Pakistan Shipbreaking Outlook:
The Way Forward for a Green Ship Recycling Industry –
Environmental, Health and Safety Conditions

1st Edition

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FOREWORD

Shipbreaking is a hazardous industry for both workers and the environment. Despite the fact that Pakistan is one of the world’s largest shipbreaking countries – currently ranking fourth in the annually scrapped volume – so far only little attention has been given to the sector in Pakistan both by the government as well as civil society. Despite the dangers presented by shipbreaking, workers in Pakistan are still not adequately protected and trained to reduce the risks of associated hazards. The industry is shaken by frequent accidents that injure, maim and kill workers. Hazardous wastes recovered from the ships are not handled, stored and disposed of properly, but dumped around the shipbreaking yards or re-sold on the local market. Due to the lack of adequate technology and equipment, proper waste handling procedures are not followed. So far, the sector can neither prevent pollution and the repartition of hazardous materials into the local market nor mitigate the risks of accidents and occupational diseases.

Although most ships are dismantled in countries far away from the headquarters of the large ship-owning companies, the primary responsibility for clean and safe ship recycling lies with the ship owners who economically benefit from their vessels over several years. Currently, selling an end-of-life vessel to South Asia means following the path of least resistance. Companies obtain the highest price for their ships as they do not have to take into account the real costs of clean and safe recycling, but can externalise them to the importing country instead.

After more than 15 years of discussion at the international level about how to make shipbreaking cleaner and safer, the necessary expertise is now available to change the current practice. The Sustainable Development Policy Institute (SDPI) and the NGO Shipbreaking Platform believe that the Pakistani authorities together with the local shipbreaking industry can – in a joint effort with international organisations – initiate the change needed to turn the industry into a “green” sector. In order to accomplish this goal, the shipbreaking industry needs to adopt more advanced methods, as practised in other parts of the world, and move its activities from breaking ships directly on the beaches to structures that allow for the containment of pollutants, proper handling of hazardous wastes, the safe use of heavy lifting equipment and the rapid access of emergency response in case of accidents.

Pakistan is State party to the Basel Convention\textsuperscript{3} and must therefore ensure the environmentally sound management of hazardous wastes if it allows for the import of end-of-life vessels. Moreover, new legislation such as the EU Regulation on Ship Recycling and the Hong Kong Convention\textsuperscript{4}, neither of which have yet entered into force, will demand an upgrade if the sector in Pakistan wants to compete with countries offering “green” ship recycling. The pressure on governments in ship-owning countries, for instance in the European Union, as well as on the shipping industry, to ensure that end-of-life vessels are recycled in compliance with international standards, is constantly growing. More and more ship owners seek clean and safe recycling.

\textsuperscript{3} Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal.

\textsuperscript{4} Hong Kong Convention for the Safe and Environmentally Sound Recycling of Ships.
solutions. A competitive ship recycling industry must therefore be based on high standards of environmental protection and workers’ safety.

This study presents a short overview of the economic conditions and the international and domestic legal framework according to which the Pakistani shipbreaking sector needs to operate, and provides information on the current conditions in the shipbreaking yards in Pakistan based on a survey conducted amongst workers, yard observations, and stakeholder consultation. In publishing this paper, the NGO Shipbreaking Platform and its member organisation Sustainable Development Policy Institute (SDPI) seek to contribute to the discussion on how to make shipbreaking in Pakistan cleaner and safer, and to provide research-based policy recommendations.

We hope that our recommendations will help us reach out to decision-makers in Pakistan, in Europe and on the international level and to convince more and more stakeholders that the reduction of risks and controversy associated with shipbreaking in South Asia are recommendable also from an economic point of view. Higher standards will be required to maintain the viability and sustainability of the sector in Pakistan, and the sooner the industry starts to take the necessary steps, the easier will the transition be.

Patrizia Heidegger
Executive Director,
NGO Shipbreaking Platform
ACKNOWLEDGMENT

SDPI is mindful of the fact that the shipbreaking industry in developing countries has various social and environmental implications, especially as ships contain hazardous materials in their structure. Under SDPI’s Environment Unit, the Sustainable Shipbreaking Initiative (SSI) aims to explore and understand the impact of Pakistan’s shipbreaking industry with a view to preparing policy recommendations to address the situation. The research work for this position paper would not have been possible without the support of all stakeholders and partners of the SSI.

Let me take this opportunity to thank the NGO Shipbreaking Platform for its committed support. Furthermore, we appreciate the assistance of the Pakistan Shipbreakers Association (PSBA), the Balochistan Development Authority (BDA), the Balochistan Environmental Protection Agency (BEPA), the National Trade Union Federation of Pakistan (NTUF) and the Ship Breaking Labour Union Gadani as well as ConsTech (Pvt.) Limited for their support in the field survey and the consultation process for this paper.

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<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>BC</td>
<td>Basel Convention</td>
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<tr>
<td>BDA</td>
<td>Balochistan Development Authority</td>
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<td>BEPA</td>
<td>Balochistan Environmental Protection Agency</td>
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<td>DWT</td>
<td>Dead Weight Tonnage</td>
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<td>EC</td>
<td>European Commission</td>
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<tr>
<td>EHS</td>
<td>Environment, Health, and Safety</td>
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<td>ESM</td>
<td>Environmentally Sound Management (of hazardous waste)</td>
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<td>EU</td>
<td>European Union</td>
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<tr>
<td>FIDH</td>
<td>International Federation for Human Rights, global network of human rights organisations headquartered in Paris</td>
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<td>FOC</td>
<td>Flag of Convenience</td>
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<td>GEF</td>
<td>Global Environment Facility</td>
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<td>GMB</td>
<td>Gujarat Maritime Board</td>
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<td>GoB</td>
<td>Government of Bangladesh</td>
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<td>GPCB</td>
<td>Gujarat Pollution Control Board</td>
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<td>GT</td>
<td>Gross Tonnage</td>
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<td>HKC</td>
<td>Hong Kong Convention</td>
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<td>HM</td>
<td>Hazardous Materials</td>
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<td>HPC</td>
<td>High Power Committee appointed by the Supreme Court of India</td>
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<td>IHM</td>
<td>Inventory of Hazardous Materials</td>
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<td>IEE</td>
<td>Initial Environmental Examination</td>
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<td>ILO</td>
<td>International Labour Organization</td>
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<td>ISO</td>
<td>International Organization for Standardization</td>
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<td>IMC</td>
<td>Inter-Ministerial Committee appointed by the Supreme Court of India</td>
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<td>IMO</td>
<td>International Maritime Organization</td>
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<td>JWG</td>
<td>Joint Working Group of Basel Convention, ILO and IMO</td>
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<tr>
<td>LDT</td>
<td>Light Displacement Ton</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<tr>
<td>LPG</td>
<td>Liquefied Petroleum Gas</td>
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<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships</td>
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<tr>
<td>MEPC</td>
<td>Marine Environment Protection Committee</td>
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<tr>
<td>MoE</td>
<td>Ministry of Environment (Pakistan)</td>
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<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
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<td>NOC</td>
<td>No Objection Certificate</td>
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<td>NSP</td>
<td>NGO Shipbreaking Platform</td>
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<td>NTUF</td>
<td>National Trade Union Federation</td>
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<td>ODS</td>
<td>Ozone-Depleting Substance</td>
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<td>OHS</td>
<td>Occupational Health and Safety</td>
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<td>OHSAS</td>
<td>Occupation Health and Safety Assessment Series</td>
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<td>PAH</td>
<td>Polyaromatic Hydrocarbons</td>
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<td>PBB</td>
<td>Polybrominated Biphenyl</td>
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<tr>
<td>PCB</td>
<td>Polychlorinated Biphenyl</td>
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<td>PIC</td>
<td>Prior Informed Consent under the Basel Convention</td>
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<td>PPE</td>
<td>Personal Protective Equipment</td>
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<td>PSBA</td>
<td>Pakistan Shipbreakers’ Association</td>
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<td>RC</td>
<td>Rotterdam Convention</td>
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<td>SBC</td>
<td>Secretariat of the Basel Convention</td>
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<td>SC</td>
<td>Stockholm Convention</td>
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<tr>
<td>SDPI</td>
<td>Sustainable Development Policy Institute, Islamabad-based think tank</td>
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<tr>
<td>SOP</td>
<td>Standard Operating Procedures</td>
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<tr>
<td>UAE</td>
<td>United Arab Emirates</td>
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<tr>
<td>SBRI</td>
<td>Ship Breaking and Recycling Industry</td>
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<td>TBT</td>
<td>Tributyltin</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>UNEP</td>
<td>United Nations Environment Programme</td>
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<tr>
<td>UNIDO</td>
<td>United Nations Industrial Development Organization</td>
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<td>WSR</td>
<td>European Waste Shipment Regulation</td>
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EXECUTIVE SUMMARY

This study first analyses the global economic and legal framework in which the shipbreaking industry in Pakistan is embedded and sheds light on the linkages of the sector to the global maritime industry and its ship recycling practices. It then presents the current conditions in the shipbreaking yards in Gadani, Pakistan, based on information retrieved during on-site visits and observations of the yards, as well as a survey conducted amongst approximately 5% of the workers representing all active yards with a focus on working conditions and the handling of hazardous materials and pollutants. Finally, the study proposes a way forward for a “green” ship recycling industry in Pakistan. The policy recommendations are addressed to all relevant stakeholders and are underpinned by the analysis of the current situation.

Whereas this study does not focus on the role of ship owners, it is understood that ship-owning companies who sell their end-of-life vessels have the responsibility to ensure clean and safe recycling. They need to provide all the relevant information regarding their ship, including an Inventory of Hazardous Materials (IHM) which identifies, localises and quantifies the amount of hazardous substances on board. Moreover, they need to make sure that their vessel is not sent to a shipbreaking yard that does not meet the requirements of clean and safe recycling.

The Pakistani shipbreaking sector is covered by international environmental and waste trade laws, first and foremost the Basel Convention. As a state party to the Convention, Pakistan has to ensure that its shipbreaking yards practice the Environmentally Sound Management (ESM) of hazardous wastes as laid down in the Basel Convention and the Technical Guidelines.5 With regards to workers’ rights, Pakistan needs to implement the ILO recommendations relevant for the sector and take into account the ILO Guidelines on health and safety in shipbreaking,6 besides being bound by the relevant general human rights instruments it is party to, most notably the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights.

Moreover, the Hong Kong Convention prescribes the authorisation of facilities, requirements for their operation as well as a Ship Recycling Plan for every vessel. Pakistan can – in order to maintain its competitiveness – seek early compliance with the provisions under the Hong Kong Convention, which need to be combined with the already legally binding obligations under the Basel Convention. Also the European Union (EU) has recently adopted a Regulation on Ship Recycling which will allow EU-flagged vessels to be dismantled only in compliant facilities. Pakistani yards need to be fundamentally upgraded to meet these standards if they want to dismantle vessels flying the flag of an EU Member State in the future.

In order to comply with its legally-binding and future obligations such as the Hong Kong Convention and the EU Ship Recycling Regulation, the shipbreaking industry in Pakistan needs to adopt more advanced methods, as practised in other parts of the world such as China or Turkey, and move its activities from breaking ships directly on the beaches to structures that allow for the containment of pollutants, proper handling of hazardous wastes, the safe use of heavy lifting equipment and the rapid access of emergency response in case of accidents. Detailed guidance has been provided, amongst others, by the aforementioned Basel and ILO Guidelines as well as recent studies on compliant facilities by the Secretariat of the Basel Convention (SBC).

The findings based on the physical observation of shipbreaking yards, interviews with workers and stakeholder consultations show a deeply unsatisfactory picture of workers' rights, notably health and safety rights, waste handling, storage and disposal, environmental impacts and compliance with legislation in place. However, the current situation and the willingness of stakeholders to work on improvements open up possibilities to modernise the sector.

**General**

(1) Various stakeholders have expressed their interest in playing a role in improving environmental and working conditions in the shipbreaking industry, and acknowledge the need for sector-specific regulation, which the Government of Pakistan should develop, to ensure safer and cleaner operations.

(2) At present, 68 plots are operational in the Gadani shipbreaking yards which are run by 38 economic operators. A workforce of 12,000 to 15,000 workers is estimated for the overall operations in the year 2012 for the dismantling of 133 ships (figure of the Pakistan Ship Breakers’ Association). SDPI estimates that up to 850,000 people — including workers and family members — depend directly or indirectly on the industry. According to the PSBA, the industry pays approximately PKR 5 billion (~4.7 million USD) of taxes annually.

(3) The conditions in Gadani display comparative advantages through a relatively high level of mechanisation and a dry working environment compared to Bangladesh, where beaches are muddy. However, there is a complete lack of hazardous waste management in the yards as well as of occupational health and safety standards, workers’ training and awareness. All dismantling takes place directly on the beach without enough measures for containment and oil spill prevention. There are no impermeable floors and drained working areas. The general infrastructure in the area is deficient with unpaved roads, no electricity supply and no public supply of safe drinking water. Power outages are common.

(4) Workers’ rights are not adequately protected, notably health and safety rights, the freedom of association, workers’ welfare and benefits, and contractual rights. The immediate implementation of the applicable laws relative to labour rights is required.
Enforcement of the law, authorization and certification

(5) Pakistan has ratified the Basel Convention; however, a compliance instrument is yet to be established. Moreover, there is no sector-specific regulation exclusively for the industry in compliance with the BC and the future Hong Kong Convention.

(6) Generally, the enforcement of the law which is already in place such as the Pakistan Environmental Protection Act 1997, the Factories Act 1934 and the Pakistan Penal Code is weak. Certain legal provisions are implemented partially, for instance with regards to working hours, wage negotiation, or compensation claims.

(7) Under the IEE/EIA Regulation 2000, the BEPA demands an Initial Environmental Examination (IEE), including a “Gas Free For Man Entry” certificate, and issues an environmental approval with the condition that the proposed Environmental Management Plan (EMP) be implemented for every ship beached. However, the BEPA based in Quetta lacks the resources for the regular monitoring of the yards. Reportedly, environmental approvals are issued without the ship being boarded for inspection. The present enforcement of IEE/EIA Regulation seems to be a documented procedure which is not based on the actual implementation of standards on the ground. Non-compliance with rules and regulations under the Pakistan Environmental Protection Act 1997 (PEPA) remains a major challenge.

(8) The adherence to certification schemes (such as ISO 14001) are in principle welcome and can help the operators of the yards to implement certain standards. However, it is unclear if yards practise self-certification or an external certifier is involved, and if audits are conducted by an independent and credible third party.

Hazardous waste management

(9) Standard Operating Procedures (SOPs) to deal with hazardous wastes and other materials retrieved from the ships are not in place. There is no regulatory requirement in place.

(10) The sector lacks store houses for hazardous wastes and a treatment plant for sewage or oily water on the yards, a waste treatment or disposal facility in the vicinity, e.g. a proper landfill for instance for asbestos, and an incinerator for the thermal treatment of PCBs. Hazardous wastes such as asbestos are dumped behind the yards in an unmarked area and it is unclear what kind of pollutants are leaked into the sea.

(11) The regulatory framework does not require a specific procedure for safe asbestos handling and disposal and there are no guidelines offered by the authorities.

(12) Hazardous wastes, including PCBs, heavy metals, ODS and asbestos, are not traceable once they leave the yards. Documentation and record-keeping are non-existent.
Working and living conditions

(13) Most of the workers come from the Khyber Pakhtunkhwa Province (52.2%), Punjab (25.7%), Balochistan (14.6%), and Sindh (6%). They tend to work in the yards for a shorter period of time, between one and five years. All workers are male. Child labour does not seem to take place. 58% of the workers are illiterate. Most of the workers have chosen their job in the absence of alternatives known to them.

(14) They live in shanties behind the yards which are made out of plywood taken from the ships. Currently, no plan to create housing for the workers is implemented. While most workers in Gadani have left their families behind in their home regions, around 100 families live next to the yards. There are no schools, no medical facilities, and only limited food shopping outlets in the vicinity of the yards.

(15) There is a lack of proper sanitation and there is no public supply of safe drinking water. Most workers receive drinking water from tanks, which has been reported to be unclean. The trade unions demanded a water filter and expressed the urgent need to improve the living conditions of workers.

(16) Most of the employment is non-formal on the basis of daily wages without written contracts or appointment letters. The workers are hired by “contractors”, middle-men between the workers and the operators of the yard. Most of the workers are not registered for social benefits, which is a consequence of the contractors' presence in the system. There are no requirements for recruiting workers, such as health, minimum age or certain skills.

(17) Workers’ families receive compensation payments in the event of death.

(18) Standard working hours are 8 hours a day, from 7 am to 4 pm. There are no night shifts. Statements regarding the payment of overtime were contradictory. According to NTUF, workers often continue working until 7 pm after the regular shift, sometimes until 10 pm. Workers do not have paid holidays and work seven days a week. This would not be legally possible under a normal work contract.

(19) Workers recruited on a daily wage basis earn, according to the 2011 agreement between the Ship Breaking Labour Union Gadani and the PSBA, between 366 PKR (USD 3.50) for a “helper” and 850 PKR (USD 8) for an “oil worker”. A foreman earns 2000 PKR (USD 18.50) a day. In June 2013, the minimum wage was raised to 10,000 PKR per month, that is, workers can reach the minimum wage level, if they work nearly every day.
Trade union and workers representation

(20) There are two active trade unions who compete with each other, the Ship Breaking Labour Union Gadani (in the following: “Labour Union”) and the Ship Breaking Democratic Workers Union (in the following: “Democratic Workers Union”) organized under the National Trade Unions Federation (NTUF).

(21) The “Democratic Workers Union” argues that the “Labour Union” does not constitute the Collective Bargaining Agent (CBA), as there has been no referendum by the workers to elect the latter as their CBA. Moreover, it claims that the leadership of the “Labour Union” is linked to the contractors, who are members of the local elite that recruit the work force. The “Democratic Workers Union” has received its registration as a trade union after a long lasting struggle, but is not recognized by the PSBA.

(22) A collective bargaining for wages takes place every two years. The “Labour Union” regularly finds agreements between them and the PSBA on wages and other benefits.

(23) The large majority of workers are reluctant to become trade union members. The representation of workers, their active involvement in the bargaining of wages, the demand for labour rights and the improvement of working conditions are therefore weak.

Occupational health and safety provisions

(24) Personal protective equipment (PPE) is barely used. The PSBA reports that shoes, goggles and helmets are handed over to workers; however, helmets are often not used due to the heat. NTUF claims that shoes, goggles, overalls and earplugs were rarely provided.

(25) Respiratory protection and masks are not available and according to NTUF, workers complain about their exposure to fumes. Workers do not wear climbing gear while working at great heights as the equipment is not provided.

(26) The lack of safety measures during asbestos removal is particularly worrying. Workers who remove asbestos are only protected by gloves and equipped with a hook. Areas of asbestos removal are not sealed off and the workers do not wear masks as these are not provided. Asbestos-related diseases such as asbestosis and mesothelioma are not prevented.

(27) The typical injuries are cuts, burns, and bone fractures resulting from unsafe operations, lack of PPE, non-compliance with standard work-related procedures and poor training.

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7 By trade union we understand an organization of workers that aims, amongst others, at achieving higher pay and better working conditions and whose leadership bargains with the employers on behalf of union members. In Pakistan, both the terms ‘trade union’ and ‘labour union’ are used.
In 2012, NTUF has recorded 12 deaths caused by accidents. Neither the operators nor the authorities document accidents, casualties and occupational diseases. The dimension of long-term health effects cannot be foreseen.

Emergency response

According to the operators, emergency plans are in place. However, the real provisions consist of mostly non-functional fire-fighting equipment and the emergency plans need to be verified. Workers injured in the hull of a ship need to be carried across the beach. There is only one ambulance to take workers to the hospital in Karachi.

More than half of the yard operators claimed that their workers were trained in emergency situations. The effectiveness and frequency of these trainings are to be verified.

There is not doctor, no dispensary and no well-equipped health center at the yards. Apparently, first aid boxes are present in most of the working plots. Their content and functionality need to be further checked. The infrastructure for medical care is far from being sufficient. The next hospital equipped to take care of injured workers is in Karachi, around 50 km away, which is too far in case of serious accidents.

Trainings

The training and capacity building status of the work force is poor, which is partly due to the workers’ low level of education and also to their being hired on a temporary basis. Only one quarter of the workers claimed to be aware of the presence of hazardous materials in the ships.

The results show that especially older workers have received trainings on emergency response, rescue and fire protection, but the qualitative analysis of trainings and capacity building leaves unanswered questions. Training efforts are not recorded.

Both the Federal and Provincial Government need to address the afore mentioned issues by developing a cross-departmental “Green Ship Recycling Strategy” and a sector-specific regulation to implement international standards based on both the Basel Convention and the future Hong Kong Convention and to enforce existing legislation for the sector. The guidance already offered by international organisations, in particular the Secretariat of the Basel Convention, can serve as a basis for this strategy, in particular the detailed technical requirements, timelines, and the cost estimations for the needed investments.
1. INTRODUCTION

Shipbreaking – the dismantling of vessels to recover steel and other materials – mainly takes place in developing countries. India, Bangladesh and Pakistan dismantle more than two thirds of all end-of-life vessels sent each year for breaking globally. Shipbreaking is a hazardous industry – both for the workers and for the environment – unless adequate technologies for dismantling and the management of hazardous wastes are used, stringent procedures followed and labour rights enforced. End-of-life vessels are considered as hazardous waste under international environmental law when they contain toxic materials such as asbestos, heavy metals, polychlorinated biphenyl (PCB), polyaromatic hydrocarbons (PAH), and organotins like tributyltin (TBT). These hazardous materials are part of the vessels’ structure and are found, for example, in the engines.

Today, shipbreaking in South Asia is still taking place at the cost of environmental destruction and severe health risks for the workers and the local population who are exposed to these hazardous wastes. In 2012, ship owners sold 850\(^8\) end-of-life vessels for scrapping in India, Pakistan and Bangladesh. ‘Beaching’, the method currently used in South Asia does not allow for clean and safe operations as it consists in breaking ships directly on the beach without proper structures to ensure containment of pollutants, hazardous waste management, and workers’ health and safety. The shipbreaking industry is responsible for many preventable accidents, work-related illnesses and lost human lives, as well as the repartition of hazardous materials and the pollution of the surrounding marine and coastal environment. The ship owners and the global maritime industry, mainly located in the industrialised countries, externalise the real costs for clean and safe recycling to the South Asian countries where laws guaranteeing environmental protection and workers’ health and safety are not properly enforced.

The International Labour Organization (ILO), the United Nations Environment Programme (UNEP) – in particular the Basel Convention Secretariat (SBC) – and the International Maritime Organization (IMO) have all provided regulation and guidance regarding environmental and labour conditions in shipbreaking. The Basel Convention, to which Pakistan is a State party, sets out requirements for the transboundary movement of hazardous wastes such as end-of-life vessels and for the environmentally sound management of hazardous waste resulting from shipbreaking. The IMO’s Hong Kong Convention will not enter into force for many years; however, flag states, ship owners and ship recyclers can already strive for early compliance, for instance regarding the preparation of a sound Inventory of Hazardous Materials (IHM) and Ship Recycling Plan. Recently, also the European Union has agreed upon a Regulation on Ship Recycling. Unfortunately, regulation and guidance have so far not led to the substantial improvements needed on the ground in Pakistan where laws are not enforced and sector-specific regulation is absent.

\(^8\) Figures by the NGO Shipbreaking Platform.
Simultaneously, the large majority of ship owners who take the decision to send a ship for dismantling in Pakistan or its neighbouring countries do not demand clean and safe recycling. In most cases, ship owners do not even provide the IHM to allow for the safe handling, storage and disposal of all hazardous materials present on board ships. Both the flag states and the states where the majority of owners of large commercial vessels are based have done too little to ensure clean and safe ship recycling and to prevent dubious or even illegal practices in the shipbreaking business. Especially the ship-owning countries have the responsibility to prevent the sale of end-of-life vessels containing hazardous waste to a recipient country, if it is known that the latter cannot enforce international waste law. The shipping nations must contribute financially and technically to the improvement of the shipbreaking yards so that these can guarantee the safety of workers and environment protection as laid down in the Basel Convention and its Technical Guidelines, the ILO Guidelines and the Hong Kong Convention and its Guidelines.

The guidance for a sustainable and still competitive shipbreaking industry in Pakistan has already been provided. In 2012, UNEP published a case study to describe models for compliant ship recycling facilities taking into account the requirements of the Basel Convention and the Hong Kong Convention. It identifies the necessary steps to be taken in the short, medium and long term at ship recycling facilities to allow for compliance with the two Conventions, focusing in particular on the environmentally sound management of hazardous wastes. The survey chose Pakistan as a test case. Moreover, in 2013, the Secretariat of the Basel Convention published a feasibility report providing models for alternative, environmentally sound ship recycling operations, identifying suitable sites and estimating the costs for the establishment and operation of such facilities. If Pakistan wants to maintain the industry and be able to compete, both the government and the industry need to decide on investing in sustainable technologies and practices, including facilities off the beach located in adequate structures with proper downstream waste management and which allow for safe working conditions.
2. OBJECTIVE AND METHODOLOGY

2.1 Objective

The objective of this study is to shed light on the global economic and legal framework in which the shipbreaking industry in Pakistan is embedded, and to provide a clearer picture of the current shipbreaking practices in Gadani to learn about the working conditions and the availability of technology, infrastructure and procedures to protect human health and the environment. The study then presents a way forward for a “green” ship recycling industry and offers policy recommendations addressed to the main stakeholders in Pakistan, that is, the Federal and Provincial Governments and authorities and the representatives of the shipbreaking industry in Pakistan. It also calls on the international organisations whose mandates cover the sector, in particular UNEP / Secretariat of the Basel Convention, ILO and IMO, to assist Pakistan in realising the objective of clean and safe ship recycling.

This study is motivated by the fact that little information is available on the current situation in the shipbreaking yards in Gadani, Pakistan. The shipbreaking sector in India and Bangladesh has already received more attention after cases have been successfully brought to the courts, due to broad domestic and international media coverage as well as research on various issues specific to the sector. This study therefore aims at providing a more complete picture of the shipbreaking industry by focusing on the sector in Pakistan.

Moreover, there has been no major contribution by civil society organisations. The most important contributions so far were published by the World Bank and the United Nations Environment Programme (UNEP). The World Bank Report focuses on the economics of shipbreaking, and the UNEP contributions present detailed technical requirements for improvements. The added value of this study lies in its up-to-date information on the global economic and legal framework and the current conditions in the yards based on extensive research on the ground.

2.2 Study methodology

This paper is based on the evaluation of primary and secondary sources. The analysis of the global economic and legal framework is based on a review of existing literature on shipbreaking as well as the NGO Shipbreaking Platform’s own publications on the economic and legal developments in the sector. Moreover, the Platform continuously compiles data on the global economic trends in shipbreaking, which were integrated in this study. In order to present a clearer picture of the situation on the ground, primary data were obtained through a field survey in the shipbreaking yards of Gadani. Further information on the health and safety of

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9 Please find an overview of research and publications at: http://www.shipbreakingplatform.org/library/.
workers as well as the environmental conditions was gained through stakeholder consultation and interviews.

The literature reviewed included the report *Ship Breaking and Recycling Industry in Bangladesh and Pakistan*, published by the World Bank in 2010, one of the major sources on the shipbreaking sector in Pakistan so far. The report provides information about the economics of shipbreaking, in particular regarding employment and contribution to the GDP, competitiveness and profitability of the industry and the linkages to the steel sector. Furthermore, yards in Pakistan were tested for soil contamination for the study and the World Bank estimated the amounts of hazardous waste that accumulate in the region as a result of shipbreaking industries.\(^{11}\) Additionally, the already mentioned case study published by UNEP in 2012 uses Pakistan as a case study on models for Basel and Hong Kong compliant ship recycling facilities. The researchers conducted a baseline study amongst shipbreaking yard operators, competent authorities and waste management facilities.

Both quantitative and qualitative data were collected applying a two-tier approach. Firstly, the physical observation of the yards: all currently functional shipbreaking yards at Gadani were screened based on a standardized yard observation form. The form was filled out based on observations in the yards and answers given by the senior management of the 38 economic operators of the plots. Secondly, SDPI staff interviewed workers in the yards based on a standardized questionnaire.\(^{12}\) At the time of the study design, SDPI estimated around 12,000 active workers and decided on sampling 5% of all workers. Therefore, SDPI staff conducted interviews with 600 workers, of which 545 fully completed the questionnaires and were taken into account by SDPI statisticians. The workers interviewed represent all active plots. All observations were statistically analysed through SPSS\(^{13}\). The findings are based on the triangulation\(^{14}\) of results from both qualitative and quantitative research.

Relevant primary stakeholders (BDA, BEPA, Planning Commission of Pakistan, PSBA, trade unions) were consulted. Moreover, in December 2012 consultation took place with representatives of civil society organisations in Pakistan including IUCN, WWF-Pakistan, the Labour Education Foundation, the Human Rights Commission of Pakistan and further SDPI staff, as well as international organisations and foundations such as ILO and UNDP, the EU delegation to Pakistan and the Heinrich Böll Foundation. The comments from the stakeholders were incorporated in the analysis, findings and recommendations of this paper. The stakeholders all expressed their interest in the issue and contributed their ideas for the future improvement of the Pakistani shipbreaking yards.

Moreover, the initial findings of the plot observation and survey amongst workers have been shared with key stakeholders during a panel discussion during SDPI’s 15\(^{th}\) Sustainable

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\(^{12}\) The yard observation form and questionnaire are available at SDPI or the NGO Shipbreaking Platform for any reader interested.

\(^{13}\) SPSS Statistics is one of the most widely used software programmes for statistical analysis in social science.

\(^{14}\) In this case, triangulation means the combination of different methods to obtain data and information.
Development Conference held in Islamabad in December 2012, and with graduate students at the National University of Science and Technology (NUST) in Islamabad.

2.3 Limitations of the study

With regards to the work force, the survey conducted for the study has covered a considerable sample size of workers through interviews. They were taken anonymously, so that workers did not have to fear consequences. Due to budget and time constraints, the interviews were taken in the shipbreaking yards or in dwellings and offices in the vicinity, to the knowledge of both the “Labour Union” as well as the yard operators in Gadani. If the interviewers had had the possibility to build a situation of stronger mutual trust with the workers, the results could potentially have been even more significant.

So far, there is little information about the environmental impact of shipbreaking in Pakistan to which this paper could have referred to apart from the reports by the World Bank and UNEP. Especially with regards to the impact of pollutants and hazardous wastes specific to the shipbreaking sector, there is no information available. Concerning hazardous waste management in shipbreaking, there is no comprehensive study on where different hazardous wastes finally go and the kinds of hazardous wastes that re-enter the market. Moreover, there is a lack of regular examination of soil, sediment, water and air samples to fully understand the environmental impact of the industry. Similarly, concerning working conditions, accidents, injuries and occupational diseases, there is a lack of substantial data.
3. THE SHIPBREAKING INDUSTRY

This chapter presents the shipbreaking sector internationally, in South Asia, and in Pakistan based on a literature review and data compiled by the NGO Shipbreaking Platform in order to understand the global influences of the economy on the sector in Pakistan.

3.1 Global perspective

Currently, the global shipbreaking industry dismantles far more than 1,000 large ocean-going vessels, such as container ships, bulkers, oil and gas tankers and passenger ships, every year in order to recover steel and other valuable metals or recyclable items. Nearly all ship recycling activities are concentrated in five countries: the three South Asian countries (India, Bangladesh, and Pakistan), China, and Turkey. Further capacity is available in North America (US, Canada, Mexico) and within the European Union (amongst others Denmark, Belgium and the UK). At present, South Asia is undoubtedly the global centre for shipbreaking.

Figure 1. Source: NGO Shipbreaking Platform

In 2012, the NGO Shipbreaking Platform recorded a total of 1,254 large commercial vessels dismantled world-wide.\(^{15}\) 68% of these end-of-life vessels were broken in South Asian yards. China attracted 17% of the ship recycling market (209 ships), whereas Turkey covered 12% (153 ships). Around 3% of end-of-life vessels were recycled elsewhere. The EU represented 2.2% of the total share in 2012 with 28 dismantled ships.\(^{16}\) Pakistan ranks fourth in the global comparison, both in terms of scrapped volume as well as in absolute number of ships recycled.

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\(^{15}\) This figure comprises large ocean-going vessels and does not cover military or government-owned vessels, smaller ships such as fishing vessels, or ships that were operated and then scrapped within the same country.

\(^{16}\) The remaining 1% - mostly single ships – were dismantled in Bahrain, the Dominican Republic, Mexico, Ecuador, Indonesia, the Philippines, Canada and Ukraine.
The intensity of ship dismantling activities fluctuates depending on various economic factors on the global and national levels. A main factor is the supply of end-of-life vessels which is directly influenced by the global economy: during an economic recession—the current one being a good example—ship owners sell older vessels for scrapping. Keeping idle ships may prove to be less economically interesting than selling them for demolition. At the same time, the demand for scrap steel on the other end of the process also influences scrapping activities. The growth of the shipbreaking sector in South Asia is linked to the growing demand for steel. Depending on local and global steel prices, the scrap steel recovered in the shipbreaking yards is sold on the domestic markets in India, Bangladesh or Pakistan, but can also be re-exported for example to the European Union. Finally, a main reason behind the current global distribution of ships destined for breaking is the comparatively low labour and compliance costs for environmental protection, hazardous waste management and workers’ health and safety in South Asia.

Several factors have led to the current sharp increase in the number of vessels dismantled every year. On the one hand, ship owners modernize or rejuvenate their fleets in order to comply with environmental standards or to increase their operating efficiency. Another main factor is the phasing-out of single hull oil tankers, which is to be completed by 2015.\(^\text{17}\) What is more, the current global economic crisis led to a downswing in global freight rates. Ship owners who had new tonnage built during the sea trade boom that took place between 2004 and 2007 now face an overcapacity of ships. The growth of the supply outpaced the growth of the demand.

Three main business stakeholders determine the fate of the global ship recycling industry, market developments and practices. First, the ship owners decide when to sell a ship for breaking and the price at which they want to sell it. In the current market situation, ship owners receive the highest profit for their vessels when selling to yards with the lowest standards. However, it is the ship owner who can set the standard for the recycling of his fleet. Secondly, cash buyers (sometimes also brokers) identify a ship recycling facility for the ship owner. In most cases, they buy the ship before its last voyage (often renaming and re-flagging it) and deliver it to the scrap yard. Cash buyers advise ship owners on ship recycling practices and therefore play a crucial role in providing the ship owners with a real choice. Cash buyers will typically gain a percentage in the overall profit made from scrapping, so they have a direct interest in increasing the ship owners’ profits. Finally, the shipbreaking or ship recycling yards need to implement the standards for the dismantling activities. All three stakeholders generate revenue from the ship recycling business and therefore share the responsibility for making the industry clean and safe.

3.2 Regional perspective in South Asia

Historically, ships were scrapped where they were built: mainly in European and North American shipyards. Due to rising labour costs, stricter regulation for environmental protection and a backlog of old vessels, the bulk of ship dismantling moved to East Asia, in particular to Taiwan and South Korea in the 1970s. A second drastic relocation of the business towards South Asia occurred over the last 25 years. The World Bank report summarizes the reasons: “A large labor supply, low labor costs, and a relative lack of environmental and occupational health regulation have all been vital. Also important is the fact that Bangladesh and Pakistan feature some of the largest current and pent-up future global demand for the SBRI’s outputs—notably, relatively low-grade mild steel bars and rods for use in construction”.

As a consequence, South Asia currently is the global centre of shipbreaking with a 70% share of the international market. India constitutes the single largest shipbreaking country in the world. According to figures from the NGO Shipbreaking Platform for the year 2012, it covered 40% of the ships dismantled in 2012 (497 ships). Bangladesh scrapped 230 ships in 2012, or 18% of the global activity, while Pakistan dismantled 124 ships, or 10%. According to the World Bank report, the Bangladeshi yards have a bigger profit margin mainly due to comparatively high taxes on the sector in Pakistan and higher labour costs.

In India, the industry is mainly located at Alang-Sosiya in the State of Gujarat, about 50 km from the port city of Bhavnagar, where yards were first set up in 1983. Moreover, there are also shipbreaking yards in Mumbai and in Sachana. In Bangladesh, the yards are on a beach stretch in Sitakunda located to the north of the port of Chittagong, in the south-east of the country. In Pakistan, the industry is situated in Gadani, Balochistan, about 50 km to the west of Karachi. The geographical features of the shipbreaking beaches vary, which leads to differences in how

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18 Kumar (2009), p. 5.
the yards operate. The Alang beaches have a tidal range of 13 meters, and during high tide the ships are moved further up the beach. Both in Sitakunda and in Alang, beaches are wide and muddy. In Gadani, the beaches are shallower, sandy and dry, due to a low tidal range.

As regards the regulatory framework, the political climate and the economy, there are considerable differences between the three shipbreaking countries; however, the yards operate under comparable conditions as far as environmental protection, health and safety provisions, and working conditions are concerned. In all three countries, the ships are dismantled directly on the beach. The currently used beaching method makes it impossible to fully contain pollutants. Hazardous waste is not properly managed, for instance no asbestos units are set up next to the vessel and recent satellite picture from Alang in India illustrate oil spills into the sea. Moreover, emergency response, for instance ambulances and fire fighters, can hardly reach the vessels on the beach. Finally, even if lifting equipment can be installed on a beach, adequate heavy machinery can only be set up on stable ground such as on a pier or in a port area.

A large part of the work force in all three clusters consists of migrant workers from poorer parts of the countries. Workers are mainly recruited on a daily basis without a permanent contract. They usually live in shanties next to the yards. Many of the workers are illiterate and not properly trained for hazardous work such as asbestos removal. Regular fatal and other severe accidents in the shipbreaking industry follow similar patterns: falling from great heights, steel part striking workers, fires and explosions, and workers exposed to hazardous materials such as asbestos or toxic fumes. In all three countries, accidents and casualties are not fully recorded and there is no systematic health screening of the work force.

In the last decade, following continuous criticism on the international and national level regarding the working conditions and environmental degradation, some of the yards have invested in upgrading their facilities. Most of the improvements seem to happen in the Indian shipbreaking yards, where, for instance, a landfill site has been constructed and the Gujarat Maritime Board (GMB) has promised the establishment of a hospital next to the yards. However, this needs to be publicly documented as there are no updated independent reports substantiating the claimed improvement and yards are not open to public scrutiny. Moreover, the standards used – such as ISO 30.000 – are not reliable as the certification procedure is reportedly dubious, or certificates are obviously worthless (a so-called “Green Certificate” being delivered without a proper procedure taking place).

3.3 National perspective in Pakistan

Informally, shipbreaking in Pakistan started in 1947, before the country’s independence, on the Gadani coast.\textsuperscript{20} The sandy beach (compared to the muddy beach in Bangladesh) and a deep water level allowed for the easy beaching of vessels. The industry grew after independence and was most active in the 1970s and 1980s. At that time, the Gadani shipbreaking yards employed

\textsuperscript{20} Kumar (2009), p. 4.
over 30,000 workers directly and Gadani was then considered the largest ship breaking yard in the world. For different reasons, amongst others the introduction of comparatively high taxes on the sector under the first Nawaz Sharif government, the Pakistani shipbreaking industry lost its competitiveness to India and Bangladesh. According to the Pakistan Shipbreakers Association (PSBA), the profit margin for shipbreaking in Pakistan as depicted in the 2010 World Bank report is still correct. The last years have seen a revival of the industry. According to the Chairman of the PSBA, Dewan Rizwan Farooqi, the year 2012 brought more business to the yards again, which reflects the global peak in the total number of ships scrapped in 2012.

![Figure 3. Increase in ships dismantled per year since 2008 (source: PSBA).](image)

According to the PSBA, the industry pays taxes of about 5 billion Pakistani Rupees (circa 4.7 million USD) annually out of which 30% go to the Provincial Government of Balochistan. Proponents of the shipbreaking industry argue that it plays an important role in reducing import burdens for scrap steel for the iron industry in Pakistan, which in turn contributes to the GDP, and provides employment for workers from Balochistan, which is the country’s poorest province. The Planning Commission of Pakistan intends to revive the industry based on “green” ship recycling standards in order to increase its contribution to the GDP.

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FACTS AND FIGURES: Ships beached in Pakistan (May 2009 – May 2013)

The following facts and figures about end-of-life vessels beached in Pakistan over a time span of four years is based on research by the NGO Shipbreaking Platform. The Platform compiles data on all ships sent for dismantling, previous ownership, changes in flags and final destinations.

How many end-of-life vessels were sold to Pakistan in the last few years?
The NGO Shipbreaking Platform recorded 403 ships that were beached over four years in Gadani, which included 100 ships in 2010, 99 ships in 2011, and 117 in 2012.

Who were the beneficial owners of end-of-life vessels sent to Pakistan for breaking?
Beneficial owners are those who ultimately benefit economically from a ship. The majority of beneficial owners came from Greece (102 vessels beached, 25.3% of all ships) and the United Arab Emirates (66 ships, 16.3% of the total). Ship owners from India (19 ships), the UK (15 ships) and Singapore (13 ships) followed. Norwegian ship owners had 11 ships dismantled in Pakistan. Some European companies sent ships via their offshore offices, such as Frontline Ltd., the world’s largest oil tanker company, who sent four oil tankers via its headquarter in the Bahamas.

What did European companies represent in terms of ownership?
149 out of the 403 ships dismantled in Pakistan, more than one third, were sent by companies based in the EU (including Norway). Greek and British owners are the largest exporters amongst EU companies.

What flags did the ships fly when coming to Pakistan?
The practice of changing the name of the ship and its flag is common when a ship changes hands, but at end of life ship owners often seek out the most indulgent flags. A typical example is the flag of Comoros. Sometimes only a few days go by between the change of flag and the arrival of a ship in Gadani. The cases are similar for the flag of Saint Kitts and Nevis, Tuvalu, and Tanzania. Whether the ship owner or a cash buyer decides for the re-flagging prior to beaching is unclear: these data are not accessible to the public.

Most European ship owners use flags of convenience (FOCs) already during the operational use of the ship including for the last voyage. For example, 90 out of the 102 ships sent to Pakistan by Greek companies were flagged in a state other than Greece. Out of the 149 European ships, only 19 were registered (and thus flagged) in the country of beneficial ownership. Ship owners used a European flag in 49 cases upon beaching (including the Norwegian flag). The new EU Regulation on Ship Recycling will cover ships flying the flag of an EU Member States, which in the future can only be recycled in a facility compliant with the provisions under the regulation. Although comparatively small in relation to the use of FOCs, European flags made up 12% of all end-of-life vessels coming to Pakistan.
What kinds of vessels were beached in Pakistan?
The most common types of ships beached in Gadani were tankers (178 for the period analysed, between 2009 and 2013). Most of the tankers were owned by companies based in Greece (54), followed by the UAE (25). Companies based in Saudi Arabia, Norway, Singapore, Kuwait, Nigeria, the US and Mexico also seemed to favour Gadani as a destination for end-of-life tankers. The second most common ship types were bulkers (142 ships beached). Once again, Greek companies, with 44 bulkers sold to Pakistan, rank first on the list. Just as for tankers, the UAE was the second biggest seller (13 bulkers), and Indian and British owners followed in third and fourth place. Only 3 containerships were beached in Pakistan – a negligible number compared to India: according to our data, 108 containerships were beached in Alang in 2012 alone.

Interestingly, no ship younger than 14 years old was beached in Gadani. Only 2,5% of the ships scrapped dated from the 1960s. 27,5% were built in the 1970s; 53,3% in the 1980s; and 16,7% in the 1990s. Whereas the NGO Shipbreaking Platform has recorded containerships younger than 15 years sent for dismantling in India, Gadani seems to receive older vessels. It’s typically riskier to dismantle older ships as they were built before regulations banned the use of hazardous substances such as PCB and TBT in paints, or asbestos and are therefore likely to contain even larger amounts of such substances. Within the pool of European-owned ships, the bulk of end-of-life ships sent to Gadani (124 ships or 83%) were built in the 1980s and 1990s.
4. LEGAL FRAMEWORK

This chapter presents an analysis of the international, EU and national legal framework regulating the shipbreaking industry based on a review of the available literature and case law in order to better understand the relevant legal obligations for the sector in Pakistan.

4.1 International Law under UNEP, IMO, ILO

The Universal Declaration of Human Rights adopted in 1948 specifies in Art. 25 the right to a standard of living adequate for health and well-being. With reference to the Stockholm Declaration of 1972 as well as the Rio Declaration of 1992, the United Nations Human Rights Commission adopted a resolution concerning the adverse effects of the dumping of hazardous wastes on the enjoyment of human rights and appointed a special rapporteur to further investigate and report to the Commission. The Special Rapporteur identified shipbreaking as a new form of waste trafficking and stated that end-of-life ships should be considered as hazardous waste. The issue of human rights in shipbreaking yards then came to the attention of the international community in the 1990s, also pushed by the concerted actions of NGOs.

Basel Convention

The United Nations Environmental Program (UNEP) adopted the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal in 1992 following numerous hazardous waste trafficking scandals in the late 1980s. The Basel Convention combines several concepts to protect human health and the environment against the dangers of hazardous waste: the minimisation of hazardous waste and waste self-sufficiency, a control system for any transboundary movement of hazardous waste, including the Prior Informed Consent (PIC) procedure, and the environmentally sound management (ESM) of wastes. It has been ratified by 180 countries and is therefore global in scope. The Convention covers end-of-life vessels when these contain hazardous materials; however, both the PIC and ESM are rarely implemented for ship dismantling. PIC is seldom followed as it is unclear who the exporting state is if there is no port state, and flag states have no obligations under the Basel Convention. On the other hand, the importing countries, India, Bangladesh and Pakistan – all State parties to the Basel Convention – do not comply with their obligations for ESM.

As the Basel Convention remains the only international regulation which aims at protecting developing countries from the dumping of toxic wastes exported from industrialised countries and has successfully been used in court cases in South Asia, the NGO Shipbreaking Platform has been continuously demanding that the Convention be enforced for end-of-life vessels.

In 1995, State parties to the Basel Convention adopted an amendment, banning the export of wastes intended for recovery and recycling to developing countries. In order for the Ban Amendment (“the Ban”) to enter into force 15 more countries need to ratify it. At the European level, the Ban Amendment has been incorporated into the European Waste Shipment
Regulation (WSR), meaning that EU Member States are not allowed to export hazardous wastes to developing countries. However, the definition of “exporting state” both under the BC and under the WSR only comprises the port of dispatch. As most ships are sold for scrapping once they are outside an EU port, the Ban Amendment is rarely enforced for ships.

In 2002, the Basel Convention adopted the Technical Guidelines for the Environmentally Sound Management (ESM) of the Full and Partial Dismantling of Ships, a document for countries that already have or are establishing ship dismantling facilities. The Guidelines provide information and recommendations on procedures, processes and practices that must be implemented to attain safe and environmentally sound ship dismantling. The Guidelines also provide advice on monitoring and verification on environment performance. Moreover, they outline a phase-out for the beaching methods following a ten-year transitional phase.

In 2007, the Secretariat of the Basel Convention (SBC) launched the Global Programme for Sustainable Ship Recycling in order to encourage collaboration between key stakeholders to facilitate improvements in workers’ health and safety and environmental conditions. The SBC has offered a variety of technical capacity building activities upon Basel Parties’ request. It has lately published a case study and a feasibility report on alternatives to the beaching method, which offers guidance to Pakistan on how to make shipbreaking yards compliant.22

**Hong Kong Convention**

The International Maritime Organization (IMO) decided to develop a new global shipbreaking regime in December 2005. The International Convention for the Safe and Environmentally Sound Recycling of Ships was adopted by a diplomatic conference under the auspices of the IMO in Hong Kong in May 2009. Guidelines supporting the Convention have recently been developed by the IMO. The Hong Kong Convention is not expected to enter into force before many years. To this date only Norway has acceded to the Hong Kong Convention (in June 2013), and several other States have signed it. So far, none of the shipbreaking countries in South Asia have signed or acceded to the Convention.

The Platform calls for the co-existence of the Basel and Hong Kong Conventions and to combine elements from both. The Hong Kong Convention alone does not provide an equivalent level of protection for developing countries from hazardous waste coming from industrialised countries, lacks important elements such as the ‘polluter pays’ principle, waste prevention, and provisions regarding downstream waste management. The Hong Kong Convention comprises requirements for ships – such as having an IHM prior to recycling – and for ship recycling facilities, as well as reporting requirements. The Convention requires ship recycling facilities to be authorized by the authorities. The facilities are required to implement a Ship Recycling Plan (SRFP) that covers worker safety and training, protection of human health and the

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environment, roles and responsibilities of personnel, emergency response, and systems for monitoring, reporting and record-keeping.

Although the Hong Kong Convention does not rule out the beaching method as non-compliant, so far only a couple of Chinese ship recycling yards have received, or are awaiting, a statement of compliance. If Pakistani yards seek compliance with the Hong Kong Convention, the yards must be upgraded with regards to all the requirements listed above.

ILO Recommendations

The ILO has called shipbreaking one of “the most dangerous occupations” in the world. In March 2004, the ILO unanimously endorsed a set of criteria to govern the disposal and recycling of ships. The criteria are outlined in “Safety and Health in Shipbreaking: Guidelines for Asian Countries and Turkey”. The Guidelines suggest a national framework defining the general responsibilities and rights for employers, workers and regulatory authorities in shipbreaking. In addition, they provide recommendations on safe shipbreaking operations including the management of hazardous substances, protection and preventive measures for workers against hazards and suggestions for a competency-based training program.

Pakistan has neither ratified the Occupational Safety and Health Convention (No. 155) nor the Convention on a Promotional Framework for Occupational Safety and Health (No. 187). The implementing Act for the latter has been pending at the Parliament since 2008.23

4.2 The EU Regulation on Ship Recycling

In June 2013, the European Union agreed on a new Ship Recycling Regulation, which is expected to enter into force early in 2014 and will be applicable between 2016 and 2019. The objective of the Regulation is to reduce the negative impacts linked to the recycling of EU-flagged ships, especially in South Asia. Furthermore, it is designed as an early implementation of the Hong Kong Convention. The regulation will apply to large commercial vessels flying the flag of EU Member States. These ships are excluded from the EU Waste Shipment Regulation, which has so far banned the export of end-of-life vessels to developing countries.

The Regulation sets out a number of requirements for the facilities willing to recycle European ships. These requirements are stricter than under the Hong Kong Convention and the current beaching facilities will not be able to meet them. The European Commission will set up a European List of compliant ship recycling facilities in which EU-flagged vessels can be dismantled. Ship owners will have to ensure that each end-of-life ship is prepared for recycling. They will have to provide the necessary information about the ship to the recycling facility, notify the intention to recycle the ship to the relevant administration, provide an updated IHM, and minimise the amount of cargo residues, remaining fuel oil and ship generated wastes remaining on board. Finally, they will have to provide a ready for recycling certificate.

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Prior to any recycling of a European ship, the ship recycling facility will have to develop a ship recycling plan based on the information provided by the ship owner. The plan will contain information about the ship essential for its safe and sound treatment and thus will facilitate the work of the ship recycling facility. European ships will undergo surveys verifying compliance of the inventory of hazardous materials with the requirements of the Regulation.

In order to be included in the European List, any ship recycling facility irrespective of its location will have to comply with a number of requirements. The Commission will assess the applications received from the ship recycling facilities located in third countries. For facilities located in the EU Member States, this assessment will be done by national authorities.

4.3 Institutional and Legal Framework in Pakistan

Despite the fact that shipbreaking has existed in Pakistan for decades, the legal status of the industry is unclear and there are hardly any specific regulations or procedures in place. Only basic procedures such as customs checks are mandatory. The Balochistan Ship Breaking Industry Rules from 1979 are limited to empower the BDA to lease plots for shipbreaking.

Nevertheless, general legal provisions cover the shipbreaking industry. First, constitutional guarantees for fundamental rights are applicable to the shipbreaking sector. Regarding hazardous wastes, the Hazardous Substances Rules (2003) under the Pakistan Environmental Protection Act (PEPA) (1997) can also be applied to the sector. With regards to occupational health and safety (OHS), a variety of Pakistani laws are of interest. However, there is no single, comprehensive law covering OHS at the workplace. The pieces of legislation which deal with aspects of OHS date back to the British colonial period, for instance the Workmen Compensation Act of 1923, the Labourers Act of 1934 and the Factories Act of 1934. After independence, the Rules to operationalise the Workmen Compensation Act were formulated in 1961, the West Pakistan Hazardous Occupations Rules in 1963, the Provincial Employees Social Security (Occupational Diseases) Regulations in 1967, and the Labour Laws (Amendment) Ordinance in 1972. The Ministry of Labour and Manpower has prepared a draft Act for Occupational Safety and Health at Work Place in 2008, but the draft was not debated during the last tenure. Pakistan, although member of the ILO, has not yet signed the ILO Convention 187 on the Promotion of a Framework for occupational safety and health at the workplace.

The law covering the whole industrial sector generally suffers from weak enforcement and a lack of compliance monitoring system. Moreover, the fact that most workers are recruited by “contractors” without a permanent and direct relationship to an employer undermines their enjoyment of fundamental labour rights.

Following the devolution process, which took place in Pakistan starting from 2011 and which is based on the 18th amendment of the Constitution, certain responsibilities for labour and environmental issues have been handed over to the provincial governments, whereas others remain at the federal level. With regards to shipbreaking, there are shared responsibilities
between the Balochistan Environmental Protection Agency (BEPA) and the Balochistan Development Authority (BDA) on the provincial level, and various Ministries on the Federal Level (such as the Ministry of Labour and Manpower, the Social Welfare Department and the Ministry for Ports and Shipping.

Despite various basic laws and regulations addressed to the shipbreaking industry, there is a dire need for sector-specific regulation in order to ensure decent working conditions and clean and safe recycling operations in accordance with national legislation and international obligations. Two examples showcase where specific regulations are missing. Firstly, asbestos use: the legal framework of Pakistan predates the acknowledgement of asbestos-related diseases; therefore, there is a need for a federal bill outlining rules and regulations for safe asbestos handling. A second example: the National Environmental Quality Standards (NEQS) do not yet cover storage, treatment, recycling or disposal facilities for hazardous wastes.

4.4 Case law and legal developments in India and Bangladesh

India has sector-specific legislation in place to regulate the shipbreaking industry, whereas the Government of Bangladesh is still adjusting its rules on shipbreaking. In India and Bangladesh, the driving force to change the industry has been instigated by civil society: the comparably similar petition mechanisms to the Supreme Courts have been vital in exposing the lack of respect for environmental and labour law, by both the industry and the authorities.

India

The milestone to Indian shipbreaking regulation was a petition submitted to the Supreme Court in 1995. Since then, the Supreme Court had several affidavits submitted to it, and took a final judgment on the matter on 14 October 2003.24 In the order, the Supreme Court recognized that even though there were certain international obligations that India was committed to, such as those under customary international law and those reflected in general principles – the precautionary principle and the polluter pays principle – many of those norms were already enshrined in national legislation.25

Evidently, there is no shortage of legislation in India, but a lack of enforcement. The final order of 14 October 2003 led to the formation of the Supreme Court Monitoring Committee which was set up to monitor compliance with legislation and in particular compliance to court orders. Since then, there have been several exemplary petitions submitted to the Supreme Court regarding shipbreaking that illustrate the excessive focus on formal procedural compliance as opposed to direct protection of the environment and workers’ safety. The latest of these was

24 http://www.elaw.org/node/1400
the joint petition in 2012 regarding the ex-*Exxon Valdez, Oriental Nicety*.\(^{26}\) The Supreme Court did not deny that the rules of the Basel Convention should be strictly applied in order to protect the environment and workers, but it took the view that because the Gujarat Maritime Board (GMB) and the Gujarat Pollution Control Board (GPCB) authorised the vessel to be broken it must be assumed that the necessary permissions were submitted and that the authorities inspected the ship accordingly.

In a nutshell, a wide spectrum of authorities in India is involved and an array of certificates is demanded. However, the administrative burdens have not led to the expected changes. The Indian regulations suffer from weak enforcement of the safety measures and the focus shifted towards procedural compliance as opposed to actual protection.\(^{27}\)

**Bangladesh**

Like India, an array of domestic law touches on the shipbreaking industry.\(^{28}\) Bangladesh has not developed as many procedural requirements as India regarding the authorization for a ship to be beached. A main difference, which affects the shipbreaking market shares between the two countries, is that India has more procedural safeguards for assessing whether a vessel constitutes a fire hazard. This does not necessarily mean that more rigorous inspection takes place in India compared to Bangladesh, but simply that Bangladesh requires less paperwork. Nevertheless, the requirements in India have led to more tankers, which inherently pose a greater fire hazard, to be beached in Bangladesh rather than in India.

An important decision by the Supreme Court was taken in the *MT Enterprise* case\(^ {29}\) in 2009, in which the Court insisted that ships could only be imported to Bangladesh after an environmental clearance had been carried out. It noticed that none of the Ministries were monitoring environmental compliance and that, on the contrary, the Ministry of Shipping was more interested in increasing the number of vessels beached in Bangladesh. As a result of this petition, the shipbreaking yards’ operations slowed down for several weeks. The court order also asked the Government of Bangladesh (GoB) to develop sector-specific rules that take into account the Basel Convention. Both the Ministry for the Environment and the Ministry for Industry have presented different sets of rules, which are still pending before the Court for approval. In 2011, the GoB officially recognized the sector as an industry.

Both India and Bangladesh have legislation in place to regulate the shipbreaking industry, albeit it is not rigorously enforced.\(^ {30}\) Though, petitions to the Courts have raised the non-compliance by both the industry and the authorities, and have been able to increase the pressure to address the shipbreaking problem.

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\(^{27}\) For a summary of Indian regulations see Kumar, pp. 7 and following.


\(^{29}\) High Court in Writ Petition No. 7260 of 2008

\(^{30}\) See http://www.shipbreakingplatform.org/south-asian-policy/.
5. CURRENT OUTLOOK – ENVIRONMENTAL, HEALTH AND SAFETY CONDITIONS IN GADANI

This chapter presents the current situation in the shipbreaking yards in Gadani based on the analysis of primary data retrieved through yard observations, interviews of workers and consultation with key stakeholders including the Pakistan Ship Breakers Association and trade unions present in the shipbreaking yards. Diagrams marked “(O)” are based on the statistical analysis of the yard observation forms, diagrams marked “(I)” on the interviews with workers.

5.1 General technical features and procedures

The shipbreaking yards are located around 50 km north-west of Pakistan’s major city Karachi along a beach stretch close to the small settlement of Gadani in the Province of Balochistan. The yards are aligned next to the “Ship Breaking Yard Road” and operate on a stretch of sandy beach with a relatively small tidal range. Office buildings are located next to the road. According to the Pakistan Ship Breakers Association (PSBA), 80% of the plots belong to waderas (local landlords) and 20% to the Balochistan Development Authority (BDA). The operators lease the plots. At the time of this study, 38 economic operators were running the affairs of 68 plots. One plot measures 4,000 square feet and the operators occupy three plots on average. At least two plots are needed to beach a ship. The yard operators are rallied in the Pakistan Ship Breakers Association (PSBA) founded in 1979. All operators are members. As already reported by the World Bank, many yards are integrated both into re-rolling mills and construction companies.

The Chairman of the PSBA explained that the average time to dismantle a ship is 90 days. According to the PSBA, around 99% (in weight) of material recovered from end-of-life vessels is scrap steel, other metals and materials such as wood. Around 400 truckloads of scrap steel are brought to Karachi every day. Most of the scrap steel from Gadani, which according to the World Bank report is 70–75%, is destined for re-rolling mills in Karachi.31

Figure 5. Plot sizes leased to different contractors (O)

According to the managers of the yards, most of the available machinery such as cranes, lifters and gas cutter is functional. The present operations at Gadani are apparently more mechanized than shipbreaking in Bangladesh, for instance. Cranes are used to lift steel parts from the beaches. However, during the primary cutting of the ships, the gravity method is applied, that is, larger steel parts are not lifted by cranes, but are dropped from the ship while cutting.

The general infrastructure in the area of the yards is poor: unpaved roads, no steady electricity supply, no telephone line and no public supply of drinking water. Electricity is produced by generators and water needs to be brought in tanks from the next town of Hub. There is no treatment plant for sea water. Electrical power outages ("load shedding") are a major limiting factor for the productivity at the yards, according to the operators, as they lead to delays. Moreover, power outages pose a security risk to the workers who, for instance, have to work in the dark inside a hull.

According to the PSBA, the situation on the ground regarding infrastructure has not changed in the last 30 years. The industry complains that the government does not invest in infrastructure, despite the fact that the industry pays noticeable amounts of tax as well as rent to the BDA. Industry representatives claimed that they were willing to pay higher rents if the government delivered better infrastructure. According to the PSBA, the infrastructure in place in Pakistan could not be compared to Turkey, where the government has provided infrastructure. However, they consider the grade of mechanisation comparable. The standard of Turkey could be reached if the government invested in an upgrade. The PSBA emphasized that the yards had underground pipes for liquid gas needed during the cutting process, which is safer than the gas cylinders used in shipbreaking yards in India and Bangladesh.

![Figure 6. Condition of machinery in the yards (O)](image)

![Figure 7. Low productivity factors (O)](image)

5.2 Enforcement of the law, authorization and certification

Whereas the BDA has the responsibility to provide basic infrastructure to the shipbreaking yards in Gadani and leases the government-owned plots, the BEPA is the environmental regulatory body for the province and has to approve an Initial Environmental Examination (IEE) and an Environmental Impact Assessment (EIA), required before permission can be granted for a ship to be imported. According to the operators, the yards are inspected by the authorities (see Figure 8), but there is no record of the frequency or of inspection reports. Most inspections were conducted by the BEPA (see Figure 9), as the BDA seems to only inspect its own plots. BEPA is supposed to monitor all plots, both privately and publicly owned. BEPA issues an environmental approval, generally referred to as “No objection certificate” (NOC), for every ship. Moreover, the PSBA argued that the BEPA asked for a “gas free for man entry” certificate for the IEE; however, it was impossible to verify the compliance of such certificates.
The fact that inspections take place and that yard operators seek the approval for every ship says little about how regularly the authorities monitor the operations, if the officials are trained for the inspections, and if they sanction non-compliance. Various stakeholders reported that the BEPA, located in the provincial capital Quetta about 650 km away from Gadani, lacked the resources for regular inspection of the shipbreaking yards. Reportedly, NOCs are issued without the ship being boarded for inspection. Discussions with stakeholders left the impression that the compliance with the BEPA procedure was more a procedural formality being followed by the economic operator, whereas the real implementation of an IEE could not be observed during the data collection.

Figure 8. Past inspections by authorities (O)

Figure 9. Inspections by different authorities (O).

Specific permits such as a hot work permit to ensure that the work places are well equipped and workers dealing with particularly hazardous work are trained are not required.

For reasons of competitiveness, many economic operators have adopted international certification schemes, mainly ISO 14001 (about 86% of working plots). However, it is unclear if the yards’ adherence is based on self-certification or if they use independent certifiers.\footnote{In Indian shipbreaking yards, ISO 30000 certificates have been issued without an in-depth analysis within two days, which undermines the credibility of the standard.}

5.3 Environmental protection and hazardous waste management

Spills and liquid pollutants

During the dismantling of ships on the beaches, oil spills and the release of other pollutants into the sea and on the beaches pose a danger to the workers and the environment. The question of containment has never been discussed, according to the PSBA. There is no impermeable flooring in the yard area and no drainage system. The association as well as the recognized trade union claimed that no pollutants were released to the sea on purpose. Waste oils are pumped out from the vessels. Oil residues and bunker from the beached ships are stored and then re-sold as fuel, for instance to brick factories, a common practice also found in Turkey.
From an environmental point of view this practice is questionable as long as the burning of the waste oils cannot guarantee the filtering of harmful exhaust fumes. During the visit of the yards in December 2012, smaller oil spills on the beaches were recorded, but most of the oil seemed to be contained. Sewage water was stored in pools on the yards. There was no treatment facility for sewage water or contaminated water.

The National Trade Unions Federation (NTUF) reported an oil spill from the oil tanker “Wenjiang” in 2012 that was dismantled at yard No 54. According to NTUF, the oil spread in a radius of one kilometer. They reported that more than 500 workers complained about skin allergies and acute respiratory problems due to widespread oil smell.\(^{33}\)

**Hazardous wastes**

Other than liquid pollutants, large amounts of various hazardous materials are likely to accumulate in Pakistan if the prevailing practices continue over the next 20 years.\(^{34}\) Provisions for the sound management of hazardous wastes, such as asbestos, PCBs or heavy metals, are non-existent in the Gadani shipbreaking yards, as well as in the next town Hub and Karachi.

There are no procedures in place to handle hazardous wastes during removal and there are no store houses on the yards. Moreover, there is no waste treatment or disposal facility, for example, no proper landfill for asbestos or treatment for PCBs. The researchers did not witness the burning or smoldering of waste and it seems that most of the materials are resold. The claim by the PSBA that heavy metals cannot be found on oil tankers and cargo ships can be interpreted as a lack of awareness with regards to environmental hazards.

The operators of the yards admitted that asbestos is dumped in bags behind the shipbreaking yards as it is one of the few things that cannot be resold. The BDA does not require a specific procedure for asbestos handling and disposal and there are no guidelines offered by the authorities. The World Bank report already pointed out that the lack of proper waste treatment facilities leads to the “informal disposal on the beaches, on adjacent unused plots, or on other land in the vicinity”.\(^{35}\) It also stated that the burial of asbestos on-site was a common practice and that the locations were not marked.\(^{36}\) Moreover, it mentioned that dioxins may be generated in the re-rolling mills when painted steel plates are heated.\(^{37}\)

The findings of the yard observation are not different from the earlier World Bank report: “Some hazardous materials are exposed during dismantling and are managed (or spilled and spread) locally, but a considerable amount is carried with equipment off the yards. This material may re-enter society in disguise. (…) The material can also travel into the hinterland with the motors, cables, transformers, air conditioning systems, and other items reused in the

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33 See: http://www.ntufpak.org/media.html
34 For figures see World Bank report, p. 5.
36 World Bank (2009), p. 36.
37 World Bank (2009), p. 5.
region. In addition, the ODS emitted during ship breaking typically carry considerable global warming potential.\textsuperscript{38} The findings of the World Bank report are to the point: asbestos is a significant problem; PCBs still occur in older vessels and especially PCB-contaminated cables pose problems; there are no measure in place for ozone-depleting substances (ODS) collection and management; heavy metals in paint pollute the work environment, and large amounts of oil and oily water must be managed.\textsuperscript{39} For the World Bank report, yards in Bangladesh and Pakistan were tested for soil contamination, and the results showed that there are deposits of cadmium, chromium, lead, and mercury.\textsuperscript{40}

5.4 Working and living conditions

The work force

The number of active workers varies between 12,000 to 15,000 depending on the supply of ships to the yards. According to the PSBA, around 100 workers are needed to break one ship in an average period of three months. For the year 2012, SDPI estimated a workforce of about 125,000 people, including the direct (15,000 in the Gadani yards) and the indirect workforce (approximately 110,000 in 450 re-rolling mills and 650 smelters), which means that up to 850,000 dependent family members rely on the shipbreaking industry.

All of the interviewed workers were male and there are no women working in the shipbreaking yards directly. Most of the workers come from the Khyber Pakhtunkhwa Province (52,2%), especially Swat valley, the province with the second-lowest Human Development Index of all Pakistan’s provinces. The rest of the workers come from Punjab (25,7%) and the province where Gadani is located, Balochistan (14,6%), as well as neighbouring Sindh (6,0%). Most of the workers have been working in the yards for a short period of time, between one and five years (see Figure 11). Workers reported that they usually stay with one yard; however, this is not a requirement. They travel home every four to six months to see their families.

![Age of Respondent](image1.png)

![Duration of Work](image2.png)

Figure 10. Age of respondents (I)

Figure 11. Duration of work at the yards (I)

\textsuperscript{38} World Bank (2009), p. 4.
\textsuperscript{39} World Bank (2009), p. 5.
\textsuperscript{40} Ibid.
The majority of workers is illiterate (58% of the respondents, especially the youngest age group of 18-30 year olds in which more than 61% are illiterate). 36.5% have finished primary or middle school, less than 5% of the workers have a secondary or higher education. Whereas child labour is still a major problem in Bangladeshi shipbreaking yards, the researchers for this study did not witness child labour in Pakistani yards. However, some young workers responded that they had been working in the yards for many years, that is, when they were as young as 14 years old. Also the World Bank report had stated that the industry employs virtually no women or children and that up to 75 percent of the total workforce are migrant labourers. The majority of workers choose to work in shipbreaking yards, as they do not know of any other job. Around one third of the workers were referred to the yards by relatives or acquaintances.

![Selection of Job](image)

**Figure 12. Decision for the job (I)**

**Living conditions**

Most workers are supposed to make their own housing arrangements in the vicinity of the yards. They live in shanties along and around the road behind the yards which are made out of plywood from the ships. The shanties are not connected to electricity. Several workers share an accommodation. There were contradictory statements regarding rents: some accommodation seems to be for free, whereas other workers need to pay a rent to local landowners. Currently, no plan to create housing for the workers is in place, although the World Bank report mentioned a planned scheme to provide 1,000 housing units to workers. While most workers in Gadani have left their families behind in their home regions, around 100 families live next to the yards according to NTUF.

There is a lack of proper sanitation and there is no public supply of safe drinking water. Most workers receive drinking water from tanks, which has been reported not to be pure. The trade union demanded a water filter. The workers prepare their own food together to save money. In interviews, workers reported that they need to spend around 2,200 PRK on food every month, which is around 20% of their income for the lowest wage groups.

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41 World Bank (2009), p. 25.
Along the road behind the yards, there are some small roadside shops and tea stalls. However, there is no further infrastructure as the shipbreaking yards are located in a remote area. The yard owners usually build a mosque on their plot which the workers may use.

According to the agreement between the “Labour Union” and the PSBA, there should be a canteen on every fifth plot where workers can eat. Every plot shall have a water filter installed and have a wash room. The implementation of these promises needs to be verified.

**Work contracts**

Most of the employment is based on short-term contracts. The majority of workers are hired on daily wages while some technicians receive contracts up to three or six months or – in rare cases – long-term contracts. The workers’ situation is weakened by the absence of written contracts, which only exist in a few cases. According to NTUF, every worker should have an appointment letter and be registered with social security. The workers are hired by “contractors”, who are middle-men between the workers and the operators of the yard and who take care of the recruitment. The “contractors” often belong to the local elite. Therefore, workers have no direct employer-employee relationship in the yards. Moreover, “contracted labour” is more difficult to organise in unions than permanent workers.

![Figure 13. Workers hired by a “contractor” (I)](image1)

<table>
<thead>
<tr>
<th>Contractual Job</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>96%</td>
<td>4%</td>
</tr>
</tbody>
</table>

![Figure 14. Categories of contracts (I)](image2)

<table>
<thead>
<tr>
<th>Contract Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily wages</td>
</tr>
<tr>
<td>3 Month</td>
</tr>
<tr>
<td>6 Month</td>
</tr>
<tr>
<td>1 year or more</td>
</tr>
</tbody>
</table>

There is no insurance or pension scheme for workers who are not permanent workers. According to the agreement between the “Labour Union” and the PSBA, ship welders who work in especially dangerous conditions are entitled to a group insurance that should cover accidents. Moreover, the yard owners should pay into the welfare system, which they do not do as most workers are not registered for social benefits, according to NTUF. The contractor system undermines social welfare. According to the law, even for a worker employed for one day only, the employer would have to register the worker for social security benefits.

**Working hours**

Workers mostly work eight hours a day, from 7 am to 4 pm, with a one-hour lunch break. Workers take their lunch in roadside eateries. According to different stakeholders, there are no
night shifts. The observance of standard working hours reflects the regulations under the Factories Act. However, NTUF reports that work regularly continues until 7 pm or even 10 pm. Workers stated that they have no paid holidays and work seven days per week, with a shorter day on Sunday (6 instead of 8 hours). As most do not have permanent work contracts but are hired on the basis of daily wages, they cannot claim a right to paid holidays or weekends.

![Figure 15. Working hours](image)

![Figure 16. Type of work](image)

## Wages and social benefits

The “Labour Union” and the PSBA agreed on a new wage scheme and other benefits on 14 June 2011. According to the agreement, workers recruited on a daily wage basis earn between 366 PKR (USD 3.50) for a “helper” and 850 PKR (USD 8) for an “oil worker”. A foreman earns 2000 PKR (USD 18.50) a day. Mechanics such as crane or winch operators are usually regularly employed on a permanent basis and earn at least 30,600 PKR (USD 290) a month; however they can negotiate higher wages with their yard operator. In June 2013, the minimum wage was raised to 10,000 PKR per month, that is, the lowest tier of workers can reach the minimum wage level, if they work nearly every day. According to NTUF, overtime is paid. If they work on Sundays, they receive double payment. In interviews, the workers reported that their wages were paid every two weeks. Their income is below the threshold for taxable income.

According to the agreement, workers should receive a free meal every day. Workers with children should receive an extra benefit of 500 PKR per month and child. Permanent workers receive an annual bonus and should be registered for pension benefits.

## Compensation

Workers’ families seem to receive compensation in the case of the death of a worker. Compensation in cases of injuries is not regularly paid according to NTUF. In cases of major injuries, workers reported that compensation was paid. The type and amount of compensation varies from owner to owner and the gravity of the injury. According to the agreement between the “Labour Union” and the PSBA, the relatives of a worker who died in an accident receive
300,000 PKR. If a worker is paralysed by an accident, he should receive a one-time payment of 50,000 PKR. If a worker dies during his engagement at a yard for natural reasons, the family shall receive 150,000 PKR.

In cases of major injuries, free treatment (89% respondents) and sometimes leave with salary (11% respondents) are provided for the recovery period according to the workers. Compensation is provided in cash.

**Figure 18.** Compensation practice for injuries (I)  
**Figure 19.** Compensation for disability/death (I)

**Trade Unions representation**

The large majority of workers is reluctant to get involved in a trade union (see Figure 21). Furthermore, the majority prefers a concept of consensus to nominate union leaders instead of elections, which may favour nepotism instead of democratically elected representatives. Currently, there are two trade unions that compete with each other.

**Figure 21.** Participation in trade unions (I)  
**Figure 22.** Nomination union leaders (I)

The Ship Breaking Labour Union Gadani (“Labour Union”) was recognized as a trade union in 1981 and as a collective bargaining body in 1986. Tripartite meetings are held between the

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43 By trade union we understand an organization of workers that aims, amongst others, at achieving higher pay and better working conditions and whose leadership bargains with the employers on behalf of union members. In Pakistan, both the terms ‘trade union’ and ‘labour union’ are used.
government of Balochistan, the PSBA and the “Labour Union”. According to the information
given by the latter, wage negotiations are held every two years. It presented an agreement
reached with the economic operators in 2011 to the researchers. Also the World Bank report
stated that the workers had organized in a “Ship-breaking Labor Union”, which for instance in
February 2009 successfully campaigned for a 40 % wage increase, better working conditions,
and improvements to medical facilities.\footnote{World Bank Report, p. 26.}

The Labour Union itself holds monthly meetings involving trade union representatives. The
union members meet once a year. The union receives 3,000 PKR for each ship beached in
Gadani from the yard operators in order to finance its activities. Workers pay a membership fee
of 20 PKR per month. Its annual budget is around 100,000 PKR it runs an office on a plot in
Gadani as well as in Hub. It is not linked to the international trade union movement.

According to the Ship Breaking Labour Union, it brings different claims to the court with an
average of one case per month. Moreover, the union maintains an ambulance. The last strike
was organized in 2010 which resulted in a 40% increase in salary, according to their statement.
The next negotiations on wages were supposed to be held in June 2013. So far, the union does
not offer training to workers, but it stated that it would be interested in doing so. Representatives argued that there should be a regular health screening for workers by the
government to detect diseases.

The “Ship Breaking Democratic Workers Union” under the National Trade Unions Federation
(NTUF), with its head office in Karachi, has received its registration as a trade union, however, is
not recognized by the PSBA. It had first tried to register the union in 2008, but was rejected in
2009. In the same year, the union was charged with holding an illegal strike: five people were
arrested and 70 were injured. The union argues that “maintenance of law and order” was used
as an argument to prevent assemblies and that leading unionists did not receive jobs in the
shipbreaking yards anymore. NTUF has filed a case to the High Court of Balochistan against a
police official claiming that he prevented an assembly of workers. NTUF argues that trade
unions are stronger in India than in Pakistan and Bangladesh.

NTUF has more than 80 affiliated unions in Pakistan, representing around 100,000 workers. It is
affiliated with the global union IndustriALL (formerly known as IMF or International
Metalworkers’ Federation). The “Democratic Ship Breaking Worker’s Union” is one of the
newest unions in NTUF with around 250 members (December 2012). It has opened an office
next to the shipbreaking yards in Gadani, not within any specific plot. It is open to workers from
8am to 5pm with one office staff. Members pay 50 PKR per month and the union does not
receive funds from the yard owners.

Since 2009, NTUF has filed 32 cases to the labour court in Quetta for cases concerning
compensation for relatives in cases of deaths. All received compensation. The yard operator
pays 300,000 PKR of compensation for the death of a worker and the government another 500,000 PKR. NTUF also filed 30 cases to the workers’ welfare department in Islamabad.

NTUF describes its competitor, the “Labour Union”, as being under the influence of contractors and yard operators. The World Bank report refers to information that described it as a “pocket” union, composed of “loyal” workers, that has been put in place by the shipbreakers to rival another union, thus denying true worker representation.\(^{45}\)

5.5 Health and Safety Provisions

**Use of personal protective equipment (PPEs)**

Personal protective equipment (PPEs) is barely used in the Gadani shipbreaking yards. Shoes, goggles and hats are given to workers when they join the yards. Different from shipbreaking yards in Bangladesh and their muddy surfaces, the workers in Gadani can always wear shoes; however, they are usually not provided with safety shoes. Moreover, other PPEs such as helmets are not used due to the heat and the yard operators do not enforce the use of PPEs. Workers indicated that heat and humidity makes wearing gear difficult. The PSBA declared that gloves, shoes, and helmets were handed out, but also admitted that workers sometimes refused to wear them. Respiratory protection and masks are not available and according to the trade union, workers complain about exposure to fumes. The torch-cutter usually uses simple goggles. Workers on the ships do not wear climbing gear while working at great heights. NTUF claims that any additional PPEs need to be purchased by the workers.

The lack of safety measures during asbestos removal is particularly worrying. Workers remove asbestos only protected by gloves and equipped with a hook. Areas of asbestos removal are not sealed off and the workers do not wear masks. Apparently, workers cannot distinguish between glass wool and asbestos, as both are referred to as “khujli”, which literally translates as “itches” and indicates the skin irritation it causes.

Typical injuries and reported casualties

The typical injuries, as shown in Figure 25, are cuts (35%) and burns (31%). Many of these injuries are preventable and result from non-compliance with provisions for the use of PPEs. During a discussion with workers on the yards in December 2012, one worker showed a missing toe, probably the result of a lack of PPEs such as safety shoes, while another one showed a crushed hand. Bone fractures, the third most common injury, may be correlated to unsafe operations and non-compliance with standard work-related procedures. Moreover, injuries can also result from poor training of the work force and the foremen, aggravated by the temporary hiring of workers. The development of procedures, as well as an improvement with regards to mechanization of dangerous processes, could minimize accidents.

In general, there is little data on occupational health and safety as well as accidents and death. NTUF recorded 12 deaths in the Gadani shipbreaking yards in 2012. Most workers were killed by falling from heights, were crushed under steel plates or huge metal pieces, in explosions or fire, or by suffocation. Four deaths recorded in June 2013 exemplify the dangers for workers in the yards: while one more worker died from falling from a great height into a tank, three more were killed in an explosion inside the hull. However, there is no full record of casualties, injuries, permanent damage and occupational diseases caused by activities in the shipbreaking yards – therefore, the full impact on human health remains unknown (see Figure 26). Especially the long-term effects caused by the exposure to hazardous materials, such as asbestos, is hard to foresee. Despite the fact that NTUF recorded fatal accidents for 2012, including explosions and fires, the PSBA claimed there were no such casualties.

Emergency response and medical care

Figure 27 shows a positive picture regarding emergency plans, which nearly three-quarters of the operated yards claimed to have in place. However, in reality provisions are either not in place or consist of non-functional, outdated, and old-fashioned fire-fighting equipment. Workers injured in the hull of a ship need to be carried across the beach. More than half of the yard operators claimed that their workers were trained in emergency situations and with regards to extinguishing fires. The effectiveness of these trainings needs to be verified as well.
as the frequency of such trainings, as the research has shown that workers are temporary and have been working in the yards for 1 to 5 years only.

![Emergency Plan](image1.png) ![Training on Fire](image2.png)

Figure 27. Emergency plans (O)  Figure 28. Training on fire (O)

The workers seem satisfied (71% respondents) with the provision of a doctor at the yards and free medical aid in case of emergency or accidents. However, there is only one ambulance available for all of the yards and there is no health post or emergency unit for more than 10,000 workers. Apparently, first aid boxes are present in most of the working plots, but this does not seem to be sufficient for proper medical aid. The high risk of accidents, fire and explosions call for a hospital nearby. However, the next hospital equipped to take care of injured workers is in Karachi, about 50 km away. The long distance puts the lives of injured workers in danger.

**Training and Awareness**

The survey shows that mainly older workers have received trainings on emergency response, rescue and fire protection. The qualitative analysis of trainings and capacity building leaves many unanswered questions. Training efforts are not recorded in any plot in Gadani and NTUF claims that no training is provided. Only one fourth of the workers claims that they are aware of the hazards at their workplace. There is no training centre in Gadani as compared to Alang in India and systematic training does not take place.

![Knowledge on Hazardous Matter](image3.png) ![Training on Emergency](image4.png)

Fig. 29: Knowledge on hazardous work (I)  Fig. 30: Workers' Training on Emergency & Rescue (O)
5.6 Further findings and advice through stakeholder consultation

The following summaries provide ideas and recommendations given by various stakeholders.

ILO: So far, working conditions in shipbreaking have not been raised in tripartite consultation between the government, trade unions and workers. The issue was raised with the former Federal Ministry of Environment in April 2011 together with UNDP and UNIDO; however, responsibilities are different now after the devolution process. The provincial government of Balochistan has argued that it intends to upgrade the yards. Yet, so far there is no policy or plan of action. The ILO runs both the “Decent work programme” (2010-2015) and a programme on “green jobs”, focused on the transformation of economies, enterprises, workplaces and labour markets into a sustainable economy providing decent work.

UNDP: Several government agencies and authorities, both at the federal and provincial level, share responsibilities for making shipbreaking cleaner and safer; however, there is little communication and cooperation between them so far. Additionally, there are several international organisations that play a key role, including the ILO, UNDP, UNIDO and UNEP. Therefore, UNDP Pakistan has advised to strengthen communication between these stakeholders. The new Environmental Ministry (Federal Ministry for Climate Change) should be consulted on the matter as well. Moreover, it should be verified if shipbreaking yards could qualify for funds from the Global Environment Facility (GEF).

WWF Pakistan: Representatives of the WWF Pakistan provided information on the ecosystem around the shipbreaking yard, especially with regards to endangered species and the impact of pollution from the yards. The area around Gadani is an ecologically important area. The mangroves in Sonmiani, north of Gadani, host an important cetacean population. The area is also important for the formation of coral. Kaio Island near Gadani is rich in biodiversity with numerous species that inhabit the coral reefs. Also, the area around Gadani was an important fishing area, but due to pollution fishing activities came to a halt to the south of Gadani. Currently, the authorities have invested in a new fishing harbour in Gadani.

IUCN: Similarly, the International Union for Conservation of Nature (IUCN) expressed support for the idea of making shipbreaking cleaner and safer. Also the IUCN mentioned the possible threat to the habitat of endangered species in the vicinity of shipbreaking yards. Representatives reported that when shipbreaking first boomed in 1970s, pollution and a rapid growth in the population close to the yards led to a reduction in marine life. One aim of IUCN Pakistan is to strengthen EPAs. They need more resources, as they are understaffed and are only based in cities and towns. There is no office close to Gadani; hence the regular observation of the yards and the issuing of NOCs are problematic. Moreover, IUCN expressed the need for regular studies and samples to record pollution, oil spills and hazardous wastes. BEPA should develop a local action plan for Gadani based on the Basel Convention and its Guidelines and regularly monitor the implementation.
Pakistan Human Rights Commission: The Pakistan Human Rights Commission argues that occupational health and safety (OHS) rules are not respected. Regular inspections should be conducted by the labour department under the auspices of the BDA and the Factories Act should be enforced. The labour department should ensure social security registration for pension benefits. Most of the workers are not aware of their rights and because of the lengthy procedures required by lawsuits they drop their cases. Since the devolution, labour issues have become a provincial matter, except for welfare benefits and pension ("old age benefit"), which are kept under federal competence. There is a lack of awareness of labour law amongst judges and magistrates at the Hub court.
6. THE WAY FORWARD – POLICY RECOMMENDATIONS

General recommendations

In order to make ship recycling clean and safe globally, all stakeholders including governments in ship-owning and ship recycling states, the ship owners themselves and their service providers such as brokers, cash buyers and consultants, as well as the ship recyclers have to take over their share of responsibility. In particular, ship owners need to ensure that their end-of-life vessels are pre-cleaned to the extent possible and hold a proper IHM as a basis for a ship recycling plan. Moreover, the ship owners need to demand clean and safe recycling and prevent ship dismantling at locations with substandard environmental protection and poor workers’ safety for his own ships. Similarly, also the ship-owning countries need to prevent ship dismantling with substandard practices, and to assist recipient countries in upgrading the yards and the regulatory framework. Ship owners as well as the major ship-owning countries, need to encourage recipient countries to create a ‘level playing field’ in terms of environmental regulations and labour conditions instead of fuelling the race to the bottom.

Recommendations for stakeholders in Pakistan

The NGO Shipbreaking Platform and the Sustainable Development Policy Institute recommend the following actions to the Federal and Provincial Governments, the shipbreaking industry as well as the relevant international organisations:

Green Ship Recycling Strategy and sector-specific regulation

(1) The Federal Government together with the relevant provincial authorities should develop and implement a "Green Ship Recycling Strategy", that is a cross-departmental policy to formalize the sector and to allow for the needed transition towards clean and safe ship recycling compliant with international and domestic law and based on guidance offered by the Basel Convention Secretariat, the ILO and the IMO.

(2) In order to develop this strategy, the Federal Government and the provincial authorities should seek advice from the international institutions, in particular the Basel Convention Secretariat, the ILO and the IMO, and build partnerships to finance the investments in the infrastructure. As the investment needed for compliance with international standards is beyond the financial capacity of the shipbreaking industry in Pakistan, for example development banks or the global environment facility (GEF), could assist Pakistan in the upgrading of its shipbreaking yards.

(3) The Government of Pakistan should cooperate with the other shipbreaking countries in South Asia – India and Bangladesh – in a joint effort to exchange experience and upgrade the facilities so that competitiveness is not based on the lowest standards, but a ‘level playing field’ is negotiated between recipient countries.
(4) Taking into account already existing legal provisions, the Federal Government together with the Provincial Government needs to develop a sector-specific "Regulation for Green Ship Recycling in Pakistan". The new Regulation needs to accommodate the overlaps in responsibilities between the national and provincial level with regards to legal requirements and the institutional framework after the 18th amendment to the Constitution of Pakistan and needs to clearly define the competent authorities.

(5) The new Regulation should be based on a comprehensive review of existing legislation and a gap analysis, and should allow for the implementation of international obligations for instance under the Basel Convention as well as the future Hong Kong Convention.

(6) The new regulation needs to set out the authorisation criteria for facilities, to establish a set of rules for facility operation including procedures for permits for different kinds of hazardous work, clearly define which authority needs to issue certificates and approvals, and set up an effective facility inspection regime.

(7) The new regulation should be in line with already existing guidance for clean and safe ship recycling such as the Basel Convention Guidelines, the ILO Guidelines, and the Hong Kong Convention Guidelines and should take into account other standards such as ISO 30000 or the NGO Shipbreaking Platform’s Green Ship Recycling Standard.

(8) The “Green Ship Recycling Strategy” should provide a roadmap for investments in the technical infrastructure of the shipbreaking yards including:
   • structures to guarantee the full containment of pollutants;
   • impermeable floors and drainage system;
   • heavy lifting equipment;
   • electricity and water supply.

(9) With regards to hazardous waste management, the “Green Ship Recycling Strategy” needs to include a plan to establish:
   • a reception facility for operationally and non-operationally generated waste at a port close to the yards with a mandatory port call for all imported end-of-life vessels to perform cleaning activities such as cleaning cargo tanks, emptying bilge tanks, paint and chemical stores, and unloading waste oil and surplus fuel;
   • waste storage on the yards;
   • waste reception facilities such as a sanitary landfill;
   • disposal treatment facility for hazardous waste such as PCBs;
   • a system to track hazardous waste and to avoid the repartition into the market;
   • establishment of a testing laboratory with portable equipment;
   • periodic monitoring of contaminants in soil, water, sediments and air.

(10) There is an immediate need for training, awareness raising and capacity building for workers to ensure safe operations. The government should provide a training center and
seek the assistance of the Basel Convention Secretariat for further guidance on materials and the organization of the training.\(^{46}\)

(11) With regards to workers’ rights, health and safety and living conditions, the “Green Ship Recycling Strategy” needs to accommodate for:

- the immediate implementation of the applicable laws relative to labour rights, notably the Factories Act 1934, the Industrial and Commercial Employment Ordinance 1968, the Industrial Relations Ordinance 2002, as well as relevant provisions of the Pakistan Constitution and the Pakistan Penal Code.
- the immediate improvement of the living conditions of workers including supply with drinking water and proper sanitation;
- the introduction of occupational health and safety procedures;
- the enforcement of the use of adequate PPEs;
- a health care system for the workers including rapid access to a hospital;
- medical insurance of workers;
- an adequate system for emergency response;
- the documentation of casualties, injuries, damages and occupational diseases;
- contracts or letter of appointments for workers and registration for social benefits.

(12) With regards to the dangers of asbestos, the sector-specific regulation needs to include strict requirements regarding OHS standards during removal, storage and disposal of asbestos to make sure that workers are not harmed and that elements containing asbestos cannot be re-sold. There is a need for regular medical check-ups. It may even be advisable to introduce a federal bill on asbestos safety.

(13) The responsible authorities need to monitor the implementation of laws and have enforcement mechanisms in place. This includes a training programme tailored for the designated officials including judiciary. Compliance needs to be monitored especially with regards to:

- worker’s registration for social benefits;
- provision and use of personal protective equipment (PPEs);
- application of environmental, health and safety procedures;
- use of obligatory onsite pollution control equipment and safety gadgets;
- periodic monitoring of maintenance and improvements of on-site equipment;
- provision of sufficient, improved and satisfactory on-site health care system;
- adequate training status of workers and awareness of hazards;
- maintenance of hazardous waste inventory and disposal.

(14) The Government of Pakistan should ratify the Hong Kong Convention and seek early compliance with the provisions under the Convention. Moreover, the government should ratify ILO Convention No. 187.

\(^{46}\) Training material in Urdu is already available.
(15) The government lease agreements with the economic operators should be conditional and binding whereby the operator is bound to ensure compliance with all legal provisions. The current lease amount is very low compared to the profit margins and should be adjusted accordingly. Both the revenue from leases and taxes should be invested in upgrading the facilities and the surrounding infrastructure.

(16) The State Bank of Pakistan should issue a directive to commercial banks for compliance with social and environmental safeguard policies and legislation with regards to loans given to the shipbreaking sector.

(17) The Federal Government should support a study to define the level and distribution of contamination in and around the shipbreaking yards, develop an inventory of hazardous wastes (e.g. for the unmarked asbestos dumping grounds). It should identify “hot spots” that need to be cleaned up. It can seek the international organization’s expertise and support for this task.

(18) Both the Federal and Provincial Government need to promote unbiased research on the working conditions and the environmental impact of ship breaking. They need to allow for transparency and enhance civil society involvement. Moreover, they should embrace the active participation of trade unions and promote their independent and democratic structures.
BIBLIOGRAPHY


APPENDIX 1

FACTS AND FIGURES: Why end-of-life vessels are toxic

End-of-life ships can contain various amounts of toxic materials in their structure, which need to be properly located, identified, removed and disposed of. Because of the lack of proper waste reception facilities, training for workers, and cooperation from ship owners to provide the necessary documentation, toxic waste from shipbreaking contaminates the coastal areas and exposes the workers to hazardous substances. Also the local population is at risk when ship parts are sold on the second-hand market.

Asbestos is one of the most common and most hazardous materials found onboard ships. Because of its resistance to heat, asbestos can be found on engine casings, in fire compartments, inside fireproof doors, as sheeting of electrical cables, in sandwich panels in corridors, around boiler casings or exhaust pipes, or in the form of calcium silicate shells, asbestos rope and asbestos fabric, in friction materials such as brake pads in lift engines or purifiers, and brake linings in cranes and winches. In South Asian shipbreaking yards, asbestos is removed by hand, with no proper masks, and mostly in the open air. When shipbreaking workers breathe in asbestos fibers, they can contract fatal diseases such as mesothelioma, asbestosis, and lung cancer. Asbestos fibers also cling to the workers’ clothes and can contaminate other workers who live in the same shacks. Surrounding communities can be exposed to the asbestos that is hastily dumped in landfills.

Workers are exposed to toxic fumes that can be carcinogenic when they cut steel with blow torches and burn waste and cables. When burned, liquid and solid polychlorinated biphenyls (PCBs) create some of the most hazardous substances known: dioxins and furans. While it is relatively easy to remove liquid PCBs prior to exporting the ship for breaking, the use of solid PCBs in insulation, paints, decking, gaskets, wires and cables is extensive. Plastics and constituents of plastics might produce hazardous fumes during burning. It is still dangerous for workers to be around the cut ship parts even after the torches are turned off, as paints continue to smolder. Tributyltin (TBT), an aggressive biocide, has been used in anti-fouling paints since the 1970s because it prevents micro-organisms from accumulating on the ships’ hulls. It is considered as one of the most toxic compounds in aquatic ecosystems. TBT is responsible for the disruption of the endocrine system of marine shellfish and can damage human health even in small doses. Now banned, it can still be found on older ships. The combustion of oil can lead to the formation of polycyclic aromatic hydrocarbons (PAHs) that accumulate in sediments or tissues of life forms.

Lead, cadmium, zinc, and copper can be found in paints, coating, insulation, batteries and electrical compounds, and mercury can be found in thermometers, electrical switches, level switches and light fittings. Mercury taken at high dosage (such as through a diet based on fish) can deeply harm the nervous system. Long-term exposure to lead, even to low levels, can cause irreversible damage for example to the nervous system and can impair hearing, vision and muscle coordination.

Other health and pollution risks come from the release into the ocean of bilge water. Located in the lowest part of the ship’s hull, bilge water can release oil, cargo residues, inorganic salts, arsenic, copper, chromium, lead and mercury to the sea, when pumped out directly into the ocean. Similarly, organic pollution coming from sewage can cause serious health risks for workers if they breathe it in.
APPENDIX 2

NGO Shipbreaking Platform visits of the Gadani shipbreaking yards, Pakistan – 17 and 19/12/2012

Above and below: Workers exit the Norwegian ship “Front Driver” beached in Gadani, Pakistan
Above: Worker wearing goggles and helmet walking around during lunch hour in Gadani, Pakistan

Below: Workers taking a break during lunch hour, surrounded by equipment salvaged from broken ships
Above and below: torch cutting creates toxic fumes that workers inhale without knowing the risks
Above: Burnt paints and oils release toxic compounds into the air and paints continue to smoulder even after the torches are turned off

Below: Because they ignore the location of hazardous materials on board ships, workers can be trapped in deadly situations, inhaling toxic gases and getting injured in fires and explosions
Above: Cranes load the heavy steel parts onto the trucks for delivery to the recycling plants

Below: Workers load steel bars onto the trucks
Above and below: Waste coming from the ship is hastily bagged or thrown around on the yard.
Above: Workers live in shacks they have built directly behind the yards, using salvaged ship parts

Below: Workers’ families often live with them and children play close to the yards
APPENDIX 3

About the NGO Shipbreaking Platform

The Platform is the only international NGO that exclusively works on the issue of shipbreaking. The purpose of the Platform, a coalition of 18\textsuperscript{47} environmental, human and labour rights organisations, is to ensure safe and environmentally sound dismantling of obsolete vessels by creating a catalyst for reform and finding sustainable global solutions that encompass the principles of human rights, environmental justice, producer responsibility and clean production. It was created in 2005 in order to work effectively in Europe, where solutions are most likely to be born, and to challenge the political clout of the global shipping industry. Due to increased political momentum, partly generated by the Platform itself, the coalition has evolved into a global network, including NGOs based in the largest shipbreaking countries, India, Pakistan, and Bangladesh. Our activities comprise policy contribution on the international level and in the European Union (EU), a corporate campaign, fact-finding, advocacy and legal action in South Asia, as well as research and communication.

The Platform has successfully brought to the forefront the intolerable realities of today's shipbreaking practices on the international and European level as well as in the affected countries. The Platform is now globally recognised as the only international advocacy organisation on this critical issue. In recognition of the achievements of our member BELA, and the Platform's struggle, Mrs Rizwana Hasan, member of the Platform's Board, received the prestigious Goldman Environmental Prize in 2009 and the Ramon Magsaysay Award in 2012, widely considered the ‘Asian Nobel Prize’.

The Platform acts as an important source of information on shipbreaking including accidents and casualties on the ground. We work closely with progressive shipping interests to find sustainable solutions. At the international level, the Platform was a strong voice in the International Maritime Organisation’s negotiations of the Hong Kong Convention and criticised, amongst other things, the failure of the treaty to prohibit the beaching method and present a roadmap for a phase-out of the method. At the European level, the Platform pushed and worked closely with the European Commission (EC) on ways to improve legislation, and has also been particularly successful in gaining support from the European Parliament (EP). Our policy recommendations were reflected in the new EU Regulation on ship recycling. In the South Asian shipbreaking countries, our members have been successful in challenging the regulation of the industry in the courts and have encouraged their governments to seek solutions.

\textsuperscript{47} Basel Action Network (USA), Ban Asbestos (France), Bangladesh Environmental Lawyers Association, The Bellona Foundation (Norway), Bangladesh Institute of Labour Studies, The Corporate Accountability Desk - The Other Media (India), The European Federation for Transport & Environment (Belgium), The International Federation of Human Rights (France), Greenpeace (Netherlands), The International Ban Asbestos Secretariat (UK), LIFE (India), The North Sea Foundation (Netherlands), OSHE (Bangladesh), Prevention of Hazardous Shipbreaking Initiative (Turkey), Sustainable Development Policy Institute (Pakistan), Toxic Links (India), YPSA (Bangladesh) and the Secretariat.