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Taking Responsibility

A Multi-Stakeholder Evaluation of the Shipbreaking and Ship Recycling Industry in South Asia

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Abstract

The global fleet of 48,525 merchant ships is responsible for 90% of world trade, making the shipping industry invaluable in today's globalised world. On average 1,000 of these ships reach the end-of-life and are recycled annually. Close to 80% of these vessels are disposed of on the coasts of India, Bangladesh and Pakistan. Ship recycling in itself is a sustainable and necessary practice because of the large quantities of steel that can be recovered and the lack of an adequate alternative. However, the ship recycling in South Asia has proven to be incredibly harmful when it comes to environment, health and safety (EHS) standards. Recycling ships in a sustainable way has proven to be a challenge, which regulation has been unable to solve. This thesis explores the role of private sector stakeholders and their involvement in improving the ship recycling industry in the region. This study aims to describe the industry as it is today, and asks how ship-owners, cargo-owners and capital investors are able to use their influence to ensure more stringent EHS standards. Taking an inductive approach, using stakeholder theory and data gathering from stakeholder interviews, each stakeholder's role in the industry was explored and their potential to influence explained. Finding that cooperation between stakeholders was crucial for improvement in the recycling industry with ship-owners as leaders of change, as well as the need for a global regulatory framework. The capacity capabilities of South Asia are irreplaceable, however the current standards cannot continue to be tolerated. Working on verification of shipyards in the region for more stringent EHS standards must become a priority to the shipping industry, and stakeholders could be the key to ensure this change.

Keywords: Substandard ship recycling; EHS standards; Stakeholder Influence; South Asia; A.P. Møller-Maersk

Executive Summary

Background and Problem Definition

This thesis analyses the ability for private sector stakeholders to influence the environmental, health and safety standards in the shipbreaking and ship recycling industry (SSRI) in South Asia, specifically India, Bangladesh, and Pakistan. The stakeholders that were chosen for evaluation were ship-owners, cargo owners, and capital investors. The strategy to focus on these three upstream stakeholders was adopted in order to highlight the importance of considering the full value chain, and to see how the three stakeholders could influence each other.

During initial research it became clear that regulatory efforts to date have had little impact and have been unsuccessful in improving the EHS standards in South Asia. This discovery prompted further investigation into other stakeholders to establish whether they could be a catalyst for change. Whilst there are several stakeholders capable of influencing the industry of ship recycling, ship-owners themselves are the most significant when it comes to active engagement and responsible ship recycling. The other two stakeholders have been evaluated predominantly on the influence that they can have on the ship-owners.

The SSRI is an industry with high potential for environmental good. When a vessel is recycled up to 95% of the ship can be recycled or reused. The majority of the vessel is made up of steel, which is a material that can be incredibly useful and the successful recycling/re-use of it could help reduce extraction of virgin materials. However, in Chittagong in Bangladesh, Alang in India and Gadani in Pakistan, the three main ship-recycling areas, there are incredibly harmful practices being used. This is due to the use of the "beaching method" whereby a ship is driven part way up the beach and then moved further up by the movement of tides. The tides also make it next to impossible to control the movement of hazardous materials and liquids that are discharged during the breaking of the ship. The industry also holds limited health and safety standards for the workers, making it a dangerous occupation with high disease rates and fatalities.

Aim and Research Question

The aim of this thesis is to evaluate how the three mentioned stakeholders could improve this industry without abandoning South Asia recycling facilities. The objective was to consider each stakeholder's individual role, as well as how they interconnect and influence each other. This thesis also seeks to demonstrate how responsibility can be taken by more than the recycling states where the vessels are disposed, and also how, in the midst of sustainable promotion, the SSRI in South Asia can become a priority for the shipping industry. As the main stakeholder was found to be the ship-owners, a specific focus was set on them in a hope to show a more realistic and practical assessment of influence in the industry. A case study was included of a ship owner, A.P. Møller-Maersk, to show a real-life example of stakeholder involvement in the SSRI.

In order to reach the aim of this thesis two questions were asked, the latter being a sub-question:

- *RQ 1:* How are private sector stakeholders able to influence the shipbreaking and ship recycling industry in South Asia, especially shipyards in India, Pakistan and Bangladesh, and work to improve the environment, health and safety standards of the industry?

- *RQ 2:* What role does ship-owners play within the ship recycling industry?

Research Design and Methodology

In order to answer the questions expressed above, various methods of data gathering and analysis were executed, with a strong theoretical framework to guide the process. As part of the data gathering process interviews, were conducted which focused both specifically on the stakeholders, and on the industry in general. Academic literature, company reports and policy directives were used as additional data sources which aided with the verification of the results. These sources were particularly useful in the literature review, where current regulatory policies were assessed to show the need for stakeholder involvement.

The research design was a qualitative inductive and exploratory approach, which allowed for no predetermined hypotheses. The thesis included a case study on a shipping company allowing for a more in depth understanding of the complex industry and the involvement of various stakeholders. Considering the multi-stakeholder approach of this thesis a stakeholder theory and an organisational theory were used as the theoretical framework.

Main Findings

The findings for the first research question all support that the three stakeholders referred to in this thesis all hold a level of ability to influence and impact the shipbreaking and ship recycling industry in South Asia. Divestment is the most common way for investors to show their stance and support to improve EHS standards of ship recycling, putting pressure on ship-owners to adhere to a certain standard. Cargo owners have been less involved in the process as of now, but there are strong arguments that the stakeholder has an important part to play when setting a price with the shipping companies. As this stakeholder is less directly involved in the SSRI it is understandable that there is reluctance to focus on ship recycling policies. However, with extended producer responsibility companies are beginning to focus on the whole supply chain, including transportation choice, meaning that cargo owners could choose shipping companies who actively engage in responsible ship recycling.

Three main findings were revealed during the process of this thesis. The first one was that meaningful stakeholder involvement would be unlikely without cooperation between them. For one stakeholder, or even one company, to take on the challenge alone the impact would most likely be limited. For example, the work Maersk is doing to improve the shipyards and the way their ships are disposed of is admirable, however the only change that is occurring is the recycling of their ships. There is a need for the entire industry in South Asia to transform, which requires cooperation between stakeholders. Furthermore, this transformation risks being small scale without global regulatory enforcement. If Stakeholder were to show support for a political framework a standard of the SSRI could be set, which is a crucial point for ratification of a convention.

The third main finding is that the abandonment of the ship recycling industry in South Asia is neither feasible nor advised. Certain companies have begun to show support for facilities outside of the South Asia region, and policies are being set to ban the use of beaching. Considering the financial implications this would have on ship-owners it is unlikely that a universal agreement would be reached, and therefore not a strong alternative. As South Asia is responsible for around 80% of global ship disposal it is also not a practical alternative, as there is no capacity elsewhere. In addition, India, Bangladesh, and Pakistan would endure significant economic loss from the lack of work opportunities and steel production. Ship recycling facilities should be improved and verified according to the Hong Kong Convention for the Safe and Environmentally Sound Recycling of Ship. Although not yet ratified, it can be used as a guideline for compliance.

For the second part of the question it remains clear throughout the data gathering and analysis that ship-owners are the most influential stakeholder in the ship recycling industry. Their ability to make the final decision on where and how the ship is scrapped leaves them, inevitably, with the highest potential responsibility. The case study of Maersk showed that shipping companies are able to initiate and stand for change, especially large players. Due to the lack of jurisdictional control in the maritime industry vessels have been disposed of in harmful ways, due to the lack of liability. It is up to ship owners to alter this, and actively encourage shipping companies and other stakeholders to take responsibility for their actions.

Conclusions and Recommendations

Ship recycling is necessary for the shipping industry as a whole both economically and environmentally. The EHS standards associated with the beaching method are unacceptable and must be improved in order for recycling to continue in South Asia. Although stakeholders in the industry have known about the lack of standards for some time, disposal in the region has continued due to financial gain. However, now that external pressures are increasing and global sustainable development efforts stakeholders are being forced into incorporating environmental performance into their decision-making.

Through cooperation both within the private sphere and the public stakeholders will reach the most potential for making a considerable impact of the shipbreaking and ship recycling industry. If cargo-owners, ship-owners and capital investors were able to come together to reach an agreement on making a unified effort their influence would reach much wider in the industry. Additional to this, working with political bodies and encouraging regulatory enforcement will further impact the industry. It is likely that without a global convention for the industry EHS standards will continue to be harmful to the environment and the workforce.

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Abbreviations

BC	Basel Convention
CSI	Clean Shipping Index
CSR	Corporate Social Responsibility
ECSA	European Community Shipowners' Association
EHS	Environment, Health and Safety
EOL	End-of-Life
HKC	Hong Kong Convention for the Safe and Environmentally Sound Recycling of Ship
ICS	International Chambers of Shipping
IHM	Inventory of Hazardous Materials
IMO	International Maritime Organisation
LCA	Life Cycle Assessment
MBI	Market Based Instruments
PSC	Port State Control
RSRS	Responsible Ship Recycling Standard
SOC	State of Compliance
SRF	Ship Recycling Facility
SRR	EU's Ship Recycling Regulation
SRTI	Ship Recycling Transparency Initiative
SSRI	Shipbreaking and Ship Recycling Industry

1 Introduction

The shipping industry is crucial for trade and freight within our society, as it is responsible for around 90% of the world trade and therefore crucial for trade and freight within our society (Cullinane & Cullinane, 2013). The industry is considerably harmful, resulting in a range of pollutants, disturbed biodiversity and the consumption of hazardous fuels. However, it is the more sustainable alternative when it comes to transporting freight over long distances (Wan, el Makhloufi, Chen, & Tang, 2018). Due to the increase of global trading the shipping industry's emissions will continue to rise, making the global targets of the industry unachievable (Lam & Notteboom, 2014). With the increasing size of the global fleet, predictions have been made that emissions from ships could increase by as much as 250% by the year 2050, making maritime trade responsible for 17% of global emissions, even with the efficiency efforts currently in place (Wan et al., 2018).

Figure 1-1: Bangladesh 2017

Source: © Studio Fasching - Courtesy of NGO Shipbreaking Platform

Considering the importance of this industry to the global economy the regulations and standards that govern environmental performance have at times been overlooked (Lister, 2015). This is especially true for the shipbreaking and ship recycling industry (SSRI) (Rahman & Mayer, 2016). Ship recycling, carried out mainly in South Asia, has limited health and safety regulations and minimal environmental standards (Chang, Wang, & Durak, 2010). With increasing regulations on ship standards more ships fall below these standards, deeming them unusable and in need of recycling. With the continuously increasing demand for recycling, the industry needs to effectively improve in order to avoid future repercussions. Sustainability is a key focus in today's society, media and political agendas and it is unlikely that an industry such as the SSRI will be left alone (Buyck & Solletty, 2017; Jain & Pruyn, 2017). Governmental progress and regulation has shown to be an unreliable source when it comes to upholding higher standards in the SSRI in South Asia (Chang et al., 2010), which will be discussed further in section 4. Therefore, other stakeholders that are 'actors' (e.g. ship-owners, cargo owners, and investors) might be important in addressing the problem of weak and ineffective

governmental interventions. Shipping companies and investors are powerful actors, which makes it interesting to analyse how they might be able to make an improvement. The definition of a stakeholder, according to Freeman, is "any group or individual who can affect or is affected by the achievement of the organisation's objectives" (Friedman & Miles, 2006). This definition will be slightly adapted to fit the circumstances of this thesis, in that the focus is not on organisation, but rather an industry.

When referring to shipping companies in this thesis, it is in relation to shipping companies that have independent ownership of some or all of their vessels. Ship-owners on the other hand, might not necessarily work in transportation. These two stakeholders will be discussed as having the same role, but in some instances they will be distinguished in order to address aspects such as consumer liability.

Ship-owners and investors across the globe are starting to improve their sustainability efforts, and one of these efforts is to improve ship-recycling practices. Corporate social responsibility (CSR) has become a necessity for companies due to societal pressures, as well as regulatory interventions. Therefore, stakeholders involved in the shipping industry must consider the importance of sustainability when it comes decisions about the end-of-life (EOL) of ships. Through changing practices in the ship recycling industry, stakeholders could significantly improve the situation (Schøyen, Burki, & Kurian, 2017). Making voluntary commitments or creating a competitive advantage by improving the ship recycling industry can achieve this.

This thesis will assess how stakeholders are working towards improving environment, health and safety (EHS) standards of ship recycling in shipyards, focusing on the ship recycling regions of Alang, Chittagong, and Gadani. These locations were chosen because it is where most of the ship wrecking is handled (Choi, Kelley, Murphy, & Thangamani, 2016). These stakeholders include cargo owners, capital investors, shipbrokers and ship-owners. Both indirect and direct stakeholders will be mapped out and evaluated to properly explore the complexities of this industry, as well as to question what it would take to bring about a significant change for the better. As ship-owners are one of the most influential players in the industry they will be the main focus of the inquiry. Maersk Freight will be the shipping company used as a case study to explore more in depth what is being done and the reasoning behind the efforts to improve by ship-owners.

1.1 History

There are many terms used to explain the process of taking apart a ship that has reached the end of its life; ship breaking, dismantling, demolition, or scrapping. Many of these words have a negative connotation, however, in recent years it has been rebranded as ship recycling (Alcaidea, Rodríguez-Díaz, & Piniella, 2017). Ship recycling is the process of taking apart ships (usually after 25-30 years) in order to salvage and recycle components, which are then returned to the market (Bhattacharjee, 2009). The shipbreaking and ship recycling industry is a raising issue as international trade is generating a larger fleet than ever, and increased regulations on ships are rendering them obsolete (Jain & Pruyn, 2017).

Ship scrapping has been done since the Second World War, however, it was in the 1980s that the quantity started to increase and ship scrapping started to move to the Asia-Pacific region (Jain & Pruyn, 2017). However, in the last few years the societal attention and media coverage of ship recycling has dramatically increased, focusing on what the various stakeholders are doing to take responsibility. With this shift of attention it is becoming clearer that the fatalities and unacceptable standards of ship breaking can no longer be ignored, it is an important industry for many national economies and every effort must be made to improve it (Choi et al., 2016).

Governments often lack extraterritorial jurisdiction to regulate ships in international waters. Therefore, international regulatory practices and cooperation is difficult to achieve effectively. The International Maritime Organization (IMO) is the UN agency set up to set global standards for "safety, security and environmental performance of international shipping" (Wan et al., 2018), and has been the main organisation responsible for improving ship recycling standards. In 2009 a convention was set up with the sole aim of improving the industry. 'The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships', aiming to tackle the complexities of ship recycling and ocean governance (Chang et al., 2010). This convention was set up to develop actions brought up by 'the Basel Convention on the Control of Transboundary Movement of Hazardous Waste' and their Disposal (BC), which had limited impact.

However, the Hong Kong Convention (HKC) has not been implemented due to a lack of countries choosing to ratify (Choi et al., 2016). In 2013 the European Commission set up its own regulation for ship recycling, known as the European Union Ship Recycling Regulation (SRR). The main focus of this regulation was to promote a list of safe ship recycling facilities, as well as to push forward the ratification of the HKC. The first two are the largest efforts made to impact and develop the shipbreaking industry, while the EU regulation is the latest and one of the main regulatory actions is to try and ratify the conventions mentioned (Argüello Moncayo, 2016). These regulations will be further explained in Section 4.

1.2 Problem Definition

Even though ship recycling is an important sector for the shipping industry and has been for a long time, it has never before been this internationally recognised. Unfortunately, there is limited up-to-date research on the topic (Buyck & Solletty, 2017). Most research covers policies and conventions which are out dated or have failed to be ratified by enough countries, or is research that aims to explain the conditions of the industry. Ship recycling is mainly discussed in a negative light because high income countries are abusing the system of loop holes in ocean governance, in order to gain access to cheaper labour and less stringent standards often resulting in further environmentally harmful practices (Hiremath, Pandey, & Asolekar, 2016).

However, ship recycling is becoming a environmental necessity due to the increasing size of the global fleet in the foreseeable future, the turnover of ships from regulation changes, as well as technical failures or physical obsolescence (Jain & Pruyn, 2017). A solution is needed to improve the horrendous conditions of the ship recycling done in South Asia.

The shipping industry has successfully avoided overarching policies and stringent regulations from international conventions and agreements; however, as climate change has become a prominent political topic they are starting to face increasing pressures (Cullinane & Cullinane, 2013). In that last years there has been more awareness and consideration of ship recycling from various stakeholders, the media and the public (Jain & Pruyn, 2017). With this raising awareness the harmfulness of ship recycling has come to light, and various NGOs, international organisations and other stakeholders are starting to promote development and improvements in the industry (Hiremath et al., 2016).

With the increase of the vessel transportation and obsolescence of certain ships, causing more turn over of ships in need for recycling. The allocation of recycling by ship owners is based on financial incentives and profit, leading to most disposal taking placing in South Asia as it is the cheapest option (Jain & Pruyn, 2017). These practices and lack of regulation cause harm to humans and ecosystems alike, which is the issue that needs to be addressed. The shipping industry is a complex mix of power relations and stakeholder interest; however, when it comes

to shipping recycling companies are able to play a large role if they choose to do so (Alcaidea et al., 2017).

Dozens of people die each year from lack of standards, and the bio-diverse coastal waters are being drenched in hazardous toxins. Progress is being made in an attempt to improve the industry, but not at an effective speed or with enough significant impact (Choi et al., 2016). The main progress has been induced by regulatory actions, societal awareness and the prioritisation of sustainability in the global market. However, there is a need for all 'actors' in the industry to take responsibility of the sustainable development for ship recycling (Kujanpää & Teir, 2017).

Figure 1-2: Bangladesh 2016

Source: © Andreas Ragnarsson - Courtesy of NGO Shipbreaking Platform

The article by Schøyen et al. (Schøyen et al., 2017) discusses the Norwegian shipping companies and their potential to impact upon the ship recycling industry. This is the only paper focusing on ship-owners' role in the industry. This thesis will go beyond this article by looking at other stakeholders with a global focus and their potential roles in ship recycling. This broader focus will create a unique perspective on the industry, and allow for an original narrative.

A significant proportion of the literature so far has focused on the role of public entities rather than private. This paper will allow for a new perspective by focusing on the roles of various stakeholders in the private sector. As mentioned, shipping companies are one of the largest 'actors' and stakeholders in the shipping industry, and therefore they hold a large portion of power and influence (Nauclér, 2018; Schøyen et al., 2017). How stakeholders can impact ship-owners, as well as the rest of the industry, to further their influences, will be a key aspect. The lack of standards in the ship recycling industry in South Asia has been well covered and therefore, simply focusing on the working standards or environmental impact of the industry there will be no new contribution (Jain & Pruyn, 2017; Matz- Lück, 2010; Rahman, Handler, & Mayer, 2016). Shipyards, where the ships are recycled, are chosen based on the financial

aspects and profits (Schøyen et al., 2017), therefore it is a valid contribution to see what impact stakeholders could have if the responsibility is extended further than profits and gains.

1.3 Research Question

The power relations within the shipping industry is a complex structure, including many key players with differing interests (Kusumaningdyah, Eunike, & Yuniarti, 2013). As the current political attempts have failed, either by not being followed through or a lack of efficient changes, perhaps it will be necessary for other stakeholders to step in. Stakeholders across the world are showing that sustainability is a top priority and the shipping industry is no different ('UN Global Compact—Accenture Strategy CEO Study | Accenture', n.d.). By evaluating what the stakeholders are doing and could do to improve sustainability in the industry would be beneficial to understand in order to improve the industry.

Furthermore, due to the complex structures and the mixture of stakeholders in the industry it is important to assess the various roles and what these roles could mean for improving the ship recycling industry. Mapping the stakeholders, both indirect and direct, will clarify who is involved at certain stages and who can actually take responsibility for the end of life stage of a ship.

For this thesis three main stakeholders will be analysed, these are (1) Financial investors, (2) Cargo owners, and (3) Ship-owners (which will be the main focus and have its own RQ). Shipbrokers and ship recyclers will be mentioned throughout the thesis and defined, but will not be part of the analysis. The reason for choosing financial investors as one of the main stakeholders to focus on is because investors are able to strongly influence their clients, which in this case are ship-owners. The financial backing needed for companies in general to function, allows this stakeholder to partake in decisions, and hopefully led to investors pushing ship-owners towards improving the ship recycling of their vessels. Cargo owners were chosen as one of the stakeholder as they are most commonly held responsible in the eyes of the public, and therefore have become a large contributor towards sustainability efforts within industries. As shipping is done with limited societal oversight, cargo owners can be the ones who initiate change by deciding to only ship their goods with companies who have a strict ship recycling policy. This leads us to why ship-owners are the main focus of this thesis. Ship-owners are the ones who actively decide where to recycle their vessels, and are arguably the last responsible party before disposing of the ship. Although a ship owner can sell to a shipbroker in order to avoid this responsibility, this will be discussed further in section 3. Furthermore, ship-owners are the ones who choose which materials are used when building the ship, the assembly of the ship, and whether or not to remove hazardous materials before sending the ship to a recycling yard. When choosing the shipyard for the vessel to be recycled at, a ship owner is aware of the methods being used and under what circumstances the ship will be disposed of, therefore, it should be their responsibility to work towards improving the environmental and safety standards at the yards. Certain global companies hold a level of respect and attention in the shipping industry, and therefore risk scandal when caught not taking responsibility for their EOL vessel. This can either lead to companies using loopholes and third party buyers to avoid their responsibility, or stepping up to make a change.

Regulatory frameworks to date have failed to ensure safe and environmentally sound recycling practices in the most important recycling areas of the world. Attempts have been made, but none have led to a standardisation of labour and environmental rights. Therefore, looking at the three mentioned stakeholders the hope is to unveil the potential impact they have on altering the industry.

The research question:

How are private sector stakeholders able to influence the shipbreaking and ship recycling industry in South Asia, especially shipyards in India, Pakistan and Bangladesh, and work to improve the environment, health and safety standards of the industry?

What role does ship-owners play within the ship recycling industry?

The main aim of this thesis is to explore the role of the previously mentioned stakeholders', their power and capabilities and to evaluate what they can do to improve the shipbreaking and ship recycling industry. The paper will look at what is being done by these stakeholders, the incentives behind these actions and what impact this will have on the SSRI. This is important to see how certain stakeholders in the private shipping sector are able to use their influence and choice to improve ship recycling. Shipping companies have begun to focus more on ship recycling as a priority within sustainability practices and aiming to improve the standards in these yards (Aaben, 2018), setting policies on ship recycling for example ('Breaking the stalemate', n.d.). The question remains as to what the incentives are and what level of impact they could have, both of which will be clarified in this paper.

Analysing the stakeholders and their role will help to explain where the role of ship-owners comes in and what impact they could have on the industry. It will also help in assessing what shipping companies and owners are actually able to do, as well as what regulations might impact their choices and ability to initiate change. In this the regulatory framework will be described to aid the reader in understanding the whole picture.

Using a case study will strengthen the arguments made and will show a real case example of potential impact. Maersk is the largest container shipping company in the world, and is know for it's environmental progress and leadership to improve the ship recycling industry in South Asia (Dasgupta, 2016). Furthermore, as a Danish company they have to comply with the EU regulations. This case study will demonstrate how regulatory bodes and ship-owners need to cooperate in order for successful change (Garmer et al., 2015).

1.4 Scope and Limitations

The ship recycling facilities will be limited to Chittagong (Bangladesh), Alang (India) and Gadani (Pakistan). These three recycling areas were chosen because they are the three largest ship breaking states being responsible for around 80% of all global ship recycling, as of 2016 (United Nations Conference on Trade and Development, 2017). At times the literature shows more research has been done on Bangladesh than the other two, and therefore is used as an example for more cases, which can be a limit and cause general conclusions to be drawn for all nations mentioned based on facts from one. Additionally, the first three countries are directly linked to the lowest environmental, safety and health (ESH) standards, and utilise substandard methods of ship demolition (Garmer et al., 2015).

This thesis will not be focusing specifically on the changes or impacts within the ship recycling states that have been made in reality, as it has proven difficult to gain accurate data from India, Bangladesh and Pakistan. Since ship recyclers, one of the main impacted stakeholders, will not be able to be evaluated first hand, the onsite impact was unable to be measured. However, a considerable amount of the data and research written to date focuses on the recycling states mentioned above and this research will form the basis of information for this stakeholder within this thesis. In future research it will be beneficial to seek insight from of the ship recycling states themsevles to see the true impact private entities can have.

Maersk, the Danish shipping company, will be used a case study to show a real-life example of what is being done and the potential impact of that. This is the only case study of this thesis and therefore creates an issue with generalizability. Maersk is a global and large scale shipping company and their efforts would be difficult for other companies without the same capitol or resources to replicate. Furthermore, these efforts might not be profitable for other companies in a similar way as they are to Maersk. Nonetheless, the stakeholder mapping and general clarifications of potential practices could be helpful to all stakeholders, and shipping companies alike.

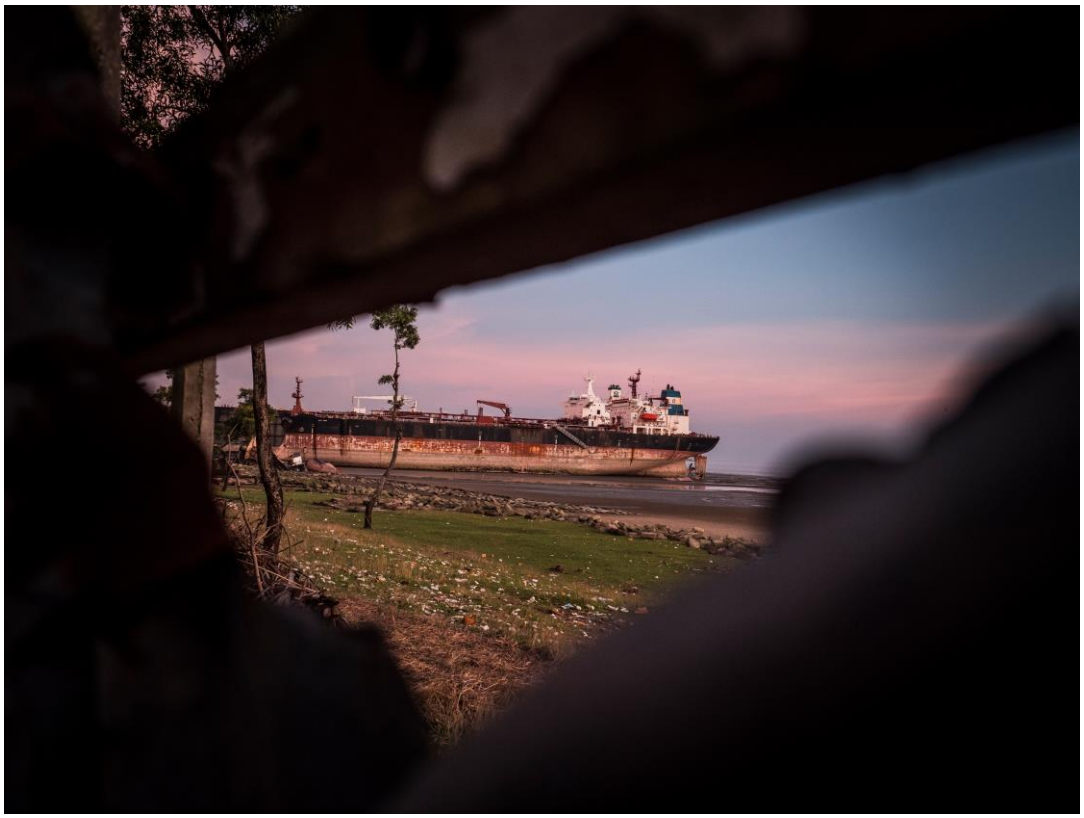

Figure 1-3: Bangladesh 2017

Source: © Studio Fasching - Courtesy of NGO Shipbreaking Platform

1.5 Ethical Considerations

For the purpose of this thesis external influence from any organisation or individual was not permitted. Naturally biases arose during the interviews, however, these were acknowledged and dealt with throughout the process. Certain interviewees wished to remain anonymous, which was respected. All the interviewees were asked if the interview could be recorded and transcribed, and were ensured that no sensitive data would be revealed. All information and quotations gather during these interviews that have been included within this thesis will be reviewed by the interviewees prior to being publically shared to ensure no information is distributed without consent.

Certain images and figures have been used from articles and publically available websites, however, all used figures are accredited and no sensitive information is revealed through the use of these figures.

1.6 Audience

The main intended audience for this thesis are the various stakeholders discussed, especially the ship-owners, the primary focus. The aim is for stakeholders to understand their part in the industry, as well as how they impact each other. Furthermore, the ship-owners will also be able to see more clearly the role of direct and indirect stakeholders, and how working together with various stakeholders could benefit them, as well as the SSRI.

Nonetheless, even though the main focus is on ship-owners, most stakeholders can benefit by seeing their role represented next to other stakeholders and explore the impact of this role. Capital investors will be one of the other main stakeholders evaluated, as one of the more influential stakeholder in today's economy. The owners of goods that are shipped also have a large role to play as they could potentially impact the cost for ship-owners; therefore their role will also be represented which could be interesting for commercial companies. Shipbrokers will also be discussed. In the globalized world of today, stakeholders are having complex and intertwined relationships and therefore the industry as a whole could benefit from the ideas presented in this thesis.

Regulatory bodies could learn from current voluntary commitments and opinions from the private entities to identify potential points of impact or areas of focus. Due to the importance of the shipping industry for trade as well as national and international economies, it would be valuable for NGOs to see what companies, and ship-owners, are willing to do.

Finally, academia is a constant audience when it comes to research, and this thesis will create a path for further research, as well as a better understanding of the research written to date on the topic.

1.7 Disposition

This thesis consists of six sections. The first section is the introduction, where the problem is defined, the aim is divulged and some underlining information of the subject is provided. Section 1 holds the purpose of drawing in the reader and ensuring that the objective of the paper is understood.

In Section 2 the method is provided. The methodology of the paper is crucial for a proper comprehension of how the thesis was developed, framed and executed. The research design will be discussed, exploring the theory framework behind this thesis. The data gathering, including literature and interviews will be clarified, as well as the steps behind the data analysis. Finally, the work behind quality and reliability checks for the research will develop.

Section 3 will set up some background and allow for proper understanding of the shipbreaking and ship recycling industry. This section will be divided into three main parts. First, the methods of ship recycling will be explained to gain a more accurate understanding of the technical aspects of recycling. Second, the industry's role in South Asia is going to be evaluated and explored. This will include the standards of workers, resource utilization and the environmental impact of the substandard practices. The third stakeholder will also be mapped and briefly described.

Section 4 is the literature review. To be able to show the need for shipping companies and other stakeholders to take responsibility to improve the SSRI, a regulatory framework and analysis needs to be undertaken. To show an overview of the policies out there, the aims of the regulations and how they have succeeded or failed to date. This regulatory framework is divided into three current policies (1) the Basel Convention on the Control of Transboundary

Movements of Hazardous Wastes and Their Disposal, (2) the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, or the Hong Kong Convention for short HKC, and (3) the European Union Ship Recycling Regulation No. 1257/2013.

In Section 5 the findings will be revealed. This section will consist mainly of primary data from interviews of stakeholders. The aim will be to confer the facts and research gained from the interviews, as well as from the literature, to see the whole picture. The findings will be split into two main parts, the first being the main stakeholders being evaluated (the capital investors, the cargo owners, and the ship-owners), and the second part will be looking into potential progresses in the region, including initiatives taken by the stakeholders and the possibility of shipyard verification.

In the next section, Section 6, analysis will be done based on the data from the previous section. The analysis done in this section will be to assess how private entities are able to influence the ship recycling industry in South Asia, especially due to the lack of global regulation. This section will in part be a discussion of what the findings mean and why it is beneficial to gain this information. The main aim wit the discussion is to assess whether the research questions have been answered and to what degree. A self-critical take on the results will allow for a more realistic understanding of the findings. This section will also include limitations.

Finally, is the conclusion, allowing for final summaries of the work, the validity of the work, and potential future research.

2 Methodology

2.1 Research Design

The over all research design of this paper is exploratory, to observe the answers from the interviews and allow the data to lead to further research. The paper has an inductive research approach, as it aims to consider possible outcomes of shipping companies' behaviour towards sustainable improvements of the shipbreaking and ship recycling industry. The author has limited knowledge on the subject previous to this thesis and therefore no specific predefined hypotheses in mind. The use of qualitative data allows the paper to explore a narrow research gap and evaluate the outcome of stakeholder influences within ship recycling industries.

The framework of this thesis is based on organisational theory and stakeholder theory. Organisational theory is used to explain how the behaviour of various social actors impacts each other and to adapt to each other's influences. In this thesis it will be used to portray the stakeholders within the ship recycling industry, and their intertwined relationships, as well as their own roles. By reflecting on the fact that formal and informal relationships within a culture, this one being the ship recycling industry, it will allow for an assessment on the how and why the organisation came to be, the way it was built and its ability to be changed. By studying the relationship between stakeholders in order to understand the influence it has on the organisation will allow for a more effective promotion of improving the organisation.

Stakeholder theory framework is also implemented in this thesis, however not in the traditional sense. Stakeholder theory usually refers to a specific firm or corporation with primary and secondary stakeholders, including employees, customers, etc. For this thesis the scale will be larger, by looking at how stakeholders can impact an industry. Stakeholder theory aims to conceptualise an organisation, and how this is done. Exploring how the organisation itself is a network of stakeholders and how each are able to influence the organisation, both for their own interests and for social responsibility. One aspect of stakeholder theory is how an organisation manages stakeholders and balances conflicting interests. This aspect will not form part of this thesis because the ship recycling industry does not hold any managerial position over the stakeholders discussed.

The design of this thesis was first to establish what a stakeholder is. The earliest definition of what a stakeholder was written by the Stanford Research Institute in 1963, "those groups with who support the organisation would cease to exist". The definition was further developed by Freeman to "those groups who are vital to the survival and success of the organisation" (Friedman & Miles, 2006). Out of over 500 definitions of stakeholders this was chosen to most satisfactorily suit the purpose of this thesis. For this thesis the groups being referred to are ship-owners, capital investors, and cargo owners, and the organisation in question is the ship recycling industry. In order for the ship recycling industry to survive and succeed the efforts of the three before mentioned stakeholders are needed.

The second important step is to find the correct stakeholders to focus on; the three stakeholders mentioned above were carefully evaluated and compared to others. In choosing these stakeholders general interviews were held and secondary data was gathered, to gain a better understanding of the stakeholders involved and of the industry in general. As the recycling industry is a large industry there are a considerable amount of stakeholders involved at different levels. The aim of this thesis was to see who could work to improve the ship recycling industry upstream, meaning before the ship arrived at the shipyard. This was mainly due to the currently unjust placement of responsibility on the ship recyclers; however, looking at who else could share this responsibility would contribute to a research gap. Furthermore,

gaining access to data and people to interview at the shipyards and other onsite stakeholders has proven to be very difficult. Without first-hand knowledge, this thesis would not be able to validate or triangulate the results. After finding the upstream stakeholders, were capital investors, cargo owners, ship-owners, and shipbrokers, the next step was to prioritise.

In stakeholder analysis there is a mapping done to evaluate which stakeholder is a key player and of most significance, see figure 2-1. Ship-owners became a clear leader when it came to who would be able to influence the ship recycling industry the most, and therefore became the focal point of this thesis. Interviewees and data collection made it clear that liability and recycling choices were up to the ship-owners, and these choices were based on financial incentives rather than environmental considerations. Ship-owners also have the highest interest, as it is their investments being sold for disposal, and their names that would be associated with certain ship recycling practices. Therefore ship-owners are the key player in the stakeholder analysis.

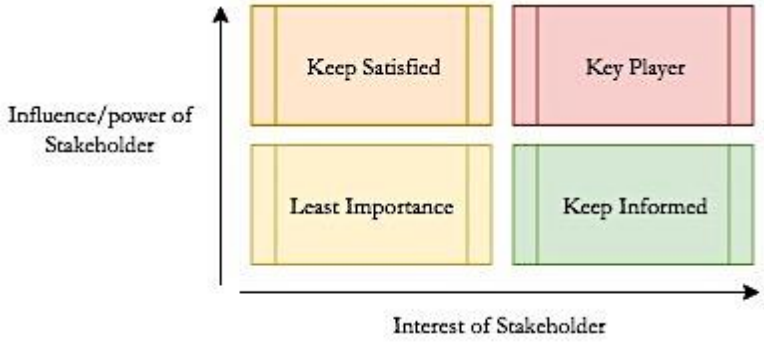

Figure 2-1: Stakeholder Mapping

Source: Adapted from Friedman and Miles (2006), p. 88

The other two stakeholders (cargo owners and capital investors) were chosen based on the largest ability to influence the choices of the ship-owners. This decision was taken based mainly from interviews with experts in the field, as well as looking at the stakeholder structure of ship-owners themselves. Using a similar mapping of stakeholder analysis as done for ship-owners.

2.2 Data Gathering

The shipbreaking and ship recycling industry is lacking in transparency and, therefore, at times, so is the literature based on it (Alcaidea, Piniella, & Rodríguez-Díaza, 2016). Although considerable articles have been written on the topic in general, there is a gap to understand how the shipping industry as a whole can impact the ship-recycling sector. Most of the data available through the literature focuses on governmental structures and regulatory framework, while the focus of this thesis will be the private sector, in order to generate new data.

This thesis is part an in-depth literature analysis where the main policy frameworks and current regulatory attempts working towards developing the SSRI will be evaluated. These frameworks are evaluated to explore the reasons for private stakeholders involvement. This part will be based of established, and mainly peer-reviewed, literature. Literature will also be used in order to explain the ship recycling industry in South Asia, exploring both the economic side of the industry, as well as the environmental burden.

The second part of this paper presents the data gathered from interviews with various stakeholders in the industry, which is necessary to arrive at relevant findings and gather novel

data. The data from the literature was not enough to make conclusions on the attitudes of ship-owners when it comes to ship recycling. As the previous section was to paint the picture of the current regulations and efforts being made by the SSRI, the findings section focuses specifically on the role of stakeholders and how they are able to influence the SSRI. As this study is of a qualitative nature, interviews are the main source to establish findings that were not predetermined, exploring opinions and observations from various stakeholders.

2.2.1 Literature

This literature includes research, using Google Scholar, LUB Search (Lund University's Research Platform) and public Journals, such as the Journal of Cleaner Production and the Journal of Ocean Engineering. Certain key phrases were used for initial information on the topic, these included a mixture of; "Ship recycling", "Regulations", "Environmental impact of ship beaching", "Ship-owners responsibilities", "Stakeholders in Shipping Industry" "Ship Recycling in India/Bangladesh/Pakistan". Whilst reviewing these papers, references to articles from similar journals were discovered which also proved useful.

Reports written by international organisations e.g. the IMO, NGOs (the Shipbreaking Platform), and journalistic articles like 'gCaptain' were also reviewed to capture an accurate, up to date representation of the data from different perspectives and sources. GCaptain is one of the few large platforms of shipping news, publishing articles about the whole industry, often including articles on different aspects of ship recycling. GCaptain is also a platform where articles from other sources are collected, for example articles written by 'Reuters'.

Public information from shipping companies was another key resource, providing insight into what these companies were doing and also opportunity to review their public statements on ship recycling practices. This resource also helped to develop a strong academic basis for interview questions.

2.2.2 Interviews

The interviews process helped to fill in gaps in the information gathered during the literature review. The interviews were semi-structured and split into two groups.

The first group were experts and stakeholders, including representatives from corporate boards, NGO members, and people working with or in the shipping business (not necessarily for a shipping company). The interviewees included in this group are: the former shipping manager at 'H&M', a member of 'Scan Global Logistics', the communication and policy officer at the 'NGO Shipbreaking Platform', a production manager of a textiles company, an engagement manager from 'GES', and a member who wished to remain anonymous.

The second group were company specific interviews, mainly from 'Maersk', and another company called 'Stena AB'. Three members from Maersk were interviewed, including; the Global Head of Safety, Environment & Performance Management at APM Terminals, Senior Partnership Manager, Sustainability Strategy & Shared Value and the Head of Responsible Ship Recycling and Sustainability. The Sustainability Manager from 'Stena AB' was also interviewed. Due to time restraints and the inability to visit the recycling states and specific shipyards, it was difficult to gain data and interview these stakeholders. Therefore these stakeholders were not part of this study. Most of the data gathered referring to the state of the shipyards is from literature, or interviewees with direct knowledge on the subject. An employee of Maersk that works closely with the recycling states onsite was interviewed and was the only primary data source specifically from shipyards.

Information on what companies are doing specifically, and why they have chosen to do so, was necessary for proper analysis. However the kind of impact these actions have was more difficult to assess. This is especially true given that there were no interviews specifically with the recycling states. This will be suggested as further research.

2.2.3 Interview Process

The first part of the interview process was interviewing interested members within the shipping industry and the ship recycling industry to gain a general understanding of the industry and where the main issues are. Questions were asked depending on the interviewees' expertise knowledge and their position in the industry.

A question guideline was set up for each of the interviews and included general questions, which put to all interviewees, as well as specific questions for each. Questions were sent to the respective people, to give them a chance to prepare answers and potentially adjust the questions. The guidelines were formed after initial research was done on each of the companies and the members that were going to be interviewed. This was to allow for a more concise, relevant discussion.

2.3 Data Analysis

When analysing the data seven main steps were taken, shown in Figure 2-2 from Research Design by Creswell (Creswell & Creswell, 2017). First was to gather the data, which was explained in the section above. This included transcribing the interviews and writing down keynotes and finding helpful images and figures. Second was to organise and prepare the data, which included preparing the interviews, the question guides and sorting through the literature.

Reading through the data was next. The literature was done systematically in that after each article was read, notes were made on the method and the main message and section of particular value to the thesis were noted down. The interview transcriptions were read, key messages were chosen and the general perspectives of the interviewees were noted. During the time the interviews were being held, each interview was analysed for initial ideas and narratives for the thesis. After the first general interviews the narrative became clearer, the analysis more straightforward, and relevant information easier to distinguish. Analysing the more general interviews before the other interviews allowed for a clearer understanding of where the thesis should focus.

The interviews were not coded, but rather the information was organised and compared in a general sense. As the information gathered was based on a general understanding of behaviours from the various stakeholders the answers would not be comparable using direct codes. When all the interviews were complete, each was analysed individually, and in turn compared to one and other. In this process, biases was revealed and noted. After being analysed separately they were all revaluated together, to assess if any information had been over looked, after gaining better understanding from other interviews, and literature.

When the data had been properly assessed it needed to be sorted, as large amount of information was gathered, especially from the literature, not all of which was valid for the purpose of this thesis. The data was split into themes, mainly based on the three separate stakeholders, and descriptive information was separated For example, if the information was to be used for background data, or clarifications on the regulatory practices to be used for the literature review. Once the themes were decided it became easier to understand the main ideas and to interpret the data properly. The themes were used so that the data collected from all

sources could be looked at together and evaluated to develop a more complete understanding and overview of the data.

Finally, in the last step, the themes were interpreted and through this process, findings began to reveal themselves. By having the data separated into themes the meaning behind the themes helped to clarify what was actually learnt from the data. Both 'personal interpretation's, and 'verified interpretations'. Comparisons that where drawn were questioned and reiterated, in a more concise setting.

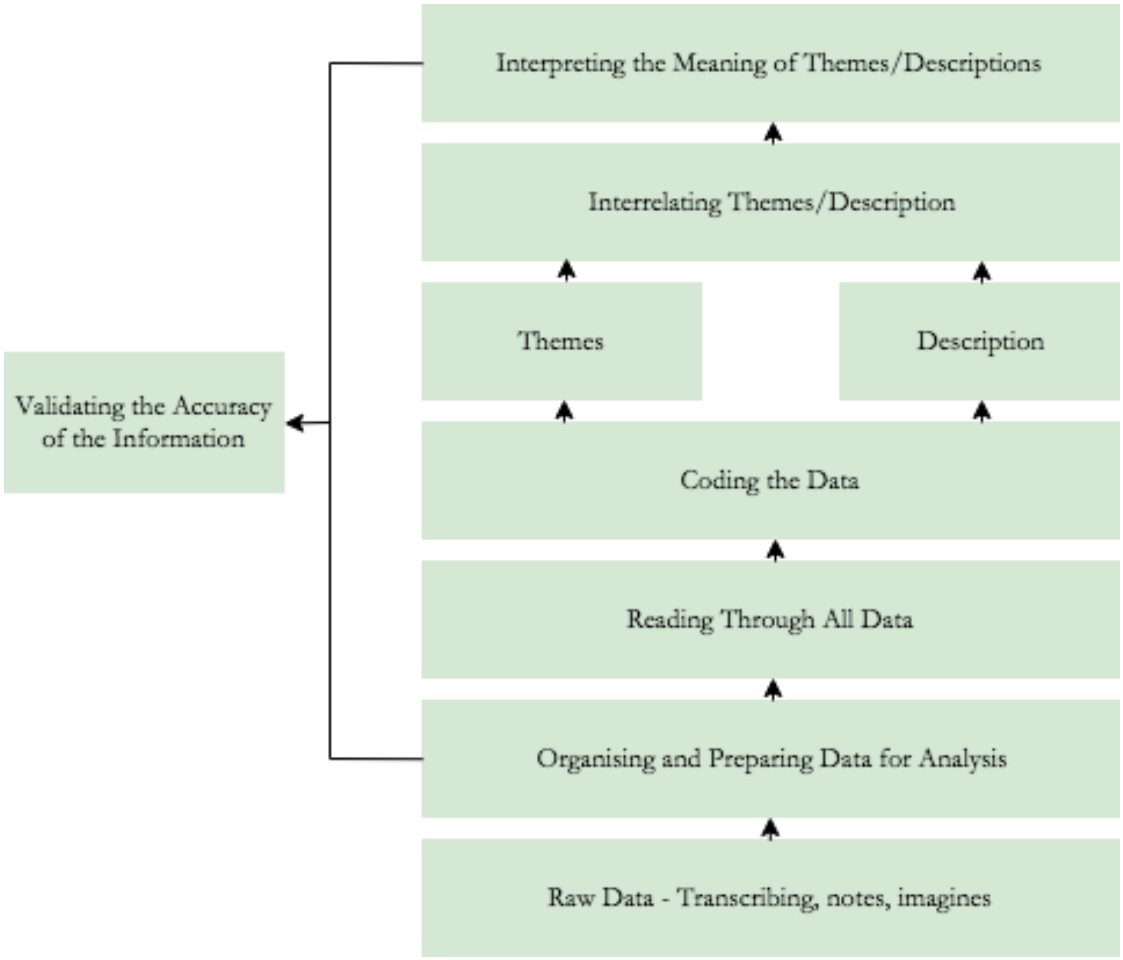

Figure 2-2: Data Analysis in Qualitative Research

Source: Adapted from Creswell (2014), p. 197

2.4 Quality and Reliability

As this thesis is based on interviews and people's opinions there is a high risk for biases and speculative results. This was clear from the beginning and in order to ensure limited biases becoming part of the main findings, the data went through triangulation of differing perspectives and opinions. By using more than one observer a level on internal validity was reached. For example, if a ship owner said that they uphold the highest standard, but a cargo owner argue that a ship owner does not do enough and a NGO says that the work is adequate, these conflicting perspectives lead to a more reliable final finding. As all of the interviews could contain speculative opinions even when compared secondary data was also used to support arguments. Additionally, past results within the topic were used to compare to the opinions of stakeholders.

As this thesis is based on what stakeholders themselves believe possible it is important to understand that even though the information has biases they are still valid for the research purpose of this thesis. One issue is the lack of accessibility to the ship recycling yards and people who are directly impacted in South Asia. If the impact were to be assessed there would need to be a certain level contact and data from the impacted party, not just developing an understanding of how stakeholder would be able to impact the industry. Therefore, this thesis focuses only on the role of the upstream stakeholder and not the practical understanding of how the ship recycling industry would feel about stakeholder involvement.

External validity when it comes to qualitative research is difficult to replicate, especially with the involvement of interviews. The interview guides could be used, however, as they were used purely as guidance and were not the only questions asked, it would be difficult to replicate this process exactly.

3 Background

In this section the various methods used in ship recycling will be described to better understand the impact of them. The industry of ship recycling in India, Bangladesh and Pakistan will be explored to see the intricacies and importance of the industry for the national economies of each of these countries. Finally, a mapping of stakeholders will be done. This will show more clearly how the stakeholders relate to one and other, as well as the impact they can have on the recycling industry.

3.1 Methods of Ship Recycling

The global trading fleet consists of nearly 50,000 merchant ships according to United Nations Conference on Trade and Development (UNCTAD), and each year around 1,000 reach their end of life (Choi et al., 2016). The amount of material that could be recycled from these ships can reach up to 20 million tons of material per annum to be reused, making ship recycling an incredibly sustainable undertaking (Choi et al., 2016). "Of the 835 large ocean-going commercial ships that were sold for scrap in 2017, a total of 543 ships were intentionally run ashore and dismantled by hand at shipbreaking yards in Bangladesh, India and Pakistan" (Schuler, 2018). It is clear that the most popular method for ship recycling relies upon substandard methods, which turns a potentially profitable undertaking into a dangerous and hazardous environment (Hiremath et al., 2016).

There are four main methods of recycling ships, these are (1) beaching (2) dry-docking (3) landing or slipway and (4) alongside or pier breaking. Beaching is a substandard method of recycling, while the other three are referred to as standard methods.

3.1.1 Beaching

The main idea behind beaching is that the ship is taken as high up to the shore as possible during the high tide leaving the large vessel beached at low tide, allowing it to be disassembled. At times the ships are unable to travel far enough up the beach and must be dragged the rest of the way by workers (Jain & Pruyn, 2017). This process is used for about 80% of the recycling that is done (K. A. Hossain, 2017). India, Bangladesh and Pakistan have become hotspots for beaching ships because of their strong tidal forces on their shores, especially in the areas of Alang, Chittagong and Gadani (K. A. Hossain, 2017). The yards in these countries are usually 50 meters wide and 100 to 150 meters deep and spread down the entire beach, Alang is a 50 km beach filled with shipyards (Jain & Pruyn, 2017).

When the ships are beached, workers flock to the vessel and start tearing it apart, starting with larger pieces to make the ship light enough to pull it further up the shore (Jain & Pruyn, 2017). Workers are usually very ill equipped, and are commonly even barefoot or in flip-flops (Nauclér, 2018). There tends to be no safety equipment either, no goggles or other protective gear making injuries and death a common occurrence. "It is estimated that over a 30 year span 1200 workers have died in the Chittagong ship breaking yards" (Choi et al., 2016, p. 84). These low safety standards along with the fact that wages for workers are much lower than in other methods and areas of the world, allow a large workforce to be assembled and a significant number of ships being recycled rapidly (Choi et al., 2016).

The environmental impact is another danger of beaching ships. The main issue is that the shores where the ships are broken down have high biodiversity and hold high natural value (Rahman et al., 2016). Various materials such as oil, asbestos and other toxic liquids are spilled onto the beach and into the shore areas, causing a large negative environmental impact (Hasan et al., 2013). Furthermore, the materials and liquids spilled are taken out to the ocean by the

tide and the dangers then spread to areas far away from the yards (K. A. Hossain, 2017). Materials that are unable to be sold are often simply be set on fire on the beach, which causes other massive environmental impacts. According to Erik Nauclér, a shipping expert, when he visited the yards, it was even common practice to burn the left over plastic because it could not be sold (2018).

The beaching industry is currently a financially viable option due to a lack of standard costs and the low cost of labour. The uncontrollable movement of waste and hazardous materials from the tide makes it environmentally problematic. The workers are unprotected and working in unacceptable conditions. In the figure below a basic process of the substandard method is described, showing the main practices and stage of which materials are sold.

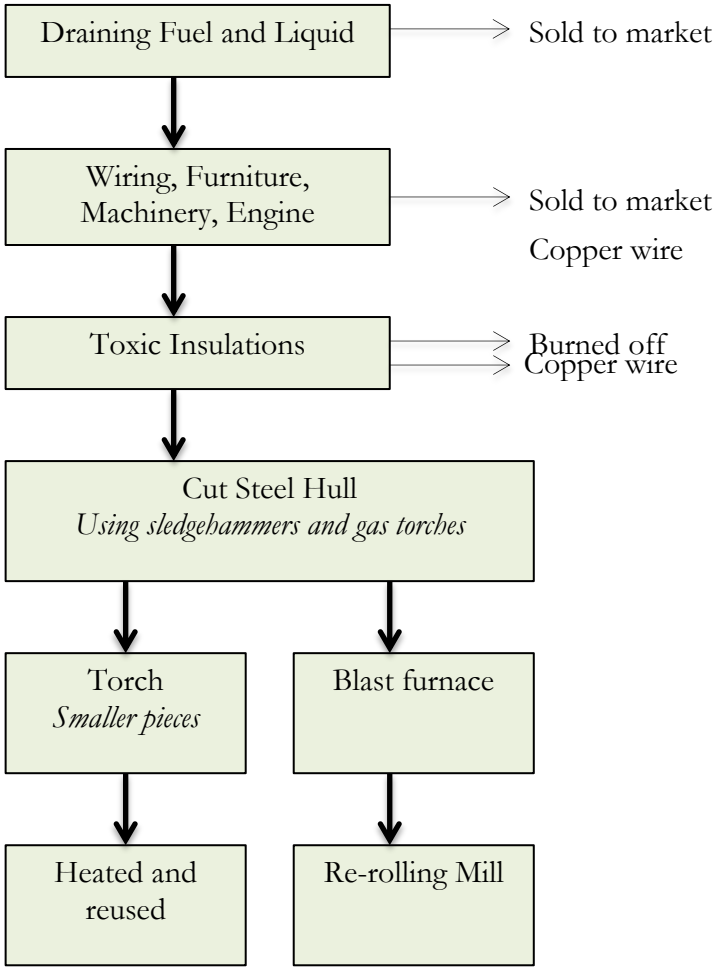

Figure 3-1: A simplified process of sub-standard method

Source: Adapted from Choi et al. (2016), p. 84

3.1.2 Dry-docking

Dry-docking simply involves the ships being dismantled at a dry dock or floating dock. This means that the ships are placed onto a dock where the water is pumped out in order that the vessel can be dismantled in a controlled area. This method is common practice within the EU and the USA, as it causes almost no damage to the environment or the workforce. It is definitely the cleanest and safest method (Nøst et al., 2015). The largest dry-docking facilities are currently in the UK, who still use this method (Jain & Pruyn, 2017) However, the downside with this is the high costs, making it an unlikely choice for less affluent regions. Costs include the infrastructure, the machinery needed, the maintenance and upkeep (K. A.

Hossain, 2017). Another downside to this method is the time taken to dismantle the ships. If this method were to replace other methods, the same annual turn around of recycled ships would not be achievable (Hiremath et al., 2016). Also, as the ship is completely enclosed in the dock, there is virtually no spillage or other emissions and the dock is cleaned after every ship is dismantled.

3.1.3 Landing or slip-way

Landing or slip-way method is similar to the beaching method, and is referred to as 'non-tidal beaching'. As the tide is not needed for this method it is used in low tide areas, commonly practiced in Turkey, and some EU countries for smaller scale ships (Jain & Pruyn, 2017). The vessel is driven up onto the shore, just like in beaching, or onto a concrete slipway, which is located by the shore. The lack of tide in this method allows spillages to be controlled and cleaned up more easily (K. A. Hossain, 2017). Furthermore, the larger pieces can be removed using mobile cranes, rather than being dropped onto the beach and dragged. Although not as safe as some methods, it is a considerable improvement on beaching (K. A. Hossain, 2017).

3.1.4 Alongside or Pier

'Alongside' or 'pier breaking' "…is a method to dismantle ships that are afloat and moored along wharfs, jetties, or quays and/or moored off shore" (Jain & Pruyn, 2017, p. 8). This is a commonly used method in calm waters, such as rivers, and is done mainly in China and Myanmar (K. A. Hossain, 2017). The main difference is that in this method the ship is dismantled from the top-down, meaning that pieces of the ship are removed from the upper part first until the "canoe" (the bottom of the ship) is the only part left. This 'canoe' can then be lifted out in one piece. The 'canoe' is then dismantled using dry docking methods. Cranes are used to remove the pieces allowing for a more controlled and safe method (K. A. Hossain, 2017).

Each method has benefits and cost implication, as well as geographical considerations. However, it has become clear from the literature that the substandard method is the most popular and the main incentive behind this is the financial profit to be made.

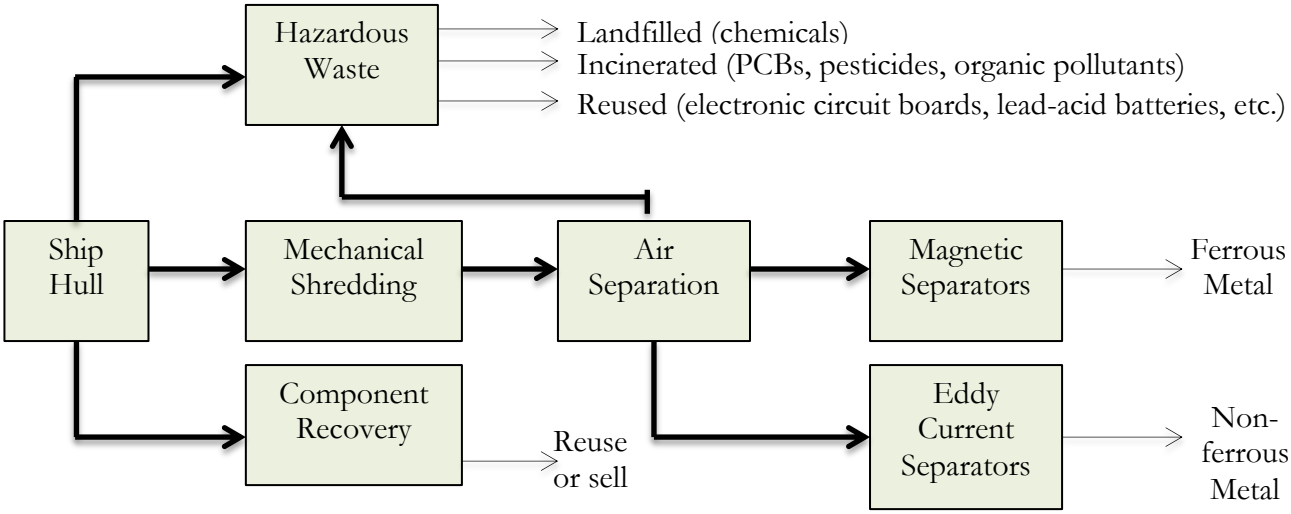

Figure 3-2: A simplified diagram showing the standard method of ship recycling

Source: Adapted from Choi et al. (2016), p. 84

3.2 Ship Recycling Industry in South Asia

There is a consensus in the wider shipping community that beaching and the ship recycling industry in India, Bangladesh and Pakistan are unsafe and hazardous, yet it still continues and remains by far the most popular method by far (Hiremath et al., 2016; Nøst et al., 2015; Rahman et al., 2016). Many factors go into choosing where and when to scrap a vessel, and South Asian has proven to offer many positive attributes for recycling. These factors are shown in figure 3-3, on the bottom half reasons for choosing where to scrap are laid out, and the top half is in assessing when to scrap. It is clear that there are aspects of this industry that are beneficial for the shipping industry, as well as the ship recycling states, however it comes with a price.

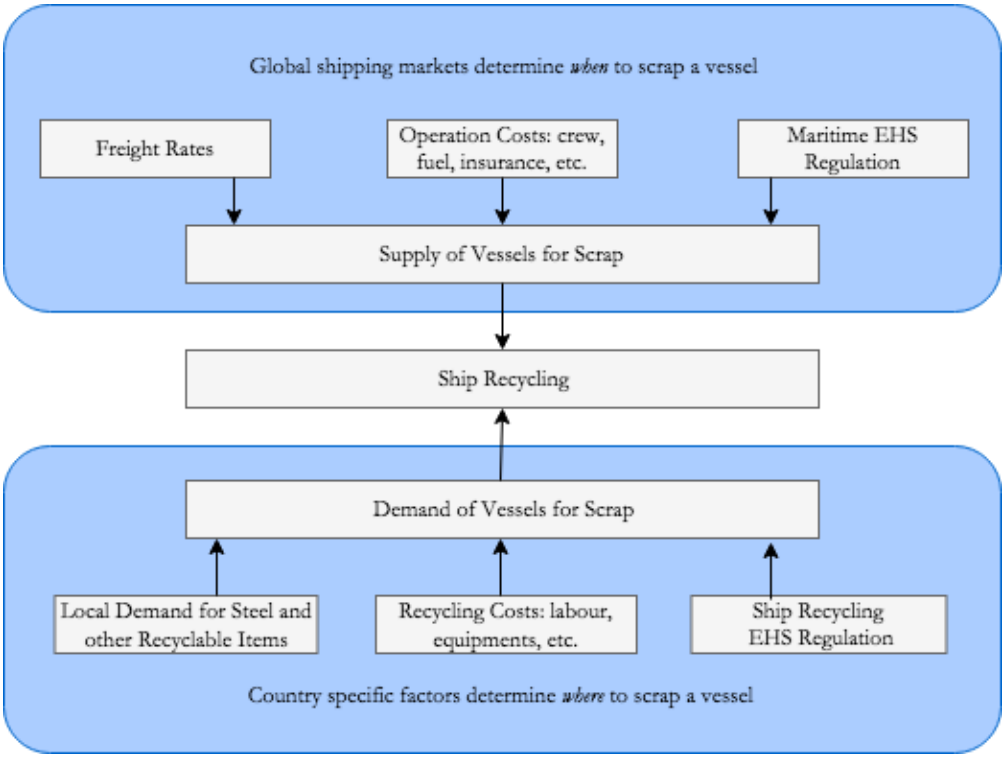

Figure 3-3: The Economics of Ship Recycling

Source: Adapted from Yujuico (2014), p. 342

3.2.1 Economic Impact

The ship recycling industry is one of the largest and most prominent industries in India, Bangladesh and Pakistan (National Geographic, 2014). "The ship breaking industry in Bangladesh is estimated worth an annual turn over of around 1.5 billion dollars" ('Overview | Shipbreaking in Bangladesh', n.d.). The lucrative business does not only benefit the shipyards and factories, but also the government. In fact the Bangladesh government, for example, gains around 100 million euros from the industry, mainly from taxes such as yard taxes and import fees (Rabbi & Rahman, 2017).

The purchase of a ship is a large investment and standards for over two-thirds of the cost of shipbreaking, as shown in figure 3-3. This investment becomes profitable, partly due to the low costs of other aspects, such as labour, however, mainly because steel is a valuable resource. Up to 95% of a ship's bulk is steel and can be recycled, while the rest are mainly hazardous materials (Frey, 2015). Around 60% the steel output in Bangladesh originates from the beach of Chittagong ('Overview | Shipbreaking in Bangladesh', n.d.), similar numbers are found in the steel industry in India and Pakistan. This steel, therefore, represents a large revenue for the ship recycling states and creates indirect jobs and resources for other industries, such as infrastructure (Rabbi & Rahman, 2017).

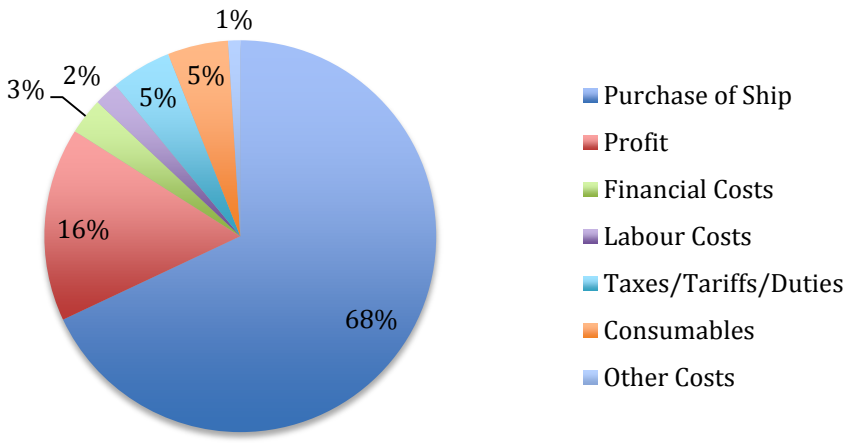

Figure 3-4: A breakdown of Costs and Profits of Shipbreaking using the Beaching Method

Source: Adapted from Khan et al. (2012), p. 3

Over a million jobs are created directly and indirectly through ship recycling, as well as massive amounts of material and resources to sell and use (Bhattacharjee, 2009). Each yard can directly support 300 workers, and as mentioned previously a beach spreading around 50 km can have over 180 plots ('Alang Info', n.d.). Although this work is detrimental in many ways when it comes to safety and human rights, it is a main source of income for a significant portion of the population in Bangladesh, Pakistan and India, and therefore would have a tremendous impact if shut down (Gregson, Crang, Krzywoszynska, Botticello, & Calestani, 2016). Nonetheless, with the current standards and regulations for the work force it could be seen more as exploitation than fair employment, according to the NGO Shipbreaking Platform (Mulinaris, 2018).

The ship wrecking workforce is divided into three main groups, the 'steel carrier group', the 'wire carrier group' and the 'cutter group'. Cutting is the most dangerous due to the toxic gases and regular explosions. There are two crucial changes that should be made at all shipyards to improve standards. The first is to ensure that toxic materials are removed before arriving to ship recycling states and the second is choosing recycling methods that keep the ships off the beach. (National Geographic, 2014).

With over 250 ships being beach each year in Bangladesh alone (and these numbers are only increasing), workers are being put under more and more pressure to meet targets, which is taking its toll. With 16 hour working days and no training or personal protective equipment, around a dozen fatalities are recorded annually (National Geographic, 2014). Workers are constantly injured, unable to access enough clean water and limited access to basic hygiene

(including toilets). Remarkably however, despite the horrendous working conditions, the workers push forward and continue this crushing work for one simple reason; "no work, no money" (Rousmaniere & Raj, 2007).

3.2.2 Environmental Impact

From an economic perspective it is clear that ship recycling holds value and therefore understandable that nations in the South Asia regions wish to continue with ship recycling. However, from an environmental perspective there are few positive aspects about the beaching methods used in ship recycling.

Ship recycling, as a practice, is sustainable because so much of a ship can be reused. Secondary steel holds a lower net energy usage, saving up to 70% of energy compared to virgin material, and a overall smaller environmental footprint (Argüello Moncayo, 2016). With 86% of global steel usage being recycled steel and a large majority being generated by ship recycling, it is an irrefutably sustainable practice (Rahman et al., 2016). Furthermore, sinking ships as an alternative, for example, poses huge risks globally (Jain, Pruyn, & Hopman, 2017). The use of recycled material is crucial for leading a more sustainable economy, given that the rate at which resource are being used is currently unattainable without considerable implications for future generations. Steel is a common material, used in various industries, and therefore the recycling of steel should be prioritised.

The focus of this thesis is the work being done in South Asia and the process by which ships are being beached and disassembled in unacceptable conditions with little to no regards for environmental implications. The contaminants spread quickly from the soil to the tidal zone, which through a sub-tidal zone leads to the deep sea and other sediments (Hasan et al., 2013). This type of work needs the tide to be operative which is also what makes it next to impossible to control the pollutants.

As mentioned, steel is undoubtedly a valuable resource, but so are coasts. The coastal region in Bangladesh supports over 30 million people with key resources and numerous industries are dependent on the health of the coasts. These include agriculture, fisheries, shrimp cultivation tourism, and forestry (M. S. Hossain, Fakhruddin, Chowdhury, & Gan, 2016). The multitude of species and the high levels of biodiversity are vulnerable and easily impacted by shifts in their habitat. "Scrapyards are sources of heavy metals, PCBs, PAHs, asbestos, radioactive materials, CFCs…PBBs, PBDEs, PCTs, chlorinated naphthalene, inflammable coatings, pesticides (mainly antifouling), clinical waste, chlorinated paraffins (non-exhaustive list) under liquid (including oils), solid (ashes, "residues" or "sediments") or gaseous form" (Devault, Beilvert, & Winterton, 2017, p. 25746). All of the mentioned compounds have a high impact on the coastal regions.

Airborne emissions are also common in ship breaking, although less significant than the previously mentioned pollutants. One of the concerns is that, due to the age of the ships, there are some banned toxins still found on certain ships, particularly because the workers are usually unaware of the risks of hazardous materials, let alone those that have been banned (Devault et al., 2017). One example, the CFCs found in refrigeration of ships and similar gases from the air conditioning, although banned due to the lifespan of ships (up to 30 years), the toxins are at times still present (Devault et al., 2017).

The main concerning pollutant is asbestos, partly due to how commonly it is found, but also because of the health risks it poses to the workforce and the environmental degradation caused (Devault et al., 2017; M. S. Hossain et al., 2016). Others are petroleum hydrocarbons and various heavy metals, due to their hazardous nature and the persistence in the

environment (Hasan et al., 2013).

There are environmental regulations and laws in Bangladesh, India and Pakistan: however, the implementation of these laws is often low and a gap remains between theory and reality (Devault et al., 2017). Bangladesh, for example, has ratified both the Stockholm Convention and the Basel Convention, yet the ship breaking industry has found subtle ways to avoid the regulations set (Argüello Moncayo, 2016; Nøst et al., 2015). This will be further developed in the literature review, where regulations are explicitly discussed.

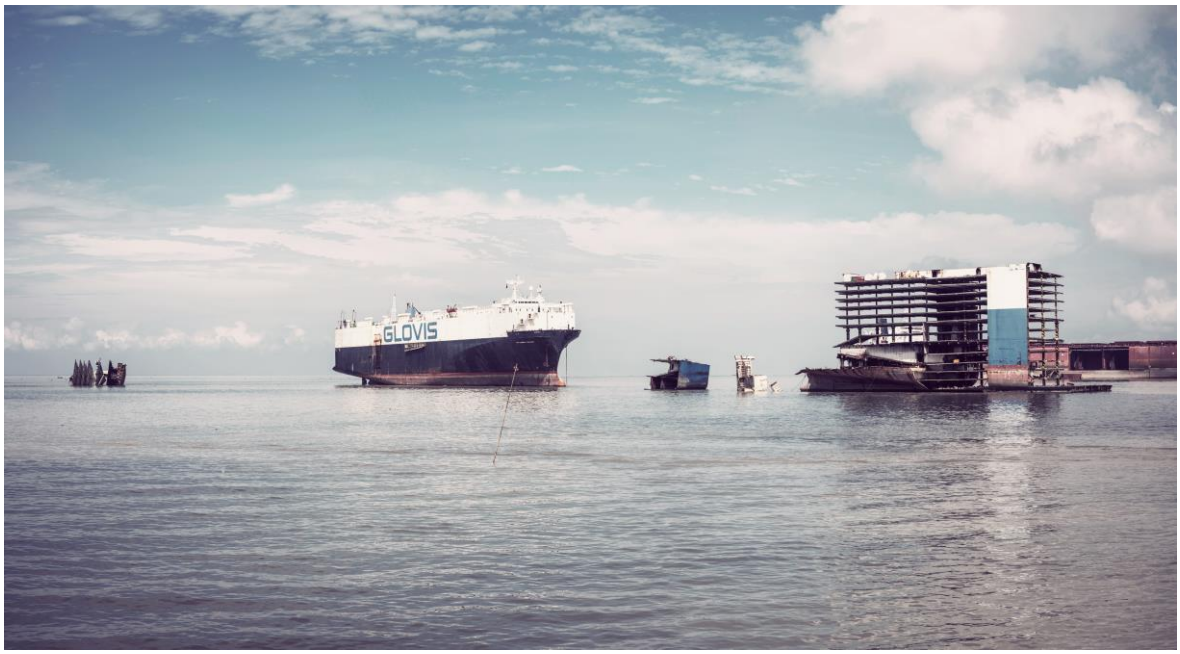

Figure 3-5: Bangladesh 2017

Source: © Studio Fasching - Courtesy of NGO Shipbreaking Platform

3.2.3 Sustainable Efforts

Recently, India has made considerable improvements to certain yards in Alang, and have reached Class NK-verified ship recycling facilities (Du, Zhu, Zhou, & Wong, 2017; gCaptain, 2015). This verification means the recycling facilities comply with the Hong Convention, and gain a Statement of Compliance (SOC). Nippon Kaiji Kyoka, which is referred to as Class NK or NK, is a Japanese ship classification society that "works to ensure maritime safety and protect the marine environment" ('Ship Recycling Convention (the Hong Kong Convention) | ClassNK - English', n.d.). This verification shows that some shipyards have made considerable steps to improve their environmental impact and workers' rights; this includes hazardous waste disposal improvements, and protective gear and clothing (Du et al., 2017).

Ship-owners wish to remain in South Asia due to cost savings; however, they are apprehensive to do so with the current standards in the region because of reputational and regulatory risk. Therefore, certification of the yards will benefit them, as well as the recycling states (Devault et al., 2017). "Large shipping companies have started a possible alternative solution to strict regulations: dismantling only in facilities with high environmental and labour standards, which will improve the possible negative image of global ship recycling industry" (Alcaidea et al., 2016). Verification and improvements of shipyards in South Asia is a common aim of voluntary agreements and investments done by companies.

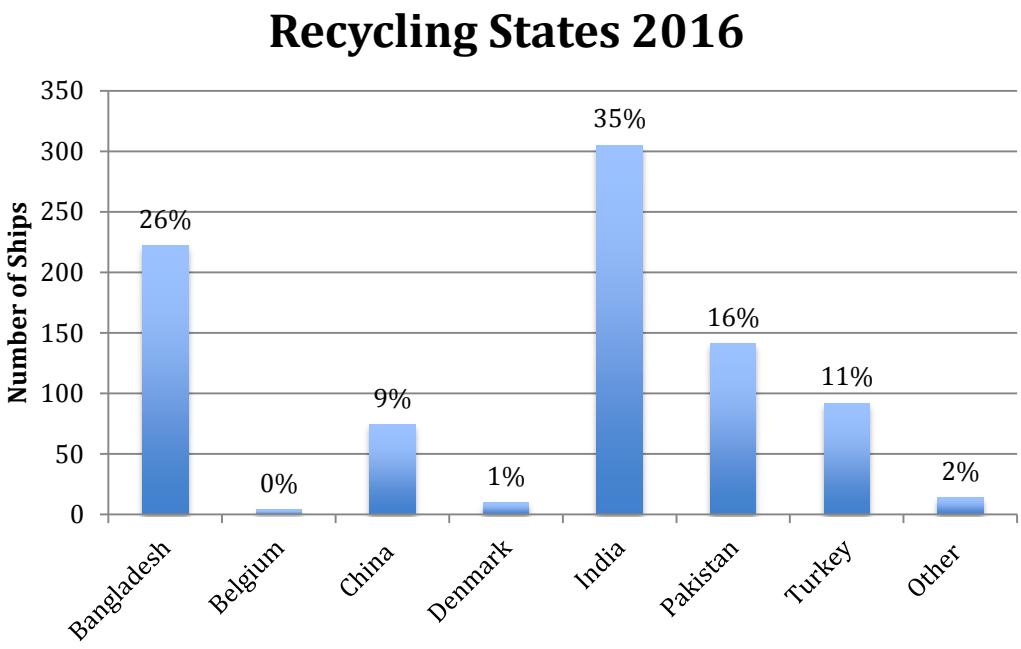

Figure 3-6: Percentages of Total Ship Disposal per Country

Source: Author Creation from the NGO Shipbreaking Platform Datasheet

With higher stringency of environmental standards being set by the EU and the IMO, older vessels are becoming less economically beneficial to operate, which will cause increases in the demand for ship recycling (Jaganathan, 2018). Furthermore, ships being recycled are younger than previous years, averaging at around 19.5 years (Jaganathan, 2018). This will lead to a level of demand that is unreachable without the South Asia countries; therefore a focus is needed to improve the yards in the region rather than moving elsewhere. In figure 3-6, which is a breakdown of the amount of vessels recycled in various recycling states 2016, it is clear that South Asia is responsible for a disproportionately high proportion of the recycling needs.

3.3 Stakeholders in Ship Recycling

There are a significant number of players, with varying interests, in the ship recycling industry. As you can see in Figure 3-8 there are many stakeholders with many relationships that connect them. However, for this section the focus will be on the financial investors, cargo owners, which are upstream stakeholders that play a critical role in developing the ship recycling industry. Then there are the ship-owners, the shipbrokers and the ship recyclers/ship recycling yards. These three stakeholders' roles are more straightforward, and need to be defined for a proper understanding of the industry. Through reading the literature, as well as gaining information from interviews, these stakeholders were found to be the most crucial players, as they were mentioned most frequently and have the highest level of influence.

In the figure 3-7 the stakeholders within the SSRI are shown in boxes, the boxes in green are the ones that will be explored in this section. This mapping of the stakeholders is done in order to express the complexities of the industry, as well as to show a systems analysis of ship recycling activities. The arrows show the movement of involvement between the various stakeholders, and therefore demonstrate a potential level of influence. For example, the recycling promotion bodies work actively with the ship recycling yards, while the maritime department of recycling and workers forums work to aid the recycling promotion bodies.

Banks and investors hold influence over more than the cargo owners and ship-owners; however, the arrows represent only the interests of this specific thesis.

In the following sections 3.3.1-3.3.5, the before mentioned stakeholders are described, to allow for a better understanding of who the stakeholders are and what their involvement is in the ship recycling industry.

3.3.1 Capital Investors

The financial investors, banks, funding institutions, etc. work the same for the shipping industry as any other, with capital investment being provided for companies and individuals. In this case, the focus is specifically on cargo owners and ship-owners. In basic terms it is an organisation or individual who puts money into various financial schemes in hope to make a profit through the chosen scheme. The commitment of capital creates a level of influence over the investments ('Investor', 2011).

3.3.2 Cargo Owners

The owners of the goods are the firm or individual who hire the ship owner to transport their goods across the seas. These could be consumer companies, such as H&M or Mercedes, for example. Their role is that they are responsible for paying the ship-owners for their services (Sivaprasad, 2010). With a tendency of short-term thinking, these companies tend to pay as little as possible, making the profit margin for ship-owners very tight, leaving limited room for a ship-recycling budget. (Nauclér, 2018).

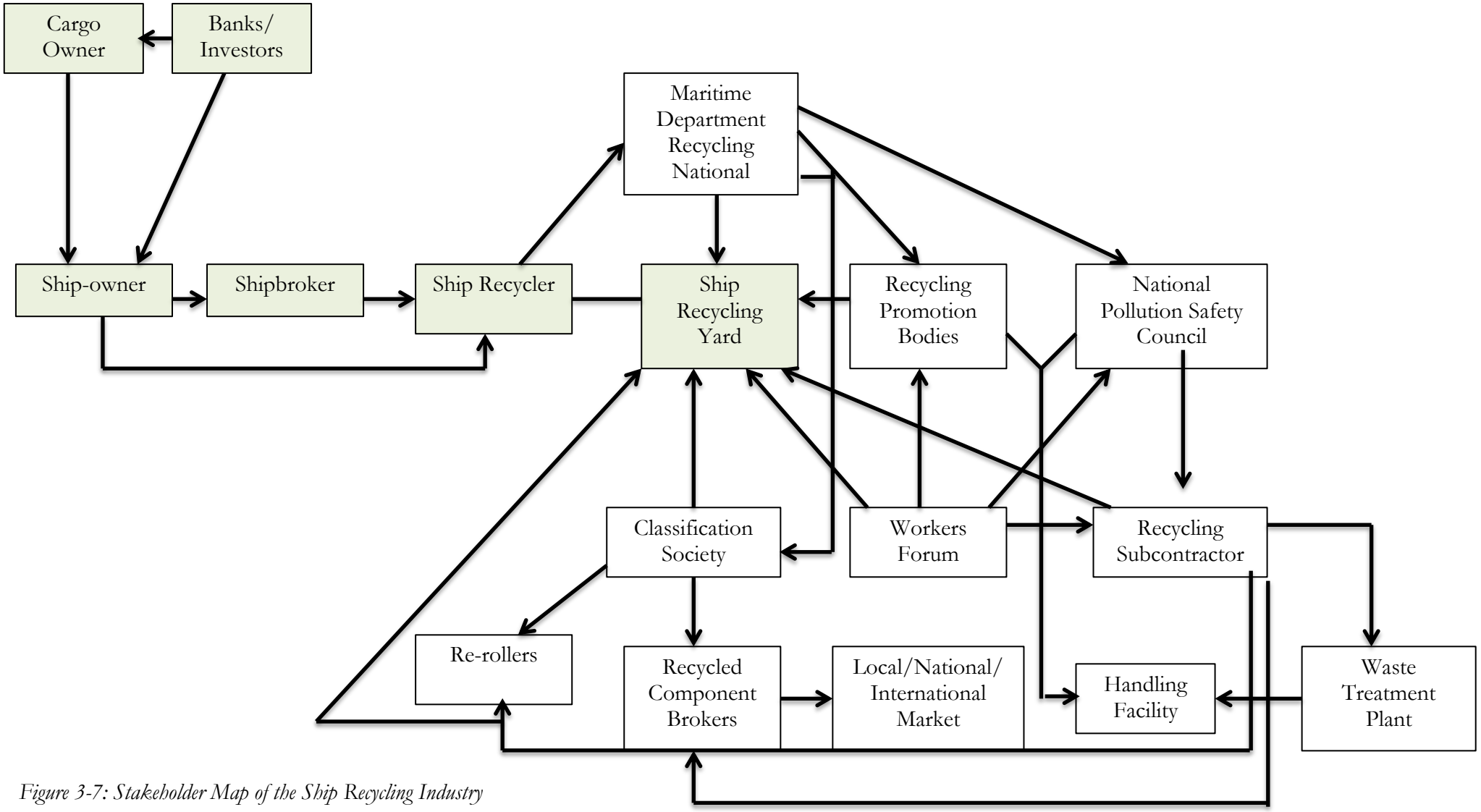

Figure 3-7: Stakeholder Map of the Ship Recycling Industry

*Source: Adapted from Sivaprasad (2010), p.*56

3.3.3 Ship-owners

A ship owner can either be a company or an individual who have the legal ownership of a maritime vessel prior to it being dismantled. The vessels themselves are owned either by the company in charge of the shipments (for example Maersk owns and builds around 60% of their own vessels), or by what are known as charter companies, who build the ships and lease them to companies, usually providing the rest of the tonnage. (Nauclér, 2018).

When a ship reaches the EOL, the ship is sold either to a shipbroker or directly to the recycling yard (International Chamber of Shipping, 2016). A shipbroker takes ownership of the vessel during the last voyage or directly before disposal. When contacting the recycling yard directly, it is up to the shipping company to choose a yard with high enough standards in order to avoid a scandal. That is why it is common that they use a third party buyer (see 3.3.4). After this sale the role of the ship owner legally ends (Ammitzboell, 2018). This is argued to be one of the main failures of developing the SSRI standards, as it allows well recognised shipping companies to avoid responsibility for the disposal of their ships (Sivaprasad, 2010).

3.3.4 Shipbrokers

Shipbrokers, in simple terms, are the middlemen between the ship owner and the ship recyclers. This means that the shipbrokers buy the vessel from the original owner (usually at an auction or directly from the owner) and then sell this investment on to ship yards (Sivaprasad, 2010). The shipbroker becomes an intermediate owner of the vessel, but do not hold the same level of responsibility as an original ship owner. This is because shipbrokers are not technically owners of the vessel, but are rather in charge of dealing with the sale of a ship from the original owner to another owner, or from the owner to a shipyard. "Where a cash buyer is used, it is likely that the contract will require them to accept certain liabilities based on the accuracy of information about the yard they select in accordance with the shipowner's demands. The extent of this liability varies from case to case" (International Chamber of Shipping, 2016). Shipbrokers have access too much more information than most shipping companies or ship-owners; therefore they are used in about 85% of vessel sales. If this data and knowledge of the ship recycling industry were to be available, ship-owners could make a much more informed decision when choosing a suitable shipyard, especially when it comes to compliance of the HKC (International Chamber of Shipping, 2016).

It is common that the shipbroker will sell the ship on to another owner, who will then use the ship once or twice before selling it on to the ship recycler; this is to enable them to deny the ownership by the previous owner, in order to remove responsibility when the vessel is eventually recycled. The name of the ship will often be altered to give the impression that the original owner have no connection to the vessel when it is beached (Nauclér, 2018). Shipbrokers hold limited accountability to the current ship recycling practices, and are concerned solely with profits when bidding and selling the vessel (Sivaprasad, 2010).

3.3.5 Ship Recyclers & Ship Recycling Yards

Ship recyclers are the agents that purchase the vessel for dismantlement. Specific yards or factories will buy the ships and keep all the material that is reusable (namely steel). The recyclers supply the infrastructure needed for dismantling the vessel, which are the ship-recycling yards, as well as the labour and tools for the workers. Currently all the responsibility is on the recycling states and yards, it is up to them to set standards and organise funds for safety. "Since they have to take the blame of any untoward incidents that may occur during ship recycling, they have to be more vigilant and involved in the process" (Sivaprasad, 2010, p.

51). It is also an obligation of the ship recyclers that both national and international regulations are being followed and complied with. (Sivaprasad, 2010).

4 Literature Review

In this section the reason why private sector stakeholders are required is discussed, mainly building on the lack of unified regulation. As mentioned previously, there are three main regulations that have attempted to improve SSRI; these are the Basel Convention, the Hong Kong Convention and EU's Ship Recycling Regulation. A large amount of the literature on the topic of ship recycling has been based on the regulations and how the various attempts have been unable to alter the recycling industry for the better (Nauclér, 2018). The main aim here is to define the main policy change attempts within ship recycling and show how the lack of implementation or successful alteration of the industry has led to private entities taking action.

4.1 The Basel Convention

The Basel Convention on the Transboundary Movements of Hazardous Wastes and their Disposal came into force in 1992, after being adopted in 1989. The main reason for the convention was to improve the movement of hazardous waste from high income countries to low income countries, thereby hindering the gross mishandling of illegal dumping of waste (Lucier & Gareau, 2016).

The Basel Convention is not specifically designed to deal with ship recycling needs, and is rather aimed at controlling transboundary movements of hazardous waste ('Basel Convention > The Convention > Overview', n.d.). The main connection to ships is that when a ship reaches its EOL it technically becomes waste needed of disposal. The ship itself holds certain hazardous wastes intrinsically such as oils, asbestos, PCBs, etc. (Jain, Pruyn, & Hopman, 2013). The ship's movements are almost always transboundary and should have to adhere to the standards set by the Convention. This only refers to countries that have ratified the Convention, which has been done by 186 parties (Bhattacharjee, 2009).

In order for the Basel Convention to be applicable, three criteria need to be met, (1) the ship needs to be classified as hazardous waste, (2) the ship is subject to transboundary movements and, (3) both countries involved, meaning the exporting country and the recycling state, need to have ratified the convention (Jain & Pruyn, 2017). When it comes to implementation of the BC the main issue hindering proper implementation of the BC is that ship-owners find loopholes or alternative to not classify their ships as hazardous waste, when being recycled (Alcaidea et al., 2016).

The shipping industry have continuously spoken against vessels being regulated under the Basel Convention, arguing that vessels should not be referred to as hazardous waste, mainly due to the fact that the BC works to limit the movements of hazardous waste and prevent unnecessary production of waste (Lucier & Gareau, 2016). If this were to be implemented on the shipping industry it would cause a significant hindrance to the ships ability to move freely (Argüello Moncayo, 2016). Nonetheless, a ship carrying hazardous materials in its structure that is on route with the intension of being recycled and scrapped would be classified as hazardous waste To avoid the BC the ship-owners do not disclose that the ship is intended for scrapping. Ship-owners claim that the ship was not intended to become waste as it arrived at the last port, but only after arrival, hence making no transboundary movement. (Argüello Moncayo, 2016). Ship-owners find alternative ways to avoid the Basel Convention, even though adhering to it would improve the environmental handling of the ships significantly (Devault et al., 2017). According to Bhattacharjee (2009), when properly evaluating the BC text it is hard to argue against the fact that ships should be classified as hazardous waste. When ships reach the end of life and are exported for dismantling it is undebatable that the

vessel becomes hazardous waste (Bhattacharjee, 2009). The issue with this is the loopholes around proving that there was an intention to dismantle the ship when leaving the exporting port.

The Basel Convention has proven in some respects to be a successful agreement, with high ratification rates. However, the lack of specific and clear connection to the shipping industry has allowed for stakeholders, especially ship-owners, to overcome the need to adhere to the Convention. As ships are not universally stated to become hazardous waste when reaching the EOL, the Convention has been unable to uphold the EHS standards in the SSRI. A convention is required that deals specifically with the ship recycling industry in order to address this issue.

4.2 The Hong Kong Convention for the Safe and Environmentally Sound Recycling of Ships

In 2009 the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships was adopted, but has yet to be ratified. As stated in the name, this convention was set by the IMO to ensure improved practices in ship recycling and to protect workers, as well as the environment (Jain et al., 2013). In order for the Hong Kong Convention to enter into force, three conditions must be met:

> *1. "Not less than 15 States have either signed it without reservation as to ratification, acceptance or approval, or have deposited the requisite instrument of ratification, acceptance, approval or accession in accordance with Article 16;*
>
> *2. The combined merchant fleets of the States mentioned in paragraph 1.1 constitute not less than 40 per cent of the gross tonnage of the world's merchant shipping; and*
>
> *3. The combined maximum annual ship recycling volume of the States mentioned in paragraph 1.1 during the preceding 10 years constitutes not less than 3 per cent of the gross tonnage of the combined merchant shipping of the same States." (IMO, 2009)*

Currently, Norway, Congo, Denmark, France, Panama and Belgium have ratified the convention, India has initiated legislation to ratify, which would be a meaningful step for the SSRI (gCaptain, 2015). Due to the three conditions of implementation, it has been challenging to move the convention forward. However, this step could satisfy the third condition due to the size of India's recycling capabilities (MAREX, 2017). The non-executive Director of GMS (the world's largest cash buyer of ships for recycling) said that "India is now in an ideal position to accede to Hong Kong Convention and in so doing bring forward the day the ship recycling industry will be regulated globally by a practical and workable international standard" (MAREX, 2017).

The Hong Kong Convention has been thoroughly debated and is both acclaimed and criticized (Zhao & Chang, 2014). On the one hand the HKC focuses on a full life cycle assessment (LCA), with regulations covering design, construction, operation and maintenance. While on the other hand, it does not set clear, strict, specific standards on the environmental practices or human safety when it comes to the EOL stage (Jain et al., 2013). "The Hong Kong Convention, including its Annex, is heavily based upon bureaucratic procedure instead of substantive prohibitions, incentives for better practice, or specific targets" (Matz-Lück, 2010, p. 102).

One of the most praised aspects of the Convention is the regulation that stipulates that ships must create and update an Inventory of Hazardous Materials (IHM). This must be set up

during the construction stage and continuously updated and verified (Jain et al., 2013). This allows for a more controlled monitoring and handling of the toxins, and the recycling states are able to be more prepared on how to dismantle the ships. Furthermore, the Convention allows for flexibility with compliance and clauses can be modified, as the industry is constantly shifting and technological advancements are being made. This creates a smoother transition for ship-owners and recycling states. Many ship-owners worry that the HKC will cause too much strain on their business, and therefore this flexibility can a be less daunting prospect to commit to. (Jain et al., 2013).

However, even though the HKC would be the first globally implemented ship recycling regulation, there are downsides to the convention. It has been argued that it is not strict enough and will not lead to a noticeable shift in the industry as it does not ban the beaching method (Chang et al., 2010). The HKC also places considerable responsibility on the recycling state, compared to the exporting countries. It is unlikely that Bangladesh, India and Pakistan will be able to respond or take action on all the Regulations in the Convention (Jain et al., 2013). This unbalanced responsibility could be shifted if shipping companies themselves commit to making changes in SSRI.

The main critique of the HKC is the advanced criteria set in order to reach ratification. The commitment to a Convention where economic freedom is risked for EHS standards is hard to attain, especially considering the need for ship-owners, shipyards and states to unanimously agree to it's adoption. The second argument is that the Convention is not stringent enough on the EHS standards of the industry. The inclusion of beaching methods in the HKC has been highly criticised by NGO's and the European Commission, leading to a new regulation to arise.

4.3 The European Union Ship Recycling Regulation

With climate change and sustainability raising to the top of the political agenda in the EU ('EU approach to sustainable development', n.d.), it is not surprising that they have chosen to implement their own ship recycling policy for the region. The SRR holds many similarities to the BC and HKC, as both conventions were used as a starting point for the European regulation. The European Commission also ensured that the implementation of the SRR would not contradict the Basel Convention or the Hong Kong Convention, and would instead act as an advocate, especially for the HKC, in hope of increasing state ratification (Alcaidea et al., 2017).

The EU, aware of member state flagged vessels use of the appalling conditions of the ship recycling industry, made moves towards improved practices and continue as leaders within sustainability (van Leeuwen, 2015). The SRR ensures that unless concrete measures are taken to meet environmental and health costs, the ship cannot be sold as a good if the ship is flying an EU Member State flag (Alcaidea et al., 2017). This means that the owners of the ship, when flying a EU flag, must uphold certain standards in order to sell the vessel to ship recyclers or cash buyers.

As part of this the EU has created a "list", known as the European List of approved (recycling) facilities, meaning that companies should only recycle their vessels at facilities from this list. This is in hope that the recycling industry will reach a level of standardization, to avoid the inherent issues of certain methods and shipyards (Alcaidea et al., 2017). One of the main issues with encouraging EU ships to only use listed facilities is that the percentage of EU flags in the global fleet is incredibly low (less that 10%) (Riev, 2017) and with an exclusion of legal action to avoid reflagging, it is likely that this number will decrease further, in order that ship-owners can avoid adhering to the regulation (Argüello Moncayo, 2016).

The main difference between the SRR and the HKC is that the SRR does not allow the beaching method at any of their certified facilities. An issue of the EU list is the fact that there is not enough capacity to handle the global recycling needs, only in the second quarter of 2018 169 out of the 220 vessels recycled globally were disposed of in South Asia (gCaptain, 2018b). However, the EU believes that it is possible for facilities in South Asia to be certified and shifted away from the beaching method, although it will be a slow process, most likely spanning over a decade (Alcaidea et al., 2017).

The IHM is also a crucial part of the SRR, in order to better control the hazardous materials and to place a larger role on the ship-owners. Ship-owners would need to be responsible for informing the recycling states of all hazardous materials on board. With this information being made available, recycling states can ban the import of certain materials, therefore leaving it up to the ship owner to remove these before disposing of the vessel. All vessels that call at EU ports, no matter the flag, must have an up to date IHM list (Alcaidea et al., 2017).

The support the EU Commission has shown towards sustainability and EHS standards across their political agenda is astounding. Attempting to provoke change in ship recycling, and show the intolerance for the beaching method is honourable; however, it might be one step further than where the industry is ready to go. The freedom the shipping industry has enjoyed in the past, the economic vitality of the industry and the complexities of jurisdictions have created a reluctance to change. The SSRI is a crucial, sustainable industry and one that cannot be dismissed. The SRR's wish to abandon South Asia due to the methods used to recycle vessels could be seen as naïve considering the volume of recycling being undertaken in the region. Furthermore, EHS standards set to strictly could risk losing commitments, especially from the private sector. Unification between regulation and private stakeholders could lead to a hopeful future for the SSRI, but the questions remains as to what the role of these stakeholders is.

In the table 4-1 all the discussed global policies on ship recycling are broken down and the key elements presented. All three policies have made efforts to try and improve the ship recycling industry. However; the lack of ratification or lack of applicable enforcement has left the recycling industry without adequate global regulation. The guidelines of the conventions remain and shipyards are able to claim Hong Kong Convention compliance without ratification. Many voluntary commitments have been implements based of various aspects of these regulations, for example the use of the IHM or the use of EU listed facilities. These commitments currently are left in the hands of companies and other private sector stakeholders.

Table 4-1 A Breakdown of Main Global Ship Recycling Policies

Policy	Ratification Status	Key Aspects	Further information
The Basel Convention	Entry into force 1992 53 Signatories 186 Parties	• Protection of human health and the environment • Minimise the generation and transboundary movement of hazardous waste • Illegal traffic • Environmentally sound management • Technical Cooperation and assistance. • Unregulated dumping	http://www.basel.int/
The Hong Kong Convention (The IMO)	Not yet entered into force 5 Signatories 6 Parties	• Safe and environmentally sound recycling (SESR) • Marine Pollution • IHM, Resolution • Hazardous materials (design, • Construction and maintenance) • Ship Recycling plan (SRP) • Unregulated dumping • Survey and certification of ships • (SCS) • Inspection of Ship (IS) and PSC	http://www.imo.org/
The EU Ship Recycling Regulation	Entered into force 2013 (for ships flying a EU flag)	• Protection of human health and the environment • Beaching method (The List) Minimise the generation and transboundary movement of hazardous waste • Export of hazardous waste • IHM	http://ec.europa.eu/environment/waste/ships/eu_policy.htm

Source: Adapted from Alcaidea et al. (2017), p. 269

4.4 The Private Sector Introduced

As previously shown, global regulations have attempted to improve the environmental and safer ship recycling industry, but have been unable to adequately do so. There is a significant amount of discussion around the stringency and potential impact that the regulations themselves would have had if ratified, and whether the HKC or SRR would be enough to change the industry. (Argüello Moncayo, 2016; Bhattacharjee, 2009). The lack of global unification and the need for economic protection continuously impacts the implementation of regulation on the shipping industry, and specifically the SSRI.

"The world's oceans are not owned by any single country. Ships sail freely over them and move between jurisdictions, which makes them and their owners difficult to regulate." (M. S. Hossain et al., 2016, p. 91). After years and various attempts to regulate what seems to be a next to impossible industry to regulate, the private sector has started to step in. Katarina Ammitzboell, the Senior Partnership Manager, Sustainability Strategy and Shared Value at A.P. Møller-Maersk said in an interview that "[ship recycling] is in a legislative and policy vacuum".

With this knowledge, private stakeholders such as ship-owners or cargo owners are able to fill in the vacuum and work towards increasing their role and taking on more responsibility. Certain companies, investors, and the ship recyclers themselves have come to the conclusion that the industry can no longer continue down the path it has been (Aaben, 2018; Ammitzboell, 2018; Schøyen et al., 2017). Nonetheless, many continue to leave the industry unaided and unchanged. Changes have started within the private sector where divestment of environmentally harmful ship recycling is becoming more common, and ship-owners are beginning to realise the potential risks of beaching ships. The effect of these changes and what can be done to encourage more significant change will be discussed further in the next section.

Figure 4-1: Bangladesh 2017

Source: © Studio Fasching – Courtesy of NGO Shipbreaking Platform

5 Findings

The aim of this section is to show how, in the face of a regulatory vacuum portrayed in the previous section, various stakeholders can use their influence to improve the shipbreaking and ship recycling industry in South Asia. By exploring the individual roles of the stakeholders as well as their relationships to each other, a framework will become evident, which can be used to assess potential influences and identify lessons for stakeholders to learn from.

The stakeholders mentioned in the background section (Section 3) will be the primary focus of this section. However, due to a lack of primary data from the shipyards and ship recyclers, these stakeholders were not analysed specifically, but rather included from data gathered on the ship-owners and the other stakeholders. Additionally, shipbrokers will not be discussed, due to a lack of prominent research, as well as an inability to gain access to a person of contact. This paper will evaluate the role of (1) Financial Investors, (2), Cargo Owners, and (3) Ship-owners. Ship-owners will be the main focus of this thesis. After this analysis of the stakeholders, the role of verification of shipyards in South Asia will be evaluated in order to see what could potentially be done and what kind of impact it could have on the SSRI.

In reading the literature on the SSRI and talking to stakeholders it became clear the shipping industry, the academic community and society as a whole agree that the conditions of the ship recycling industry in South Asia is unacceptable. However, this has stopped very few from recycling their ships there, in fact the amount of shipbreaking being done in South Asia has increased (gCaptain, 2018b).

In the past years where climate change and environmental issues have become one of the most debated topics (Poulsen, Ponte, & Sornn-Friese, 2018), it has become clear that sustainability has an economic benefit, in the medium to long term, and it is in fact the cheapest way to proceed (Alcaidea et al., 2017). "The cost of recovery from a disaster is always greater than that of the reasonable measures taken that would avoid or mitigate it" (Alcaidea et al., 2017, p. 270). The question remains, is the shipping industry neglecting this fact or are they in fact initiating change?

There are two sides to why the ship recycling industry has continued to neglect the standards of workers and the environment. The first is the fact that there is financial profit to be made for ship-owners, shipbrokers, banks and many other stakeholders upstream of the recyclers. The sale of a ship can make a large difference for ship-owners who are facing extreme levels of competition in the industry and pressures from the market. The second is that this industry is vital for the national economy and the livelihood of a massive amount of people in South Asia. Not only for people who are working directly with the vessels, or the industries selling and re-using the steel, but indirectly as well. This would be less possible if prices were to be increased due to higher labour and environmental standards. (Alcaidea et al., 2017).

The practice of ship recycling is valuable and necessary, however, the beaching method and the EHS conditions concurrent with the method are unacceptable. Were these standards to be found in another industry that held more public awareness, such as the textiles industry, there would have been an immediate public outcry. Due to the fact that the shipping industry remains largely outside of the public scrutiny, practices have been allowed to remain (George, 2014). Perhaps it is time for stakeholders to step up and try to use their influence to promote greener practices in South Asia.

5.1 Capital Investors

Capital investors and banks are the backbone of today's globalised economy (Dorfleitner, Utz, & Wimmer, 2018). Without investments most projects and firms would be unable to function, and therefore these stakeholders have a large influence over their clients. Profit and returns is the main consideration for investors when building a portfolio and for a long time that did not include environmental aspects. However, times are changing (Park, 2018). Social and environmental welfare has become a consideration for investors in the past decade, arguably for selfish reasons, as regulation and social awareness risks loss in returns (Park, 2018). However, this shift could allow for a significant impact on the SSRI, if investors choose to get involved. This section will discuss the role of corporate social responsibility, the potential influence investors have, divestment as an option for change, and the intricacies of SSRI. Exploring the role of capital investors in the SSRI stakeholders through the value chain were interviewed and their viewpoints were used in this section. Investors themselves were not interviewed, but their viewpoints and priorities are based of literature, articles, and press releases.

Sustainable finance has become a recognised concept, and through divestment and alterations to portfolios, investors have become key players in impacting industry and market trends. With the UN Sustainable Development Goals and corportate social responsbility becoming a crucial part of the business world, investors all over the world are realising that sustainability is an unavoidable development (Lambooy, Maas, van 't Foort, & van Tilburg, 2018). Nonetheless, this does not mean the shipping industry has implemented these efforts, nor does it mean that investors consider ship recycling as an important issue. In an interview with the Sustainability Manager at Stena AB, Emma Aaben, she recalled a meeting held with about 90 financial representatives, including their own financial department, and not a single question was posed about the company's sustainability work. Aaben continued saying it is important to remember that even though there are good examples and there is a rise in concern, it is not the focus of many financial investors. Some banks and some specific people at banks and institutes have understood the importance of sustainability. For example, two of the largest banks in Sweden have approached Stena to discuss sustainability when it comes to their operations, but not specifically about ship recycling. Even though there has been a shift towards green thinking, it is a slow process. For most it is still black and red numbers that is the greatest concern (Aaben, 2018)

Investors and institutions have a tendency to hold a high level of influence over the firms they invest in, being able to impact certain choices. Investors within the shipping industry are moving towards a stronger focus on sustainable finance and ESG is hopeful for the future (Ferreira & Matos, 2008). The leader of the Ocean Industries for the largerst financial service group in Norway, DNB, Kirstin Holth said, "we believe actors that do not take the environmental and social risk seriously will have problems accessing capital markets in the future", when discussing the potential role of investors when it comes to shipbreaking (Saul & Jessop, 2018). Investors are starting to put considerable pressures on the shipping industry to take responsibility and ensure safer recycling practices in order to mitigate risk (MI News, 2018). If investors were to pull out and divest because of companies mishandling a vessel EOL, it would impact the companies' ability to remain in its market position, and could eventually even lead to bankruptcy (Dorfleitner et al., 2018).

Investors agree that ship recycling is part of the value chain of the shipping industry and therefore must be considered as part of the risk and cost in an investment (Riev, 2017). A

value chain is the concept referring to the actors involved in all stages of a specific product or service, from extraction to disposal (Gereffi & Fernandez-Stark, 2011). If recycling is being classified as part of the value chain it stands to reason that actors involved in some part of the chain need to take some responsibility, including investors and their ability to influence other stakeholders, especially ship-owners. Bearing in mind the complexities of the value chain of the industry, and the unbalanced responsibility placed on the ship recycler states the inclusion of recycling in the chain is very important. As ship recycling is not like most industries as a certain level of engagement is required in order to have a significant impact, rather than only divestment (Dorfleitner et al., 2018). It is difficult to ensure that investments are properly utilized, the infrastructure is lacking on most shipyards in South Asia and there is a need for initial onsite work and training (Devault et al., 2017).

Divestments is common practice for investors and banks in order to update their portfolios and keep on track with societal and political agendas. Moving away from environmentally damaging, human rights issues and other reputation risk areas has become common practice. The ship recycling industry in South Asia is one of these areas, and considering the global raise in sustainable finance a new standard is being held (Dorfleitner et al., 2018). Divestment has shown to be an affective incentive for companies to act more responsibly, and can cause "…rapid, transformative change…" (Bratman, Brunette, Shelly, & Nicholson, 2016). In the face of limited national and global political movements in the SSRI private governance can act as a guideline for societal movements (Park, 2018). Investments to ship-owners and ship recycling facilities in South Asia can also trigger regulation and be a stepping stone as a supporter of the initiatives, for example the SRR and the HKC would benefit from backing by the financial community (Saul & Jessop, 2018).

Giving ship-owners a warning about being excluded from portfolios if practices of ship scrapping are not altered and improved will allow firms to reassess and consider other alternatives (Saul & Jessop, 2018). This does not necessarily mean that companies will leave South Asia, but instead work towards improving the industry, which is a hopeful outcome. However, the question is if divestments will be enough for a proper shift of the SSRI. Sasja Beslik, the head of group sustainable finance at Nordea (a Swedish bank) argued that although divestments will continue, it is time to encourage companies to take action and engage with the ship recyclers first hand (Saul & Jessop, 2018).

Divestment from companies recycling using the beaching method could have serious repercussions on the national economies in South Asia, as many of them simply do not have the money to upgrade their facilities, and if investors pull out from the industry due to the beaching method being utilized, the ship recyclers will lose their competitive advantage (Saul & Jessop, 2018). Building up the industry would allow improved working standards for a large part of the regions working population, as well as environmental improvements, which can be seen by results from certain Indian yards (Ammitzboell, 2018). Abandoning the industry could however leave the whole region in economic crisis and lead to a surplus of vessels in need of recycling.

As the capacities for ship recycling is unable to be satisfied by the facilities provided by the EU's list, it is crucial that investments are made to improve the yards in South Asia. At the moment a majority of investments focus on the operations of a ship, not on the EOL aspects. Investor initiatives within ship recycling is becoming more common, and stated in an interview with Ellinor Häggebrink, an investor engagement manager at GES (Global Engagement Services). She argues that with the increasing awareness of the ship recycling industry, and investors starting to take initiatives to focus on firms with responsible ship

recycling policies, as well as more vessels being scrapped, it is an opportune time for ship-owners to take action and step up (Häggebrink, 2017).

Many industries are turning way from unsustainable practices and industries, for example it has becoming increasingly common for banks and investors to divest from oil production, coal, etc. (Trinks, Scholtens, Mulder, & Dam, 2018). However, this should not be done when it come to ship recycling as it is a "…sustainable necessity…" (Bhattacharjee, 2009, p. 200). Ship recycling will need to continue, as there is a lack of alternatives and a continuous rise of obsolescence of vessels, from age or environmental standards for example. Recycling of these vessels is not only crucial to avoid the use of virgin materials, but also to hinder the unnecessary and environmentally damaging act of sinking these ships. The only possibility is to change the standards and methods of how the ships are recycled.

Roger Charles, the Director of Environmental Social Risk Management at Standard Chartered Bank, who is currently working with ship recycling, started that, "the easy thing would be for Standard Chartered to walk away, but we want to improve conditions" (Standard Chartered Bank, 2017). Rather than choosing to encourage companies to move away from South Asia and beaching ships, Standard Chartered have chosen to work actively with the recycling facilities and to invest in improving the standards onsite. This included training and education, protective gear, and health checks (Standard Chartered Bank, 2017). Monitoring this progress by audits will allow the region to grow, rather than being left behind. The amount of employment and profit made from ship recycling in emerging economies should be seen as a source for economic growth, especially considering that investments are increasingly being focused on emerging markets (Ferreira & Matos, 2008).

Most of the banking initiatives are taking place in the Nordic countries and in the Netherlands (Ammitzboell, 2018). The oil fund of Norway, worth over €850 billion, chose to pull out of four different companies, due to their irresponsible ship beaching practices, and similar action is being made throughout Scandinavia (Saul & Jessop, 2018). SEB, one of Sweden's largest banks, has written a policy ensure that their clients and portfolio companies consider all life cycle stages of the vessel, and that they include a developed ethic and environmental policy when it comes to ship recycling (SEB, 2011). SEB has initiated this action by 2011, showing that this is not a novel issue.

Nordic countries have shown leadership when it comes to sustainable efforts, Norway's oil fund is even known for its ethical investment and long-term perspectives (NMR Publisering, 2013; Persson, 2014; Saul & Jessop, 2018). This leadership can be used as an example for other investors, showing the possibilities, and the risks. It can be difficult at times to be the first mover, however, it can lead to immense profits as well (Hirose, Lee, & Matsumura, 2017). Cooperation is another profitable initiative, both between stakeholders in the shipping industry, as well as for companies in individual industries. In Norway four large investment firms came together to set up a plan for divesting in companies working with substandard ship recycling methods (Saul & Jessop, 2018).

According to Dorfleitner et al., investments focusing on environment, social and goverance aspects are be more likely to have a higher return, medium to long-term. This indicates that companies with higher CSR, would be a smarter investment for asset managers (2018). If ship recycling were to become more standardized and safer when it comes to ESG, asset managers would gain more profits (Dorfleitner et al., 2018). Thereby, green efforts will allow for a competitive advantage, both for the investor and the companies. The shift towards a more sustainable future, focusing on improving environmental standards and human rights is

coming faster than expected. However, it will be a diffcult shift for firms, in this case for the ship-owners and shipbreakers (Saul & Jessop, 2018). In the short term a transition to more sustainable practices will be costly, and therefore, investors are needed to provide capital (Park, 2018).

The number of stakeholders involved in the value chain in the shipping industry makes it difficult to discern which stakeholder within the shipping industry should hold the responsibility for recycling a vessel. Currently most of the responsibility falls on the recycling states, partly due to the lack of regulatory enforcement on ship-owners, and other stakeholders, as well as stakeholders varying interests causing further erosions in responsible action. Considering the inadequate implementation of legislation in South Asia it is unlikely that recycling facilities would be able to properly enforce higher standards in the industry even with capital investment (Zhao & Chang, 2014). However, using examples of other industries, for example the textile or technology industry, countries like India and Bangladesh have flourished and have been able to reach high levels of success (Mulinaris, 2018). The textile industry has made significant improvements when it comes to EHS standards and technological development (Rajan, Anand, Narayanan, & Bapu, 2016). Investments could allow for the SSRI to follow these examples, especially with initial onsite engagement from ship-owners. In an interview with the Communications and Policy Officer at the Shipbreaking Platform, he said that if a facility is built with a dry dock both workers and the environment would automatically benefit in terms of safety and protection. He did argue, however, that finding a ship owner that is willing to use a dry dock facility, therefore compromising on profits, is quiet difficult (2018).

"A financial incentive and demands from investors, banks and clients of shipping will help close the gap between green dollars and green recycling" (Riev, 2017). Since investors are starting to move towards developing the shipbreaking and ship recycling industry, there is no doubt that this will impact the choices of ship-owners. The key is to ensure that the only focus is not to move away from South Asia, but rather to improve the standards of the region and to help shipyards to reach verification and international standards, which is being done in Alang, India.

The influence that investors hold within the economy is undeniable, and with the transition towards sustainable finance there is hope that they will be able to lead stakeholders in the right direction when it comes to environmental and societal considerations. However, when it comes to the shipbreaking and ship recycling industry it seems that without a level of cooperation it will be unlikely that the beaching method will be left behind. The cost cannot be placed on one stakeholder, nor can the risk. Divestment is a strong incentive for companies to rethink their customs, however, not enough for a proper and effective shift in ship recycling. Investors, especially in certain countries, have shown to take ship recycling as a serious issue and they are taking action. However, they are not the only stakeholders that should be taking action.

5.2 Cargo Owners

One stakeholder that is not as directly involved in the ship recycling industry, as others mentioned, are the owners of the goods that are being shipped. Consumer companies, such as H&M, Philips, or BMW, are able to influence the prices set on the ship-owners who are transporting their goods (Nauclér, 2018). If ship-owners earn more from their shipments it is possible that more money can be spent on EOL practices. The bottom-line has proven to be the main consideration for ship-owners time and time again (Devault et al., 2017; Mulinaris,

2018; Nauclér, 2018), and therefore it is a fair assessment to say that financial incentives would have a significant impact on decision making.

Financial incentives set by cargo owners could lead shipping companies or owners to invest in environmental practices for their ships, as it has proven a successful scheme in other industries (Miola, Marra, & Ciuffo, 2011). The Clean Shipping Index (CSI) is an index where vessels are labelled depending on their environmental performance (Fridell, Rydbergh, Berndolf, Eriksson, & Wimby, 2018), it is used by cargo-owners, as well as ship-owners, to be able to assess and choose higher standards of transport services (Wuisan, van Leeuwen, & (Kris) van Koppen, 2012). Currently, the CSI has 31 cargo owners registered, and 54 ship-owners, with steady growth since starting in 2007 ('Clean Shipping Index – så miljörankas rederierna', 2014). This index uses various financial incentives, such as differentiated port fees, to encourage vessels to promote better environmental practices (Fridell et al., 2018). According to the methodology of the Clean Shipping Index (2018), end-of-life handling of the vessels needs to be reported, but is not a part of the Index score. If EOL practices became part of the Index it could require cargo owners to consider their role more carefully, as they are then directly impacted. The CSI has proven to have had a rather significant impact when it comes to choosing sustainable transports, an interest that is rising. Mats Samuelsson, Global Logistics Transport Manager for H&M, said in an interview that since a large portion of their climate impact is from suppliers and that cooperation with transport carriers is crucial. With the help of the Clean Shipping Index it allows them as cargo owners to influence ship-owners to become more environmentally friendly ('Clean Shipping Index – så miljörankas rederierna', 2014).

With companies setting goals for their future, for example zero waste or zero fossil fuels, there needs to be a complete value chain analysis. With this, shipping will be a consideration and therefore cargo owners will extend their responsibility. The rise in emissions is the largest issue of focus for many cargo owners when it comes to developing environmental efforts. If it is possible to influence shipping companies to alter their practices during transport, it should be feasible to do so for recycling. (Poulsen, Ponte, & Lister, 2016). The issue of incentives is where the discussion becomes difficult.

As society is become more aware of the environmental impact of the goods, they are holding the industry responsible for that impact and therefore making the cargo owners put pressure on the ship owners and their environmental performance. However, it is rare that this includes efforts of recycling (Poulsen et al., 2016). For example, cargo owners will ensure limited emissions from their transport services, in order to improve their environmental footprint. The drive to reduce their environmental footprint is motivated by a desire to improve their image in the consumers' eyes. Another example of this can be seen in the type of vessel that they use. There are three main types, 'dry bulk carriers', 'tankers', and 'container ships'. The first two transport lower value goods and the price tends to be negotiated without environmental considerations. The goods being transported by tankers or dry bulk vessels has lower cost per weight for the cargo owners, for example a dry bulk vessel will ship coal that is intended for further processing and production, meaning the goods are not final products when they are transported (Poulsen et al., 2016). Consumers will not see the cargo owners as the ones who produce their products, and therefore not cause any reputational risk for the cargo owners. While on the other hand, for container ships that transport consumer goods of a higher value, which are finished products that are time sensitive and with higher inventory value, the consumer will see the cargo owner as the responsible party (Poulsen et al., 2016). As the first two transports lower value good that is not associated with the final brand, the price will be negotiated without environmental

consideration. Only when consumers see the cargo owner as the responsible party is environmental impact incorporated and, as stated previously, this still does often not include recycling.

In this example it becomes clear that it is less about cargo owners using their influence as a stakeholder to help improve the environmental standards of the shipping industry, but rather to avoid their own reputational risk. Were cargo owners to look at the whole industry, recycling would be considered as a key area of development, no matter the vessel being used for transport (Nauclér, 2018). The lack of market value for certain cargo owners is a 'deal breaker' when it comes to using their influence and profits to improve another industry. This is a large issue considering that tanker vessels are the largest portion of scrapped ships (Kayakiran, 2018).

The exclusions of recycling efforts from initiatives already in place, such as the Clean Shipping Index, as well as from the lack of reputation risk for companies, has caused a limited incentive for cargo owners to partake in efforts to improve the SSRI. Nonetheless, the fact that there has been success in the past shows that it is possible for cooperation and initiatives to aim to improve the recycling practices in South Asia.

However, at this stage it seems unlikely that cargo owners, due to their indirect connection to recycling of ships, will use their bottom-line to work towards a greener industry, unless it directly affects them. In an interview with Erik Nauclér, who is the former head of transportation of H&M and was responsible for shipping needs at the company, he stated that it was time for cargo owners to stop focusing on the short term, and look ahead. Even though the shipping industry is a volatile one, it is important to think about big picture. Everyone knows about the impact of using substandard methods in ship recycling, consumer companies included, and the small difference it could make for paying the ship-owners more and ensure a clause where it says money will be put aside for recycling is not an impossible aim (Nauclér, 2018).

Nevertheless, other cargo owners argue differently. A manager at a company stated that he believed it to be naïve to hold cargo owners responsible since they would have no way to ensure that their investment or price cut would go to the intended outcome. Some companies are simply too far away from the value chain to have an impact. A production manager at a textiles company, furthered the argument saying that if their company were to pay more it would at some stage come out of their bottom-line, impeding their profits and would lead to them needing to charge more for their goods and hurting their competitive advantage. One company helping a shipping company will not benefit them unless an agreement was made as a sustainability strategy and publicly stated. These interviewees wished to remain anonymous due to sensitive information.

Becoming more vocal about their potential extended producer responsibility and creating a dialogue with clients and ship-owners would allow for a more equal distribution of cost and risk (Nauclér, 2018). Now that only one stakeholder was to stand for the costs it is unlikely that a transition towards improved standards will be achieved. Currently, ship recyclers are responsible for standard settings, facility upgrades, and reporting, however, they are not equipped with the proper infrastructure to handle these objectives (Rousmaniere & Raj, 2007).

For cargo owners to be able to have an impact on the ship recycling industry the entire value chain, or a significant amount of consumer companies within an industry would have to

choose to make the commitment together. Otherwise, the financial loss will not be worth the potential impact on SSRI. However, as the first stakeholder to start pressing down prices they do have a role to play and should arguably reconsider their impact (Nauclér, 2018). By choosing a company with the lowest offer, causing companies to force down their rates in order to remain in the bid, shipping companies are usually left with little profit to spare on ship recycling.

Companies choose to take responsibility for certain issues based on the consumer interest, because of the potential reputation risk if no action is taken (Poulsen et al., 2016). As mentioned society and media are starting to become more aware of the standards within the ship recycling industry in South Asia, and the cruel, polluting practices being used. If this knowledge continues to spread the cargo owners might reassess the cost of not working together with the leaders in the shipping industry. Cargo owners are likely to react to the wants to they customers; however, they are not likely to act where there is no incentive for them, especially if it were to require additional costs (Nauclér, 2018).

It is unreasonable, in today's economic system, to believe a company of any kind will risk their own profits to aid another. Cargo owners have the ability to offer better prices to ship-owners when it comes to the transportation of goods, in order to encourage better recycling practices when the vessel reaches EOL. However, the cargo owners have no guarantee that the ship-owners they work with will be the ones to dispose of the vessels. Furthermore, few cargo owners only work with one shipping company, and in many cases do not work directly with a shipping company.

5.3 Ship-owners

The shipping industry has managed to remain outside of the society's periphery for a long time, going about their business with limited to no consequences (George, 2014). However, in today's world information is spreading faster than ever and environmental degradation and human rights issues are rarely kept hidden for long. Companies and industries are being held accountable for not only their firms, but also their supply chains both upstream and downstream (Poulsen, Hermann, & Smink, 2018). Shipping companies across the world have begun to see sustainability as a necessary part of their work, and ensuring better environmental management of their practices (Cheng, Lai, Venus Lun, & Wong, 2013). This effort has largely been focused on operations to date and less so EOL performances, however this is starting to change.

"When a ship-owner scraps a ship, (1) it provides cash flow (2) prevents the ship from being overtaken by competitor and continue trading in the market, and (3) 'if the scarping is carried out properly, it provides the sustainability requirements necessary for recycling vital resources'" (Schøyen et al., 2017). Ship-owners are aware of the benefits related to ship recycling, however, the method used is less of a concern, mainly because of the financial gain of using the beaching method.

Ship-owners are the ones who buy, sell and lease ships and are also the ones who eventually send the vessel for disposal (Schøyen et al., 2017); therefore, it can be said that this stakeholder holds the largest role when it comes to improving the shipbreaking and ship recycling industry. As stated, it is common that ship-owners use a shipbroker to sell the ship to another owner, thereby removing the responsibility from the original owner, who tends to be held to a higher standard of practice, usually due to global recognition or status. A global company like Maersk would be unable to send ships for disposal in South Asia without media coverage and a scandal outbreak. When talking to Nauclér, he brought up the

hypocrisy of this practice. The company Atlantic Container Line (ACL) went through an enormous scandal due to the fact that they sent a few of their ships to be beached, causing a real uproar and downfall for the firm. However, other companies do exactly the same thing by only selling it to a third party buyer and abandoning their responsibility, meanwhile knowing where the ships will be recycled otherwise they would never be able to get the high price (Nauclér, 2018).

This section is divided into three separate parts, each relating to how the ship-owners are able to influence the SSRI, and in what ways they might be impacted in doing so. The first part discusses the level of responsibility ship-owners have and what this over all role is. In the second, the use of financial incentives is evaluated, as financial gain is one of the main reasons behind ship-owners choosing substandard methods when recycling their vessels. The third point explores what impact political and societal trends and pressures have on the ship-owners. Concluding this section will be the case study of Maersk, to explore how a real company has navigated through these issues and how the continue to work towards initiating real change.

5.3.1 Responsibility of Ship-owners

Ship-ownership is a complicated issue, much like the intricate web of stakeholders in the shipping industry, this too results in loopholes being abused to avoid responsibility of a ship's EOL. Pinpointing responsibility for ship-owners can be difficult:

> "…The registered owner, defined as the legal owner of the vessel as indicated on the ship's registration documents; the operator, defined as the company responsible for the commercial decisions concerning the employment of a ship; the ship manager, who is designated by the ship owner or charterer as responsible for the day-to-day running of the ship; and the technical manager, who is specifically responsible for technical operations and acts as superintendent of the ship" (Schøyen et al., 2017, p. 500)

The multitude of managers and parties can complicate the process of identifying who makes the decision on EOL disposal, and is a large issue when it comes to when the vessel officially gets classified as waste, one of the main obstacles to implementation of the Basel Convention (Bhattacharjee, 2009). Nonetheless, for this thesis ship-owners will be referred to as the actor held responsible.

Ship-owners need to show that they are willing to step up and take responsibility for their vessels. Without the involvement of this stakeholder there will not be enough momentum to ensure regulatory enforcement. Understandably private stakeholders tend to be against legislation that might impede their business. However, for the ship recycling industry extremes are needed and enforcement has proven to be a useful tool. Specifically when it comes to standardization and implementation of liability controls, both in general, but also in the shipping industry, for example, when dealing with port fees or ship operation strategies. (Alcaidea et al., 2017).

Leaders in the shipping industry are beginning to step up to the plate, and have demonstrated a willingness to work together with other stakeholders to make a meaningful difference. Katarina Ammitzboell, representing Maersk, states that it's critical that the industry shows leadership. She continues to mention that there have been successful banking initiatives that create a strong incentive for ship-owners to rethink their policies, through portfolio evaluation and fear of divestment if policies are not strengthened (2018). However, when it

comes to making an actual change in the global industry it is the ship-owners that are leading the way, as they are the ones who actively engage with the recycling states.

The EU have shown that they take their responsibility more seriously that other regions, creating their own regulation policy and continuously publicising the importance of sustainability in industries (Alcaidea et al., 2017). The only issue with this is that the EU holds a small share of the global fleet, and if a proper change were to be implemented including Asia and the US, it is unlikely to happen without the involvement of the large shipping companies (Ammitzboell, 2018). It can be argued that this opinion can be biased, as it comes from a representative of a shipping company. However, there have been noticeable changes to the shipyards working together with Maersk, and some have reached verification status, but still the beaching method is being used (Mulinaris, 2018).

In 1999 Japanese investors felt it was time to take action against the beaching method in Alang, and they built four dry docks just outside the region for all ship-owners to use. They were easy to access and simple to use, however, not a single ship owner chose to utilise the improved infrastructure. The small price difference in labour costs and environmental protection costs outweighed the benefits, even though the steel prices remained the same. As a consequence, the dry docks have limited their activity to ship repair. (Mulinaris, 2018). This highlights the importance that ship-owners have, and that without their involvement nothing will truly change. At the end of the day it is their vessel being recycled and it is their choice where it is recycled. The issue that ship-owners do not want to get involved needs to be adjusted through pressures from other stakeholders, such as cargo owners and investors. Once these stakeholders make the need for improved recycling methods clear, it is up to the ship-owners to show what they can do.

Ship-owners are able to choose any method they desire when it comes to recycling their vessels, and considering the unified agreement that beaching ships leads to appalling consequences, it become clear that money is able to win over all attempts to move away from this substandard method.

5.3.2 Financial incentives for Ship-owners

Even though ship recycling represents a small percentage of the profit made for shipping companies, due to the high level of competition, with around 48,000 merchant ships being divided between 10,000 ship-owners (Schøyen et al., 2017), the shipping industry is volatile and unpredictable (Aaben, 2018; Devault et al., 2017; Nauclér, 2018). Many shipping companies are faced with downturns and losses at the end of the fiscal year, especially today with the increase in trade wars. Maersk, even as one of the largest global shipping companies, has taken a considerable hit from the trade war between the US and China (gCaptain).

Companies are relying on every profit input in order to keep a strong and lucrative business. Therefore, when given the option to sell their vessels for around €3 million to recycling facilities compared to recycling at a EU verified facility and get nothing or even have to pay, the choice becomes rather clear. Even with the knowledge of the conditions from the beaching method profits are winning over environmental and labour concerns (Buyck & Solletty, 2017). Companies are swayed by the price, therefore allowing recycling states such as India, Bangladesh and Pakistan to outbid countries like China and Turkey, where more sustainable practices are used (Du et al., 2017).

In an economy where money is the major incentive for choices it stands to reason that financial mechanisms should be used to alter the industry. Market-based instruments (MBIs)

are where economic variables within the market, such as price differentiation, is used to create an incentive for polluters to reduce their environmental footprint and limit negative environmental externalities ('Market-based environmental policy instruments', 2018). These instruments have become part of a discussion within the shipping industry in hope to more effectively reduce the emissions and other environmental degradation (Shi, 2016).

MBIs and other financial mechanisms have been considered within the SSRI, particularly by EU's ship recycling regulation in which they want to create a ship-recycling fund. The ship-recycling fund aim is to collect funds from ships calling at EU ports, to disburse these funds for improvement in ship recycling, and build up resources for R&D (van Gelder, Hogenhuis-Kouwenhoven, & Kloostra, 2013). If shipping companies would uphold their responsibilities when it comes to the disposal of their ships, they would be reimbursed for the cost of choosing responsible shipping facilities. Shipping organisations have been prone to support MBIs, and ship-owners have argued that if done properly and without unjust differentiation between ships, MBIs can be successful (van Gelder et al., 2013). However, recycling states in South Asia worry that heavy financial incentives will cause considerable negative impact on their business, as their main advantage is price competitiveness (Shi, 2016). Financial mechanisms might be the answer to where regulation has failed.

Money might be a crucial aspect in incentivising change; however, it is not the only one. Society and public awareness is a powerful tool when it comes to companies taking responsibility. Although it is more common for companies that are selling the goods to be held responsible rather than those who ship them, shipping is no longer out of reach to the societal pressures. Political pressure also generates enforcement of responsibility for companies, and can be effective when it comes to sustainability.

5.3.3 Societal and Political Impact on Ship-owners

"Ship recycling is a global industry. International organisations and non-government organisations have proposed a series of requirements for safe and environmentally sound recycling of ships around the world" (Du et al., 2017, p. 432). For a long time, shipping companies have been able to avoid a considerable amount of regulation; however, this is coming to an end and that includes the practices in ship recycling (Aaben, 2018). Political and societal pressures are ensuring an improvement of EHS standards throughout the supply chain of goods and services consumed by the public. These pressures lead to new innovations and initiatives by companies to work towards more sustainable practices, and avoiding risk (Poulsen et al., 2016). These pressures have reached other industries considerable faster than the shipping industry, due to the disconnect shipping has to the public and the peripheral aspects of the industry.

Society has become a much stronger stakeholder in recent years due to the ability to share and spread information at incredible speed (Rapp, Beitelspacher, Grewal, & Hughes, 2013). However, the main issue is that shipping is a business-to-business industry and society tends to focus more on business-to-consumer industries, therefore do not concern themselves as much with the shipping industry. This does not mean they cannot be a strong influencer, especially when a scandal happens (Aaben, 2018).

Ship recycling has become an issue where the law requires one thing and the eye of the public requires another, according to the Sustainability Managers at Stena AB Emma Aaben. Due to the lack of legal enforcement, NGOs and public opinion has taken up the challenge to compel ship-owners to take responsibility. For example, the Shipbreaking Platform took it upon themselves to release data of what companies were using the beaching method when

recycling their ships, leading public access to data that was previous unattainable, this is done each year. Furthermore, at Stena the public pressures and media awareness has lead them to start creating a specific policy for ship recycling, in order to do their part.

Society will not at all times be enough to initiate change, especially with changes in interest and lack of commitment for certain issues (Rapp et al., 2013). Aaben at Stena AB explained that a large part of what they do is to support unified, global, and tighter regulation. As a global industry, regional laws and regulations can cause discrepancies the market and influence the competitiveness (Aaben, 2018). Many companies in the shipping industry are regional and therefore it can be difficult to attain a level of influence independently, without it harming their position in the market. If a company sets higher standards that leads to higher prices it will likely lead to a loss of market share (Zhou, 2015).

Figure 5-1 Bangladesh 2017

Source: © Studio Fasching – Courtesy of NGO Shipbreaking Platform

One of the main issues is that carbon dioxide and emissions levels are the main focus when it comes to improving the environmental impact of the shipping industry (Poulsen et al., 2016), and even though ship recycling is gaining attention there is not enough money or resources for ship-owners and companies to focus on both aspects (Aaben, 2018). In today's political agenda CO_2 is taking priority, especially in the EU (Kujanpää & Teir, 2017). Firms needed to respond to public pressures, ship-owners are no different. In the decision making process on what to focus on the public and political areas of interest are deemed most important at the time, in this case this is emissions rather than ship recycling. Additional to this, even though ship recycling is discussed more frequently, it is mainly done within the industry, the public remains largely uninvolved when it comes to ship recycling in South Asia (Aaben, 2018; Mulinaris, 2018).

Ship-owners are able to initiate voluntary industry led efforts, as well as multi-stakeholder schemes, and these efforts are likely to make a difference (Ammitzboell, 2018; Poulsen et al.,

2016). However, they are weakened if there is a lack of effective enforcement and infrastructure to deal with non-compliance issues. The IMO has, at times, been critiqued for lagging behind when it comes of effectively working with environmental issues in the shipping industry, and not up to the task to handle initiatives created by the industry (Wuisan et al., 2012). On the other hand, this lack of leadership encourages non-state actors further to pick up the slack and to improve the environmental performance of shipping companies.

One of the largest successes from regulatory demands has been the Inventory of Hazardous Materials. As this inventory is not yet part any legal commitment, companies have started to implement it on their own, for example Stena and Hapag-Lloyd have committed to having an IHM on all their ships. Part of improving the recycling process is dealing with hazardous materials in a more controlled matter, and being able to dispose of them safely. This is not possible if there is no information available on what materials are being dealt with. For a long time companies have worked in improving design of ships, as well as making disassembly as simple as possible (Nauclér, 2018).

Case Study: A.P. Møller-Maersk

With certain investors moving away from the South Asia region due to the lack of standards and responsible practices, companies need to begin to either follow the investors and recycling outside South Asia, or prove that ship recycling in the region can be done properly. Maersk is one company choosing the latter alternative. Rather than abandon the industry, they work on helping upgrading HKC compliant yards to their own Responsible Ship Recycling Standard (Ammitzboell, 2018).

A.P Møller-Maersk, Maersk for short, is a Danish company working in transport, logistics and as the world's largest container shipping company they hold a strong position in the market and have proven to be a reliable and stable firm. The company moves around 12 million containers a year, operating in 130 countries ('About Maersk', n.d.). The five core values of the company, constant care, humbleness, uprightness, their employees and their name, all express their wish to run a forward thinking, honest and open-minded business ('A.P. Moller - Maersk Core Values', n.d.)

Maersk have always focused on environmental factors, ship recycling being a more recent area of emphasis. Maersk have built Triple-E vessels, which stands for Economy of Scale, Energy Efficiency and Environmentally Improved. These ship focuses on emissions and efficiency in various ways, and have proven to be incredible vessels (Dasgupta, 2016). The ships hold incredible capacity, allowing for a larger movement of goods than any other ships, creating a more efficient shipment. The vessel also has managed to decrease the emissions and has a heat recovery system, cutting engine power by 10%, which might not seem significant but it is equal to the electrical consumption of over 5,000 European households (Dasgupta, 2016). These efforts have shown that Maersk takes some environmental aspects seriously, and aims to lead the shipping industry towards improved practices.

Other aspects and life cycle phases, such as design or operation, within the shipping industry have undergone considerable improvements when it comes to environmental performance, as shown above. However, the disposal phase is lagging behind. Shipping companies and owners are able to make choices when it comes building of ships that improves recycling practices, for example using re-usable insulation or removing replaceable hazardous materials (Jain et al., 2017). These efforts are helpful, but do not come close to creating a significant

change in the SSRI. In the end it comes down to where the ships are recycled and what method is used.

As a large company Maersk is lucrative business for shipyards and can create a strong incentive for altering the practices. Maersk has in the past years spent a considerable amount of effort in improving certain shipyards in Alang, India ensuring they reach verification status according to the HKC. "Maersk is introducing contractual steps to ensure that its sales contracts include a strong financial incentive for ship recycling to be carried out responsibly" ('Maersk tightens its ship recycling procedures', 2018). Maersk created an incentive for yards in Alang to promote better standards by agreeing that the company will recycle at yards with HKC compliance. For instance, when ensuring the Responsible Ship Recycling Standard (RSRS) set out by Maersk, the company takes various steps in ensuring that a chosen ship recycling facility (SRF) recycles the ship according to the company's needs. Figure 5-2 shows the steps taken during a disposal of a ship, and how Maersk is involved at each step. It becomes clear that the main role of Maersk is supervision; therefore their onsite involvement is crucial for RSRS. The technicalities of the steps are not crucial for this thesis, but can be found at the original source. In an interview with Captain Prashant Widge, the Head of Responsible Ship Recycling at Maersk, he makes is clear that the workers understand the shipyards are being improved and so is their work, and they have been met with very little reluctance. The incentive for recyclers to follow these steps and make these improvements, is partly in order to keep the business of Maersk, but also because of the higher wages, better living conditions and contract rights (Widge, 2018). Working together with the workforce Maersk is able to ensure adequate compliance that the company can accept.

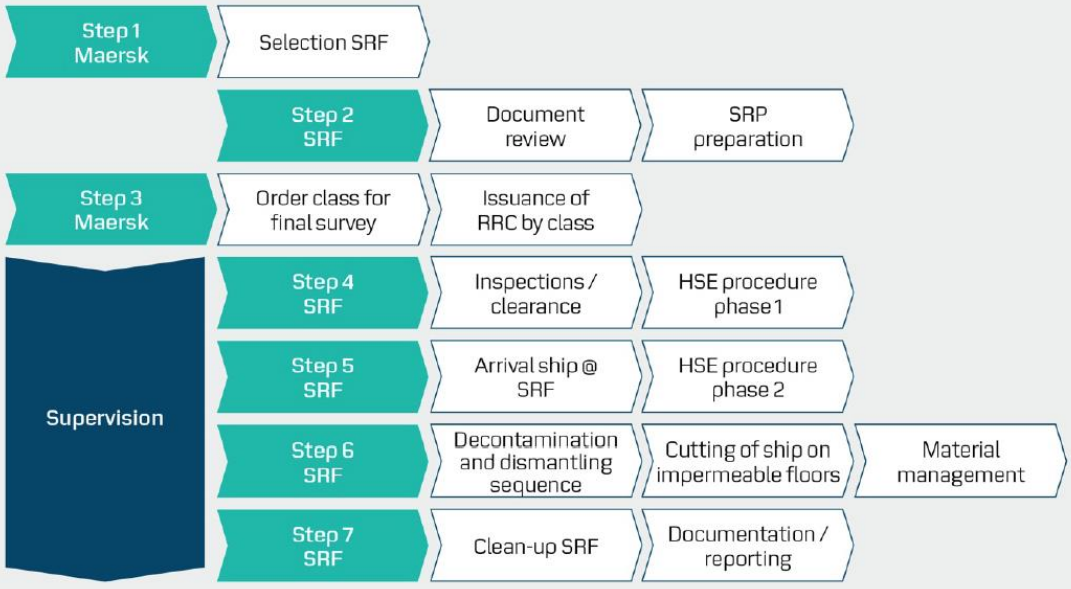

Figure 5-2: Process Flow of Main Steps in the Recycling Process

Source: A.P Møller-Maersk Responsible Ship Recycling Standard Report (2016)

For a long time Maersk conserved the company's recycling needs to shipyards in China and Turkey; however, in 2016 began to move a majority of their vessels to Alang, India (Mulinaris, 2018). It has been argued, by the Shipbreaking Platform, that this move was based on financial reasons, rather than on the willingness to improve the shipbreaking yards in the region. That Maersk used their CSR approach as a PR tactic to distract from the fact that the company is returning to using the beaching method (Mulinaris, 2018). For a long time Maersk was used by the NGO as a good example to show that global shipping companies are taking responsibility by not supporting substandard methods, which is no longer the case. The Shipbreaking Platform did agree that the shipyards Maersk work with hold higher recycling standards, when it comes to controlling environmental impact, such as leakages, and worker rights, than others in the region. Nonetheless they argue that the work Maersk has initiated should not be celebrated, due to the fact that the beaching method should never be tolerated and can never be seen as a sustainable method.

The beaching method is arguably impossible to make sustainable due to the lack of control from tidal movements, however, if the majority uses beaching would it not be worth developing these shipyards? Going to the extreme and saying that all vessels must be recycled according to EU standards is unlikely, especially considering the instability of the industry today and the lack of regulation to facilitate it. The shipyards where Maersk is recycling the ships has proven to have higher levels of training enforced, at the shipyards 70% of the work force receive intensive safety training, the workers are given contracts and overtime pay, protective gear is provided and environmental recycling plants are considerably improved (Mikkelsen, 2016). Voluntary commitments by companies are likely to hold some underlying financial incentive, and in this case it is likely Maersk wishes to continue using the beaching method because it is cheaper for them. Nonetheless, the company is stepping up and no longer hiding behind cash buyers, who have no incentive to choose greener yards, and beginning to take responsibility for their own ships.

Maersk, unlike many companies, believe they hold a level of responsibility after the sale of a vessel. Maersk will either choose to recycle the ship independently, or will sell the vessel to a new buyer. Maersk has chosen to no longer work with shipbrokers, in order to strengthen their ability to choose recycling practices. If a ship is sold to be recycled within a year Maersk will ensure that the new buyer recycles the ship according to Maersk's standards, through contract liability clauses and oversight, after 24 months Maersk can no longer extend their responsibility ('Maersk tightens its ship recycling procedures', 2018). This responsibility in selling a vessel shows that ship-owners are able to influence the value chain and are able to control recycling methods, within a reasonable time frame.

By using the commercial power of a global company Maersk proved, with two ships as examples, that it was indeed possible to uphold responsible standards in Alang. Through audits and on site supervision Maersk led the way in proving there are possibilities in South Asia, and the region does not need to be abandoned, but rather supported ('Leading Change in Ship Recycling Industry', n.d.). This work remains recent and further studies might prove that the work being done by Maersk is not as significant as advertised by the firm, however, in the absence of regulation, market-based solutions seem to be the way forward. Annette Stube, Head of Group Sustainability, stated "instead of waiting on the sideline we have taken action and the results we have achieved in six months are far more comprehensive and far-reaching than those achieved during the seven years of waiting for a global agreement" (Mikkelsen, 2016).

The Hong Kong Convention is as of yet not ratified; however, the standards set allow companies, such as Maersk, to make voluntary commitments to the convention. Companies can use the Convention to show verification of shipyards, and that it is possible to recycle according to unified standards (Bhattacharjee, 2009). Maersk has shown support for the Convention from the beginning, and has openly expressed its support for the Convention and now investing in HKC compliance of shipyards in Alang. Maersk believes that these global standards should be enforced, and have even invested in helping the ratification ('Maersk tightens its ship recycling procedures', 2018). However, the company has not supported all regulatory suggestions.

The EU ship recycling regulation, for example, has not received favourable critique. The proposal for ship recycling licences has been rejected by ship-owners, Maersk included, and the exclusion of South Asian shipyards from the EU facility list spurred considerable disagreements (Mulinaris, 2018; 'Shipowners Reject Proposals for Ships to Pay for EU Ship Recycling Licences', 2016).

When it comes to the ship recycling licenses the European Community Shipowners' Associations (ECSA) and the International Chamber of Shipping (ICS) firmly reject the European Commission's suggestion to intervene in the business of ships not flying a EU flag. Not only will it be a substantial administrative burden to oversee, but the licenses provided will likely be paid for by one ship owner at the start of the vessels life, but given to another owner when the vessel is ready for disposal ('Shipowners Reject Proposals for Ships to Pay for EU Ship Recycling Licences', 2016). ICS Secretary General, Peter Hinchliffe argued that this scheme could be taken as an "anti-competitive interference" risking other nations to respond with similar measures.

The exclusion of South Asian shipyards from the EU list received similar disgruntlement. Maersk even threatened to abandoned the Danish flag if the Indian yards remained off the list, even after HKC compliance (Mulinaris, 2018). ECSA and ICS agree with Maersk, and believe that the EU should focus its efforts on ratifying the HKC and showing its support to the IMO. By not allowing the South Asia shipyards a fair chance to compete with EU standard facilities, it will hinder efforts to improve the regions standards and rather risk less transparency in disposal of vessels ('Shipowners Reject Proposals for Ships to Pay for EU Ship Recycling Licences', 2016). If companies were legally encouraged to promote South Asia's sustainability practices, by including certain shipyards on the list, it would bring together regulation and financial motivation. Ship-owners are unlikely to pay the prices EU facilities would demand, and therefore the exclusion of shipyards in India, Bangladesh and Pakistan will lead to limited changes. The HKC might lack stringency in certain areas, but it does have a level of reality and practicality that SRR does not.

The choice to promote the ship recycling done in India, with the work of improving their shipyards, has gotten critique from other stakeholders due to the fact that they use the beaching method. The main argument is that Maersk is doing it for financial reason, however according to John Kornerup Bang, the Head of Sustainability Strategy & Shared Value at Maersk, "It would have been less costly to continue to recycle a few vessels in China every year and sell off other ships before end of life… We believe that being on the ground could help solve this industry-wide problem."

Maersk has continuously proven to be a leader within sustainability when it comes to their ships and their investments. When compared to other similar SRFs in the region it is clear that the Maersk supervised facilities hold higher EHS standards. Whether or not they

compare to the EU listed facilities is not of importance, as the company believes in working to improve the South Asia region, rather than abandoning it.

5.4 The Ship Recycling Transparency Initiative

One of the main issues with ship recycling is the ability to avoid responsibility, evade regulatory practices, such as the Basel Convention, and abuse loopholes present in the industry. The hope is to tackle this through increasing transparency ('New transparency initiative to accelerate responsible ship recycling', 2018). As of now the regulatory attempts have failed to encourage transparency when it comes to the SSRI, and stakeholders are able to escape their responsibilities, especially when a simple sale can be made to a third buyer (Alcaidea et al., 2017). There is a need for a level of transparency within any industry, in order to deal with problem and hold parties responsible for the harm they are doing. Therefore, the Ship Recycling Transparency Initiative (SRTI) was formed, in hope to raise awareness of the SSRI and encourage a level of cooperation between stakeholders (MI News, 2018). The Initiative reveals data about the practices used by various companies when it comes to recycling a ship, including the method used, the region of recycling, the potential incidents, both concerning human rights and the environment ('New transparency initiative to accelerate responsible ship recycling', 2018). Industry leaders formed the Ship Recycling Transparency Initiative in 2017, including Maersk and Hapag-Lloyd, and the non-profits Forum for the Future and the Sustainable Shipping Initiative. Other stakeholders, such as cargo owners and, especially, financial institutions were also involved in the initiative ('New transparency initiative to accelerate responsible ship recycling', 2018). It was in order to "to create an overview of practices and options through disclosure, as well as ensuring that the ship recycling debate takes place on an informed basis" ('Breaking the stalemate', n.d.).

Considering the complexities of the global value chain in the ship recycling industry it is difficult for one stakeholder to stand on their own, a joint effort is needed. The aim with the transparency initiative is to "…facilitating voluntary disclosure of recycling practices…" thereby the information provided by ship-owners can be used by other stakeholders, such as investors or cargo owners, in order to make more informed decisions ('New transparency initiative to accelerate responsible ship recycling', 2018). An improvement in transparency throughout the value chain in an industry, has proven to be a successful beginning to more sustainable efforts (Poulsen, Ponte, et al., 2018).

These voluntary commitments show the strength of private sector stakeholders, and their ability to push forward even when regulation is absent. When it comes to the IMO, who has dealt with considerable criticisms in the past, it has proven to be difficult to reach an agreement within the industry. Furthermore, implementation risks being unattainable in reality (Poulsen et al., 2016). It is impressive that stakeholders have chosen to come together and reach an agreement that cooperation is needed in order to achieve a shift within the SSRI. However, another aspect that needs to be considered is that stakeholders much prefer voluntary commitments to regulation, for obvious reasons. Using these types of initiatives and schemes show that the industry is working to making a difference, but without regulation it is unlikely that enough will change in the SSRI (Aaben, 2018).

A level of standardization is needed when it comes to the schemes aimed to improve sustainability. A too large variety of initiatives, verification measures, collection of data, and administrations causes inconsistency and continues to allow stakeholders to evade responsibilities (Poulsen et al., 2016). If stakeholders simply do what works for them and

their business it will never lead to enforcement of real change, companies will simply opt out of the initiatives when they are no longer profitable (Alcaidea et al., 2017).

The Ship Recycling Transparency is a novel commitment, and ship-owners are beginning to realize the need for full market transparency, which is common for most industries today. It is assuring to see some stakeholders taking responsibility, as others use the lack of proper enforcement of international standards to allow of less stringent standards in the SSRI in South Asia. With improved transparency the ones responsible for bad practices will be brought forward, and the good practices that have gone unnoticed will be able to be rewarded ('New transparency initiative to accelerate responsible ship recycling', 2018). As Stephanie Draper, Chief Change Officer of Forum for the Future said, "If ship-owners share their practices then it raises awareness of what's happening, puts pressure on under-performers and allows customers and owners to reward good performance. Ultimately this will lead to better social and environmental outcomes which are so critical for ship recycling" ('New transparency initiative to accelerate responsible ship recycling', 2018).

Through interviews and literature review it becomes clear that one of the issues with moving towards sustainability improvements is that the stakeholder doing it alone risk loosing business from increased costs. Therefore, multi-stakeholder cooperation is crucial in trying to shift an industry. The Ship Recycling Transparency Initiative is an example where this cooperation shines. The ship owner might be one of the more significant stakeholders when it comes to ship recycling. Nonetheless, this work would likely have failed without the cooperation.

Many aspects of the shipbreaking and ship recycling industry needs to change, especially the practices used in South Asia. However, in order to deal with a problem it needs to be clarified and understood. Transparency will allow for stakeholders to understand the main issues that need to be dealt with and make improved decisions based of this data. The public and politics will gain a wider awareness of the situation and can hold the stakeholders responsible and create pressures for them to act better.

5.5 Verification of Ship Recycling Yards

Stakeholders across the value chain are starting to realize the need for altering the standards in South Asian shipyards and the ship recycling practices. The EU has created a list of facilities that they believe uphold the appropriate methods when it comes to handling hazardous materials, safety and rights for workers, and efficient and sustainable practices when breaking down a ship. Any South Asian shipyard working with the beaching method has been excluded, even though many have gain compliance according to the HKC. There are arguments on both sides when it comes to whether or not these yards should indeed be verified.

Maersk might be the largest container shipping company, but it is not without competition. Hapag-Lloyd is a German container company and a giant on at that, who have decided to only use the EU listed facilities when recycling their vessels (Riev, 2017). Hapag-Lloyd prides itself in their sustainability efforts, and believes that the beaching method undermines responsible ship recycling. Other companies in Europe, including the Swedish company Wallenius, support the SRR and have themselves enforced ship recycling policies that work only with verified shipyards (Riev, 2017).

Shipyards verified by the European Commission do hold higher standards, both for workers and the environment. However, the issue remains that these facilities will not be able to

recycle the amount of vessels disposed annually, especially considering the upcoming surge of vessels becoming obsolete (Devault et al., 2017; Jain & Pruyn, 2017). Beaching might not ever be considered a green practice, but ship recycling is, and with South Asia being responsible for around 80% of the vessels being recycled it is unrealistic to think it will be abandoned (Schuler, 2018). There is a blistering need to increase the amount of verified yards, and currently the main capacity and potential is in India (Gopalakrishnan, 2018).

India began to lose part of their market share because of China's and Turkey's more advanced facilities and green efforts. Due to this certain shipyards re-evaluated their business and saw the potential in more sustainable practices (Du et al., 2017). In a market where sustainability consideration is becoming impossible to avoid, shipyards in India worked towards regaining their market shares. China and Turkey are home to some of the first countries to adhere to higher standard practices of ship recycling, while still offering a reasonable price (Du et al., 2017). It became impossible to compete with India, Bangladesh and Pakistan when it came to price alone, and therefore other aspects, such as environmental efforts, became a new potential selling point.

Certain Chinese shipyards made considerable effort to improve the EHS standards and could be used as a lesson or model for shipyards in South Asia (Du et al., 2017). The main change Chinese shipyards underwent was to convert their method to use quays when dismantling the ships, this method always for more control and better handling of the materials. Furthermore, the shipyards broke apart the ship in a reverse manner, meaning that the way the vessel was disassembled in the same but reversed way it was assembled (Du et al., 2017). This is significant because ship builders have begun to take great care in assembling a ship in order for a simpler disassembly, with detailed designs and material data. During beaching, the ships are broken down into chunks and stripped, causing lower quality of dismantlement and more unpredictable outcomes (Du et al., 2017). Naturally, the ways chosen due certain Chinese shipyards leads to higher costs and therefore, they must offer a lower price to ship-owners.

Chinese shipyards have become a favourable choice for European ship recycling needs, and subsequent to the SRR this is likely to increase (Du et al., 2017). As China works vigorously towards improving their environmental standards and developing a stronger sustainable regulatory framework, the SSRI in the country will face transformations (Zhao & Chang, 2014). The backing from the government creates incentives for the shipyards to improve their practices, however, at the time being ship-recycling policies in China are not stringent enough and are not nationally enforced.

Without a strong global and unified regulatory framework it will be difficult to assess what shipyards actually uphold adequate EHS standards. With a wide variety of schemes and verification methods within the SSRI it will remain difficult. As mentioned if India were to continue pursuing verification of the shipyards in Alang, and where able to reach HKC compliance it would have a huge impact on the ratification of the Convention (MAREX, 2017). The Convention has undergone considerable scrutiny, however, it still remains as one of the few universal agreements aiming to improve the SSRI. If the Hong Kong Convention were to be ratified it would be a start for setting standards in the ship recycling industry, and would lead to verification process to be standardised as well.

The Shipbreaking Platform claims that even the shipyards that are certified in South Asia do not guarantee environmental protection and workers' safety (Mulinaris, 2018). The NGO argues that the certifications of the shipbreaking yards are done by companies, hired by the

yards themselves, on the basis of a mere check-listing approach, without looking at the actual practice of the yards (Mulinaris, 2018). Ship-owners continue to sell their ships to the beaching yards despite the well documented deplorable conditions (gCaptain, 2018a), and verification of these yards could simply be a way to be able to continue doing so. Nonetheless, it is simple to criticize something, but then an alternative must be offered. The EU's SRR might be the answer, however, practicalities of the framework cannot be over looked.

6 Discussion

This section will serve as a summary of the main findings from the above-mentioned arguments. There are six main findings that will be mentioned, not in order of importance. The findings will be referred to the research question of this thesis, to see if an answer has been found, and if so what is the validity of these findings. The section will also include the main limitations of the thesis, to show an honest representation of the results. Two examples of recycling practices in other industries will also be part of this section, to show a comparison and lessons that can be learnt, these examples are from the Aircraft industry and the Automotive industry.

6.1 The Research Question

This section will cover an analysis of the main findings and the ability this thesis has had in answering the research question set in the beginning of the work. The findings will be split into the main part of the question and the sub-question.

When asking the question, which is repeated below in section 6.1.1, certain answers were found to be the most persisting and unremitting through all the data. Three main answers focused on the main question, these being: (1) need for cooperation, (2) need to global regulation, and (3) the abandonment of South Asia and the beaching method is not a plausible or sustainable solution. One main finding can be linked to the sub question about ship-owners, being that ship-owners and shipping companies need to be the leaders of change in the SSRI.

6.1.1 The Main Findings

The research question:

How are private sector stakeholders able to influence the shipbreaking and ship recycling industry in South Asia, especially shipyards in India, Pakistan and Bangladesh, and work to improve the environment, health and safety standards of the industry?

What role does ship-owners play within the ship recycling industry?

When analyzing the literature search and the interviews to evaluate the role of the three main stakeholders, it became clear that the private sector have a crucial role to play in the SSRI. Considering the current regulatory vacuum in the ship recycling industry, the global political focus on sustainable efforts, and the atrocious EHS standards of the SSRI in South Asia being to come to light, there is no about that stakeholders are going to feel the pressure to improve their practices of EOL treatment of vessels.

Stakeholders are able to influence not only their own actions, but also to the actions of stakeholders within their industry, especially if there is a direct connection between them. Which is the case for the three stakeholders mentioned in this thesis. Ship-owners are the largest and critical stakeholder within the shipping industry, and especially in ship recycling. However, this stakeholder works directly with the companies shipping their goods, known as cargo-owners, and the capital investors ensuring monetary stability for the company. In an industry with complicated jurisdictional control and loopholes in standard settings, working together to improve the industry is a must.

The first finding is the fact that there is a need for cooperation when it comes to being able to initiate change in South Asia's ship recycling industry. Stakeholder must come together in order for an effective shift in EHS standards. As was shown in the Ship Recycling Transparency Initiative, when stakeholder come together and work towards a unified goal it is more likely that it will be enforced. When stakeholders, or companies, work alone to try and change the industry it risks them losing their market position due to increased prices and lead to decreased competitive advantage. All stakeholders can push each other and need to come together for it to be effective. Aaben, from Stena AB, worried that bringing companies together is hard, and when it comes to recycling it is not something that is likely to happen soon, but maybe in a few years and when the market will be more ready. Right now there are other focuses, for example the SECA. However, she believe it is possible to bring together ship-owners, for example as what is done in the Maritime anti-corruption network (MACN), which has had a high level of success.

Through research it became clear that one of the main issues is the need for the industry to work together in order to create a large enough shift of the SSRI. However, in interviews the stakeholders spoke of blame and that it was someone else fault and not about coming together. The Ship Recycling Transparency Initiative is one case where stakeholders have chosen to join forces, and hopefully this will be only a first step. The leaders of the industry, such as Maersk being the largest container company globally, are able to initiate change by leading by example. They cannot be held responsible for shifting the standards of an entire industry. Not only is this not financially feasible, but companies have no say in what other companies are doing with this vessels, only regulation would be able to activate that level of influence.

Bringing us to the second point, which is that the change of EHS standards in ship recycling will not be significant enough without regulatory intervention and enforcement. Both the sustainability managers at Maersk and Stena doubted the ability of private sector stakeholders' ability to reach a unified, global standard. Although ship-owners and other stakeholders would be able to initiate change in certain areas, for example Maersk taking responsibility for their own vessels. It is, however, very rare that all shipping companies would have the resources available to do this on their own, due to their size or logistical abilities. Regulation, such as the Hong Kong Convention, would have a massive impact on the ship recycling industry's EHS standards, and ensure that the whole shipping industry is rethinking their recycling practices.

It has become clear that financial incentives and profit margins are the main consideration of a business, but ship-owners are disinclined to pay high investments to improve environmental protection and safety when it comes to EHS standards of recycling a vessel. This is where governmental interference can encourage the green ship recycling market and ensure adequate investment incentives (Du et al., 2017).

Stakeholders hold the ability to influence regulation, showing support or discontent with certain policy decisions. They also hold the ability to act where regulation has been unsuccessful. However, the level of these abilities is limited and will not lead to a global change. Furthermore, financial interest have a tendency to win over almost all other considerations for a company, and considering that ship-owners make millions on the ship that they sell their vessel to a beaching yard it is not likely that all will voluntarily give that up simply to make the industry a fraction better (Schøyen et al., 2017), therefore regulation is needed to ensure commitments.

Aside from the strength of a unified regulatory framework, the research conducted in this thesis shows that the main leaders of change are the ship-owners. It is still important that other stakeholder do their part in holding ship-owners responsible, and creating incentives for developing their ship recycling policies. Ammitzboell, from Maersk, stated that the SRTI is a true multiple stakeholder initiative, and would not have been possible without the cooperation of stakeholders – ship owners, investors, cargo owners and NGOs (2018). Through the literature it was always clear that ship-owners were considered the largest player when it comes to alterations in the shipping industry, and especially so in the ship recycling industry. As the owners of the vessels being disposed of, it is clear that they are able to make the largest change, if they wished to do so. That is not to say that ship-owners are the ones to blame, they must also adhere to the economic system of today and ensure financial growth and profits. Argued by Aaben, from Stena, currently finance wins and is the main reason for choosing beaching while reputational risk does not hold a huge role, that might change as it has for other industries, but it will be a slow process. This is where other stakeholder's cooperation could come in. However, if ship-owners wish to change nothing, it is unlikely other stakeholders will be able to do enough to initiate any change of the ship recycling practices in South Asia.

The Automotive Industry

In this example, although the industry is considerable different from the one of shipping, the regulatory practices on recycling in the automotive industry will be used to show the potential upcoming regulatory implications on ship recycling.

The European Union saw that end-of-life treatment of vehicles were not upholding to the stringent environmental standards of the region. Therefore an End-of-Life Vehicle Directive was enforced where original equipment manufacturers and component manufacturers need to take back and dismantle all motor vehicles for domestic use. The Directive will naturally only be for manufactures operating within the EU, and went into effect as of January 1, 2006. (Crotty & Smith, 2008).

Each components and part is either reused or recycled, making manufacturers increasingly dedicated to ensure easier disassembly, and less unnecessary or harmful material usage. "The ELV Directive has proven to be the catalyst for substantial reform within the vehicle recovery sector, and has clearly brought EOL stakeholders into the vehicle value chain" (Go, Wahab, Rahman, Ramli, & Azhari, 2011, p. 1539).

The regulatory success of this Directive shows that recycling can become an intricate and valuable part of the value chain. Currently, the goal is for 95% of vehicles to be reused or recycled (Crotty & Smith, 2008), and with similar achievability in ship recycling there is considerable potential for regulation and stakeholders to work together to improve the SSRI.

South Asia, being the focus of this thesis, is the last main finding. The abandonment of this region would have catastrophic implications on the national economies, and stating that beaching will never be a sustainable option for ship recycling risks the regions' demise. There is no doubt that the current EU list does not hold enough capacity to support the recycling of the annual disposal of vessels. Rather than companies hiding behind loopholes and sending ships to be beached without any traceability, efforts should be made to improve and verify the shipyards in Alang, Chittagong and Gadani.

Considering the instability and lack of control of hazardous materials that the tide's movement causes when using the beaching method, it is understandable that the EU and other organisations have chosen a strong stance against the method. However, it is naïve to believe that only EU sanctioned facilities will be used in the foreseeable future (Alcaidea et al., 2017). This is especially true considering the fragmented EU maritime governance and the continuous decline in EU flag use (van Leeuwen, 2015). If more shipyards are able to gain investment, capital and physical, similar to that given by Maersk to yards in Alang, the region could undergo a serious transformation. India has shown their interest in moving towards a greener and safer industry and various shipyards have begun working towards HKC compliance (gCaptain, 2015).

The recycling states' willingness to learn and comply with higher standards is a fundamental part of making a shift within the industry. The investment being used by the EU to create new facilities and improve old ones, could be redirected and instead used to improve the facilities in South Asia, where almost all of the recycling is being carried out (gCaptain, 2018a). Furthermore, China can be used as an example in making the ship recycling practices greener, as they underwent a similar transformation. "South Asian nations may also benefit from seeking technical cooperation from China as another developing country that already practices nearly HKC-complaint ship recycling" (Yujuico, 2014).

The region of South Asia holds a high level of potential that cannot be overlooked. Not only is there a massive capacity for ship recycling already established in the region, incomparable to any other region in the world, but also South Asia has shown their support in verification of yards, and India has even shown support for the ratification of the Hong Kong Convention. Currently many ship owners are avoiding responsibility of properly disposing of their ships in a safe manner, and using tricks of the trade to avoid legal liability of their vessels being beached (Nauclér, 2018).

The global fleet is increasing and disposal rates with them and there is a need for an increased capacity of verified shipyards, which was clearly stated by Aaben at Stena AB. Considering the potential of South Asia this would be a good place to start. The level of EHS standards will not be as strict as the ones on the EU list, but it will be a considerable improvement from the way things are now. At times making a too large to a shift can cause resistance and in this case verification in South Asia might just the right size of change needed.

The Aircraft Industry

In this example a short description of how private sector stakeholders impacted the recycling of aircrafts will be presented. Although, the industry remains to be regulated it is interesting to see how stakeholders took it upon themselves to act.

The aircraft industry has skyrocketed in the last decades, and it is estimated that around 12,000 aircrafts will need to be recycled in the next two decades. There is currently no legislation around aircraft recycling and it is completely voluntary (Ribeiro & Gomes, 2015).

Aircraft recycling was for a long time non-existent, and the aircraft were disposed of at landfills or what are called aircraft cemeteries. It was not until two of the largest aircraft manufacturers, Airbus and Boeing, took it upon themselves to find better solutions in the 2000s. Boeing set up the Aircraft Fleet Recycling Association (AFRA) along with other

manufactures, aviation companies, and salvage companies, with the aim to initiate industry awareness and lead to an emergence of the first industry of dismantling aircrafts. Around the same time, Airbus started PAMELA, the Process for Advanced Management of End-of-Life Aircrafts. PAMELA was launched in 2005 and the aim of the project was to show, in a real-life and full-scale, that 85% of an aircraft can be recycled, re-used or recovered. The project was successful and showed the economic and environmental benefits of recycling these large investments. (Ribeiro & Gomes, 2015).

The leaders of the industry stepped up and took charge, to show the potential of future recycling and the environmental harm of discarding aircrafts at landfills. Maersk has started to do the same, however, standing alone is difficult. The shipping industry has been recycling for decades unlike the aircraft industry, however, the methods being used in ship recycling is what leaders can change.

In the second part of the question a specific focus was dedicated to the role of ship-owners in specific. The main finding when it came to ship-owners was that it was reinforced the importance of this stakeholder, and that when it comes to initiatives within ship recycling they are needed to lead. In the end of the day the responsibility falls on the ship-owner and the decision they choose to make when it comes to disposing the vessels. Maersk has shown an incredible level of commitment to the issue, however, as a global leader it is unreasonable to expect other companies to be able to take the same initiative.

Promoting recycling policies internally for the company, working with shipbrokers to ensure verified shipyards are being used, working together with other ship-owners to promote ship recycling EHS practices in South Asia, are all things that is up to the ship-owner and cannot be demanded of other stakeholders. The Ship Recycling Transparency Initiative was a success due to the cooperation of stakeholders and it is important that the world's largest shipping companies get involved and engage with their stakeholders to accelerate industry wide transformation.. This was stated by Ammitzboell, the Senior Partnership Manager of Sustainability at Maersk.

As the owners of the vessels that are being recycled it is clear that their role in the ship recycling industry is crucial, and through the data found and interviews held not only are they important in the movement of change.

6.2 Reflection of Findings

This section will evaluate the validity of the main findings and the main limitations of the findings.

The findings showed that economic incentives and pressures remain of highest priority in the ship recycling industry. Therefore, it is unlikely that the beaching method will be abandoned simply in hope to improve EHS standards of the industry. Responding to the enquiry of how private sector stakeholders can influence the industry, which was summarised above, the data showed that stakeholders hold a significant level of power and are unlikely to use it if financial gains are put at risk.

Stakeholder's in the shipping industry, mainly financial institutes and NGOs, are starting to put pressures on ship-owners to act greener when it comes to the recycling of their ships. With these pressures, economic stability is at risk and therefore more likely that ship-owners will take action to facilitate safer handling of the EOL stage.

Similar to the paper written about Norwegian ship-owners by Schøyen et al., this thesis showed that ship-owners are responsible for the majority of changes to the SSRI. These results are contradictory to the article by Sivaprasad, who concluded that 'ship-owners have no role and responsibility in the issues related to ship recycling' (Sivaprasad, 2010). All interviewees in this thesis agreed that the role of ship-owners is crucial, and they must initiate a higher level of responsibility for the recycling of vessels.

The underlying meaning of the findings gathered for this thesis is to show that certain private sector stakeholders are beginning to act to ensure better environmental and labour standards in the ship recycling industry in South Asia. Stakeholders are taking different measures, as well as working together to instigate a change. These measures include financial pressures, such as divestment from investments or cargo-owners ensuring they work only with shipping companies with a ship recycling policy. Other measures are cooperative initiatives, such as the Transparency Initiative, in which stakeholders work together to balance responsibility and cost. These efforts are invaluable to the industry, and can lead to a global convention to be ratified, for example the HKC, which will be instrumental in a transformative shift of the SSRI.

Companies from Nordic European countries are leading the progress, mainly Scandinavia, the Netherlands and Germany. This is common in many industries, as Nordic countries have continuously shown to be leaders in sustainability efforts. However, support is for a greener industry is also growing in South Asia, which is a momentous step. With the support from the ship recycling states real change can be made, since in the current circumstances all EHS standards are up to the recyclers with their facilities and workforce needing to be transformed.

Ship-owners, although the largest stakeholder, has been the main focus of most research done on potential impact from the private sector. In this thesis more stakeholders were discussed, and opened up a new research gap and this should be developed further. Considerable work has been done to show how supply chain cooperation can drastically improve industries. Working together and through the whole value chain would lead to a more significant impact on ship recycling practices and the EHS standards. Ship-owners cannot be expects to stand on their own. IT would be very beneficial research to look further into more stakeholders and working with them to evaluate their true influence. This paper introduced this type of research, but was unable to cover all angles or all stakeholders.

The fact that ship recycling is a sustainable necessity filled with potential environmental improvement might not be the main focus within shipping but it definitely deserves a prominent place on the agenda. The ability to reuse such a high percentage of the massive vessels enables an ability to start closing the loop in shipbuilding. Re-using the material from old ships for the new, re-using the material for other industries, and limited waste all show possibilities for a circular way of thinking in the shipping industry. With the unacceptable pace resources are being used, the shipping industry stands in front of a huge potential economic and environmentally friendly opportunity. Stakeholders could be the key to unlock this opportunity, and therefore proper and continuous research should be done on the topic.

Even though the question was adequately answered, there are various limitations that must be discussed to portray an accurate representation of this thesis.

The main limitation remains the exclusion of first hand data and interviews from the ship recyclers and the other stakeholders present onsite in South Asia. The industry is difficult to

penetrate without legitimate credentials or previously agreed upon arrangements. Even if an individual is allowed to visit the shipyards, which is rare, the information gather is likely to be misconstrued and unreliable, especially when discussing the harmfulness of the industry. Since the shipyards are essential to the region's economic progress and workforce it is unlikely that an honest representation will be given.

However, what would be valuable to discuss with the people actively working in the area and the people who own the facilities would be their view on private sector stakeholders and their work in the area. Captain Prashant Widge, who works onsite in Alang for Maersk, said that there has been no reluctance from the workers when Maersk has come in and understand that the objective is to improve the standards for them as well. However, this opinion cannot be compared or verified as no other stakeholder has comparable knowledge from the onsite circumstances. It would be a great contribution to be able to assess the real impact onsite, and to make casual connections between stakeholder involvement and changes to the yards.

The exclusion of shipbrokers is not as substantial of a limitation as the lack of ship recyclers input; however, it would lead to a more complete picture of the industry. Shipbrokers have more information about shipyards and ship recycling methods than other stakeholders, and the use of this information would allow for ship-owners to make a more informed choice. Therefore, it would be interesting to see what they themselves believe their role to be, and how the sharing of their data would impact the industry, as well as their own competitive advantage. Shipbrokers are used in most of the disposal of vessels and while their interests remains financial, and they have no liability to improve the SSRI, it would be an advantage to see how they view the standards of the industry and if there are any sustainability aspects they consider when recommending a ship recycling facility.

Recycling policies at companies, changes in regulatory framework, especially the SRR, and other efforts to improve the SSRI both in South Asia and else where is all very new and therefore not a significant amount comparable data is available at this point. For example, as the Initiative was formed in 2017, there has been limited research done on the success of the initiative. The movement is just starting and it will take a while to see if the work being done will lead to concrete changes in the industry. Without seeing what the efforts impact it is difficult to go beyond speculation of the role of private side stakeholders. Nonetheless, this thesis does not attempt to prove the level of impact for specific yards or aspects in the industry, but rather to show how stakeholders can take it upon themselves to develop the industry in a broader sense. Stakeholder influence is a proven concept and through the findings of this thesis it shows that stakeholders can make a difference, although it does not show what difference that would be. The work done by Maersk in specific shipyards is one of the examples that can be used to show the potential impact it can have.

Finally, the lack of an interview with investors first hand led to a limitation of a completely accurate representation of this stakeholder. Although, significant information was gained about investors from other stakeholders working with them and available literature, talking to the investors themselves would have been an invaluable addition to the analysis. This issue was again a lack of time and response from investors. The lack of response could be interpreted as either a reluctance to discuss the issue or an absence of knowledge on the subject. However, without talking to the investors themselves these notions could not be validated.

6.3 Reflection of Methodology

Similar to the section above, the validity and limitations of the methodology will be the focus of this section. An evaluation will be made of the methodology choice of this thesis, and if the theoretical framework and data assessment chosen was well applied. Stakeholder theory does not fit traditionally to the assessment of companies' impact on a specific industry. Nonetheless, theoretical frameworks are nothing if not adaptable, and in this case of observing how various groups are able to influence a larger network of stakeholders, the only difference was the scale of the analysis.

Stakeholder theory evaluates how certain groups of similar interests influences an organisation, and in this thesis three stakeholder groups were evaluated to explore how they are able to influence the ship recycling industry. Furthermore, the additional input of organisational theory, where the social actors' behaviours are analysed to see how they impact each other, was a valid insertion to complete the framework for this thesis. To properly understand the impact stakeholders have on the ship recycling industry it is crucial to also dissect their relationship to each other and what can be done to initiate change throughout the value chain.

The mixture of literature with the interview data allowed for a more comprehensive understanding of the industry. As little information has been research on this topic all sources needed to be utilised. The literature was able to support and verify perspectives and statements from interviewees. Although, a larger scale of interviewees would have been beneficial, it was not vital for the validity of the results.

A limitation of many qualitative research papers is the amount of interviews done, especially for papers like this one that is under considerable time pressures. A wider range of interviews will naturally lead to a more accurate representation of the results and will allow for a higher level of reliability. Using more companies, shipping companies and cargo companies included, would create a more applicable generalizability, and more likely to be relevant in other contexts. However, the specificity of stakeholders chosen for this thesis made the amount of interviews needed smaller.

Furthermore, only having one case study (Maersk) limits the ability to make any generalizations about what shipping companies are able to do. Considering that Maersk is such a large, global company there are not a lot of companies that can be directly compared to it. However, Maersk is far from the only large, global container company and many of their direct competitors could use the information presented. To show the leader of the industry's ability to make a difference and initiate change, and the potential ship-owner can have was useful specifically for the sub-research question. A case study can be used for various reasons, and this case it was less to show what could be done by ship-owners, but rather as an example of what is currently being done by a private sector stakeholder, and the potential there.

The limitations concerning methodology are mainly based on the availability of first hand data gathering, and the potential improvements that would be reached if more stakeholders were able to be included. However, the focus on three specific stakeholders rather than more also has its upsides. A more in-depth analysis of these stakeholders was gained, as the focus was not too wide spread. Additional to this, these stakeholders work actively together prior to the disposal of the ships and therefore belong to a specific subsector of the industry that shipbrokers and ship recyclers do not. This particular focus is thereby beneficial to the outcome of this thesis, and is able to provide a novel research perspective to the literature.

7 Conclusion

Ship recycling is a vital and sustainable industry, but the lack of EHS standards in South Asia has resulted in a hazardous industry, in which environmental degradation and social injustices are common (Choi et al., 2016). When comparing the severity of environmental and labour rights failings to other industries in South Asia, such as textiles, ship recycling has truly fallen behind. In addition, ship recycling has been disregarded by many of the industry's major stakeholders (Frey, 2015; Rajan et al., 2016).

Despite the industry's long-term aspirations to improve recycling EHS standards, a sustainable method of ships disposal has yet to be developed and enforced. During the research done for this thesis, it was found that stakeholder participation in the transformation of South Asian ship recycling is valuable and necessary.

With the rise of awareness on the subject, it is no longer plausible for recognised shipping companies to beach their vessels without there being significant repercussions. In addition to this, investments in the industry are beginning to become undesirable and financial holders are starting to divest and encourage safer recycling standards. Finally, the cargo-owners, although less directly involved in the recycling industry, are being held responsible for a full life cycle assessment of their products. In this the shipping choices are included and therefore their participation in improving the SSRI is increasing.

On the other hand, Aaben, from Stena AB, doesn't believe that voluntary commitments will be enough and will not lead to a significant enough change. These are all good intensions, but may not have enough of an impact and regulation is needed to change the SSRI. The globalization of the industry is too complex for anyone to do enough. She goes on to say that, currently finance wins and is the main reason for choosing beaching, while reputational risk does not hold a huge role. This might change, as it has happened for other industries, however, the risk is that the change will be too slow and be vulnerable to market changes.

This is an important aspect of stakeholder involvement, as currently the regulatory attempts have failed to be implemented or ratified for the SSRI. If stakeholders, especially ship-owners, are able to show that EHS standards should be enforced and that they support this form of regulatory enforcement, it could lead to a new global policy. Stakeholders within an industry are key when it comes to sustainability efforts, as it is common the stakeholders upstream hold most power.

Stakeholder efforts are unlikely if there are only additional costs with no economic return, and ship recycling holds plenty of potential economic benefits. The benefits also happen to come with incidental positive environmental effects, for example, the market for re-used materials to build ships. The main incentive for ship-owners to work towards improving the ship recycling industry in South Asia is that the cost of investments to develop the facilities is not comparable to the cost of the inevitable continued social pressures, and regulatory enforcements. In the shipping industry, where competition is extraordinarily high and volatile, all efforts to gain a strong market position are instrumental. Sustainability is on top of the political agenda and is becoming a priority for many businesses, either due to internal initiatives or from external pressures. Therefore, stakeholders within the ship recycling industry can use the promotion of EHS standards as a competitive advantage.

It is the intention that the research done here will allow each stakeholder to more properly understand their role and what implications their actions have. It is important realise that it is

not only the ship-owners who should be held responsible, but in fact the whole supply chain should be taken into consideration. Many stakeholders might simply see the immediate implications of their role, but do not consider the outcomes further down the chain. This is a start to show how interconnected these three stakeholders are to each other and to the ship recycling industry.

7.1 Further Research

This type of research is crucial for various reasons. The main one is to continue to raise awareness on the topic, and to see to it that the academia available is sufficient to demonstrate support for improvements of the South Asia region. With so many different perspectives portraying their own biased opinions, it is important to gather them together and to show a more complete and honest depiction of current circumstances. The private sector is often illustrated in a selfish light, and a culprit in the environmental sphere, and at times this is justified. However, this does not mean that the stakeholders cannot be strong and wilful participants in the work done to improve practices.

Moreover, with the limited literature available on the role of stakeholders in the shipbreaking and ship recycling industry, focusing on this subject holds a valid contribution to the literature. Although the main environmental focus in the shipping industry remains emissions, it does not mean that other areas should not be developed simultaneously. Considering the dangerous and damaging practices of the SSRI, EHS standards must become a higher priority. Therefore, all literature available on the matter is important.

Further research on this topic is encouraged, especially that which evaluates further stakeholders and gleans further insight first hand on what changes could realistically be implemented from both the stakeholders side and the recycling states. Looking at a larger sample of each stakeholder group, both international and regional, would be greatly beneficial to this research, however difficulties in attaining objective data must be kept in mind. In addition to this, more industries could be evaluated, exploring how the steel rollers, shipbuilders, etc. can be utilised to implement this transformation.

Another potential avenue for further research would be to probe deeper into the evaluation of the impact from Maersk supervised SRFs. These facilities can be used as a case study and compared with a standard beaching facility in the region. Exploring how Maersk's role came about and the actual changes that have been made to the shipyards, from an unbiased and objective perspective. Currently, most of the information comes either from the company itself or from sources that are opposed to Maersk's intensions.

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List of Interviewees

Anonymous | *Manager* | Scan Global Logistics | June 18, 2018

Anonymous | *Production Manager* | X | June 26, 2018

Captain Prashant Widge| *Head of Responsible Ship Recycling* | A.P. Møller-Maersk | August 24, 2018

Ellinor Häggebrink | *Engagemang Manager* | GES | May 18, 2018

Emma Aaben | *Sustainability Manager* | Stena AB | June 15, 2018

Erik Nauclér | *Former Shipping Manager* | H&M | June 13, 2018

Lars Göran Walleby | *Former Ship Broker* | Maersk| July 20, 2018

Katarina Ammitzboell | *Senior Partnership Manager, Sustainability Strategy & Shared Value* | A.P. Møller-Maersk | July 06, 2018

Nicola Mulinaris | *Communication and Policy Officer* | NGO Shipbreaking Platform | June 14, 2018

Wouter De Gier | *Global Head of Safety, Environment & Performance Management* | APM Terminals, Maersk | May 22, 2018