



SHIPBREAKING IN PAKISTAN – THE NEED FOR ALIGNING WITH GLOBAL INSTRUMENTS FOR SUSTAINABLE DEVELOPMENT

Naeem Mahmood
Department of School of Law
University of Karachi
Karachi – Pakistan
naeem.mahmood1965@gmail.com

Commander (R), Prof. Dr. Muhammad Tahir
Research Supervisor
University of Karachi
Karachi - Pakistan

ABSTRACT

Pakistan has been the largest shipbreaking country during the 1980s and is presently among three of the largest shipbreaking countries in the world; however, shipbreaking through the beaching method has so far not been properly regulated and is evident from several incidents from time to time taken place as a result of sheer lack of consideration for health & safety of the workers and the coastal environment. Toxins in the ship's structure are harmful residue and are extremely dangerous to natural resources and employee wellness. Notwithstanding, it is volatile in terms of adding its share to the economic growth by providing opportunities to employ and supply solid iron steel to the rolling mills to meet the demand of the country's construction sector. Environmentalists have shown their concerns, especially over countries to the global south where the beaching method is popular for breaking down obsolete vessels. Several global instruments have been introduced to curtail bad practices bringing about environmental and health issues. It will be assessed whether existing local instruments in Pakistan are responding to these issues effectively or whether there is a need for introducing more regulations, especially sector-specific, to align the viable sector according to global regulations to be able to get the share by competing with regional competitors like India and Bangladesh.

Although in one form or another, there have been efforts on a global level to address the environmental, health, and safety issues, as several such conventions about it have taken place since 1907. The "United Nations Convention on the Law of the Sea" (UNCLOS), the London Dumping Convention and Protocol and the World Charter



for Nature. A Preservation of the Ozone Layer at the Vienna Convention on, Transboundary transfer of hazardous wastes, in particular from industrialised nations to poor or less developed countries, was prohibited under the Montreal Protocol until the Basel Convention under the United Nations Environment Program (to which Pakistan is a member) went into force in 1992. In 2002, technical rules were adopted for the ecologically responsible handling of ships' complete and partial disassembly. In 2009, the International Maritime Organization established the Hong Kong Convention to address environmental dangers and worker safety and health., while decommissioning the ship, but so far, these global instruments in Pakistan have not been inducted in the procedures through local regulations; therefore, this study investigates industry viability on efficient administration and adherence to international law instruments being introduced by European Union Regulations and Hong Kong Convention, in an attempt to overcome the shortfall of earlier regulations under United Nations agencies. The effective implementation of existing local laws and making of sector-specific rules and regulations is highly desirable to respond to the earliest compliance gaps on the safe and environmentally sound dismantling of uneconomical ships. An analysis of the consistency of State legislation to respond to international legal instruments is recommended for the sustainable development of the ship-breaking industry in Pakistan.

Key Words: Global Instruments, Basel Convention, European Union Regulations, Hong Kong Convention,

INTRODUCTION

This study highlights the latest requirement for implementing global instruments, particularly the “Hong Kong Convention” and EU regulations for the safe and environmentally sound dismantling of ships. The study assesses the national response to these global legislations to achieve sustainable development of the industry in Pakistan. It provides a comparative analysis of the region’s competitors adapting to global regulations to have a better share, having responded to the requirement of international legislation.

Ship dismantling has somehow been an industry lacking in compliance with regulations. The major tonnage-handling countries in the south generally have poor environmental and occupational health, safety, and marine standards. After 25-30 years of operational life, Ships become too uneconomical to maintain and are sold to mainly ship scrap yards for demolition (Shippedia.com). Since the previous four decades, these inoperable ships have been sold primarily to developing nations so that their parts, which are made up of around 90–95 per cent steel and other precious metals, may be collected and substantially recycled by re-rolling mills; the remainder is made up of hazardous wastes. Equipment, sanitary, machinery, tools and wooden parts goods made of non-steel materials are restored for use in second-hand markets, fostering recycling companies. (Greenpeace-FIDH, 2005; Fery, 2013).



Many tragedies, including the deaths of employees engaged in shipbreaking, have reportedly occurred, as reported by an NGO in Gadani, Pakistan. Notwithstanding these recent catastrophes, 22 ships were sold for wanting to break during the first part of 2020 at “one of the most hazardous places to operate,” said the NGO, indicating that shipping companies and cash purchasers continue to exchange boats with Pakistani breakers (NGO Shipbreaking Platform)

Recycling is still the best option for end-of-life ships, even though the existing ship recycling business is linked to these detrimental social and environmental effects. Prolonged preservation after the operating phase and scurrying, whereby ships are purposefully sunk to create artificial reefs, are not considered plausible situations on a wide scale (Moncayo, 2016)

Shipbreaking nations are prevented by the fierce international competition in the market from enacting and enforcing harsh national laws that may jeopardise their economic advantages (Bhattacharjee, 2009; Cairns, 2017). To combat this, worldwide law has been created as a motivator to alter present unethical practices. Due to early recognition of the detrimental effects of ship recycling practices—dating back to the 1980s—the first legal action was only finally brought about in the late 1990s (Devault et al., 2017).

Ship managers desire to sell their boats to South Asian countries' breaking yards for trash because they obtain a greater price—up to a tenfold premium over industrialised nations—for doing so (Terao, 2013). It is claimed that this is a result of yards disobeying pollution control and “occupational health and safety” (OH&S) regulations, which would raise processing prices (Iqbal and Heidegger, 2014). When joblessness is high, as in Pakistan, the less fortunate may be forced to accept dangerous and unpredictable occupations. According to the ILO, shipbreaking is the most dangerous job in the nation. Employees may have long-term health consequences as a result of asbestos exposure, heavy metals including mercury (Hg), cadmium (Cd), and lead (Pb), as well as poisonous gases and chemicals. Additionally, explosions or falling objects might gravely hurt, maim, or even kill employees (Heidegger et al., 2017).

Because of historic low labour rates and domestic production for recycled goods, regional shifts have occurred historically due to cost-effectiveness (Kagkarakis, Merikas & Merika, 2016). In wealthy and industrialised nations like the USA, Italy, UK and Germany before the 1960s, the breakage of end-of-life containers was a recognised mechanical procedure. Following that, there was a movement, first to semi-industrialised countries, like Turkey, Spain, and Taiwan, and then to countries like India, Bangladesh and Pakistan, with low operating costs (Boran and Demirel, 2016; Kagkarakis et al., 201).

The purpose of this research is to look at the shipbreaking industry in Pakistan, especially:

- To examine legislation in its legal and regulatory framework; and,
-



- To assess the efficacy of regulatory systems in practice.
- To assess the effects of the shipbreaking business in Pakistan

The primary goal is to demonstrate the successful closure of a compliance gap imposed by international regulatory regimes to lessen the ecological influence of ship recycling operations in Pakistan and to enhance wellness and security processes and working conditions in the sector.

MATERIAL AND METHODS

The legal aspects of wrenching were investigated, notably those related to global laws and conventions like the Basel Convention of 1989 (to which Pak is a member), the “International Labour Organization” (ILO), and the London Convention. In his discussion, Mikelis (2009) highlighted the International Maritime Organization’s (IMO) role, conventions, agreements, and intergovernmental contact with the ILO.

Limitation

From the perspective of Pakistan, there is very little data and information accessible.

Research Approach

Though the proposed study is predominantly qualitative, both qualitative and quantitative methodologies were employed to assess validity and reliability. A comparison analysis was conducted to discover an adaptive legal answer for quickening methods.

A Review of Shipbreaking In Pakistan

In Gadani, Shipbreaking happened from the Subcontinent before the partition days (Gazzola, 2022). Recognising its significance, Pakistan’s government made practical actions to develop the business in 1978, including designating Gadani as a port, lowering import charges, and forming a task team to address infrastructural and logistical concerns. Gadani might have popularised the competitive worth of the beaching technology in its early years, producing around 1 million tonnes of scrap throughout the 1980s. It is believed that the Gadani shipbreaking business employed up to 30,000 workers at its peak (Sarraf et al., 2010).

Unfortunately, due to increased competition from India and Bangladesh and shifting administrative and tax regimes, ship trash production fell to less than one-fifth of what it was in the 1980s. Ships arriving for disassembly were subject to a 45 per cent customs tax in the early 1990s. This negatively impacted ship-breaking activity at Gadani, practically bringing the sector to a standstill by the early 2000s. In current history, shipbreakers and local governments have fought for lower tariffs and fees.



The sector has rebounded significantly, albeit volumes are still far behind those in India and Bangladesh (Sibilia, 2019).

Nevertheless, ship recycling is the main business in Balochistan province, employing 20-25 % of the entire Gadani labour and generating a major supply of tax income for the provincial, national, and Balochistan Development Authority (BDA). According to reports, the federal government recently suggested higher taxes on shipbreaking operations (Sarraf et al., 2010). However, they were abandoned after the involvement of Baluchistan's Chief Minister. Gadani has 132 shipbreaking plans. The BDA owns the remaining two-thirds. Over 30 active ship breakers currently function on property rented from either these local proprietors or the BDA. Every shipbreaking employs three plots, with the top five breakers employing four or more. Most ship-breaking enterprises, like the Bangladeshi industry, are a small group of diverse industrial groupings. Lateral integration is seen in either steel or building. Around 75% of the shipbreakers originate from the Gujarati-speaking population, 20% are from Punjab, and the other 5% are of Pathan ancestry. The availability of shipbreaking yards and plots is the key entrance hurdle. Shipbreakers maintained to pay rental payments to owners or the BDA largely to prevent abandoning their yards amid the industrial collapse. There is no genuine exit restriction, and plot owners can leave whenever they choose.

The "Pakistan Ship Breakers Association", founded in 1979, is the primary body in "Pakistan's Shipbreaking Recycling Industry (SBRI). Given the current situation in Pakistan, obtaining a comprehensive picture of the market circumstances for ship scrap steel is challenging. Ship plates and dissolving waste from Gadani are utilised as inputs to the 50-60 re-rolling factories in Sindh and Baluchistan. Still, their utilisation in the Punjab, which leads the re-rolling market, is unknown. According to the study, around 70-75 % of Gadani's production is bound for Karachi's re-rolling factories and 25% for the Punjab province. As a result, the business is highly localised, with tiny re-rolling mills especially reliant on ship breaking for inputs. The sales of waste steel are claimed to account for 95 per cent of total earnings, with the remaining coming from other recycled products sold in Karachi's Sher Shah Market (Ali and Hassan, 2001).

From a sociological standpoint, shipbreaking operations in Pakistan have equally good and bad implications. Foundation research was done on shipbreaking workers' general working atmosphere, healthcare, sanitation, security concerns, and financial situations. This investigation discovered that there were extremely few safety devices such as helmets, glasses, gloves, protection boots, or medical services and no monetary insurance for shipbreaking employees in Pakistan (Rahman, 2021).

Legal elements of wrenching were examined, particularly those related to international laws and agreements, such as the Basel Convention of 1989 (to which Pakistan is a signatory), the International Labour Organization (ILO), and the London Convention. Mikelis (2009) discussed the function of the International Maritime Organization (IMO), its conventions, treaties, and interagency interaction with the ILO in his presentation Basel Convention and the "Hong Kong International Convention for the Safe and Environmentally Sound" Recycling of Ships, 2009 (frequently referred as the Hong



Kong Convention) were accepted for the dumping of harmful wastes and the publicity of safe and sound ship recycling programs, according to this. Furthermore, Sarraf et al. (2010)**Error! Bookmark not defined.** proposed that shipbreaking in Pakistan should require the installation of Marine Pollution (MARPOL) facilities, as well as conformity with the Hong Kong Convention (HKC) and other international agreements for the reduction of hazardous compounds.

On the other hand, Pakistan does not yet appear to have made progress towards compliance with the Convention. Furthermore, in 2019 the country's ship recycling industry suffered from adverse taxation, adverse exchange rates, and cheap imports of billets from Iran. Consequently, it has recycled very little tonnage (The Maritime Executive).

Global Regulations

Hong Kong Convention

As of December 31, 2018, i.e. 9 years, 7 months and 16 days after the Hong Kong Convention was signed, only Norway, Congo, France, Belgium, Panama and Denmark had ratified it. In 2019, the six countries were joined by Japan, Turkey, India, Serbia, Germany, the Netherlands, Estonia, Serbia, Malta and Ghana. The minimum number of parties to the Convention (15) has been reached. This is only the first of the three criteria for its entry into force. The minimum percentage of 40% of the world merchant fleet in gross tonnage has yet to be reached; the 15 Contracting States currently account for 30.21%. As for their combined recycling capacity, with the ratification of two major shipbreaking countries, India and Turkey, it reaches almost 14 million gross tonnages. It is still not enough. Considering the evolution of the world fleet, the experts estimate that the volume recycled by the Contracting States should be around 17 million gross tonnages in 2021 to meet the third criterion regarding recycling capacity. This criterion requires during the ten years before the treaty's signing, the participating states recycled at least 3 per cent of the gross tonnage of their combined commercial vessels each year through ship recycling.

Ratification of the Convention by India is seen as a step forward in improving shipbreaking practices. However, the standards of the Convention in Indian shipyards still need to be effectively implemented.

Entry into force still requires ratification by another major shipbreaking country. After the withdrawal of China, which bans the import of waste, especially ships, efforts have been focused on Bangladesh for several years. For the time being, only the PHP yard is stated to be compliant with the standards of the Hong Kong Convention.

The International Maritime Organisation (IMO) announced its wish to “support the capacity of Pakistan concerning ship reuse that doesn't harm the ecosystem. In December 2019, a workshop was organised in Karachi with relevant stakeholders, including the Pakistani authorities, shipbreaking



yards, the International Labour Organization (ILO) and WWF-Pakistan. The workers' union NTUF (National Trade Union Federation) has been asking for years for the implementation of binding regulations. Still, the industry has, until now, always stifled any progress. The shipbreaking industry has collapsed since the *Aces* disaster (29 fatalities at least, dozens of casualties) in November 2016 and the many accidents, deadly or not, that followed while scrapping tankers that have not been, or incorrectly, gas-freed. The prospect of entry into force of the Hong Kong Convention may get the Pakistani shipbreakers to improve their practices. It is a long and winding road before classification societies may issue a statement of compliance to Pakistani yards.

European Union Regulation

The European regulation 1257/2013 entered into force on January 1, 2019. All ships flying a Member State flag must be broken up in a European Commission-approved yard. The list of approved yards is regularly updated and available on the commission website. The initial list was limited to yards located in the EU Member States; since November 2018, it has included yards established in the United States, Turkey and Norway. No Indian yard has been included yet. The audit process regarding the compliance of the applicant yards with European regulations is ongoing. The next update proposes to include 4 yards in the European Union or Norway and 3 in Turkey, bringing the number of approved yards to 41.

The European regulation is being evaluated. It applies only to ships flying a Member State flag. Yet in 2019, 139 ships scrapped were EU-owned, but only 44 were EU-flagged in their last year of trading before demolition. In addition, 17 ships were deflagged before scrapping and thus escaped the regulation scope. Of these 44 ships, 7 were broken up in the European Union and 23 in Aliaga though only Leyal et Isiksan were EU-approved yards. 13 were sent to Bangladesh or India under a flag of convenience aiming at bypassing the regulation. 3 Maersk container ships were deflagged from Denmark to Hong Kong and sold 8 months later for scrapping under a Kiribati or Palau flag. The same goes for 2 container ships owned by APL, the CMA CGM Singapore-based subsidiary: they were deflagged from Malta to Liberia and finally to Palau.

Regarding the 139 ships “with a strong link with Europe in terms of flag or ownership”, about two-thirds were scrapped in the Indian Subcontinent where no yard was EU-approved, to which ships scrapped in non-EU-approved Turkish yards have to be added.

At the moment, it is very easy for ship owners to say that sales for scrapping were concluded before the regulation came into force or that their deflagged vessels are out of the scope. The European regulation is implemented with no clear infringement procedures and penalties.

The EU SRR requires that European flag boats be reused only in yards listed on the European List of authorised yards commencing in 2019. In December 2018, the fourth list of authorised yards was issued, including 23 yards based in the EU, two yards in Turkey, and one in the United States. In June



2019, the Commission published its 5th Listing, which included 30 yards based in the EU, 3 yards in Turkey, and one yard in the United States.

The 6th European List of certified recycling centres, which is due to be released soon, will contain 4 additional EU-based yards (in Norway, Lithuania, Netherlands and Latvia) and 3 more Turkish yards. An EU List of permitted yards that primarily consists of EU-based recycled yards (many of them can not recycle ships) makes little reason, given that the EU is the world's foremost net exporter of raw steel, with the vast bulk of its shipments moving to China, Pakistan, Turkey and India. Consequently, recycling huge ships in the EU to create scrap that must be transferred to nations that recycle ships is not financially sustainable.

According to the IMO's official figures, the EU's joint optimum yearly recycling capacity (including Norway and the UK) is just 0.57 % of the nation's capacity. In contrast, total tonnage recovered in Europe in 2018 was 82,067 GT, accounting for only 0.45 % tonnes recovered worldwide (equivalent to a little more than two Panamax vessels).

Just a few ocean-going yachts were regenerated in line with the Regulations in the initial year of its adoption, as hoped and predicted. It should be assumed that numerous edge EU-flagged ships switched flags in 2019. It should be obvious to everyone that the EU SRR will not be enforced unless its list contains a considerable proportion of South Asian yards. As a result, it is reasonable to expect that the first Indian yards to be added to the European List by 2023.

Another significant change is the "Inventories of Hazardous Materials" (IHMs) distribution to all yachts over 500GT that propose to call on European ports after December 31,2020.

Criticism

A shortage of EU-approved recycling yards leaves ship-owners with no choice but to re-flag old European ships before sending them to be recycled, says shipping organisation Bimco. The EU does not agree with that assessment.

Several ship-owners see no other solution than to opt for a controversial flag manoeuvre before sending European ships to be recycled in, for example, South Asia, but this is now met with criticism from the EU.

According to the EU, circumvention is mainly driven by financial reasons.

The reaction from the EU follows on the heels of Bimco recently saying that ship-owners have no choice but to re-flag to states outside the EU, as there are not enough EU-approved shipyards, according to the shipping organisation. Not least for recycling big vessels such as panamaxes.

Regrettably, several yards on the EU list have been underperforming as many ship-owners chose to



re-flag their ships at the end of their life and bring them to non-listed facilities. **(Shipping Watch)**

Existing Laws in Pakistan Amid Global Enforcements:

Pakistan Environmental Protection Act 1997

The Factories Act of 1934

Workmen Compensation Act 1923

Constitutional Human Rights

The Pakistan Penal Code

Criminal Procedure Code

Enforcement of Laws:

Implementing existing laws, such as the “Pakistan Environmental Protection Act 1997”, the Factories Act 1934, and the Pakistani Penal Code, is lax. Legal provisions, such as work time, salary negotiations, and compensation applications, are only partially applied.

Following the prosperity of court proceedings, the ship-breaking industry in India and Bangladesh has attracted increased scrutiny from national and international media outlets, in addition to the results of studies examining a range of concerns unique to the industry.

About every ship that would be beached, the Baluchistan Environmental Protection Authority (BEPA) requires an “Initial Environmental Examination (IEE)” following the IEE/EIA Regulation 2000. This investigation must include a “Gas Free for Man Entry” certificate. The BEPA will only grant ecologic permission when the suggested “Environmental Management Plan (EMP)” is carried out; nonetheless, the Quetta-based BEPA does not have sufficient means to conduct consistent yard inspections. It has been revealed that ships do not have to be boarded to receive environmental clearances. To my knowledge, the current enforcement of the IEE/EIA Regulation is predicated on paperwork rather than real adherence to the regulations. A significant obstacle persists in the form of widespread disobedience to the PEPA’s strict provisions.

Global Standards and Local Response by Verdicts on Ship Recycling

NETHERLAND - SEA TRADE CASE

“The Rotterdam District Court” condemned Seatrade on March 15 2018, for attempting to unlawfully transport four boats to India for scrapping following the EU Waste Shipment Regulation. Two Seatrade executives were penalised severely and barred from serving as a shipping company’s director, commissioner, advisor, or worker for one year. To paraphrase the NGO Platform, this judgement was a watershed moment in their battle since it was the first time a maritime business was found criminally accountable for the unlawful trading of obsolete vessels. Since this is the first time, criminal charges have been brought against Seatrade officials, the Prosecutor’s request that they face



imprisonment was waived. This groundbreaking decision establishes a crucial precedent for holding ship owners liable when they use questionable cash purchasers to sell their boats for filthy and unsafe breaking to increase profits.

BANGLADESH

After a landmark ruling by the Supreme Court in 2009, the shipbreaking business was shut down since no yards have the requisite ecological clearances to continue operations. Nevertheless, after 2 months of suspension, the yard reopened with just partial permissions in hand and very little alteration in practice. As a result of authorities and shipbreaking yard owners' persistent disregard for national environmental and labour rules, the Supreme Court issued a contempt decision in 2016.

“The court’s decision is a landmark because it explicitly declares that import, beaching, and breakage permissions are unlawful and because, for the initial time, a breaker has been removed from the broken operations and the authorities have been handed control of the ship. And it’s even more crucial now that the government has had to crack down on questionable cash purchasers and imports from grey and blacklisted flag registries. Because of this, unethical actors will have a harder time using Bangladesh as a dumping ground. Syed a Rizwana Hasan, Director of the Bangladesh Environmental Lawyers Association and a member of the Supreme Court Bar.

INDIA

At the ship-breaking yards, there are major violations of national legislation meant to safeguard the rights of employees. Labour law implementation and inspections have been particularly difficult in Alang. It is impossible to safeguard the well-being of the shipbreaking yard personnel since local authorities do not even have an up-to-date record of the number of staff. Local and national governments must work together immediately. “Tata Institute of Social Sciences Associate Professor Dr Geetanjay Sahu “(TISS)

To conform to international norms, the Indian Parliament has revised its ship recycling law (January 02, 2020, by Riviera News)

Features important to the 2019 Ship Recycling Act

- Ships may not carry any hazardous materials, and vessels reusing are governed by the Recycling of Ships Act of 2019.
 - Ship-owners who have just taken delivery of a new vessel must apply to the National Authority to receive a certificate detailing the quantity and kind of hazardous chemicals carried. Within five years of the Act’s inception, current ship owners must apply for the certificate. The certificate is recommended to be kept up-to-date and reissued every five years to account for any structural or equipment modifications made to the vessel during that time.
-



- In addition to possible monetary fines and jail time, using dangerous items on a ship is considered a criminal offence.

DISCUSSION

This analysis has shown that there are both good and bad sides to the shipbreaking sector in South East Asia, and more specifically in Bangladesh, India, and Pakistan, even though the process varies greatly from country to country. The employment it creates and the raw materials it supplies are crucial to the health of the local and national economies. Still, the industry isn't doing enough to safeguard its workers' rights or the environment.

Huge-scale SBRI development in South Asian nations like India, Pakistan and Bangladesh has previously been viewed as non-compliant with legal frameworks. The Sarraf Group (2010). While India is swiftly moving to adopt the HKC, environmental and occupational health and safety standards in Pakistan remain lax (Ahmed and Siddiqui, 2013; Linnenkoper, 2017). Workers' occupational health and safety and environmental protection are given special attention by national, international, and EU regulatory regimes due to political will for improvement in the shipbreaking industry (Samiotis, Charalampous & Tselentis, 2013). Legislations should be revised or made from scratch to align with the Basel Convention, as was the emphasis of Alam and Faruque's 2014 study. Although universal organisations have published some recommendations since 2000 for OH&S and environmental protection, the ILPI study (2016) stated that the most fundamental principles are still not applied in Pakistan. A "Fund for Green Shipbreaking" was proposed by Hoque and Emran (2016) to facilitate the Basel Convention-compliant, long-term transformation of the shipbreaking industry.

Effectiveness of Regulatory Frameworks

Legislation's approach to regulating the working environment and its environmental effects, eEven if comprehensive and well-thought-out regulations and policies have been enacted, they will not be fully effective unless they are enforced by inspection, monitoring, and penalties for violations or noncompliance. Government entities' ability to monitor and enforce is crucial to the efficacy of "legal instruments in the ship breaking & recycling industry" (SBRI), especially in Pakistan. In Pakistan, it is typical to encounter shortages of resources, infrastructure, and machinery. Table 1 displays the results of a comparative analysis of the regulatory frameworks of the world's leading shipbreaking nations.



Table 1: Comparison between major shipbreaking nations in the world.

Country	Social and livelihood	OH&S issues	Economic gains	Environmental impacts	Effectiveness of legislations
Pakistan	• employment creation	• neglected	• excellent for government revenue, yard owners, and other recycling industries	• immense impacts	• poorly implemented; recently
India	• employment creation	• neglected; recently improved some yards (Leela, Sarvag yards) but need more attention	• same as Pakistan	• immense impacts	• poorly Implemented; recently improved some yards
Bangladesh	• employment creation	• neglected	• same as Pakistan	• massive impacts	• poorly implemented Recently PHP yard improved
China	• standard methods require fewer people	• follow regulations	• good	• minimum	• effectively implemented
Turkey	• require fewer people	• follow regulations	• good	• minimum	• effectively implemented

Sources:

Ahmed and Siddiqui (2013)**Error! Bookmark not defined.**; Hiremath et al. (2015); Memon and Zarar (2016); UNCTAD (2017), Jain and Pruyn (2017).

In light of this, it is evident that Pakistan's general situation is bleak, notwithstanding the availability of legal recourses. In conclusion, it may be stated that the national and international regulatory tools are not successfully applied in Pakistan.



CONCLUSION

The European Regulation No 1257/2013 on ship recycling promotes safe and environmentally sound ship recycling and is a major improvement compared to earlier regulations such as the EU WSR and the Basel convention and can help to phase out substandard facilities. It seeks to regulate EU-flagged ships and EU recycling facilities and ships sailing other flags through the IHM and facilities outside the EU through the EU list of approved facilities. Thereby it is a major step forward that the regulation includes downstream waste management requirements and that inspections of yards are executed by the European Commission to assure thorough inspection. Some challenges for the EU SRR have also been identified. The major weakness of the regulation is the easy circumvention through re-flagging of vessels to non-EU flags. Possible solutions, such as financial incentives, are available to deal with this. Still, no agreement on the usefulness of such an instrument is found.

Secondly, the enforcement of the regulation remains a major challenge. The enforcement capacity has to be enlarged, and the cooperation between member states must be improved.

Thirdly, it is challenging to assure that all ship owners will have a proper IHM for few years more to come.

Lastly, it is unclear what role beaching facilities shall have under the EU SRR, and there is no agreement on the future of the beaching method overall. Some points of attention are suggested for future regulation development, although these were not unanimously agreed upon. The jurisdiction under which ship recycling is now regulated, the flag state, could be changed to beneficial ownership to extend the scope. Requirements on ship recycling facilities should be more stringent, including articles on energy use. In the long term, it is important to put more effort into the green design of ships for recycling and improving the connections between ship building and recycling.

Moreover, it is important to put energy into a change in mentality amongst stakeholders. The EU SRR is a regional instrument. Therefore, it may influence global standards and improve ship recycling practices. Still, it cannot set a global standard. A global regulation would be the most effective instrument for regulating the international ship recycling industry. However, there is no agreement on the suitability of the HKC to fulfil this purpose. The EU SRR is a step forward, but improvements are still necessary to develop a clean and safe ship recycling industry.

Recommendations for Sustainable Shipbreaking Industry

Since the shipbreaking business has numerous harmful effects on the environment, and because of Pakistan's international legal commitments, the country's current environmental regulations should be updated with more emphasis on its effective implementations. Alternately, the shipbreaking sector may benefit from its own set of laws addressing the ecological, workers, and social concerns raised.



Along with the principles above, a recommended legislative framework should also clearly identify the duties and responsibilities of various authorities. This is crucial because it would be challenging to run the ship-breaking sector sustainably and follow global standards lacking a specific legal framework aimed towards this end.

In addition, Pakistan has to establish a comprehensive authorisation and inspection system without delay to guarantee adequate handling of dangerous materials, ecosystem preservation, and reporting transparency. Pakistan's shipbreaking business might be jeopardised if the country does not have the infrastructure and human resources necessary to meet environmental protection and management standards. Due to this, no government can sell its old ships to a country that doesn't meet the standards for ecologically responsible administration.

Legal regulation at the national level to implement the "Basel Convention's key" principles is contingent, in part, on the capabilities of the Department of Environment and other relevant government agencies. Organisations in this field consistently lack funding, infrastructure, tools, and, most critically, sufficient and skilled personnel, despite the fact that numerous government agencies have not launched essential measures in this respect. These holes in the enforcement system require immediate attention.

There has to be more investigation into how well laws are enforced in Pakistan. Morally, it makes no sense for the sector to grow at the expense of low-wage workers and environmental degradation. Keeping the business viable and sustainable in Pakistan will need higher moral standards, and the sooner the industry begins to take the essential measures, the smoother the change will be. It is also suggested for doing the following:

1. A centralised ship-breaking yard with state-of-the-art machinery has to be established
2. Lawbreakers must be forced to comply with local, state, and federal regulations.
3. The 'polluter pays' notion should be written into federal law.
4. It is necessary to improve government agencies' coordination, monitoring, and accountability capacity.
5. Companies and yard owners should be mandated to donate a portion of their earnings to Corporate Social Responsibility initiatives.

Required Research:

Gaining steam for countries to formally ratify the HKC, which is controversial among many interest groups. More research is needed to further understand if and how the HKC's implementation is good for the EU SRR.



References

- Alam, S., & Faruque, A. (2014). Legal regulation of the shipbreaking industry in Bangladesh: The international regulatory framework and domestic implementation challenges. *Marine Policy*, 47, 46-56.
- Ali, M. and Hasan, A., 2001. Integrating recycling and disposal system for solid waste management in Karachi. *Urban Resource Centre*.
- Bhattacharjee, S. (2009). From Basel to Hong Kong: international environmental regulation of ship-recycling takes one step forward and two steps back. *Trade L. & Dev.*, 1, 193.
- Boran M., & Demirel F. B. (2016). Shipbreaking in Turkey and in the world. *PROCEEDINGS BOOK*, 419.
- Cairns, G. M. (2017). Return to Chittagong: ten years since the “postcard”. *critical perspectives on international business*.
- Devault, D. A., Beilvert, B., & Winterton, P. (2017). Ship breaking or scuttling? A review of environmental, economic and forensic issues for decision support. *Environmental Science and Pollution Research*, 24(33), 25741-25774.
- Frey, R.S. (2013). Breaking ships in the world-system: an analysis of two ship breaking capitals, Alang India and Chittagong, Bangladesh
- Greenpeace, F.I.D.H. (2005). YPSA, End of Life Ships–The Human Cost of Breaking Ships.
- Gazzola, G., 2022. Shipbreaking in the Indian subcontinent-Practices, consequences and applicable legislation.
- Heidegger, P., Jenssen, I., Mulinaris, N., & Carlsson, F. (2017). NGO Shipbreaking Platform annual report 2016. Brussels.
- Hiremath, K. M., Manjunath, H., & Soon, W. (2015). Indian summer monsoon rainfall: Dancing with the tunes of the sun. *New astronomy*, 35, 8-19.
- Hoque, M., & Emran, M. M. (2016). Role of ship-breaking industries in Bangladesh and ILO guidelines: a critical discussion. *Global Journal of E-Economics*, 16(3), 9.
-



Iqbal, K. M. J., Heidegger, P., Reuter, D., Carlsson, F., Javed, M., Khwaja, M. A., ... & Ahmed, I. (2014). LEAD AUTHORS.

Jain, K., & Pruijn, J. (2017). An overview of the global ship recycling industry. *Reference Module in Materials Science and Materials Engineering*, 1-22.

Kagkarakis, N. D., Merikas, A. G., & Merika, A. (2016). Modelling and forecasting the demolition market in shipping. *Maritime Policy & Management*, 43(8), 1021-1035.

Linnenkoper, K., & Reintjes, M. (2017). The wide world of shredders. *Recycling International*, 2, 26-35.

Memon, A. A., & Zarar, M. (2016). Comprehensive analysis of existing infrastructure conditions correlating ship-breaking activities and its implications on workers and community a case study of Gaddani Town and ship-breaking industry, Baluchistan, Pakistan. *American Academic Scientific Research Journal for Engineering, Technology, and Sciences*, 17(1), 245-257.

Mikelis, N. (2009). The IMO ship recycling regulations-a perspective. Marine Environment Division, International Maritime Organization (IMO), Organized by the Cambridge Academy of Transport, Madingley Hall, Cambridge.

Mikelis, N., 2009, July. The IMO ship recycling regulations A perspective. In *Conference Organized by the Cambridge Academy of Transport* (Vol. 2).

Moncayo, G.A. (2016). International law on ship recycling and its interface with EU law. *Marine pollution bulletin*, 109(1), pp.301-309.

Platform, N.S., 2013. Annual report 2012. *NGO Shipbreaking Platform, Brussels, Belgium*.

Rahman, S., 2021. From Shipbreaking Literature to Sustainability Framework for Developing Country Recycling: a Review (Part 2).

Samiotis, G., Charalampous, K., & Tselentis, V. S. (2013). Recent developments in the institutional framework of ship recycling and the positive impact on international ship dismantling practices. *SPOUDAI-Journal of Economics and Business*, 63(3-4), 158-171.

Sarraf, M., Stuer-Lauridsen, F., Dyoulgerov, M., Bloch, R., Wingfield, S., & Watkinson, R. (2010). The ship breaking and recycling industry in Bangladesh and Pakistan.



Sibilia, E.A. (2019). *Market Making: Crises and The Global Production of Shipbreaking in Chittagong, Bangladesh* (Doctoral dissertation, City University of New York).

Siddiqui, D. A., & Ahmed, Q. M. (2013). The effect of institutions on economic growth: A global analysis based on GMM dynamic panel estimation. *Structural Change and Economic Dynamics*, 24, 18-33.

Terao, T. (2013). From shipbreaking to ship recycling: relocation of recycling sites and the expansion of international involvement. In *International Trade in Recyclable and Hazardous Waste in Asia* (pp. 174-190). Edward Elgar Publishing.

United Nations Conference On Trade And Development Staff. (2017). *Review of maritime transport*. United Nations Publications.