed is the "political will" and empathy towards the plight faced by the workers and the local communities upon whom is thrust the negative externalities created by this industry. Ideally, the Government of India could divert a share of its profits from *Alang*. The General Secretary of the Ship Recycling Industrial Association at *Alang* claims that when three million tonnes of steel are recycled at *Alang*, India's Union Government secures a revenue of Rs. 600 to Rs 700 crores (approx. USD 90 million). At the same time, the Government of Gujrat obtains Rs 250 crore (approx. USD 30 million).[562] Similarly, the EU must also

drydock is aimed at repairs and especially to promote the building of comparatively smaller vessels like LNG Carriers, drill ships, jack-up rigs, large dredgers, aircraft carriers for the Indian Navy and high-end research vessels); Jonathan Boonzaler, *Andhra Pradesh planning India's first European-standard ship-recycling facilities*, TRADEWINDS (Oct. 26, 2022, 6:58 AM), https://www.tradewindsnews.com/esg/andhra-pradesh-planning-india-s-first-european-standard-ship-recycling-facilities/2-1-1340316 (noting, recently, the deputy chief executive of the Maritime Board of the Indian State of Andhra Pradesh expressed plans to set up India's first European-standard ship-recycling facilities in Andhra Pradesh which includes 400 mt. dry docks or equivalent facilities. There is also a proposal to introduce a steel cluster in and around these newer facilities, which would reduce the cost of logistics and transport and promote greener recycling).

560. *India Signs 76 Million US Dollar Loan Deal with Japan International Cooperation Limited (JICA) to Upgrade Alang-Sosiya Shipyards*, PRESS INFO. BUREAU (Sept. 17, 2017, 6:07 PM), https://pib.gov.in/newsite/PrintRelease.aspx?relid=170818.

561. *Id.*; *see also* EIA, *supra* note 7, at Drawing No. MEC/Q770/11/S2/02 (the report provides a rough layout of the proposed dry dock).

562. PTI, *Alang positioned to grab 50% share in global ship recycling, employs 25,000 workers directly: Mandaviya*, DECCAN HERALD (Oct. 04, 2020, 03:45 PM), https://www.deccanherald.com/national/west/alang-positioned-to-grab-50-share-in-global-ship-recycling-employs-25000-workers-directly-mandaviya-897108.html.

contribute significantly to the upgrade of the yards because it is ultimately their garbage that is being recycled. Interestingly, the EU cannot claim the moral high ground by insisting on recycling upon built structures. This is because there is nothing in the EU SRR that requires providing technical or financial assistance to the South Asian ship recycling countries to improve their beaching process. The EU SRR practically pushes the Third World ship-recycling countries into a quandary, knowing very well that India, Bangladesh, and Pakistan will be hard-pressed to devote funds to refurbish the yards unless there is external support. The HKC, on the other hand, recognizes this reality and mandates technical assistance and cooperation.[563]

While it is true that developing countries need steel and other reusable materials and the economic and employment opportunities that the shipbreaking industry creates, shipbreaking is not solely a developing-country issue. Developed countries need these rotting carcasses, an eyesore, removed from their coastlines. Because of the demanding nature of domestic environmental and labour legislation, it is virtually difficult, if not impossible, for developed countries to dispose of the diverse range of vessels domestically. Accordingly, an efficient legal and institutional framework is needed at the international level that ensures the smooth flow of end-of-life ships from developed countries to the yards in South Asia and other regions that follow sustainable scrapping practices without having to reflag.[564] While the HKC

563. HKC, *supra* note 30, art. 13.

564. *See* Prosecutor v. X (Seatrade), No. ECLI:NL:RBROT:2018:2108 (Neth.); Reuters Staff, *Dutch shippers sentenced for having ships demolished on Indian beach*, REUTERS (Mar. 15, 2018, 10:52 PM), https://www.reuters.com/article/us-netherlands-shipping-court-idUSKCN1GR2NC; *see also* David Galea & Anna Fomina, *UK: The Seatrade Verdict: Has Scrapping Just Got A Lot More Onerous?*, MONDAQ (Oct. 23, 2018), https://www.mondaq.com/uk/marine-shipping/747932/the-seatrade-verdict-has-scrapping-just-got-a-lot-more-onerous (As mentioned, to escape the strict EU SRR and other regulations, shipowners find it easier to reflag the vessel to one of the flags of convenience for the vessel's last voyage. In 2018, in the first of its case, a Dutch shipping company and its directors were held criminally liable for *illegally* sailing ships to India to have them demolished in violation of the EU Regulation No. 1013/2006 relating to waste shipments (EWSR). The Rotterdam district court held that the company violated the EU rules and noted that dismantling on these beaches polluted the environment and endangered the workers' lives. Furthermore, it held that the practice of beaching, common in South Asia, polluted water and air and endangered the lives of untrained workers. Although

perfectly fits the bill, the dichotomy between the HKC and the EU SRR should be sorted out first. This agreement would ensure that those who enjoyed the beneficial ownership cannot divest responsibility. It would also ensure that the recycling facilities in India and the South Asian region will be able to attract EU-flagged ships and thereby prompt the other shipbreaking majors like Pakistan and Bangladesh to adopt the HKC and domesticate the prescriptions contained therein. Moreover, the corpus available in the IMO-administered Ship Recycling Fund must be expanded and used to provide at least partial aid for the South Asian countries to construct dry docks and implement other measures to secure sustainable scrapping.

VI. CONCLUSION

Shipbreaking is one of the most hazardous industries to the environment and health of those involved in the breaking process. Reeling from severe international criticism over how the recycling yards in developing countries operate, the International Maritime Organization (IMO) approved the HKC to improve the image of this industry. Its core objective was to secure environmentally and human-rights-friendly ship scrapping. India ratified the HKC and enacted legislation to enhance the international reputation of its shipbreaking industry. Its Recycling Act, 2019 streamlines the procedures followed by India's shipbreaking industry, addressing the two core concerns associated with ship recycling based on the benchmarks established by the HKC: 1) environmental harm and 2) occupational health and safety risk. Concerted efforts and significant capital have also been invested in upgrading substandard ship-recycling infrastructure and related practices. Consequently, among the South Asian countries, India's ship-recycling industry,

the vessel was sold off to shipbrokers, the Court held that the moment the ship left the Rotterdam and Hamburg ports, it was "waste" under the EWSR. Thus, this case laid threadbare the possibility of ship owners facing criminal prosecutions several years later if it was found that there was some misdeclaration by them.); *see also* Niklas Krigslund, *Maersk has to explain re-flagging of scrapped ships to Danish authorities*, SHIPPINGWATCH (Nov. 21, 2019, 1:17 PM), https://shippingwatch.com/carriers/Container/article11771502.ece (recently, the shipping giant Maersk came under the radar of the Danish environment ministry regarding the reflagging of their vessels and being sold off to cash buyers, which eventually ended up in Alang for recycling).

notwithstanding its imperfections and gaps, is the most developed in ensuring responsible ship recycling.

Despite being an IMO-sponsored International Maritime Convention, which lends to the HKC a broad range of influence, the EU SRR, a regional legal instrument that primarily applies to the EU, significantly limits its scope. That limitation occurs because the EU is such a crucial player in the shipping world that shipping-industry developments from within it that resonate beyond its boundaries. India's yards do not conform with the stricter EU SRR, which mandates, among other things, that for recycling facilities to be included on the European List, the facility must operate from built structures. Consequently, EU-flagged ships steer clear of India's ship-recycling yards even if those yards comply with the HKC mandates. Because of that avoidance, scrapable ships from the EU that have to reach India's shores (and even that of its neighbors) must indulge in flag-hopping. Even so, Bangladesh and Pakistan may still have the edge over India because the new ship owners may prefer these countries over India because they have not yet ratified the HKC. Their yards operate rudimentarily in a minimally regulated environment and can offer better prices for scrapable tonnage than those in India. Ultimately, this inability to attract the EU tonnage and the ensuing competition may prove a dampener for India, which might turn the clock back and return to previous practices.

As the saying goes, it is inadvisable to sail on two boats. By ratifying the HKC, enacting its Recycling Act, 2019, and investing in infrastructure at *Alang*, India is on target for sustainable ship recycling. Yet, it finds itself at the receiving end as the dichotomy between the HKC and the EU SRR threatens to veer from India's initiatives and disincentivizes the ratification of the HKC by the other major players.[565]

Accordingly, it is necessary for the IMO and the EU to sort out their normative differences as soon as possible. Such a venture

565. It is reported that Bangladesh may ratify the HKC in 2023. Even so, it is doubtful whether the situation will improve as long as the core issue of the tussle between the two regimes persists; *see* Bangladesh Ship Recycling Act, 2018, https://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=106422&p_count=15&p_classification=22 (according to the section 7 of the Act, the government of Bangladesh has set a target date for ratification to the HKC as five years from the date of enforcement of the Act, i.e., Feb. 12, 2018).

would ensure a level playing field globally for the ship-recycling industry based on sustainability. It would also help eliminate undercutting and predatory practices, act as a catalyst to reform substandard scrapping, and facilitate the ratification of the HKC by all the major players. In sum, human lives and the environment should not suffer unnecessarily and perish simply to enable an avaricious few to slip past regulatory nets because of inconsistencies and gaps and earn a few more pieces of silver.

APPENDIX: TABLE 1

APPENDIX: TABLE 1: List of all the Major Laws, Applicable to the Ship Recycling Industry in India.

Applicable Domain	**National statutes applicable to Ship Recycling Facilities in general**	**Corollary statutes applicable to ASSBY enacted by the State of Gujarat**
Labour	1. The Code on Wages, 2019 (to replace) a. Payment of Wages Act, 1936 b. Minimum Wages Act, 1948 c. Payment of Bonus Act, 1965 d. Equal Remuneration Act, 1976.	1. The Minimum Wages (Gujarat) Rules, 1961
	2. The Code on Social Security, 2020 (to replace) a. Employee's Compensation Act, 1923 b. Employees' State Insurance Act, 1948 c. Employees' Provident Funds and Miscellaneous Provisions Act, 1952 d. Maternity Benefit Act, 1961 e. Payment of Gratuity Act, 1972 f. Unorganised Workers' Social Security Act, 2008	1. The Payment of Gratuity (Gujarat) Rules, 1973

	3. Occupational Safety, Health and Working Conditions Code, 2020 (to replace) a. Factories Act, 1948 b. Contract Labour (Regulation and Abolition) Act, 1970 c. Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979 d. Dock Workers (Safety, Health and Welfare) Act, 1986	1. The Gujarat Factories Rules, 1963 2. The Contract Labour (Regulation and Abolition) (Gujarat) Rules, 1972 3. The Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service)(Gujarat)Rules, 1981
	4. Code on Industrial Relations, 2020 (to replace) a. Industrial Disputes Act, 1947 b. Trade Unions Act, 1926 c. Industrial Employment (Standing Orders) Act, 1946.	1. Industrial Disputes Act (Gujarat) Rules, 1966 2. The Gujarat Trade Unions Regulations, 1963 3. Industrial Employment (Standing Order) (Gujarat Rules), 1955
	5. The Employers' Liability Act, 1938	x
	6. The Child Labour (Prohibition and Regulation) Act, 1986	x
	7. The Children's (Pledging of Labour) Act, 1933 (No. 2 of 1933)	x
Shipping and Maritime	1. Recycling of Ships Act, 2019	Gujarat Maritime Board Ship Recycling Regulations, 2003
	2. Recycling of Ships Rules, 2021	
	3. Ship Breaking Code, 2013 (*Superseded* by the Recycling of Ships Rules, 2021)	
	4. Major Port Trusts Act, 1963	
	5. Indian Port Act, 1908.	
	6. Merchant Shipping Act, 1958	
	7. Admiralty (Jurisdiction & Settlement of Maritime Claims) Act, 2017	

	8. Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act, 1976	
	9. Coast Guard Act, 1978	
Environment	1. Environment (Protection) Act, 1986	x
	2. Environment (Protection) Rules, 1986	x
	3. Air (Prevention and Control of Pollution) Act, 1981	x
	4. Water (Prevention and Control of Pollution) Act, 1974	x
	5. Water (Prevention & Control of Pollution) Cess Act, 1977	x
	6. The National Green Tribunal Act, 2010	x
	7. Noise Pollution (Regulation and Control) Rules, 2000	x
	8. Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016	x
	9. Solid Waste Management Rules, 2016	x
	10. Coastal Regulation Zone (CRZ) Notification, 2018	x
	11. The Plastic Waste Management Rules, 2016	x
	12. Construction and Demolition Waste Management Rules 2016	x
	13. Municipal Solid Wastes (Management and Handling) Rules, 2000	x
	14. E - Waste (Management and Handling) Rules, 2011	x
	15. Batteries (Management & Handling) Rules, 2001	x
	16. The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989	x
	17. Public Liability Insurance Act, 1991	x
	18. The Environment Clearance Rules, 1997	x
	19. The Environment Public Hearing Rules, 1997	x
	20. Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987	x

	21. Atomic Energy (Radiation Protection) Rules, 2004	x
Miscellaneous	1. Customs Act, 1962	x
	2. Explosives Act, 1884	x
	3. Explosives Rules, 2008	x
	4. Gas Cylinders Rules, 2016	x
	5. Petroleum Act, 1934	x
	6. Petroleum Rules, 2002	x

APPENDIX: TABLE 2

APPENDIX: TABLE 2: An Overview of the Interrelationship Between the Various International Ship Recycling Instruments and India's Ship Recycling Law

S. No.	Core Elements	HKC, 2009	EU SRR, 2013	Recycling of Ships Act, 2019	Recycling of Ships Rules, 2021
1	**Scope**	Article 3	Article 2, 31	Section 1	Rule 2
2	**Consistency With International Law**	Article 15, 16	Article 1	Preface	Rule 4(l)
3	**Application of 'Precautionary' Principle**	Preamble	x	x	x
4	**Application of 'Polluter Pays' Principle**	x	Recital para. 19 r/w Article 22	x	Rule 5
5	**Entry Into Force**	Article 17	Article 31	Section 1	Rule 1
6	**Distinction Between Member and Non-Member States**	x	Article 12, 14, 15	x	x
7	**Port State Control**	Annex (Reg. 11(3))	Article 11	Section 28	Rule 16
8	**Exchange of Information with the Parent Orgnaization (IMO/EU)**	Article 7	Article 21	Section 24 (however, reporting limited to the National Authority)	x
9	**Designation of Competent Authorities**	Annex (Reg. 15(4))	Article 18	Section 4	Rule 4
10	**Duties of the Shipowners**	Annex (Reg. 10, 11, 17, 24)	Article 6	Section 19	Chapter 3
11	**Survey and Certifications**	Article 5 r/w Annex (Reg. Ch 2, Part C)	Article 8, 9, 10	Section 7, 8, 9, 10	Rule 9

12	**Inventory of Hazardous Materials (IHM)**	Article 8 r/w Annex (Reg. 5, 11)	Article 5	Section 8	Rule 8, 15, r/w First Schedule
13	**Inspection of Ships**	Article 8	Article 8, 11	Section 13, 20, 28	Rule 4(f), 9, 16
14	**Obligation to Minimize Cargo Residue**	Annex (Reg. 8(2))	Article 6(2)(b)	Section 19(1)(iii)	x
15	**Safe-for-Hot-Work Certification Obligation on Ship Owners**	Annex (Reg. 8(3)	Article 6(2)(c)	Section 19(2)	x
16	**Control of Hazardous Materials**	Annex (Reg. 4)	Article 4	Section 6	x
17	**Beaching**	x	x	-	x
18	**Compensation with regards to Undue Delay of Detention of Ships**	Article 11	x	Section 39	x
19	**Authorization of Ship Recycling Facilities / Authorizing Entity**	Article 6, 7 r /w Annex (Reg. 16)	Article 13, 14, 15	Section 11, 12, 13	Chapter 4
20	**Safe and Environmentally Sound Management of Hazardous Materials**	Annex (Reg. 20)	Article 4, 5, 13, 15	Section 21	Rule 5
21	**Design, Construction and Operation of Yards**	Annex (Ch. 3)	Article 13(1)	Section 12	x
22	**Ship Recycling Plan**	Annex (Reg. 9, 18)	Article 7	Section 17	Rule 9
23	**Emergency Preparedness and Response**	Annex (Reg. 18, 21)	Article 13(h)	Section 14	x
24	**Technical Assistance and Cooperation**	Article 13	x	x	x
25	**Worker Safety & Trainings**	Annex (Reg. 18, 22)	Article 13(i)	Section 15	x
26	**Safe-for-Hot-Work Certification Obligation on Facilities**	Annex (Reg. 9(3), 19)	Article 7(2)(c)	x	Rule 9(1)(d)(iv)(3)

27	**Right to Refuse /Detain Vessels in case of Non-Compliance**	Article 9(3)	Article 6(5)	Section 28 r/w Section 31(1)	x
28	**Maintenance of Records on Incidents, Accidents, Occupational Diseases and Chronic Effects**	Annex (Reg. 18(9), 23)	Article 13(j)	x	x
29	**Violations**	Article 9 & 10	Article 23	Chapter IX	x
30	**Penalties**	x	Recital para. 17 r/w Article 22	Section 31, 32	Rule 20
31	**Enforcement**	x	Title V	Chapter IX	x
32	**Dispute Resolution**	Article 14	x	Section 38	x