**Shipbreaking**

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Introduction

Shipbreaking refers to the recycling of end of life ships. It is also known as demolition, disposal, or recycling, especially by industry stakeholders. It becomes problematic or criminalized when it takes place through unregulated means or against international environmental standards due to uneven regulations.

A group of men working on a beach

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Ships are recycled because they are no longer sea-worthy, because they no longer comply with International Maritime Organization (IMO) regulations, or because “the economic context makes it more profitable to dismantle the ships for parts and secondary raw materials than to keep them in business”.[1](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-1-89) Research suggests that adverse economic conditions, such as global turn downs and crises, render ships redundant rather than ships coming to a physical end of life.[2](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-2-89)

The shipbreaking industry reclaims valuable steel and other metals.[3](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-3-89) End of life vessels, however, are considered hazardous waste under international environmental law because they commonly contain toxic materials, such as asbestos and heavy metals.[4](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-4-89) According to the provisions of the Basel Convention, these wastes must be managed in an environmentally sound manner. Used oils, slops, and sludges also require special consideration.[5](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-5-89)

Shipbreaking primarily takes place in India,[6](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-6-89) Pakistan,[7](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-7-89) Bangladesh,[8](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-8-89) China,[9](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-9-89) and Turkey.[10](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-10-89)  India and Bangladesh attract the most attention, dismantling more than two-thirds of the global total end of life vessels annually.[11](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-11-89)  This is due to the availability of cheap labour, geographical advantage, favourable weather conditions and local demand for scrap metals, as well as a lack of enforcement of worker’s rights, or environmental and coastal regulations.  These countries are also synonymous with ‘beaching’ as the method of shipbreaking.[12](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-12-89)

While shipbreaking can take a number of forms, including demolition inside dry or segregated docks, beaching is particularly problematic (see impact). Ships are driven on the high tide into tidal mudflats, from where they are dismantled.[13](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-13-89), sometimes without proper structures to ensure full containment of hazardous waste materials.  Waste can also be burned on the beach, and hazardous materials such as asbestos are removed by hand before being resold or dumped in the sea.[14](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-14-89)  Ships broken in this way often contain increased levels of hazardous materials because beaching requires that they arrive in an operational state. This can have significant negative impacts, including environmental pollution and worker injury, illness, and death (see impact).[15](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-15-89)

Beaching a preferred method of shipbreaking, both for shipping companies and those doing the recycling. Ship weight is assessed by Light Displacement Tonnage (LDT). In normal recycling, a ship may sell for USD $37 per LDT, but up to USD $260 when recycled through beaching.[16](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-16-89)  This is due to significant differences in labour costs, as well as costs related to environmental and safety regulations.  Sales of ships to shipbreaking yards averaged around USD3,835,227 per ship, on the basis of 704 vessels being sold for a total of USD 2.7 billion in 2021.[17](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-17-89) These figures can vary significantly depending on the characteristics of the ships.  In 2014, for example, the Athens Trader, a 10, 317 tonne container ship, was reported to have been bought by an Indian shipbreaking company for USD $495 per tonne, which amounts to USD $5,106,915 in total. [18](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-18-89)

It is important to note that shipbreaking provides important employment opportunities in the countries where it takes place. In Bangladesh, for example, approximately 22,000 workers are directly employed by the shipbreaking industry and 200,000 indirectly employed.[19](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-19-89) The scrap metal forms a valuable resource for the shipbreaking nations, and equipment from ships is also often reused.[20](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-20-89)

**Characteristics**

Not all shipbreaking is illegal due to uneven and fragmented regulations, and different interpretations of international law. At a national level, many shipbreaking countries do not have regulations in place that criminalise the practice.  At an international level, while the Basel Convention prohibits the export of hazardous waste from more developed to less developed countries,[21](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-21-89) there has been a dispute over whether the convention applies to end of life vessels.[22](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-22-89) The shipping industry considers a ship a ship rather than waste, and argue that they cannot be both things at the same time.[23](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-23-89)  Proponents of the Convention argue, however, that a ship can be both a ship and hazardous waste at the same time, and that the distinction can be made when it is decided to discard the vessel for scrapping.

Ship owners in the Global North often externalise the costs of recycling to countries where there are not stringent regulations, or where these regulations are not enforced. This has been termed as ‘toxic colonisation’,  with the choice of the countries receiving waste being conditioned by economic necessity, political instability and potential conflict with recipient countries.[24](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-24-89)  As a result, shipbreaking may not always be perceived as a criminal practice, but one of blue (in)justice.

Some regions do have strict regulations on ship breaking. Examples include the European Waste Shipment Regulation and European Ship Recycling Regulation that prohibit the sending of a ship containing hazardous materials to a developing nation for recycling.[25](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-25-89) The exploitation of loopholes and illegal practices to avoid these regulations is more frequently perceived as criminal, though mostly through the lens of white collar or corporate crime.[26](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-26-89)

Even where it is illegal to knowingly scrap a vessel in these ways, the intention can be difficult for other parties to establish.[27](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-27-89) The process is therefore easy to conceal through a number of problematic practices. The ownership of ships can be transferred whilst a vessel is at sea and beyond the jurisdiction of any state.[28](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-28-89) Multiple changes of ownership over a relatively short period can obscure liability, because companies can claim to have sold the ship but not with the intention of it being eventually scrapped by the new owner, most often a broker.  These cash buyers account for around 80 per cent of transactions.[29](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-29-89)

Open registers, or flags of convenience, make this process easier because ships can be re-flagged to a state that does not have strict environmental regulations.[30](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-30-89) This is facilitated by so-called end-of-life flags, with registration packages available to purchase entirely online and that typically “includ[e] fast-track registration procedures, valid only for a very limited period of time, at a special lower price”.[31](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-31-89) An empirical review of registry and scrapping data found that 40 percent of beached vessels had changed flag shortly prior to decommissioning.[32](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-32-89)

In some flag States, the number of dismantled ships tripled that of their operational fleets.[33](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-33-89) For other registries such as Liberia or Panama, ship life cycle and registration records indicated that around 50% of the fleet consisted of dismantled ships.[34](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-34-89) One example of note is the Comoros registry, where more than 84% of ships had been registered for the sole purpose of immediate dismantling.[35](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-35-89)

Shipbreaking by beaching is thus the result of a complex interplay of various economic actors (shipping lines, financial institutions, cash buyers, classification companies, shipping yards) and political actors (port states, flag states, tax havens) at national and international levels. The fact that companies seem to undertake these practices for reputational considerations, rather than to avoid criminal sanctions, demonstrates the greyzone nature of shipbreaking and the degrees of its criminality.

A further linkage to criminal practice is within the shipbreaking yards themselves. ] Bribery and threats are common practices against those who attempt to investigate shipbreaking activities, and are thought to be undertaken by organised criminal groups.[36](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-36-89)

**Scope**

There are various estimates as to the scope of shipbreaking by beaching. It has been suggested that around one thousand sea vessels per year are sent for scrapping, 70 per cent of which are scrapped in Asia.[37](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-37-89)  Another estimate suggests that 80 per cent of vessels are decommissioned by the beaching method.[38](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-38-89) NGO Shipbreaking Platform states that 7073 ships have been beached since 2009.[39](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-39-89) In terms of tonnage, the European Commission has reported ‘40,000-1.3 million tonnes of toxics on board of end of life vessels are exported each year to South Asia from the EU alone’.[40](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-40-89)

**Impact**

Shipbreaking can cause significant harms, including negative impacts on workers and wider environmental harms.

For the workforce, the risks involved in the demolition of ships are manifold due to frequently unsafe conditions.[41](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-41-89) These can include fires and explosions caused by latent bunker fumes set off by acetylene torches, suffocation, falling from heights, and being crushed by falling objects.[42](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-42-89) These hazards are exacerbated by inadequate training and protection. There are also dangers arising from the release and handling of hazardous materials.[43](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-43-89)  Workers report significant day to day eye problems and burning sensations, and the average lifespan of a shipbreaking worker is roughly 40 years old.[44](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-44-89) In Alang, a notorious shipbreaking area in India, one in six workers showed signs of asbestosis.[45](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-45-89)

While it is difficult to assess the long term implications on human health of shipbreaking in Bangladesh and India, there have been studies of health impacts in Taiwan, previously a notorious shipbreaking destination. These data demonstrate a strong impact on lung health and asbestosis, arising from poor ventilation when extracting asbestos, fumes, and vapours.[46](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-46-89)

NGO Shipbreaking Platform suggests 430 workers have been killed since 2009 in India and Bangladesh,[47](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-47-89) with 359 also suffering permanent disability.[48](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-48-89) Fatalities in India have been recorded as 2 for every 1000 workers.[49](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-49-89) The International Labour Organization (ILO) states that these high fatality rates makes shipbreaking one of the most dangerous occupations in the world.[50](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-50-89)

There is also a wider environmental impact. Shipbreaking may be the largest land-based source of marine pollution in South Asia.[52](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-52-89) Because ships are dismantled on the shore, it is impossible to prevent oil pollution into the ocean.[53](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-53-89) This is thought to impact the marine environment for around 30km around the shipyards, but due to currents such pollutants could lead to wider marine and fisheries contamination.[54](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-54-89)

Biodiversity can be damaged in areas adjacent to the shipbreaking yards, especially due to chemicals like Tributyltin (TBT) which is found in paint on ships.[55](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-55-89) Fishers have stated stocks and quality have decreased in areas close to shipbreaking sites.[56](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-56-89) The first Greenpeace report on the Alang and Mumbai shipbreaking yards concluded that *‘. . . even if activities were stopped at these sites, the high concentration of TBT in the marine sediment and thus the food chain, will remain in the next 10–20 years. Heavy metals, asbestos dust and poorly degradable pollutants from the combustion processes are also contaminating people living in neighbouring areas’.*There is also significant coastal erosion and mangrove depletion, making local communities more vulnerable to natural disasters such as cyclones, storm surges, and floods.

**Responses**

International regulatory responses to shipbreaking have been limited. The Basel Convention on hazardous waste makes no special provisions for ship-recycling. Shipowners and shipbreakers have argued that ships bound for scrapyards are not covered by the import/export restrictions of the Basel Convention, on the theory that operational vessels do not fall under the Convention’s definition of ‘waste’. In terms of international responses to labour exploitation and unsafe working conditions, the first international instrument directed squarely at the industry came in 2003, when the ILO formulated a set of “Guidelines on Safety and Health in Shipbreaking” addressed to ship recyclers and national governments.  However, these guidelines were not legally binding.

In response, the Hong Kong Convention for the Safe and Environmentally Sound Recycling of Ships has been adopted by the IMO through a tripartite Joint Working Group including the International Maritme Organization (IMO), ILO and Basel Convention.  The Hong Kong Convention aims to ensure ships are fit for environmentally sound recycling and that shipyards have plans in place to prevent environmental damage. Under the Convention, ship owners need to provide inventories of hazardous materials on vessels to be recycled, as well as requiring shipyards to produce a Ship Recycling Plan.  Parties will be required to take effective measures to ensure that ship recycling facilities under their jurisdiction comply with the Convention.

However, the Convention has not, to date, come into force. It has also been suggested that the Hong Kong Convention, once in force, will not be sufficient because non-party facilities will still be able to accept party ships following re-flagging. In consequence, these loopholes could still be exploited if the Hong Kong Convention were not to be ratified by relevant states (currently India and Turkey have ratified, but not Bangladesh). In addition, the IMO has no powers of enforcement or sanction, and the paperwork (certificates, licenses and inventories) can only be verified by the issuing state.  Even if it were to be ratified, therefore, the effectiveness of the Hong Kong Convention would depend on national cooperation to be effective. Some shipbreaking yards and ship owners are already abiding by the Hong Kong Convention, but the standards in many shipbreaking facilities remain inadequate. Notably, the Convention does not ban beaching.

Regional responses have had some degree of success. The EUs’s European Ship Recycling Regulation came into force in 2018. It requires an inventory certificate to be carried onboard and has an approved list of scrapping facilities. It *de facto* bans beaching by requiring that ship recycling facilities be operated from built structures.  While it is also vulnerable to circumvention via reflagging, there have been cases where ships have been sold prior to scrapping but the original owners were sanctioned following investigations that uncovered an intention to sell for the purpose of scrapping.

All such international regulations are dependent to some degree on national regulation and enforcement. While Bangladesh and India do have relevant regulations, such as Bangladesh’s Ship Recycling Act 2018, implementation is extremely weak and enforcement is lacking. There are a number of reasons for this.

First, is the problem of losing out economically if enforcing stricter and more expensive rules.  India’s enforcement of the requirement that vessels be gas-free and decontaminated prior to demolition led to the diversion of larger tankers to Bangladesh, making further enforcement economically untenable.  It has been argued that regulations in Bangladesh are sometimes ignored for the same purpose.

Second, there are problems of implementation. Bangladesh’s court, for example, has issued directives to close shipyards that operate without clearance from the Department of Environment. The Government, however, failed to comply, with ships still being imported in violation of the regulation.   One practice stipulated in Bangladesh’s Ship Recycling Act is the issuing of a no-objection certificate following an assessment of a ship.  However, the Department for Environment is not responsible for this process, and there have been accusations of large-scale fraud and corruption which render the certificates essentially meaningless in practice.  Alam and Farque have observed that the ‘enactment of these rules would represent a crucial step towards the coherence of the domestic legal regime governing shipbreaking… and would mitigate the fragmentation of responsibility by the Bangladesh Government’.  Such problems are also prevalent in India.  Despite the requirement that ships must have consent from the State Maritime Board stating it has no hazardous waste onboard, as well as bans on beach burning, current practices do not indicate these are followed.

Thirdly, is a lack of capacity for enforcement in some shipbreaking countries. It has been suggested that inspection teams lack sufficient training and equipment to make meaningful inspections, for example. Some also argue that the expectation that Bangladesh and India should be responsible for enforcing these regulations contravenes the ‘polluter pays model’.  Critics have suggested that the financial burden should be placed not only on importing countries, but on ship owners too. There is also some evidence of an improvement of workers rights in some countries. In Alang, India, there has been a provision of more mechanical handling equipment and better facilities in the medical and fire services. There is also a requirement for basic training for workers.

Finally, there are responses by non-state actors. NGOs such as Greenpeace for example, have campaigned against shipbreaking, and undertaken a number of significant investigative and awareness campaigns. Greenpeace was a founding member of the NGO Shipbreaking Platform, which monitors the practice of beaching, raises awareness, and advocates for more sustainable policies. Greenpeace is no longer listed as a partner or member of this platform, however, after one of its own ships was sold and subsequently beached at a shipbreaking yard.

Some argue this advocacy plays a strong role in leading shipping companies to engage in ethical decision-making.  Norway’s Government Pension Fund Global (GPFG) is the world’s largest sovereign wealth fund, and disinvested from four ocean carriers due to them scrapping their vessels in Bangladesh.

Some shipping companies have also taken initiatives of their own. Maersk, for example, has exclusive arrangements with nominated shipbreaking yards where it provides technical advice and PPE for workers. The success of this approach led to the formation of a department in the company which was subsequently able to offer a similar service to other shipowners who sought to introduce an element of corporate social responsibility into their operations. While Maersk withdrew from this programme in 2011, it is now performed on behalf of Maersk and others by the newly-formed organisation known as Sea2Cradle, an organisation headed by a key figure in the former Maersk Ship Management Recycling operation.

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47. [NGO Shipbreaking Platform n.d.](https://shipbreakingplatform.org/)
48. [NGO Shipbreaking Platform n.d.](https://shipbreakingplatform.org/)
49. [Mathew 2021](https://www.tandfonline.com/doi/pdf/10.1080/25725084.2021.1921994)
50. [ILO n.d.](https://www.ilo.org/safework/areasofwork/hazardous-work/WCMS_356543/lang--en/index.htm)
51. [Alam et al. 2021[](https://www.sciencedirect.com/science/article/pii/S2667010021001335)/efn\_note] On the beach, PVC and plastic coatings are burned in order to recover copper, and waste oil may be burned as well.  This releases toxic chemicals into the air. Toxic waste can leech off beaches into the sea, creating one of the ‘most contaminated environments in the world.’[51](https://www.safeseas.net/evidence/2020/02/17/shipbreaking/#easy-footnote-bottom-51-89)[NGO Shipbreaking Platform n.d.](https://shipbreakingplatform.org/our-work/the-problem/environmental-costs/); [Hossain 2021](https://www.cambridge.org/core/books/abs/environmental-impact-of-ships/environmental-impacts-of-shipbreaking/57722F93CF7F93F8F6E539F9FD5D91C3); [Hossain et al. 2016](https://www.sciencedirect.com/science/article/pii/S1462901116300569); [European Commission n.d.](https://ec.europa.eu/environment/waste/ships/pdf/ship_dismantling_report.pdf)
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