

**The Ship-Breaking Industry of Bangladesh: An Exploration of the
Accountability of Shipping Companies.**

THIS DISSERTATION IS PRESENTED FOR THE DEGREE

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Declaration

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

Most Moriom Ferdousi

Date:

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Abstract

This thesis explores the social and environmental information disclosure practices of shipping companies, with specific reference to how they account for the lifecycle of ships under their control. This thesis sheds light on the working conditions, violations of human rights, and ecological damage within the ship-breaking yards of Chittagong, Bangladesh. The thesis has two interrelated sections. The first section explores the social and environmental disclosure practices of the top ten global shipping companies for a particular year. The second section explores the disclosure practices of some of the identified shipping companies that supplied their ships for dismantling to the ship yards of Chittagong, Bangladesh. Both sections utilise annual report content analysis. For the purposes of measurement, an index called ‘Ship recycling related information disclosure index’ (SRIDI) has been used and the unit of analysis is the frequency of disclosures. The thesis also developed an ‘accountability model’ to evaluate the accountability demonstrated by the shipping companies.

The thesis finds that the extent of disclosures of social and environmental information, including ship recycle-related information by the global top ten shipping companies, is relatively high for some of the organisations. However, the disclosures made by the identified shipping companies that are alleged to supply the end-of-life ships to Bangladesh seems to be lower than the global top ten shipping companies. The thesis finds no information from either the global shipping companies or from the identified shipping companies annual report that specifically states where the ships actually go at the end of their lifecycle. This implies that the shipping companies avoid mentioning the final destination for their end-of-life ships to avoid potential criticism for dumping them in the ship-

breaking yards of developing countries, an act which might negatively impact their reputation as well as 'brands'. This also implies that although shipping companies that allegedly supply their end-of-life ships to Bangladesh should be accountable for their actions. However this does not appear to be the case. This thesis used a normative theoretical perspective and applied 'accountability model' to analyse the findings. The first part of the thesis was accepted as a paper in the AFAANZ conference 2012 held in Melbourne and was presented in a concurrent session by the researcher.

Acronyms (alphabetically) used within the thesis

AIT = Advanced Income Tax

BAN = Basel Action Network

BBC = British Broadcasting Corporation

BELA = Bangladesh Environmental Lawyers Association

BSBA = Bangladesh Ship-breaking Association

CSR = Corporate Social Responsibility

COHEAN=College of Human Ethics Advisory Network

FIDH = International Federation for Human Rights

ILO =International Labour Organisation

IMO = International Maritime Organisation

LDT = Light Displacement Tonnage

NGO = Non- Government Organisation

ODS= Ozone-Depleting Substance

OECD =Organisation for Economic Co-operation and Development

PCB = Polychlorinated Biphenyl

PVC= Polyvinyl Chloride

PPE = Personal Protective Equipment

RMIT=Royal Melbourne Institute of Technology

SEA =Social and Environmental Accounting

SRIDI = Ship Recycling-related Information Disclosure Index

SRO =Statutory Regulatory Order

UN= United Nations

USA= United States of America

VAT = Value Added Tax

YPSA =Young Power in Social Action

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Chapter 1

Introduction to the thesis

1.0 Introduction:

This thesis explores the social and environmental information disclosure practices of shipping companies, with specific reference to how they account for the lifecycle of ships under their control. This thesis sheds light on the working conditions, violations of human rights, and ecological damage within the ship-breaking yards of Chittagong, Bangladesh. The thesis has two interrelated sections. The first section explores the social and environmental disclosure practices of the top ten global shipping companies for a particular year. The second section explores the disclosure practices of some of the identified shipping companies that supplied their ships for dismantling to the ship-breaking yards of Chittagong, Bangladesh. Based on a normative theoretical perspective, this thesis used an accountability model to explain the findings.

By using the accountability model it will show that although global shipping companies in general, and identified shipping companies in particular, disclose some of the information pertaining to their accountability¹, there is limited evidence that the shipping companies disclose any information regarding where they send their ship for recycling. This chapter provides an overview of the significance of the research, the motivation for the research and the research objectives and research questions to be explored in this thesis. Finally, this chapter outlines the organisation of the remaining chapters.

¹The notion of accountability is discussed in chapter 3. This thesis uses the definition of 'accountability' as "the duty to provide an account or reckoning of those actions for which one is held responsible" (Gray, Owen & Adams, 1996, p. 38).

1.1 Importance/significance of the research

Ship-breaking involves the business of dismantling old vessels and recycling and selling the parts as scrap metal (AlJazeera, 2011). It has been around for decades and offers the most environmentally sustainable way of disposing old vessels (World Bank, 2010). The country of Bangladesh has the greatest number of ships scrapped every year, with India and Pakistan far behind (AlJazeera, 2011). The International Federation for Human Rights (FIDH) (2008) also supports the finding that Bangladesh is the number one ship-breaking country of the world in terms of the highest quantity of ships broken down. The context of this thesis is the ship-breaking industry of Bangladesh and details about this industry are discussed in chapter two. This industry has considerable significance for both global shipping companies and the economy of Bangladesh.

The global shipping industry needs a destination for scrapping their end-of-life ships. Usually after 20-25 years ships are checked for their usability and insurance companies are not interested in providing coverage on a ship older than 20 years (Holbrook, 2009). Thus when a ship becomes older than 20-25 years, its owner typically tries to sell it to scrap yards, as noted by Holbrook (2009, p. 48).

No matter its size, the lifespan of a steel vessel is usually 20 years and must not exceed 25 years, according to the IMO. For most ship owners, it is more economical to declare a ship unfit for service after 20 to 25 years, instead of opting to service or modify the vessel. Insurance companies are also hesitant to provide coverage on a ship older than 20 years. Once the ship is declared unfit for use, it is labelled as an “end-of-life” vessel and sold to scrap yards, the bulk of which call the shores of India, Bangladesh and Turkey home.

Because of the restrictions imposed by many developed countries and strict regulatory regimes existing in the ships' country of origins, shipping companies

seek to supply their out-of-service ships to the ship-breaking yards of developing countries such as Bangladesh (Hossain, 2010). Thus the ship-breaking industry of Bangladesh is significant for the global shipping companies. In terms of the national economy of Bangladesh, this ship-breaking industry provides steady employment and is the highest supplier of iron and steel within Bangladesh (the details of the contribution of this industry to the national economy is discussed in chapter two). Although it has considerable significance for the global shipping industry and for the economy of Bangladesh, this industry has been highlighted by Western media for various social and environmental issues such as poor working conditions, use of child labour, violation of human rights, persistent death and severe injuries to the workers and damages to eco-systems within the surrounding environment (see for example, CBS News, 2007; BBC news, 2012; The Economist, 2012; The Guardian, 2012; Al-Jazeera, 2011).

Some of the accidents, including the deaths, occur in the ship-breaking industry because the owners of ships do not pre-clean the ship which contains hazardous materials (YPSA, 2005). The owners also do not take direct responsibility for the working conditions in the ship-breaking industry and the violation of labour rights and human rights, as they sell their ships through cash buyers or brokers (Greenpeace, 2003). However, it is argued by some Non-government Organisations such as Greenpeace (2003) that since the owners of the old ships know that they will ultimately need to scrap their ships, they should be required to follow appropriate procedures and guidelines before selling it to the brokers who usually sailed the end-of-life ships to the developing country such as Bangladesh. Nevertheless, the shipping companies appear to assume limited responsibility

regarding the social and environmental harm that they are committing by exporting their out-of-service ships directly or indirectly to Bangladesh. It is also argued by Greenpeace (2003) that the original shipping companies are not interested in taking any responsibility and thereby avoid accountability.

From an accountability perspective, it can be argued that the shipping companies should be accountable for their actions and it is their duty to provide an account or reckoning of those actions for which they are held responsible (Gray et al., 1996). Here the actions of shipping companies include the selling or supplying of the end-of-life ships to the ship-breaking yards of Bangladesh, and it is their duty to account for those actions. As such, and accepting that companies have a duty to provide an account of the social and environmental implications of their operations, the shipping companies *should* disclose information regarding the recycling process of their end-of-life ships. Such an account could be provided in such media as annual reports or any other publicly available documents.

Local and international NGOs such as Greenpeace, Bangladesh Environmental Lawyers' Association (BELA), Young Power in Social Action (YPSA) and human rights group (such as FIDH) expect some form of accountability from owners who supply their ships to the ship-breaking yards. For example, the Chief Executive of YPSA provides the following insight pertaining to the accountability of the ship owners:

The main responsibility is on the owners of the ship. After building up the ship, the ship owners do business for about 30 years but when it becomes old they send it to Bangladesh. The main owners who get all the profit are in the dark (meaning they are not directly taking any responsibility for the risk associated with the dismantling of their ships). They should have responsibility, they should compensate for

that. All the owners are from the richest countries. They change the flag to hide the real owner and to hide the responsibility. If we look at the Basel convention, they are responsible for their waste management (interviewee no. 6²).

FIDH (2008) also finds that public opinion in Europe, where the majority of end-of-life ships come from, is increasingly sensitive to the social and environmental impact of ship-breaking in developing countries including Bangladesh. The Director of BELA provides more insight into this.

According to Basel Convention, OECD countries have to take responsibility when sending hazardous materials to poor countries. Ship-breaking is an activity of shipping companies, because they have to get rid of those old ships. Unfortunately Bangladesh gets those ships without pre-cleaning. Shipping companies have used the ships for 30/40 years, they have the maximum benefit from the life time of the ships and again they are making money by selling it to ship brokers or cash buyers (interviewee no. 1).

These comments show that the stakeholders expect some form of accountability from the shipping companies pertaining to their actions about their end-of-life ships. People from YPSA and BELA argue that it is the original owners who should accept their responsibilities. Thus the owners of the ship should be held responsible (and accountable) since some stakeholders/society (such as YPSA, FIDH, BELA) expect them to demonstrate their accountability. With heightened social/stakeholders' expectations it is anticipated that successful business corporations will react and attend to the human, environmental and other social consequences of their activities (Heard & Bolce, 1981). Accordingly, companies could be held accountable for their actions (or non-actions) to protect the harms caused by their activities to humans, society or the environment.

² Some of the stakeholders are being interviewed as part of this research and some of the interview quotes have been used as preliminary materials relevant for the discussion. The interview protocol is discussed in Chapter Four and the designation of the interview participants along with the date of conducting interviews are attached in the appendix.

The above discussion and quotes provide further justification for the claim that the shipping companies owe some accountability, and therefore offer more support to explore the accountability of the shipping companies in the context of the ship-breaking industry of Bangladesh.

1.2 Motivation for the research

The poor and unsafe working conditions, and the violation of human rights in the ship-breaking yards of Bangladesh have been highlighted over the years via different media such as CBS News (2007), BBC news (2012), the Economist (2012), The Guardian (2012), Al-Jazeera (2011) and others. In addition, the ship-breaking industry in Bangladesh has been widely condemned by international organisations such as Greenpeace (2006), YPSA (2005) and FIDH (2008); in particular for exposing low-paid workers to high levels of asbestos as well as for contaminating the environment. It has also attracted attention from the academic community such as Cairns (2007, 2011).

While criticising the ship-breaking industry of Bangladesh some of these media and organisations also blame the owners of the ships that supplied their end-of-life ships to the brokers/breakers (see for example, The Guardian, 2012). However, the shipping companies appear to assume limited responsibility for selling their ships to the ship breakers who directly harm society and the environment (Karim, 2009). It is also difficult to identify the shipping companies that sell or supply the end-of-life ships, as most ships are sold through ship brokers and cash buyers to the ship breakers and in many cases ships are renamed and reflagged during, or prior to, the final voyage (Greenpeace, 2003). Thus, by changing the ship names

and avoiding stricter regulatory regimes, the shipping companies cannot effectively escape accountability associated with being linked to ship-breaking activities. Hence investigating the accountability of the shipping companies would provide further insight to the responsibility that the shipping companies' should assume.

The ship-breaking industry of Bangladesh has national as well as international significance; nationally in regards to supplying vast amounts of steel and providing employment, and internationally as it provides a 'supposedly safe' final resting place for ships. The BBC recently referred to the shipyards of Chittagong as the 'graveyards of ships' (BBC News, August 6, 2012). Thus, international shipping companies need Bangladeshi ship-breaking yards for dismantling their out-of-service ships, while Bangladesh needs these ships for trade in foreign currency, employment generation and satisfying local demands for steel. Therefore, of utmost to both parties, should be to keep this industry more environmentally-friendly and ensure that the original ship-owners are held responsible for how their ships are recycled at the end of their life cycle. The ship-breaking industry needs to be operated in a way that respects the existing natural environment, the dignity of the workers, and upholds basic human rights. Thus, this thesis provides a normative perspective about the supplier of the end-of-life ships.

The normative perspective prescribes how a particular practice should be undertaken (Deegan, 2011) and how organisation should treat their stakeholders (Deegan, 2002). In other words normative perspective focus on how managers

should act on the basis of moral or ethical principles. Adopting this perspective, suppliers should be required to be much more careful, particularly when cleaning the ships before sailing them to the breaking yards, and should be accountable for any potential social and environmental hazards caused by supplying their end-of-life ships to the ship-breaking yards.

The motivation for this thesis also arises due to the lack of research attention from the academic community, as stated by Cairns (2007, p.275):

Whilst organizations such as Greenpeace and the Basel Action Network (BAN, 2006) continue to fight for stringent control on the global market in redundant vessels, and with some success, the ship breakers of Chittagong (Bangladesh) continue to ply their trade. Whilst the industry continues to attract little or no attention from the academic community, it has become a topic of great interest.....

Specifically there is no known research within the social accounting literature that investigates the social and environmental disclosures of shipping companies in a developing country context. Developing countries are arguably at higher risk in relation to social and environmental concerns, as the laws and regulations in these countries are generally less demanding (Newson & Deegan, 2002). It is argued that the social and environmental disclosure of the shipping companies is important from the accountability perspective, and shipping companies' managers are aware of the social and environmental issues and have voluntarily responded to the demands for disclosure of social and environmental information. Thus the attempt in this thesis to investigate the social and environmental disclosures of the shipping companies in a developing country context should contribute to the existing social accounting body of knowledge.

1.3 Objective of the research and research questions

Having the above motivation in mind, this thesis aims to understand the social and environmental information disclosure practices of shipping companies, with specific reference to how they account for the lifecycle of the ships under their control. To achieve this broad objective the thesis explores two specific research issues. First, it explores the social and environmental information disclosure practices of the top-ten global shipping companies to understand how the global shipping companies are accounting for their end-of-life ships. The idea behind this selection of the top-ten shipping companies is to understand the general trend of disclosure practices regarding the ship recycling related information by global shipping companies, irrespective of whether or not they supply their end-of-life ships to developing nations.

After identifying a group of shipping companies that are known to send their end-of-life ships to developing countries such as Bangladesh, this thesis compares the disclosures of these shipping companies with the global shipping companies. Thus the second research issue is to compare the disclosure of the top-ten shipping companies, with those shipping companies that allegedly supply their old ships to the ship-breaking yards of developing countries including Bangladesh. However, as will be shown, the identification of these shipping companies is very difficult, as there is a lack of publicly available information and shipping companies have a tendency to change the name of ships when they sell them to cash buyers or brokers (Greenpeace, 2006).

Along with the second objective, this thesis also aims to elaborate and explain the difficulty of the ‘search process’ of those shipping companies that dump their end-of-life ships on the ship-breaking yards of developing countries such as Bangladesh. This thesis uses the annual report content analysis to investigate how, or whether, the sample shipping companies address the social and environmental issues associated with ship-breaking (the research methods are discussed in chapter 4). This thesis does not consider sustainability reports as the compilation of sustainability reports is not mandatory throughout the world and most of the global top ten shipping companies do not produce sustainability reports.

An index has been prepared called the ‘Ship Recycling-related Information Disclosure Index’ (SRIDI) to compare and explain the disclosure practices of both global top ten shipping companies and alleged shipping companies. An accountability model has also been developed to suggest how the shipping companies should demonstrate their accountability. The development of the ‘disclosure index’ and the ‘accountability model’ are significant contributions of this research, and will be available for future researchers to conduct further research. Thus, the thesis aims to answer the following research questions:

Research questions

1. What are the disclosure practices of the top-ten shipping companies with respect to providing information about the lifecycle of their ships (this question is a general question as at this point the sample will not necessarily include organisations associated with ship-breaking in developing countries)?

2. Do shipping companies identify how and where disposal and ship breaking occurs (whether directly, or through third party intermediaries, such as ship breakers)?
3. To what extent do the identified shipping companies provide 'best practice' disclosures in relation to the ship-breaking activities (best practice being determined as a result of reviewing the policies and procedures prescribed by local and international monitoring bodies for ship-breaking)?

1. 4 Organisation of the remaining chapters

The next chapter provides the context of the thesis which is the ship-breaking industry of Bangladesh. It provides a detailed discussion about how the ship-breaking industry of Bangladesh grew over time. This chapter also sets out the ship-breaking industry's contribution to the national economy, and focuses on some of the hazards involved in the industry. Some relevant discussion about prior literature is provided in Chapter Three. This chapter focuses on the social and environmental disclosure in general and information disclosure about the ship-breaking industry in particular, although there is limited research exploring the latter. This chapter also provides some overview of positive and normative perspectives of research in the social accounting discipline and develops an 'accountability model' based on the normative perspective of research.

Chapter three also uses some of the interview quotes to illustrate the perspective of interviewees that accountability lies with the shipping companies as they supply their end-of-life ships to Bangladesh. Chapter Four discusses the research methods

used in the thesis. Chapter Five provides the findings of the first part of the thesis. This chapter focuses on the social and environmental disclosure practices of the global top-ten shipping companies. Chapter Six provides the findings of the second part of the thesis and focuses on the disclosure practices of the shipping companies that allegedly supply their end-of-life ships for dismantling to Bangladesh. This chapter also provides the ‘search process’ involved in gathering of the information regarding the connection of the shipping companies with the supply of the ships to Bangladesh for scrapping. Chapter Seven provides the implications of the thesis, its limitations, further avenues for research, and the conclusion.

Chapter 2

The context of the thesis

2.0 Introduction

This chapter provides the context of the thesis, the ship-breaking industry of Bangladesh. Bangladesh is the destination for the majority of end-of-life ships as described elsewhere in the thesis. This chapter provides insights into the historical development of the ship-breaking industry of Bangladesh, which began in 1965 when a cyclone washed a Greek ship onto the shores of Chittagong. This led to a rapid emergence of one of the most important sectors for Bangladesh in terms of satisfying local demand for steel and generating employment. Internationally, it provides benefits to the shipping companies as now they have a safe destination³ for dismantling their end-of-life ships.

However, over the period, the ship-breaking industry of Bangladesh has attracted huge criticism from Western media and local and international NGOs for poor working conditions, violations of human rights and serious social and environmental harm caused by the ship-breaking industry of Bangladesh (Greenpeace, 2006; YPSA, 2005; FIDH, 2008; CBS News, 2007; BBC news, 2012; The Economist, 2012; The Guardian, 2012; Al-Jazeera, 2011; among others). Furthermore, this chapter provides discussions about the contribution of the ship-breaking industry of Bangladesh to the national economy and describes the working conditions, health and safety issues and human rights violation within

³ Safe destination in this context means that because of the weak regulatory systems and state level corruption, ship owners can more easily by-pass the legal issues while supplying their end-of-life ships to Bangladesh compared to what would be in the case in many other countries.

the ship-breaking industry by providing some pictures and interview quotes from the workers and relevant stakeholders.

2.1 The development of the ship-breaking industry of Bangladesh

The context of the research is Bangladesh, as it is home to one of the world's biggest ship recycling yards (Ahmed & Fabi, 2011). The ship-breaking industry of Bangladesh is located about 15-20 kilometres from the country's second largest city, Chittagong. At present there are 125 ship-breaking yards (69 are operating) along the Sitakunda coastal zone (Bdnews 24. com, April 22, 2011). Bangladesh Ship Breakers Association (BSBA, 2011) listed 138 ship breakers as their members in their websites while Hossain et al. (2008) states that there are 50 local ship-breaking companies directly engaged in the ship-breaking activities of Chittagong. However, some ship-breaking companies have more than one ship-breaking yard, depending on the number of ships imported for dismantling. This industry, which employs hundreds of thousands of people and supplies Bangladesh with almost all its steel, began by accident. This was documented by CBS news in September 2, 2007:

In 1965, a violent storm left a giant cargo ship beached on what was then a pristine coastline. It didn't take long before people began ripping the ship apart. They took everything and businessmen took note - perhaps they didn't need a storm to bring ships onto this beach here. To do the same work in America or England would be very expensive.

This is how the ship-breaking industry began in Bangladesh. Currently the ship-breaking industry of Bangladesh is a rising industry from a socio-economic perspective. Following a tentative beginning in 1960s, the ship-breaking industry experienced a boom in the 1980s. As shipping companies in developed countries such as the United Kingdom, Spain, Scandinavian countries, Brazil, Taiwan and

South Korea wanted to discontinue their ship-breaking activities (being non-compliant with the new environmental protection standards), Bangladeshi industrialists made the most of this opportunity (Hossain & Islam, 2006). Businessmen involved in the industry imported more and more ships, and gradually Bangladesh began to play a major role in this industry. As a result, within a short period of time, Bangladesh established a significant share in the international market of big-ship scrapping.

Some researchers within Bangladesh noted the reasons for the growth of the ship-breaking industry (see for example Sobhan & Ahmad, 1980; Andersen, 2001; YPSA, 2005; Hossain et al., 2010). Some of the reasons identified by these researchers include cheap labour, local demand for scrap materials, large tidal differences providing an inter-tidal zone particularly suitable for beaching large vessels, stable weather conditions, low level of environmental (physical environment) awareness, moderate enforcement of laws, and the geographical location of Chittagong, among others. However, most of the researchers found that the stimulus for the ship-breaking industry in Bangladesh is the fact that it is a developing country with cheap labour. While conducting interviews with relevant stakeholders, one of the ship-breaking yard's managers stated that the geographical location of Chittagong, Bangladesh, is perfect for the development of the ship-breaking industry, more so than most other locations in the world.

Our main advantage here is our location; you will find no other places in the world such as this having both tidal changes called 'Joar and Vata'⁴, which actually makes our beach a natural place for ship-

⁴ It's a local term used in Bangladesh to indicate the large movement of water to and from the river. 'Joar' is used when a large movement of water comes from the ocean to the rivers and inland, and 'Vata' is used to indicate when water actually goes out of the river. The water level is high in the case of 'Joar' and low in case of 'Vata'. Some people use the terms 'high-tide and low-

breaking. Because to break the ships, sometimes you need water and sometimes you need dry places (interviewee no.5).

The geographical location is a plus point for Bangladesh to establish ship-breaking yards, not every place is suitable for ship-breaking. It is a natural gift to Bangladesh, a floating mine (interviewee no. 9).

There are other reasons for the growth and development of the ship-breaking industry of Bangladesh, such as shifting the ship-breaking activities from China and India to Bangladesh. Before 1994, China was the pioneer in ship-scraping activities, but they stopped this activity when the government and breakers became aware of the adverse impact on the environment, particularly the coastal environment (natural environment). India vigorously increased its scrapping activity with the reduction of activity in China, but in 1997, when a major explosion occurred during the scrapping of a large oil tanker that caused the death of an unknown number of employees, the government did not allow the ship scrapper to scrap ships without having gas-free certificates (Hossain, 2010). As a result the tanker scrapping practices in India shifted to Bangladesh, which since then has been dismantling large tankers as well as cargo ships and container ships along its coastline.

In 1998, Greenpeace published a report on the Alang ship-breaking industry in India, and made claims that there were approximately 365 deaths a year from accidents, which resulted in the slogan; ‘every day one ship, every day one dead’ (Greenpeace, 2000). Greenpeace targeted P&O Nedloyed, an Anglo-Dutch cargo company that sold ships in the Asian market. Public protests outside the P&O offices were followed by the company being caught in the act of painting over the

‘tide’ for the above terms. However, it is easy to beach the ship during ‘Joar’ and break it during ‘Vata’.

name of one of its Asia-bound ships. This confrontation led to interventions at the highest policy levels and ship-breaking was inserted into the meeting agendas of the European Union and the International Maritime Organisation (IMO) (Hossain, 2010). The implication of this situation, and the relatively strict regulations of ship-breaking industries in other developing countries, is that Bangladesh is now dismantling most of the end-of-life ships that are not cleaned of their hazardous materials before trans-boundary movement (Hossain, 2010).

Thus to maximise the profits, ship owners of the developed countries send their old ships to scrap yards in Bangladesh, where environmental protection, and health and safety standards are either minimum or totally absent and workers are desperate for employment. Bangladeshi ship breakers are mainly purchasing the ships from Russia, Bulgaria, Norway, Romania, Greece, Italy, Turkey, Japan, Singapore, South Korea, as well as some other countries (Hossain, 2010). Towing an end-of-life ship for scrapping is costly and time consuming, so the Bangladeshi ship breakers and their agents generally prefer to buy ships on last voyage⁵ or ships anchored in Singapore or at some other ports near Chittagong, such as ports of India, Sri Lanka, Myanmar and Thailand (Rahman & Ullah, 1999; FIDH, 2002). Another reason for the preference of ships on their last voyage is that they can easily bypass the laws of pollution-free certification (Hossain, 2010) as they deemed to carry passengers or goods rather than just sailed towards a destination for scrapping.

⁵ Ships on last voyage indicates the last trip of the ships carrying either passengers or goods and then needs to recycle as by the end of its last trip its useful life becomes end.

The development of the ship-breaking industry of Bangladesh and the major events experienced by this industry is illustrated in Table 1. This table has been prepared using references from several newspaper articles, media reports and with particular reference to prior literature. The table indicates the chronological development of the ship-breaking industry of Bangladesh and the interference of the government to regulate it through the formulation of rules and policies. As a result it is included within the ministry of industry. The table also provides an understanding of how different NGOs and human rights bodies attempted to highlight the social and environmental impact of this industry over the years.

Table: 1 : Key issues in the ship-breaking industry of Bangladesh

1965	In 1965, a violent storm left a giant cargo ship beached on the shore of Sitakunda, Chittagong, what was then a pristine coastline. It didn't take long before people began ripping the ship apart. They took everything and businessmen took note - perhaps they didn't need a storm to bring ships onto this beach here. To do the same work in America or England would be very expensive (CBS, 2007). This accident, in fact gave birth to the ship-breaking industry of Bangladesh.
1974	During the liberation war in 1971, a Pakistani ship "Al Abbas" was damaged by bombing in Chittagong port. Later on, this was salvaged by a Soviet salvation team from Chittagong port and bought to the Fauzdarhat seashore. In 1974 the Karnafully Metal Works Ltd bought this as scrap, which is considered as the introduction of commercial ship-breaking in Bangladesh (Hossain & Islam, 2006).
1980s	The industry flourished slowly from the 1980s and to maximise profit, ship owners began sending their vessels to the scrap yards of Bangladesh (Hossain & Islam, 2006).
1990s	1990s was considered the golden age for ship-breaking. By the middle of the 1990s, the country ranked number two in the world in terms of ship-breaking by tonnage scrapped (Hossain & Islam, 2006).
2000	Until 2000, there was limited voice against the human rights violation, unhealthy and dangerous working conditions and environmental damage found in the ship-breaking industry (YPSA, 2005).
2000	During 2000, BELA and YPSA started to raise their voices against the ship-breaking industry of Bangladesh (YPSA, 2005).
2003	During 2003, Ms Rizwana (on behalf of BELA) spoke with ELAW (Environmental Lawyers Alliance Worldwide) colleagues from around the world about the horrific problems with ship-breaking yards in Bangladesh. She asked for their assistance in challenging the ship owners – who, despite her efforts, had been abusing workers and the environment for years. On coming back home, she filed a lawsuit against the owners of the ship-breaking yards (YPSA, 2005).
2004	From 2004 to 2008, the ship-breaking yards of Bangladesh were the largest ship-breaking yards in the world (Ahmed & Fabi, 2011).
2009	Since 2009, Bangladesh has fallen into second position in terms of breaking the old ships. After litigation by BELA, the Bangladesh supreme court, for the first time, provided some directives to regulate the ship-breaking activities of Bangladesh (Ahmed & Fabi, 2011).

2010	The high court of Bangladesh banned the lease of coastal land to ship-breaking yards and accordingly the ship-breaking activities were closed from March to October 2010 for 7 months due to ban by the high court (Hasan, 2012) .
2010	Immediately after the lifting of ban, Bangladesh received the highest number of ships in its ship yards for recycling – 300 ships in total (The Daily Prothom Alo, 2012).
2010	Through issuing a statutory regulatory order (SRO), the government of Bangladesh amended the import policy that makes it mandatory for ship importers to submit pre-cleaning certificates for ship import (Hasan, 2012).
2010	Leading European ship recycling technology provider, Greendock, came up with a new solution & technology to save the ship-breaking industry in Bangladesh, but it was not accepted by the existing ship-breaking yards on the plea of excessive costs (Bd News 24.com, 2011).
2011	The high court of Bangladesh again put a ban on the import of end-of-life ships to the ship-breaking yard in Bangladesh. However after the demonstration by ship-breaking workers (influenced by the owners) and pressure from the ship-breaking yards' owners, the ban was lifted after a short period of time (The Daily Prothom Alo, 2012).
2011	The Ship-breaking and Recycling Rules, 2011, was published and became mandatory for the ship-breaking yards in Bangladesh, and the ship-breaking industry was formally brought under the Ministry of Industry aiming to set up an environmentally friendly ship-breaking industry in the country (The Daily Star, 2012).

2.2 Contribution to national economy by the ship-breaking industry of Bangladesh

The ship-breaking industry of Bangladesh employs more than 250,000 workers directly and another 750,000 workers indirectly (Hossain & Islam, 2006), and it provides employment irrespective of seasons, unlike farming (The New Nation, 27 December, 2009). It is easy to get a job in the industry as people do not need any prior skills or knowledge. One of the workers provided the following insight about his job in the ship-breaking industry.

I have been working in the ship-breaking yards for the last four years. It's not difficult to get a job here (interviewee no. 12).

It is obvious that it provides employment for some of the people who do not have any other options; particularly the people from the Northern part of the country, who to a great extent, depend on this industry for their livelihood. Besides employment, the ship-breaking industry is the main source of the bulk of raw materials used by some 500 private sector re-rolling mills and nearly 50 steel mills for producing mild steel rods, bars and angles at affordable prices (Hossain, 2010). The salvaged metal from the ships is melted down at mills and recycled into

construction materials. A significant proportion of new building constructions in Bangladeshi cities and towns uses metal cut from the ships that sailed the oceans of the world (The Daily Star, 2011). Furthermore, this industry provides many scrap items which are being used by local households and businesses as well being exported to earn foreign currency. The following table provides a brief summary of the materials extracted from the ship scrapping and the potential use of such materials.

Table 2: Materials/machineries collected from a ship and their uses

Materials	Potential uses
a. Steel	1. Raw material for re-rolling mills 2. Steel plate, frame, girder, stiffener, longitudinal, etc. are used for construction of inland vessels (local vessels)
b. Electric cable and cable sheathings	1. House hold and industry 2. Cable sheathing is used in rubber industry 3. Inland ship-building industry
c. Navigational instrument such as compass, navigation light, life boat & buoy, life raft, fog horns, generator, battery, various maps, fire fighting equipment etc	1. Inland ship-building industry 2. Other industry
d. Marine engine	1. Export for reuse by shipping companies 2. Inland ship-building industry
e. Generators, pumps, compressors, other mechanical equipments & machineries	1. Household use 2. Inland ship-building industry 3. Garments industries and some are exported
f. Motor, light, fans, fridge, switch, switchboard, various electrical & electronic materials	1. Household use 2. Inland ship-building industry 3. Used in industries and some are exported
g. Steering gear, capstans, windlass, crane, anchor, cable, chain, block, pulley, wear rope, bollard, fairlead, deck-eye, hatch, hatch coaming, various fittings & fixture, etc	1. Inland ship-building industry
h. Furniture, utensils, bedding materials, bathroom fittings, refrigerator, washing machine, etc	1. Household use 2. Inland ship-building industry 3. Used in industries and some are exported
i. Fuel and lube oil	1. Transport industry 2. Inland vessels (local vessels)
j. Burnt oil and oil sludge	1. Brick field
k. Coolants	1. Refrigerant industry
l. Dye	1. Dying industry
m. Heavy metals like copper, zinc, mercury, brass, alloy metal	1. Recycled in metal industries 2. Other industry 3. Export

Source: Adapted from Hossain et al. (2008) and Hossain & Islam (2006).

From the above table it is noted that there is almost nothing from the scrap of the end-of-life ships that cannot be reused in some way or other in Bangladesh. Some well-maintained and better conditioned items are even exported, such as Marine engines, and many of the items are being used in the inland ship building industry and for household fittings. The insignificant objects, the smallest parts of a ship are also recycled or resold. As such, even the last drops of oil from the tanker's holds are drained and resold. Moreover, the garments' manufacturing factories use engines and generators off the abandoned ships. Boilers are mainly used in the rice mills, garments washing plants, knitting plants and other industries.



Picture 1: The left-over items stored near road side for resale, pictures taken by the researcher in January, 2012

Picture 1 shows how some of the scraps are stored for resale in protected areas and hundreds of these types of stores can be found near the ship yards. Many things from ship scrapping are being sold along the streets of Dhaka-Chittagong highway (particularly across the 20 kilometres from Vatiary to Sitakundu), unavoidable from visitors' eyes while travelling along the highway. These items include, but are not limited to, wooden planks and furniture, small motors, pumps and

machines (e.g. lathes), navigation equipment (e.g. sextants), life-saving equipment (e.g. life buoys, lifeboats, life vests), flags and navigational manuals, personal protective equipment (e.g. helmets, boots, gloves, overalls), chemicals and paint, different steel parts (e.g. anchors, chains, ventilation parts, pipes), toilet and sanitary equipment (e.g. toilets, sinks, and bathtubs), furniture (e.g. sofas, chairs, tables, beds), televisions, fans, cables and electrical wiring (undamaged cables are reused while damaged cables are burned), batteries, insulation material (e.g. asbestos and mineral wool), kitchen equipment, dishes, canned goods and foods, and so forth (Hossain et al. 2008; Hossain & Islam, 2006).



Picture 2: The road side shop selling all the scraps collected from the ships. The picture was taken by the researcher during January, 2012.

Picture 2 shows how the various parts of a ship are gathered on the road side (Dhaka-Chittagong Highway) to attract customer's attention. The customers are usually the local re-rolling mills, local households, businesses and some foreign tourists. The development of this local shopping vicinity also provides employment and livelihood for several hundred thousand people in Bangladesh. Because of lower costs and discounted pricing, Bangladesh is becoming one of the

largest suppliers of scrap metal items and ship accessories among all the developing countries (Hossain, 2010). However, despite providing employment and supplying steel and scraps, this industry has been extensively criticised by local as well international media, NGOs and human rights bodies for its negative social and environmental impacts.

2.3 Social and environmental criticisms of the ship-breaking industry of Bangladesh

The ship-breaking industry of Bangladesh has been criticised for its poor working conditions and violation of human rights, and environmental disasters across the coastline of Bangladesh. To understand how each phase of ship breaking has health implications (for example, from the hazardous conditions), the researcher collected a 'ship-breaking plan' from a ship breaking company of Chittagong. This is provided in the following diagram (Figure 1). A typical ship-breaking plan involves three stages: de-ballasting and beaching; cutting the ships; and recycling of the waste after cutting. During the de-ballistic and beaching stage, several documentations/certifications are required from different government departments. However, in most of the cases, these are not strictly followed, and ship breakers hurry the process to access the metals and scraps as fast as possible.

The following sections provide discussions about the working conditions, human rights violations, poor payment systems, environmental disasters, and more in each of these stages of ship breaking. These discussions are relevant to understanding why the shipping companies need to assume some accountability,

given that their recycling of ships is associated with the negative social and environmental affects within the ship-breaking industry of Bangladesh.

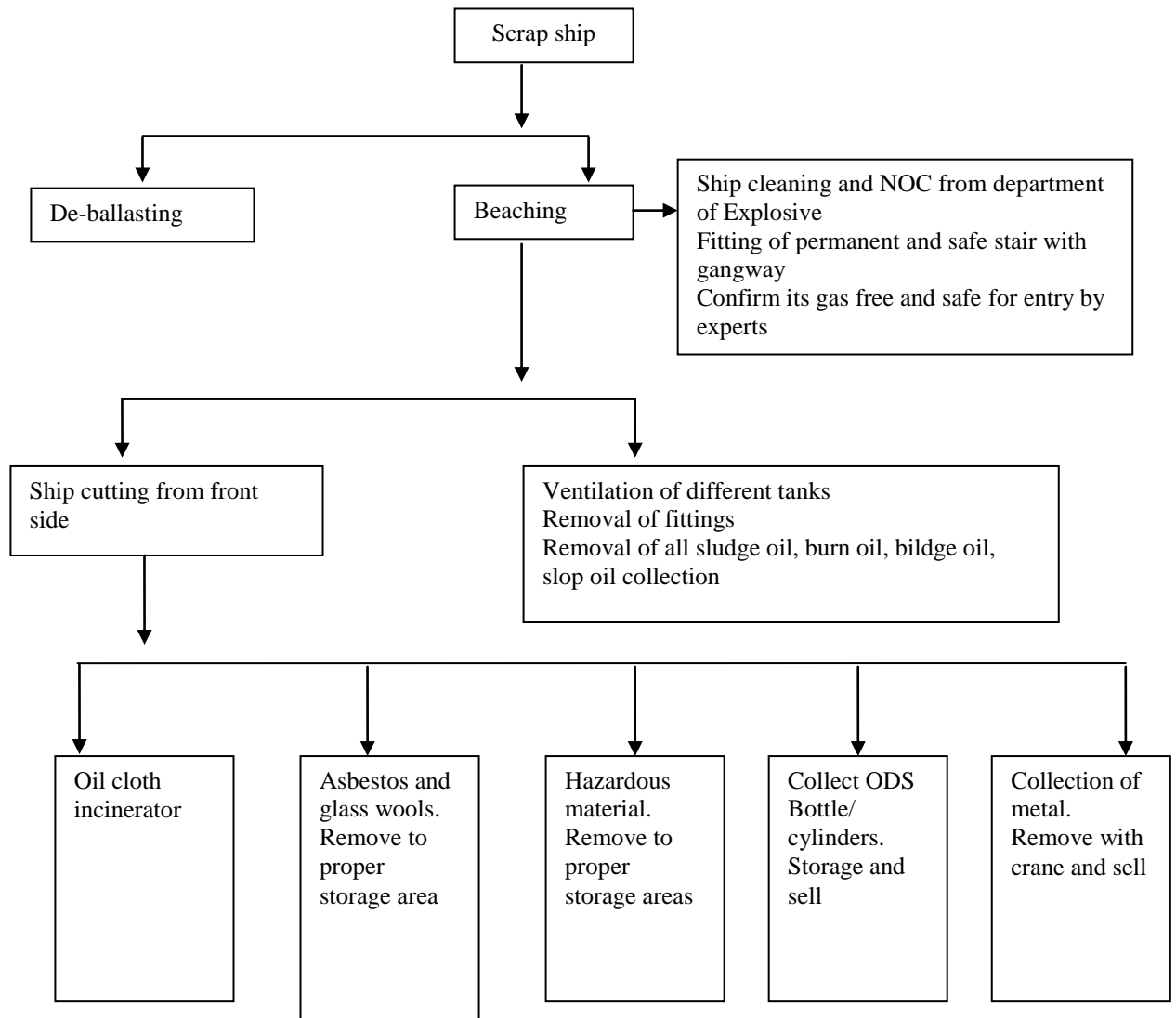


Figure 1: Source: Muhib steel & ship recycling industry, Sitakund, Chittagong, Bangladesh.

2.3.1 Working condition and violation of human rights

Cairns (2007) notes that the ship-breaking industry of Bangladesh is criticised on a number of grounds, including the dangerous working conditions and the number of deaths arising from these, environmental pollution, and the impacts of working with asbestos and other materials that are hazardous to human health. Karim

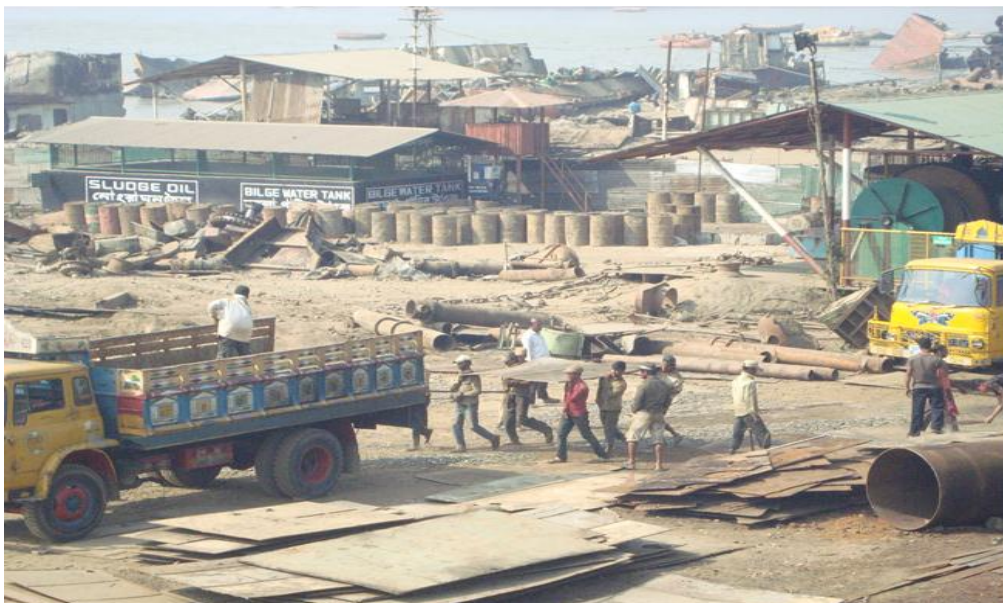
(2009) also states that the government and the ship-breaking industry are violating the fundamental human rights of the people in the ship-breaking yards. Sharma (2012) reported that there were about 1,300 workers killed and about 4,000 workers severely injured⁶ during the last decade in the ship-breaking industry of Bangladesh. However, this number might not be the actual number of casualties, as Hossain et al. (2008) note that the accidents are not always reported or recorded and employers often conceal the information, even from the families of victims, and typically avoid paying any compensation. Rights activists in Bangladesh claim that the health cost for employees working in the ship-breaking yards is too high because of environmental issues, for example, about 90% of the workers suffer some form of accidental injury while working in the ship yards (The Financial Express, 2010). Most of the injuries occur as the workers work bare handed and bare footed and in very muddy conditions. The following picture demonstrates some of the issues noted above.



Picture 3 (adapted from The Economist, October 27, 2012)

⁶ This is an official statistic; the actual death toll could be much higher than this figure.

Picture 3 shows how workers in a ship-breaking yard manually carry the heavy metal rope to connect it to the ship and then use a machine to move the ship to a convenient location for dismantling. People here need to walk in a rhythm, if someone misses the rhythm, he falls and will most likely injure himself. The beaching method widely applied in the local ship-breaking is unique; with the flat muddy land and huge labour force, ship yard owners are able to do away with expensive and heavy infrastructure required for pulling and docking the ship (Zakaria, 2011). With this kind of beaching method, the ship is sailed at its maximum speed using its own power during high tide, and forced to beach over the flat muddy land where it is dismantled into smaller parts using semi-skilled and unskilled labour during low tide (Zakaria, 2011). Then the dismantled parts are pulled to the dry shore area using electric winches and labour force.



Picture 4: Workers carry truck-able pieces of iron sheets on their shoulders, a job which would be a lot easier and quicker if carried out by lorries. This picture was taken by the researcher during January, 2012.

Picture 4 above shows how workers in the ship-breaking yards manually carry heavy steel plates which weigh sometimes more than a tonne. Again they need to

walk in rhythm; if someone misses the rhythm, the metal plate falls and can cause serious injury, including death. Especially when workers include child labour or elderly people, there is more chance of losing rhythm, and therefore resulting in serious injury or death. One of the interviewees focused on the unhealthy and dangerous working conditions within the ship-breaking industry:

Very inhumane conditions are prevailing in the ship-breaking industry of Bangladesh. People are injured almost every day and become disabled for life. The workers are being treated like a machine. No human rights over there. There are frequent accidents relating to falling plates, suffocation, toxication, or fire explosion (interviewee no. 1).

Although ship-breaking has been declared an industry by the government of Bangladesh, it is still an informal industry without formal employment letters, formal wage rates structures, and a labour union. Hasan (2012) also notes that this industry falls short of all safety and environmental standards that an industry under the Labour Act of 2006 is required to meet.

Workers' rights are extremely violated - within the ship-breaking yards of Bangladesh. They are not considered as formal workers; they have no employment letters, no specific wage rate, no protection equipment i.e. gloves, and helmets etc, not any training even. Ship-breaking is a very hazardous and risky job. We have the evidence that at least one worker dies once in a week here in Chittagong (interviewee no. 7).

About 75% of the workers of the ship-breaking yards of Chittagong are employed temporarily on a 'no work, no pay' basis and get their wages daily at the rate of US\$1.5 to US\$ 3 per day depending on experience (Hossain et al., 2008). However, the original shipowners receive an aggregated amount of more than 1 billion US dollars annually by exporting old ships to India, Bangladesh, Pakistan and China for scrapping (Greenpeace, 2003). In the case of death or injury, the workers (or their families) often do not get the proper amount of compensation as they have no documents such as appointment letters and most of them are illiterate.

As the workers do not get any appointment letters, how could they claim for the compensation? Most of the workers are from northern parts of the country, and are illiterate so it is very easy to exploit them. This is one kind of slavery (interviewee no. 6).

Delphine Reuter, information and communication assistant at NGO Ship-breaking Platform, an NGO in Brussels, also describes ship recycling as ‘close to slavery’ in her report published in the Economist (The Economist, October 27, 2012). However, the truth remains that there are still people in Bangladesh who are aware of this, yet seek employment within the ship-breaking industry. Although the workers are involved in dangerous work, they receive very poor wages as noted above and even their payments are delayed in some cases; they are also required to buy their own helmets and personal protective equipment. A ship-breaking worker provides the following insights:

Some yards pay Tk20 per hour, some yards pay Tk15 per hour so the rate varies. Sometimes we are not getting paid regularly. The owners always keep some payments outstanding to make sure that we do not leave. We need to buy our own helmets, or safety measures. I have no mask, so I just use a piece of cloth to protect my nose and mouth (interviewee no. 11).

2.3.2 Child labour in the ship-breaking industry of Bangladesh

The use of child labour is very common in the ship-breaking yards of Bangladesh, as about 20% of the workers are below the age of 15 and therefore considered as child labour according to the Child Labour Convention (Karim, 2009). The Economist (2012) also finds that one way in which Bangladesh competes on cost is that poor workers are unlikely to file claims for accidents or bad health, and another advantage is (or was) the use of child labour in the ship-breaking industry of Bangladesh. FIDH (2008) provides a detailed report on the use of child labour in the ship-breaking yards of Chittagong, Bangladesh. The FIDH has been observing the child labour situation within the ship-breaking yards since 2000, and

in 2008 they believed that the use of child labour remained the same; they (FIDH, 2008) found that children and young workers below the age of 18 account for up to 25% of the work force on the yards. They argued that child labour is widespread in Bangladesh, but the involvement of children in ship-breaking yards is particularly alarming because of the very hazardous nature of the work and the physical strength it requires (FIDH, 2008). While investigating the reasons behind the use of child labour, FIDH (2008) found a number of interesting insights which included the loss of land by poor families following floods, single-mother families, burden from a loan from micro credit, families not being able to meet daily expenses, employers slack about the age requirements, and the shift of child labour from the textile and garments sector. Given that there are serious human rights abuses and the use of child labour within the ship breaking industry of Bangladesh, it is argued that there is clear breach of the United Nations Global Compact (2013) Principles⁷ by the suppliers of end-of-life ships. Being a normative framework, these principles are globally accepted as ‘benchmarks’ and it is expected that the countries supplying the end-of-life ships are signatories to the 10 principles, and thereby taking actions to reduce human rights abuses and to eliminate child labour in the workplaces.

2.3.3 Asbestos in the ship-breaking yards

The Department of Health, Queensland Government, Australia (2007) defines asbestos in their official website as follows:

Asbestos is a naturally occurring mineral found in the surface of the earth which contains strong fibres that have excellent durability, fire resistance and insulating properties. It is 50 to 200 times thinner than

⁷ United Nations Global Compact (2013) provided ten principles in the area of Human rights, Labour, Environment, and Anti-Corruption.

a human hair, can float in the air for a long time, can be invisible to the naked eye and can be breathed into the lungs. Asbestos can cause health effects if fibres are breathed into the lungs, causing lung cancer.....

The Australian government nationally banned the use of all forms of asbestos on 31 December 2003. Although the life-threatening ‘asbestos’ is banned in many countries including Australia, it is scattered far and wide within the ship-breaking yards of Bangladesh, which causes long-term health effects for the workers.

Asbestos is everywhere in the field although it is completely banned. Most of the ships contain asbestos or glass-wools etc., a tiny exposure of which is enough for lung cancer (interviewee no.1).

Although asbestos is very dangerous to human health, workers are often unaware of this hazard. Employers often deliberately do not inform them; for fear that they might leave the yard:

I don't know about asbestos or any other things that may cause harms, what is it? We have never been informed about it or other life-threatening materials, I think people of high level know about these (interviewee no. 11).

There are other materials as serious as asbestos which are typically found in an end-of-life ship, and the workers do not know anything about these and are consequently exposed to life-threatening risks while cutting up the ships:

More serious is silent accidents as the ship contains PCBs, asbestos, and other hazardous matters which has long and medium term effect. Some of these cause cancer (interviewee no. 6).

There is no safe limit for asbestos, as even a small particle can cause deadly asbestosis cancer (Hasan, 2012).

2.3.4 Environmental pollution and displacement of the local fishing community

The environmentalists fear that the unregulated and haphazard growth of the ship-breaking industry and its subsidiary industries, such as the re-rolling industry (which is a by-product of the ship-breaking industry), might lead to serious environmental degradation (Hasan, 2012). There are allegations from different NGOs and environmental groups that the ship-breakers often violate environmental law by dumping hazardous chemicals and other materials on the beach without care (see for example, YPSA, 2005; Hasan, 2012).



Picture 5: The hazardous surroundings in the ship-breaking yard. This picture was taken by the researcher during January, 2012.

This picture (Picture 5) demonstrates how steel plates and other broken metals and hazardous items are scattered in a typical ship-breaking yard of Chittagong, Bangladesh. Some of these items might not be lying there for a long time, but during high tide the hazardous substances mix with the ocean water and thus pollute the entire coastal area.



Picture 6: Unhealthy and dangerous working environments. This picture was taken by the researcher during January, 2012.

Picture 6 above provides evidence of unhealthy and dangerous working conditions within the ship-breaking industry of Bangladesh. Hazardous materials, including toxic items are sometimes dumped nearby, reflected in the above picture, which causes serious health hazards to the workers. All the surroundings, including the air gets polluted, for example, when visiting a ship-breaking yard, one needs to wear a mask to prevent against the pungent smell of burning oil. All of these toxic and hazardous substances have both temporary and permanent health consequences for the workers. AlJazeera (2011) states that the soil and water in ship-breaking areas show high levels of toxicity, with limited environmental protection and virtually no proper management of deadly chemicals. According to a World Bank Report (2010), soil contamination tests showed concentrations of cadmium, chromium, lead, mercury and oil.

Thus the ship-breaking industry causes serious environmental problems in the coastal region of Chittagong, Bangladesh, and many of the local fishing villages have simply disappeared or dislocated due to the environmental pressure of the

ship-breaking industry; there are very few fish found in the surrounding areas. The following quote provides further evidence of environmental pollution and the displacement of local communities:

They are breaking the ships in the open air, polluting the sea water by throwing the hazardous materials, and displacing the local fishing community. Could you think of a situation, let's say every ship has at least 1 ton of toxic substances and if 100 ships are imported in a year on average, then 100 ton of toxins are brought into the country. The country is doing this for last 45 years. So can you imagine how much toxic waste is polluting the sea water and the environment? Although it creates employment and provides steel or iron, and generates revenue which is visible, but what is invisible, is the long term effect, the huge loss of environmental and health of workers and extinction of sea species and local fishing communities (interviewee no.1).

In addition to this there is no waste management system and ship breakers are consistently dumping their used oil in the sea, which not only contaminates the ocean, but is also dangerous for sea species:

They have no waste management plan; they throw black oil in the sea. The community don't get water. Lands are occupied by ship owners, the local community who actually depended on fishing; ultimately changed the living place. Owners force them to leave the place. Before there were 100 types of fish but now very few fish, most of the fish have disappeared and taste like 'kerosene' or chemicals because their food life-cycle is contaminated by chemicals (interviewee no. 6).

The environmental damage caused by the ship-breaking industry and the damage to the eco-systems is of great concern to some of the stakeholders. Bangladeshi environmental lawyer, Hasan (2012), also noted that the ship-breaking industry of Bangladesh poisons marine organisms and the soil. She further added that continuous oil spills threaten natural resources and birds, and contaminates soil and surface water; this has a significant long-term effect on the coastal environment of Bangladesh.

2.3.5 Hazards involved in ship-breaking activities:

Worldwide, this industry largely avoids scrutiny in regards to the environmental and health risks that it entails (Hasan, 2012). As ship-breaking activities involve very risky tasks, there are potential hazards throughout the demolition process. Most of the accidents in the ship-breaking industry are caused by toxic gas explosions, electric shocks, and workers falling off heavy metal plates from upper decks (which are up to 70 m high) to lower decks, as they are not using safety harnesses (FIDH, 2002, YPSA, 2005, Hossain, 2010). There is hardly any training conducted by the employers for workers regarding the dismantling process and safety measures. As workers are not aware of hazards to which they are exposed, they frequently suffer from suffocative injuries and lung problems, which results in a temporary loss of their working capacity. In most cases, ships are not properly cleaned before beaching; the toxic and hazardous contaminated gas sometimes explodes and causes serious injury (Hossain & Islam, 2006). A ship-breaking worker provides further insight about the common hazards within the industry:

Accidents must be here, very risky job, accidents include gas explosions, falling plates, falling down from the top of the ships etc. (interviewee no. 12).

Although ship-breaking is a risky occupation with many accidents and fatal occupational diseases, the employers rarely provide any PPE (personal protective equipment) in general or appropriate PPE in specialized areas (Hossain & Islam, 2006). The common hazards that are likely to cause work-related injuries and death, ill health, diseases and incidents among ship-breaking workers are listed in the following table:

Table 3: Common hazards in the ship-breaking yards of Chittagong, Bangladesh.

Types of Accidents	Details of Accidents
A. Serious Accident Hazards:	Fire and explosions: explosives, flammable; falls from heights inside ship structures or on materials or on the ground; being struck by falling objects; struck by moving objects; compressed between heavy objects; slipping on wet surfaces; snapping of cables, ropes, chains, slings; sharp objects; handling heavy objects; poor access to oxygen; deficiency of oxygen in confined spaces; progressively dismantled vessels (floors, stairs, passage ways); lack of PPE, housekeeping practices, safety signs etc.
B. Hazardous Substances:	Asbestos fibres; dust; PCBs & PVC (combustion products); heavy and toxic metals (lead, mercury); welding fumes; cadmium, copper, zinc etc.; organometallic substances (tributyltin, etc.); volatile organic compounds (solvents); lack of hazard communication (storage); inhalation in confined and enclosed rooms (suffocation); batteries; fire-fighting liquids; compressed gas cylinders etc.
C. Physical Hazards:	Noise; vibration; extreme temperatures; poor illumination etc.
D. Mechanical Hazards	Trucks and transport vehicles; shackles, hooks; chains; scaffolding, fixed and portable ladders; cranes, winches, hoisting and hauling equipment; impact by heavy and sharp-edged tools; lack of safety guards in machines; power-driven hand tools, saws, grinders; poor maintenance of machinery and abrasive cutting wheels equipment etc.
E. Biological Hazards	Toxic marine organisms; animal bites; risk of communicable diseases transmitted by pests, vermin, rodents, insects and other animals that may infest the ship; infectious diseases (TB, malaria, dengue fever, hepatitis, respiratory infections, and others)
F. Ergonomic and Psychological Hazards	Repetitive strain injuries; awkward postures; mental stress, strained human relations; repetitive and monotonous work; excessive work load; aggressive behaviour; consumption of local drugs (Ganja) to reduce work pressure/stress; workplace abuse and violence; long working hours, shift work, night work; poverty, low wages, under age; temporary employment; lack of education and social environment etc.
G. General Concerns	Lack of safety and health training; inadequate accident prevention and inspection procedures; poor work organisation; inadequate emergency, first-aid and rescue facilities; inadequate housing and sanitation; lack of medical facilities and social protection etc.

Source: Adapted from ILO (2003) and Hossain & Islam (2006).

The table above provides an extensive list of common hazards in the ship-breaking yards of Chittagong, Bangladesh. However, the list is by no means exhaustive given the unhealthy, filthy, muddy and dangerous working conditions within the ship-breaking yards, which to some extent were explained in the previous sections. Sometimes ships are cut by the workers who are not wearing gloves and goggles; these crude attempts very often cause severe injuries. It is found that the beaches where ship-breaking takes place are strewn with chemicals and toxic substances, small pieces of pointy and sharp iron splinters on the surface

of the beach also causing injuries (Hossain & Islam 2006). Occupational health and safety is not important to the employers, they hardly even maintain a First-Aid Box (Hossain & Islam 2006). However, when asked about all of these unsafe and dangerous working conditions, the interviewees (from the ship-breaking yards', managers, owners and the government representatives) all seem to be in favour of putting business before social considerations. They basically focus on the positive side such as employment generation and the supply of steel rather than on the social and environmental issues described above.

2.4 Documentary on the ship-breaking yards

There are some documentaries or investigative media reports focusing on the ship-breaking industry of different countries, such as India and Bangladesh. The first known investigative media reports were produced by Gary Cohn and Will England in December 1998, which attracted the '1998 Pulitzer Prize' for investigative reporting (Hossain, 2010). The report investigated an American ship that was supplied to the ship-breaking yards of Alang, India and focuses on the death and injury of the workers within the ship-breaking yards. The first documentary film covering this was named 'Ship Breakers' and was directed by Michael Kot, a Canadian movie maker; this was a co-production of the National Film Board of Canada with Storyline Entertainment in 2004. It also focuses on the working conditions and health and safety issues, particularly the death and injury of the ship-breaking workers in Alang, India. Then CBS News (2007) telecast 60 minutes documentary on the ship-breaking industry of Bangladesh which attracted much attention and received international media coverage.

The story grew momentum because of Europe-wide interest, particularly in Holland, where it became a national issue (Hossain, 2010). The most recent documentary film 'The Iron Eater' also attracted huge media attention globally. The documentary was written, filmed and directed by Shaheen Dill-Riaz, a Bangladeshi-born French movie maker. The documentary was originally in French and it was called 'Eisenfresser', produced by Hamburg's Lemme Film GmbH; it has won many awards such as the New Berlin Film Award 2008 for best documentary and the Grand Prix 2007 des Festivals Le Festival International Du Film D'Environnement, Paris. The movie actually provides details of the working conditions of the ship-breaking industry of Bangladesh and presents the negative aspects of the industry. Since the release of this documentary, the ship-breaking yards' managers have become very vigilant and no longer allow any visitors to their site unless the visitors have some personal connection with the yard managers or the owners of the ship yards. Even if they allow visitors, photographs are rarely allowed. Hasan (2012) also notes that both the government and the yard owners are unwilling to allow independent third parties or visitors to inspect or visit the yards.

2.5 The implications of all these negative social and environmental consequences of the ship-breaking industry of Bangladesh

With all these poor and unsafe working conditions, and the violation of human rights in the ship-breaking yards, the shipping companies (the ones who send their ships from overseas) appear to assume limited responsibility and/or accountability for selling their ships to the ship breakers who eventually cause social and environmental harm (Karim, 2009). Bangladeshi environmental lawyer, Hasan

(2012), recently argued that most countries in the world have rejected this industry, not only because it is not compliant with their court orders and environmentalists' concern, but also because greater public interest is weighed against the environmental contamination and health effects of the industry. She asked 'what is it that prompts the owners of the ships to dump their end-of-life ships in countries like ours' without giving any answer to her own question. The answer to her question potentially relates to the notion of accountability of the shipping companies. The main problem is that it is very hard to trace the shipping companies, as they often change the name of their ships, or use alternative ways to sell the end-of-life ship. Presumably, the reason for this is to avoid potential responsibility as well as accountability associated with being linked to ship-breaking activities. Thus, while exploring the accountability of the shipping companies, the discussion above provides an impetus to justify why shipping companies need to take responsibility for sending their out-of-service ships to Bangladesh.

2.6 Conclusion

This chapter provides the chronological development of the ship-breaking industry of Bangladesh, which is the context of this thesis. Starting by accident as a result of a cyclone, this industry has become one of the most important industries from a global marine business perspective. A cheap and resilient labour force, coupled with flat beaches for intentional strandings, ushered in the start of a new industry for Bangladesh: dismantling the great hulks of the sea and selling their steel for scrap. Almost all the parts of the scrap ships are being reused in some way or other and even some items in better condition are exported.

However, over the years Bangladeshi ship breakers have found themselves at the forefront of criticism, as NGOs and pressure groups have exposed some of their worst practices which have led to environmental and human harm. These include health risks due to injuries, noxious fumes and the handling of asbestos and other toxic materials. But it would not be fair if all the criticism and confrontations were aimed at the ship-breaking industry of Bangladesh, as shipping companies also need to be made accountable, as these are their hazardous end-of-life ships that are being dismantled in the ship-breaking yards. Given that the negative social and environmental issues discussed in this chapter are of relevance to the social and environmental accounting discipline, particularly in relation to exploring accountability issues, the next chapter will discuss the relevant literature within social accounting discipline.

Chapter 3

Literature review

3.0 Introduction

This chapter provides a discussion of the relevant literature pertaining to social and environmental disclosures in general, and ship recycling-related information disclosure in particular; there is a scarcity of research relating to the latter. However, there is some research that explores the accountability of companies generally, which has been reviewed in this thesis. This thesis embraces a normative perspective as it endeavours to evaluate corporate disclosure practices against a series of value judgements (prescriptions) made about how shipping companies *should* disclose information about their end-of-life ships. Thus, this chapter discusses the normative perspective of research within the social and environmental accounting context. The accountability model developed to evaluate the shipping companies' disclosures is also discussed in this chapter. Finally, this chapter identifies the research gap addressed by this research.

3.1 Social and environmental disclosures

Exploring social and environmental disclosure is not a new phenomenon within social accounting research. Social and environmental disclosures constitute part of what is generally termed social responsibility disclosures, and these include, among other things, disclosures relating to the interaction between an organisation and its physical and social environment (Deegan & Gordon, 1996). Social responsibility reporting may include information about the environment, energy use, human resources, product and safety, and community involvement (Deegan & Gordon, 1996; Hackston & Milne, 1996; Islam & Deegan, 2008). Social

responsibility reporting fits into the broader discipline of Social and Environmental Accounting (SEA) research. SEA researchers often focus on what companies disclose (see for example Bell & Lehman, 1999; Gray, Kouhy, & Lavers, 1995; Newson & Deegan, 2002), where they disclose (Tilt, 2008; de Villiers & van Staden, 2011) and since most disclosure is voluntary, why they disclose (see for example Adams, Hill, & Roberts, 1998; Clarkson, Li, Richardson, & Vasvari, 2008; Islam & Deegan, 2008; Belal & Owen, 2007). Belal and Momin (2009) argue that social and environmental disclosure is an important element in corporate social responsibility reporting and it is relevant for addressing issues such as climate change, poverty alleviation and human rights. Some early research exploring social and environmental disclosures includes Ernst and Ernst (1978), Trotman (1979), Hogner (1982), Guthrie and Parker (1989), Andrew et al. (1989), Yamagami and Kokubu (1991), Patten (2002), Gray et al. (1995), Deegan and Gordon (1996), Adams, Hill and Roberts (1998), and Tsang (1998) among others. Most of the early researchers focused on the nature and frequency of disclosures, which were descriptive in nature and documented social and environmental disclosure practices via content analysis (Owen, 2008).

Over the years, social and environmental disclosures have become an important area of research and receive attention from SEA researchers. Since the late 1990s scholars have been investigating environmental disclosures from different points of view (see for example, environmental disclosures of property development companies (Ahmad & Haraf, 2013); relationships between environmental

performance and environmental disclosures⁸, and disclosures relating to environment-related financial liabilities (see for example Deegan & Ji, 2008; Gray et al., 1998; Moneva & Llena, 2000; Rockness et al., 1986; Northcut, 1994; Leary, 2003). These studies reveal that organisations often fail to disclose, within their annual reports, details about how or whether they are assuming the responsibility for a particular event that relates to a negative social and environmental issue. For example, Deegan and Ji (2008) find that there is an overwhelming lack of publicly available information about Australian-contaminated sites, despite the belief that thousands exist.

Belal (2008) notes that in the developing country context, the disclosure practices of social and environmental information are mostly self-laudatory and the organisations within developing country provide CSR information on a limited scale. Within the developing country context, Bangladesh took the lead in terms of available published research on social and environmental disclosures (Belal & Momin, 2009). Sobhani et al. (2009) find that the nature and extent of disclosures of Bangladeshi companies seemed to be poor and that the awareness of what was still lagging compared to that of developed countries. There is also lack of accountability and transparency of global companies in their operations in Bangladesh across a range of sectors such as garments and textile sector (Belal & Roberts, 2010). Although, some of the previous research within the context of Bangladesh explores the social and environmental issues and related

⁸ A number of researchers investigated the relationship between environmental performance and environmental disclosures and found a negative relationship (see for example Cho & Paton, 2007; Patten, 2002; Hughes et al., 2001), a positive relationship (such as Clarkson et al., 2008; Al-Tuwaijri et al., 2004) and no relationship (see for example Freedman & Wasley, 1990; Wiseman, 1982; Ingram & Frazier, 1980).

accountability in the textile and garments sector (see for example, Islam & Deegan, 2008), there is no research to explore the accountability of the ship breaking industry.

In relation to the topic of interest within this thesis, there is limited research investigating the disclosure practices of corporations in relation to the ship-breaking industry. Specifically there is no known research that explores the accountability of shipping companies regarding various social and environmental issues associated with ship-breaking activities. Most of the prior research relating to the ship-breaking industry focuses on pollution, impacts on marine life, biodiversity issues, and working conditions within the industry (see for example Mitra, 2005; Nesar et al., 2008; Rousmaniers & Raj, 2007; Greenpeace, 2006; Bhattacharjee, 2009; YPSA, 2005).

Within Bangladesh, most of the early research on the ship-breaking industry focused on the factors that assisted with its development, while some recent research focuses on the working conditions, health and safety, and human rights violations of the ship breakers (see for example Sobhan & Ahmed, 1980; Andersen, 2001; Jabbar, 1998; Mehadi, 1994; Hossain & Islam, 2006; Hossain et al., 2008; Hossain, 2010; Karim, 2009; Belal & Momin, 2009; Babul, 2000; Siddique, 2004; Debdas, 1998; and Hasan, 2012). However none of this prior research considers the social and environmental disclosures of the shipping companies involved with supplying ships for dismantling.

SEA researchers use different theoretical lenses to explain their findings (see for example Islam & Deegan, 2008; Belal & Owen, 2007; Deegan, 2002; Khan et al., 2011). Chen and Roberts (2010) note that most of the researchers in the social accounting literature use legitimacy theory, institutional theory, resource dependence theory and stakeholder theory to analyse their findings (see for example Islam & Deegan, 2008; Belal & Owen, 2007; Khan et al., 2011). Research in social accounting can be labelled as either positive or normative research (Deegan, 2011). This is discussed in the next section. Legitimacy theory, institutional theory, resource dependence theory and stakeholder theory (of the managerial or instrumental variety) are all examples of positive theories, as they either seek to explain or predict particular activities.

3.2 Normative perspective of research

Positive research seeks to predict and explain particular phenomena whereas the normative perspective provides prescriptions or guidance about what corporate managers *should* do (Deegan, 2011). Gaffikin (2005) notes that the positive perspective provides a statement about *what is* and contains no indication of approval or disapproval, whereas a normative statement expresses a (value) judgment about whether a situation is desirable or undesirable and is couched in terms of *what should be* or *ought to be*. The positive perspective of research is generally applied to investigate the managerial motivation for social and environmental disclosures; in most cases it was found that organisations disclose social and environmental information to manage powerful stakeholders (see for example Islam & Deegan, 2008; Belal & Owen, 2007, Deegan & Blomquist, 2006; Ullman, 1985), to secure or maintain legitimacy, or to meet community

expectations (Deegan, 2002; O'Dwyer, 2002). In contrast, the normative perspective of research seeks to inform others about particular practices that *should be* followed to achieve particular outcomes (Deegan, 2011). Deegan (2006) notes that the normative perspective asks the question '*what should be*' rather than explaining '*what is*'. Based on certain key assumptions, this perspective provides some prescriptions for a particular accounting issue and such prescriptions might represent significant departures from current accounting practice (Deegan, 2011). For example, corporate disclosure decisions, within a normative perspective, should not be responsive to perceived legitimacy threats but should be based on the beliefs about what managers are considered to be accountable for, and what people need to know about the organisation (Deegan, 2002, p. 298).

Some of the prominent research within this perspective includes Cooper and Owen (2007), Adams (2002), Lehman (1995), Gray et al. (1996), Cooper et al. (2003), Hackston and Milne (1996), and Gray et al. (1995). As this thesis embraces a normative perspective to investigate the accountability of the shipping companies, and since there is no 'accountability model' that can be specifically applied to demonstrate or prescribe the level of accountability of the shipping companies in respect to their end-of-life ships, this thesis has sought to develop 'an accountability model'. The development of an accountability model, and various notions of accountability, is discussed in the following sections.

3.3 Notion of accountability

Accountability is a complex and abstract term (Walker, 2002) that is difficult to define (Mulgan, 2000) because it has many connotations. The Oxford English Dictionary defines it as:

The quality of being accountable; liability to account for and answer for one's conduct, performance of duties, etc. (in modern use often with regard to parliamentary, corporate, or financial liability to the public, shareholders, etc.); responsibility.

Boven (2007) defines accountability as a relationship between an actor and a forum, in which the actor has an obligation to explain and to justify his/her conduct, and the forum can raise questions and pass judgement, while the actor may face any consequences that might result from this process. Cousins & Sikka (1993, p. 53) provides the following insights into accountability:

Accountability is a key concept in the management of social affairs. Its meaning is dependent upon relations of power and has always been contested. It can be changed through social struggle and practice.

Chew & Greer (1997, p. 293) defines accountability as “the requirement that an individual give reasons for his or her action”, but it can be expanded to include groups larger than the individuals, such as corporations or governments (Andrew, 2001). Gray et al. (1996) argued that accountability can contribute to ‘free and fair’ society because it holds out “the possibility for the development of accounting in a way in which individuals are better informed and empowered, in which inequities in wealth are potentially exposed and the inequalities of power are somewhat reduced” (p. 42). In more practical terms Gray et al. (1997, p. 334) provide a broader notion of accountability:

Accountability is concerned with the relationships between groups, individuals, organisations and the rights to information that such relationships entail. Simply stated, accountability is the duty to provide an account of the actions for which one is held responsible. The nature of the relationships – and the attendant rights to information – are contextually determined by the society in which the relationship occurs.

Based on the notion of accountability, Deegan (2011) argued that corporate social reporting is responsibility-driven rather than demand or survival-driven which implies that people in society have a right to be informed about certain facets of an organisation's operations. Gray, Owen and Maunders (1991) also argued that the role of corporate social reporting is to inform society about the extent to which the organisation meets the responsibilities imposed upon it. Kaler (2002) notes that accountability has to be understood as the providing of answers, as reporting or, more obviously, 'giving an account'; in terms of the corporate or business context. This is a way of understanding accountability that connects it to financial auditing and reporting as well as to accountancy in general. He further argued that business ethics, perhaps in a somewhat derivative fashion, has linked business accountability to auditing and reporting of a social, ethical, or environmental sort as well as to the whole notion of transparency in business reporting and information providing (Kaler, 2002). Kaler (2002) finds that, from a 'stockholder perspective', responsibility along with accountability is an issue of concern, for only when there is the possibility that those in control are not serving the interests of owners. Conversely, from a stakeholder perspective, they are issues regardless of any separation of ownership from control. From this perspective, those controlling companies, be they also owners or not, have a responsibility to serve interests other than their own and so could be made accountable to those other interests (Kaler, 2002).

Over the years, the concept of accountability has evolved. For example, Friedman (1970, p. 6) states that "there is one and only one social responsibility of business--to use its resources and engage in activities designed to increase its profits...".

This implies that, the only accountability of business is directed towards its owners, not other stakeholders. However, Freeman (1984) countered the argument stating that businesses have responsibility to other stakeholders. For example, Freeman (1984) argued that, in addition to shareholders, there are many other interest groups who can affect, or be affected by, the firm's behaviour such as employees, customers, suppliers, government and the public in general. The issue of stakeholder involvement assumes central importance in reporting corporate accountability (Belal, 2002). This implies that organisations are not only accountable for their shareholders but they are also accountable to other stakeholders.

Gray (2002) also notes that one of the primary objectives of the social accounting process is intended to discharge accountability to stakeholders. The discharge of accountability by organisations operating in society has been identified as a key area of focus for accounting and the use of accounting information (Dellaportas et al., 2005). Herbohn & Herbohn (1999, p. 412) described the modern concept of accountability as a holistic concept that represents 'something beyond responsibility'. This concept of accountability requires that organisations be accountable for the often unintended and unacknowledged moral, social and environmental consequences of the pursuits of economic objectives (Dellaportas et al., 2005). To discharge accountability to stakeholders, organisations often disclose social and environmental information in publicly available documents, although, accountability is not just about disclosure. However, the researcher of this thesis used accounting disclosure as a proxy for accountability since this thesis interrogates corporate disclosures as a mode to demonstrate accountability.

Gray et al. (1996) use the normative perspective of research while developing an accountability model. The accountability model prescribed by Gray et al. (1996) explains how organisations should deal with stakeholders and proposes that since a firm's activities affect the well-being of a wide range of stakeholders, it is morally responsible, and therefore accountable, to these stakeholders. However, this model failed to provide any prescriptions (value judgements) that a particular company should follow if they were to assume an appropriate level of accountability towards the broader community/stakeholders. To overcome this limitation, the researcher of this thesis developed an accountability model based on a normative framework. Being a normative framework, this model cannot be tested. The prescriptions (value judgements) were developed from available national and international guides and materials relevant to the focal industry/company. For example, chapter four of this thesis notes that the researcher used 10 documents that specially provide some guidelines/prescriptions pertaining to ship-recycling.

As noted earlier, to evaluate how corporations demonstrate their accountability, this thesis uses 'an accountability model' that specifically provides some *prescriptions (value judgements)* that shipping companies *should follow* if they were to assume an appropriate level of accountability towards the broader community/stakeholders. The prescriptions pertain to how the shipping companies *should* provide 'accounts' about their end-of-life ships. There are many subjective judgements made in any prescriptions relating to accountability. The accountability model developed by the author of this thesis is presented in Figure 2. Again, it is emphasised that this is just one of many possible models of

accountability that could be adopted with different researchers having differing perspectives of how accountability should function, and how it should be demonstrated.

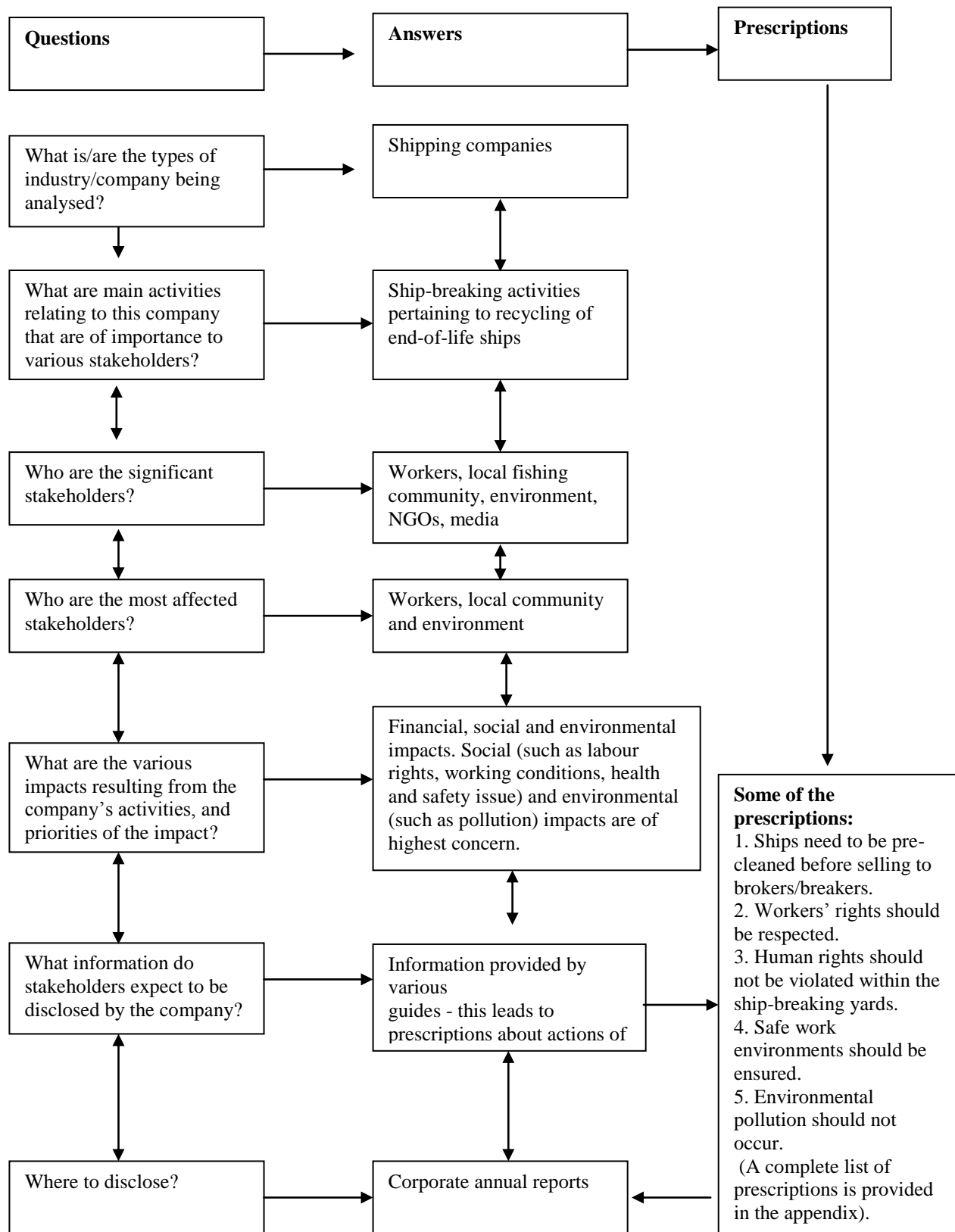


Figure: 2 Accountability model

The accountability model developed in Figure 2 is a generic model that could be used for any type of business activities to evaluate their accountability. The model

begins with some of the general questions relating to accountability (the left hand column). For example, what particular activities require accountability, what are the implications of that particular activity, who are the key stakeholders, who are the most (negatively) affected stakeholders⁹, and so forth. Once the answers to these questions are found, then it is necessary to provide a ‘*value judgement*’ about the particular activities of the company in question. This ‘*value judgement*’ refers to an individual’s opinion which is formed on the basis of available information and the personal value systems of the individuals making the judgements. The next question then arises – what information do stakeholders demand and how should the company provide this information to demonstrate their accountability. By asking such questions, the model generates prescriptions. These prescriptions could be developed from available national and international guides or materials relevant to the industry/company. For example, chapter four of this thesis notes that the researcher used 10 documents that specially provide some guidelines/prescriptions pertaining to ship-recycling. Finally the researcher needs to evaluate how/whether a particular industry/business provides disclosure in the publicly available media, such as corporate annual reports to demonstrate the accountability.

However, this model is based on some key assumptions: a company *should* disclose information pertaining to stakeholders’ demand for a particular activity, the company’s disclosure policy is influenced by stakeholders’ expectations, stakeholder power is not of relevance, and companies should use publicly

⁹ The researcher of this thesis acknowledges that the scope of the above model is restricted to the stakeholders who are negatively affected by the main activities of the ship breaking, and therefore, ignores the stakeholders who are positively affected (such as the owners of end-of-life ships).

available media, such as corporate annual reports, to provide information. As the model above is built upon a normative perspective, it is open to challenge by other researchers. Nevertheless, the researcher elected to use this model since there are known and documented human rights abuses, and those affected have limited means and political leverage to express dissatisfaction. The researcher use this model (which some people might disagree with) to evaluate how global shipping companies in general, and identified shipping companies in particular ('identified' refers to companies known to have supplied ships to Bangladesh), demonstrate their accountability. The following section discusses how the researcher of this thesis used this model to evaluate the accountability of the shipping companies for their ship-breaking activities.

3.4 Application of the model

3.4.1 Activities of the shipping companies

Shipping companies partake in many activities; of significance for this thesis, are their ship-breaking activities. The importance of the ship-breaking activities for the shipping companies is discussed elsewhere in the thesis. As the breaking or recycling of the end-of-life ships involves significant social and environmental impacts, shipping companies need to demonstrate an appropriate level of accountability pertaining to these issues. From the accountability point of view it is argued that the shipping companies need to assume responsibility for their old ships, by at least conducting pre-cleaning and safe recycling of the toxic or hazardous elements before sailing their ships for dismantling. Thus, the thesis takes the position – which is obviously normative – that given all shipping companies eventually dispose their end-of-life ships, and given that there is

always a real possibility that such disposal will be done in a less than ‘ideal’ way, it is essential that shipping companies disclose their policies pertaining to ship-disposal methods.

3.4.2 Who are the significant stakeholders?

The significant stakeholders for the particular ship-breaking activities include workers, the local community (including the fishing community), environment, NGOs, media and other. However, the most affected stakeholders are the workers and local community. Chapter Two of this thesis provides a detailed discussion about how workers and local community are affected by the ship-breaking activities. But these stakeholders have no voice in terms of raising their concerns. For example, the workers in the ship-breaking yards of Bangladesh are mostly illiterate and there is no union. Thus, without the power and leverage that a union brings to the table, the worker, as an individual, has no power to fight for these rights. Similarly the affected community has little power to fight for their rights with the powerful ship-breaking companies.

Since the workers and local community have no voice, often NGOs and media come forward to raise concerns about the violation of labour rights or the environmental pollution caused by the ship-breaking activities. From a normative perspective, these stakeholders, including the wider community, have a right to know how shipping companies are disposing ships, particularly how or whether the shipping company provides accounts for the social and environmental impacts pertaining to the breaking of their end-of-life ships.

3.4.3 What are the various impacts?

The ship-breaking activities have financial, social and environmental impacts. However, this thesis focuses on the social and environmental impacts. As indicated in an earlier chapter, social impacts include accidental death, serious injury, violation of local labour law, poor payment of wages, violation of human rights, displacement of local fishing community, use of child labour and so forth. Environmental impacts include environmental pollution, scattering life-threatening asbestos, disposing of toxic chemicals into the sea, and carrying waste and hazardous materials to the country's territory.

The significant negative social and environmental impacts of the ship-breaking activities imply that shipping companies have to be accountable for their end-of-life ships that are dismantled by the ship-breaking industry. Based on these discussions, it is the personal belief of the researcher that helps to develop the *judgement* that the shipping companies directly or indirectly should be responsible and accountable for the negative social and environmental impacts resulting from the ship-breaking activities. Given the implications that the ship-breaking industry of Bangladesh have in terms of poor working conditions, violation of human rights, and damage of coastal environments, some accountability also needs to be assumed by the suppliers of the ships. Chapter Two of this thesis broadly discussed the significant impacts of the ship-breaking activities by providing some insights from workers, NGOs and media reports, which revealed that shipping companies should take on some of the responsibility. A further insight by the program officer of YPSA is provided below:

IMO has a rule that actually saves the original owner(s) as it could allow the owner(s) to change the flags when it is sold to different

people. Last party may say – I have sold the ship to the person who is living in a country which is not a party of Basel convention –that is difficult to identify the owner. Some middleman (cash buyer) is involved and they are not from any country, they have a post box company in Singapore or Dubai where they buy ships from shipping companies and sell the ship to Bangladesh. A cash buyer is a person, a businessman not responsible for anything. He may be from any country. That is why the last owner can say I have sold it to Mr X (cash buyer) nobody knows him. The original owner(s) hides the information because they don't want to lose money on the responsibility issue. They could be asked for compensation if it is proved that it is their ship. So they want to avoid responsibility. I think it's just international politics in favour of the rich (owners) and against the poor (interviewee no. 7).

This quote justifies the claims that shipping companies should be accountable. To be accountable, it is argued that they need to provide disclosures about how they recycle their end-of-life ships, or whether they send their out-of-service ships to developing countries for dismantling. This is argued in line with the accountability model embraced in Figure 2.

3.4.4 What information do stakeholders expect to be disclosed?

The key stakeholders in this context include the workers and local community and they do not have a voice as noted earlier, and they do not know exactly what information they require. However, some NGOs and international monitoring bodies provide information about governance policies suitable for shipping companies, and the author of this thesis used this information as the basis for developing disclosure prescriptions pertaining to the breaking or recycling of the end-of-life ships. In fact, by asking what information stakeholders' demand, the model (Figure 2) generates a prescription for the shipping companies. Accordingly, the author of this thesis has developed a list of prescriptions based on various national and international guides that are provided in Chapter Five and

the list of prescriptions are provided in the appendix (i). Thus, according to these guidelines, it is expected that shipping companies should disclose certain information if they are to assume a high level of accountability pertaining to the breaking of their end-of-life ships. From a CSR (Corporate Social Responsibility) point of view it can be argued that the shipping companies are accountable for their actions, and it is their duty to provide an account or reckoning of those actions for which they are responsible (Gray et al., 1996). Here the actions of shipping companies include the selling or supply of their end-of-life ships either directly or indirectly to the ship-breaking yards of Bangladesh, and based on this model, it is their duty to account for those actions. As such, and accepting that companies have a duty to provide an account of the social and environmental implications of their operations, the shipping companies *should* disclose information about how they are discharging their accountability regarding the recycling of end-of-life ships.

3.4.5 Where to disclose?

Based on the ‘accountability model’ developed in the previous section, it is expected that organisations should disclose relevant social and environmental information in media that is publicly available. Organisations should disclose this information to discharge their accountability associated with a particular activity – ship-breaking in this case. Since corporate annual reports are considered the most important publicly available document, and shipping companies do not seem to provide any other reports such as social and environmental reports or sustainability reports (discussed in Chapter Five), it is assumed that shipping companies should provide disclosures in their annual reports to demonstrate how

they are accounting for the lifecycle of their ships. Although it is unlikely that workers or the local community representatives would read these disclosures, it is assumed that the NGOs, media and other national or international monitoring bodies who often speak on behalf of the former would read these publicly available disclosures.

3.5 Gaps in the literature

After reviewing the above literature, this thesis finds a gap in social accounting literature investigating the accountability of the shipping companies in general and identified shipping companies in particular – those supplying their ships to the ship-breaking yards. Specifically, no study has been found so far that investigates the social and environmental disclosures of shipping companies regarding the recycling of their ships, waste management and acceptability of their related accountability. Given the many adverse social and environmental issues associated with ship-breaking in a developing country, shipping companies have a responsibility to provide information to meet the information needs common to external users. The shipping companies should provide information about where their ships go at the end of their useful life, and the safeguards that are in place to limit the potential adverse effects of the dismantling process.

It is argued that shipping companies are expected to provide an account of their actions that the wider community believes they are responsible for. Considering the notion of ‘accountability’, and based on the accountability model (Figure 2) developed for this study, this thesis evaluates the social and environmental disclosures of the shipping companies. The gap in literature on this particular topic

is also echoed by Cairns (2007). Thus, in response to a call for research by people such as Cairns, and considering the void in the existing SEA literature, this thesis investigates the public accountability of the suppliers or exporters of the end-of-life ships.

3.6 Conclusion

This chapter reviews some of the relevant literature on the broader discipline of social and environmental disclosure in general, followed by the different perspectives of research within the social accounting discipline. Investigating social and environmental information disclosure is an important area of research in SEA, and this area has had many scholarly contributions from numerous researchers over the last three decades. However, there is no research that actually points to the accountability issues of these practices, which are hampering the coastal bio-diversity and resulting in the death of many workers on a daily basis. To explore the accountability of the shipping companies, this chapter provides an overview of the normative perspective and develops an ‘accountability model’ to demonstrate how accountability could be discharged. It then provides various notions of accountability for shipping companies in general, and identified shipping companies in particular.

The ‘accountability model’ developed in this thesis is in itself a contribution to research which could be used by future researchers to evaluate how organisations demonstrate their accountability. The ‘accountability model’ developed in this chapter implies that shipping companies should be held responsible for providing accounts about their end-of-life ships. Although shipping companies try to avoid

this accountability via different strategies, this thesis takes the viewpoint that they should provide social and environmental information, particularly ship recycling-related information to discharge their accountability. Finally, this chapter finds a gap within the SEA literature; this leads to the investigation of the accountability of shipping companies, particularly how they report on the movements of their end-of-life ships, or how they account for the recycling of the ships after the expiration of their useful lives.

Chapter 4

Research methods

4.1 Introduction

This chapter provides the research methods used for this thesis. The research methods include annual report content analysis and conducting interviews with relevant stakeholders. There are two stages of research process of this thesis and both of the stages used annual report content analysis. The first stage used annual report content analysis of global top ten shipping companies and addressed the first research question outlined in chapter one. The second stage also used annual report content analysis of the identified shipping companies and addressed the second and third research questions. Interviews were conducted to obtain insights about the context of the research. This chapter provides discussion about content analysis, development of the disclosure index, unit of analysis and measurement, and conducting the interviews.

4.1 Annual report content analysis

This thesis used annual report content analysis (Krippendorff, 2004) to understand the social and environmental information disclosure practices of the global shipping companies, including those that were identified as supplying their end-of-life ships to Bangladesh. Broadly content analysis may be seen as a method where the content of the message forms the basis for drawing inferences and conclusions about the content (Nachmias & Nachmias, 1976). Holsti (1969) offers a broad definition of content analysis as, "any technique for making inferences by objectively and systematically identifying specified characteristics of messages" (p. 14). Kerlinger (1986) defined content analysis as a method of studying and

analyzing communication in a systematic, objective, and quantitative manner for the purpose of measuring variables. Krippendorff (2004) states that content analysis aims to reduce the raw data into manageable amounts of information for analysis. He defines it as ‘a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use’ (p. 18).

For the purpose of content analysis and to measure the disclosure, an index has been prepared called the ‘ship recycling-related information disclosure index’ to measure the extent of disclosures, with the frequency of disclosures used as the unit of analysis. While preparing the disclosure index, the thesis made reference to existing guidelines, policies, prescriptions and suggestions by local as well international monitoring bodies for ship-breaking and ship recycling. The details regarding the preparation of the index and the measurement and classification scheme is outlined in a separate section within this chapter. The ‘search process’ used to identify the shipping companies that supplied their end-of-life ships to Bangladesh has been described in chapter six.

The researcher of this thesis reviews annual reports of the top-ten global shipping companies and that of identified shipping companies. The researcher chooses annual reports rather than sustainability reports for a number of reasons. First of all, the compilation of sustainability reports is typically voluntary throughout the world (Parliamentary Library, Australia, 2010). By contrast, annual reports are mandatory. Second, when searching for the sustainability reports of the selected shipping companies, the researcher did not find the sustainability reports for all; a

significant number did not produce such reports. So to ensure uniformity, the researcher used the annual reports. Finally, annual reports content analysis have been used by many social accounting researchers such as Hackston & Milne (1996), Gray, et al. (1995), Unerman (2000), Deegan & Gordon (1996), Deegan & Rankin (1996), Islam & Deegan (2008) and Kamal & Deegan (2011). The limitation of content analysis is that it captures the quantity of disclosures (for example, frequency of disclosures) rather than quality, and is often subjective in that it captures various narratives as a representation of social and environmental reporting (Guthrie & Abeysekera, 2006). However, the researcher of this study combines content analysis with other methods of data collection, such as conducting personal interviews with various stakeholders to provide a richer empirical understanding of the subject matter.

The top-ten shipping companies have been selected from the ‘The Alphaliner Top 100¹⁰’ list, and the year selected was 2010. These annual reports were then analysed to see how (or if) these shipping companies describe/explain what happens to their ships at the end of their lifecycle. The thesis used only those shipping companies that are listed on the stock exchange and have their annual reports available on a website. However, annual reports are the main document for shareholders and easily accessible to other low-power stakeholders (other than shareholders); arguably shareholders and the relevant stakeholders have a right-to-know, or an interest in the lifecycle of the ships under the companies’ control. Hence, such disclosures should arguably appear in the annual report. To

¹⁰ The Alphaliner TOP 100 provides a constantly updated ranking of the 100 largest container/liner operators as well as global capacity figures taking into account the fleets of virtually all container operators worldwide.

investigate the extent of disclosures of sample shipping companies, the researcher developed an index. The next section provides discussion about it.

4.1.1 Development of Disclosure Index

To prepare the index the researcher identified a number of documents outlining the social and environmental practices and related guidelines to be followed by the shipping companies for ship recycling. The researcher found these documents relevant as these were mentioned in prior literature (see for example Cairns, 2007), and were released by various NGOs and international monitoring bodies for shipping companies. These documents address many governance policies suitable for shipping companies and the author of this thesis used this information as the basis for determining appropriate disclosures. Shipping companies should arguably disclose this information to demonstrate various aspects of their social responsibility. Some of these documents typically identify particular disclosure items that would be expected from shipping companies related to ship recycling. The index is named ‘Ship Recycling-related Information Disclosure Index’ (SRIDI). Within the index there are sixty specific issues related to ship recycling. Specifically, the following documents have been reviewed to prepare the index:

- Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their disposal (1992).
- Industry Code of Practice on ship recycling (February, 1999).
- Draft technical guidelines for the environmentally sound management of the full and partial dismantling of ships (Basel Convention Working group, 2001).
- A Guide for Ship Scrappers: Tips for Regulatory Compliance (US EPA) (Summer, 2000).
- The IMO Guidelines on ship recycling by Greenpeace International (2003).

- Information resources on Recycling of ships by the International Maritime Organisation (IMO, 2011).
- Hong Kong International convention for the safe and environmentally sound recycling of ships (2009).
- Safety and health in ship-breaking – guidelines for Asian countries and Turkey, by International Labour Organization (ILO office, Geneva 2001).
- International Convention for the Prevention of Marine Pollution from Ships (MARPOL, 1978).
- Basel Action Network (BAN, 2006).

These documents have also been used while developing the ‘accountability model’ in chapter 3 to demonstrate the accountability of the shipping company. The criteria for the inclusion of a particular item in the index was that this particular item must be present in at least two of the documents. These documents are synthesised in a way that they typically identified particular items of information that would be expected to exist in the publicly available domain of the shipping companies. A limited number of additional disclosure items were identified in the annual reports and these have been incorporated in the index. Thus the SRIDI has a total of 60 specific social and environment-related items under four broad categories: Occupational Health & Safety, Ship-Recycling, Environment and Pollution. After preparing the index, the author conducts ‘annual report content analysis’ to understand the social and environmental disclosure practices of the shipping companies. The next section discusses the unit of analysis and measurement for content analysis.

4.1.2 Unit of analysis and measurement

Certain technical requirements, for example, the unit of analysis and the basis of classification, have to be clearly defined for content analysis to be effective (Guthrie et al., 2004; Guthrie & Abeyesekera, 2006). The common units of analysis

used by accounting researchers include word counts (e.g. Campbell, 2003; Deegan & Gordon, 1996; Deegan & Rankin, 1996; Islam & Deegan, 2008), sentence counts (e.g. Buhr, 1998; Patten & Crampton, 2004; Perrini, 2005; Hackston & Milne, 1996), page proportions (e.g. Gray et al., 1995; Unerman, 2000) and frequency of disclosure (e.g. Cowen, et al., 1987; Ness & Mirza, 1991; Haque & Deegan, 2010).

A good rule of thumb to follow in the content analysis is to use word frequency counts to identify words of potential interest, and then to use a Key Word In Context (KWIC) search to test for the consistency of usage of words (Stemler, 2001). The researcher of this thesis also used 'key words search' within the annual reports. Some of the key words are 'ship recycling', 'ship-breaking', 'pollution', 'occupational health and safety', 'environment', 'ship dismantling', 'asbestos', 'grass wools', 'hazardous wastes', 'clean ships', etc. Once the researcher found that a particular annual report disclosed a particular key-word, then the full sentence was read to make sure that it was related to a particular item of the index. Thus, the researcher used 'frequency of disclosure' as the unit of analysis since it primarily focuses on the presence or absence of particular social and environmental information. If the company discloses particular social and environmental information, it assigns them a score of 1 otherwise 0. The theoretical maximum would be 60, and the minimum would be 0 in a particular given year. As a result the maximum available items of disclosures for global shipping companies would be 600 (60 times 10 companies) and that of identified shipping companies would be 900 (60 times 5 times 3).

4.2 Conducting interviews

To understand the accountability of the shipping companies the researcher also conducted 12 in-depth personal interviews with some of the relevant stakeholders within the ship-breaking industry of Bangladesh from December 2011 to February 2012. The purpose of conducting interviews was to gain an in-depth understanding of the working conditions, health and safety issues and human rights violations within the ship-breaking industry of Bangladesh from the people who are directly involved with this industry, such as owners, managers and workers. The interviews were conducted with the Ship Breakers Association of Bangladesh (BSBA) (1 interview), YPSA (Young Power in Social Action) (2 interviews), BELA (Bangladesh Environmental Lawyers' Association) (1 interview), ship-breaking workers (2 interviews), ship-breaking companies (2 interviews), ship-breaking yards' managers (2 interviews), and the state minister for labour and employment, and her secretary (2 interviews).

The researcher initially contacted three NGOs, Greenpeace, YPSA and BELA, and from the response conducted interviews with the senior representatives of YPSA and BELA. Greenpeace replied via email indicating that they were no longer involved in ship-breaking related issues and had no offices in Bangladesh. The researcher decided to contact overseas offices of Greenpeace via email, but they informed her that their priorities had changed and they were not willing to participate in any interview regarding these issues. As BSBA is the association of the ship breakers and government recognised body to monitor the ship-breaking activities, an email was sent to them followed by telephone contact, and the president of BSBA agreed to the interview in his office in Agrabad, Chittagong.

The BSBA helped the researcher by providing her with some important connections into the ship-breaking companies' offices in the city and ship-breaking yards, following which the researcher was able to convince two of the yard managers to allow her to visit their ship-breaking yards. However, initially the researcher contacted ten yard managers, but most of them refused (except the above 2) to give access in the plea of confidentiality and the direction from the owners not allowing any visitors in their yards. The workers were randomly chosen from the yards and were agreed to participate in the interview after knowing the purpose of interviews. After visiting the ship-breaking yards, the researcher also visited their company offices in the main city (Agrabad and Khulsi) and conducted further interviews with the managers.

To fully understand the government of Bangladesh's perspective on the ship-breaking industry, the researcher contacted the secretary of the Ministry of Labour and Employment through one of her friends who is a deputy secretary in another ministry. Both the state minister and her secretary agreed to participate in the interviews, which was an unlikely outcome because of the strict access to the secretariat for general public and the cut-throat bureaucracy of Bangladesh. Thus the researcher conducted 12 interviews with the relevant stakeholders of the ship-breaking industry of Bangladesh, including NGOs, ship-breaking companies, yard managers, yard workers, BSBA, and relevant government departments. The role of the interview is to understand the current working conditions, health and safety and human rights violation within the ship breaking industry of Bangladesh. As such these interview findings are incorporated in chapter two to understand the

context of the research and to emphasize why shipping companies need to assume the responsibility arising from the breaking of their end-of-life ships.

The interviews were 30 minutes to 1 hour long and were tape recorded, except for one. Extensive notes were taken during the interview process and further notes were taken after the interview. The interview tape records were then transcribed and themes were identified from interviewees' perceptions of the accountability regarding the ship-breaking activities of Bangladesh. Before conducting interviews, ethics approval was sought from the RMIT College of Business Human Ethics Advisory Network (COHEAN) and the interview protocol was maintained according to the RMIT University ethics guidelines. Quotations are given to enrich the understanding of the perception of stakeholders about the accountability of the ship-breaking activities of Bangladesh. The list of the interview participants and interview dates are given in the appendix (iv). Interview questions are given in Appendix (v). As discussed in the early part of this section, interview data has been used in chapter two to understand the context/background of this study. Interview data has also been used to demonstrate the perception of relevant stakeholders about the accountability of the shipping companies.

4.3 Conclusion

This chapter provides an overview of the research methods used in the thesis. It emphasises on annual report content analysis and conducting interviews.

Chapter 5

Accountability of the Global Shipping Companies

5.0 Introduction

This chapter of the thesis explores the social and environmental information disclosure practices of global shipping companies with specific reference to how they account for the lifecycle of ships under their control. This chapter addresses the first research question outlined in chapter one. This chapter uses annual report content analysis to understand the disclosure practices of global shipping companies. The discussion about content analysis has been provided in previous chapter. The annual reports of ten large shipping companies' for the year 2010 have been collected to understand their disclosure practices relating to how they account for their end-of-life ships. This chapter finds that the extent of disclosures is relatively high for some of the organisations. However, global shipping companies tend to provide limited information relating to where they actually send their end-of-life ships, which provides evidence that they provide limited accountability.

5.1 Objective of this chapter

The prime objective of this chapter is to understand the social and environmental information disclosure practices of global shipping companies, with specific reference to how they account for the lifecycle of ships under their control. For this purpose, the researcher reviews the annual reports of the world's top-ten international shipping companies. It is argued that regardless of whether some of these companies are specifically sending their ships to ship-breaking yards in developing countries (and there is obviously a very strong possibility that some of

the companies are), they should nevertheless inform interested stakeholders about the processes they have in place regarding end-of-life ships. In the next chapter of the thesis, the researcher identifies where possible, and from publicly-available information, the specific companies that are responsible for supplying their old ships for dismantling to Bangladesh. The researcher will then ‘drill down’ to identify disclosures that relate to such activities.

It is further argued that as there are many pressure groups like Greenpeace, BELA, YPSA, Basel Action Network (BAN) and local and international human rights groups who are active in relation to the violation of human rights and the damage to the coastal environment of Bangladesh by the ship breakers, shipping companies would have certain motivations to disclose information pertaining to ship recycling. Thus, central to the research, the researcher is interested in investigating how, or whether, the sample shipping companies publicly disclose information about the social and environmental issues associated with ship-breaking.

As noted in chapter four, to address the first research question, the researcher collected the annual reports of the top-ten shipping companies from the ‘The Alphaliner Top 100 list’. Alphaliner ranks the shipping companies based on existing fleet and TEU¹¹ capacity available on board operating ships. As on 30th June, 2011, the shipping companies appeared on the websites of Alhpaliner (<http://www.alphaliner.com/top100/>) include Hapang-Lloyd, Maersk, Mediterranean, Evergreen, CSAv, NYK, COSCO, CMA-CGM, UPS and Fedex.

¹¹ The twenty-foot equivalent unit (often TEU or teu) is an inexact unit of cargo capacity often used to describe the capacity of container ships and container terminals (Rowlett, 2000).

Accordingly, these companies were selected for the purpose of this thesis. Since these companies have bigger fleets and TEU, these are considered representatives of the ‘global’ shipping industry.

5.2 Findings

It is found that global shipping companies disclosed a total of 260 items out of 600 (10*1*60) available items, that is the disclosure is about 43% (Figure 3). Specifically, it found the highest amount of disclosure from the CSAV shipping company followed by COSCO and Hapang-Lloyd. CSAV disclosed 36 items out of 60, which is 60%, COSCO provided 57% and Hapang-Lloyd provided 55%. The least amount of disclosure is found in the case of ‘Fedex’ and ‘Maersk’, which only disclosed 13 out of 60 (about 22%). CMA CGM disclosed about 27% whereas UPS, Evergreen and Mediterranean had almost the same amount of disclosure, approximately 51% (Figure 3).

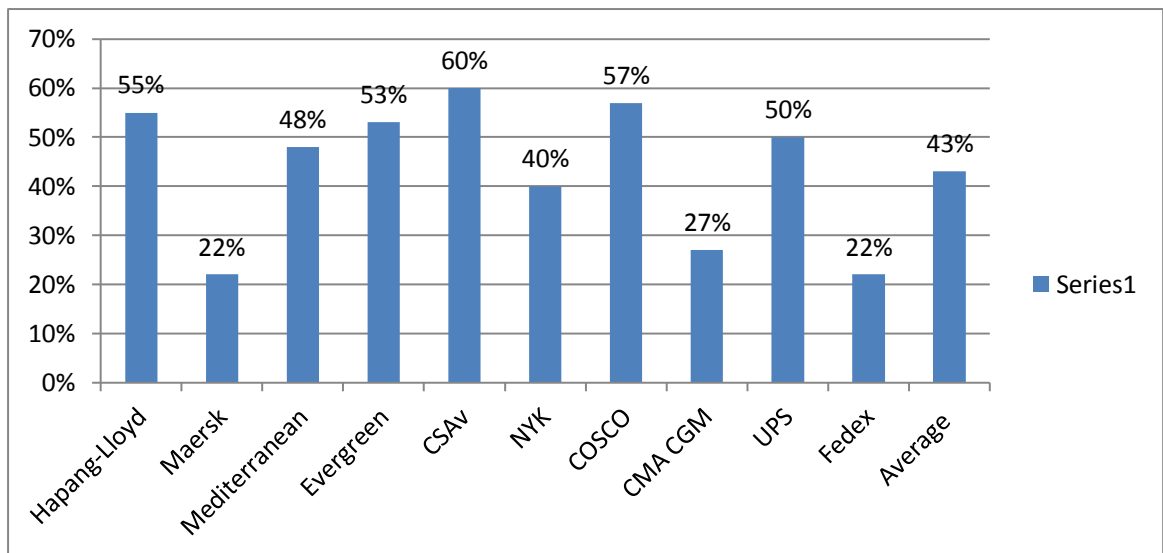


Figure 3: Percentage of disclosures by the global top ten shipping companies

This disclosure level gives the idea that shipping companies’ disclosure about ship recycling related information is relatively extensive for some of the organisations.

Given the exploratory nature of this research, such results therefore provide the basis for subsequent research (such as comparing this level of disclosures with the disclosures of identified shipping companies, and so forth). Figure 4 below shows the actual number of disclosures by the global top ten shipping companies.

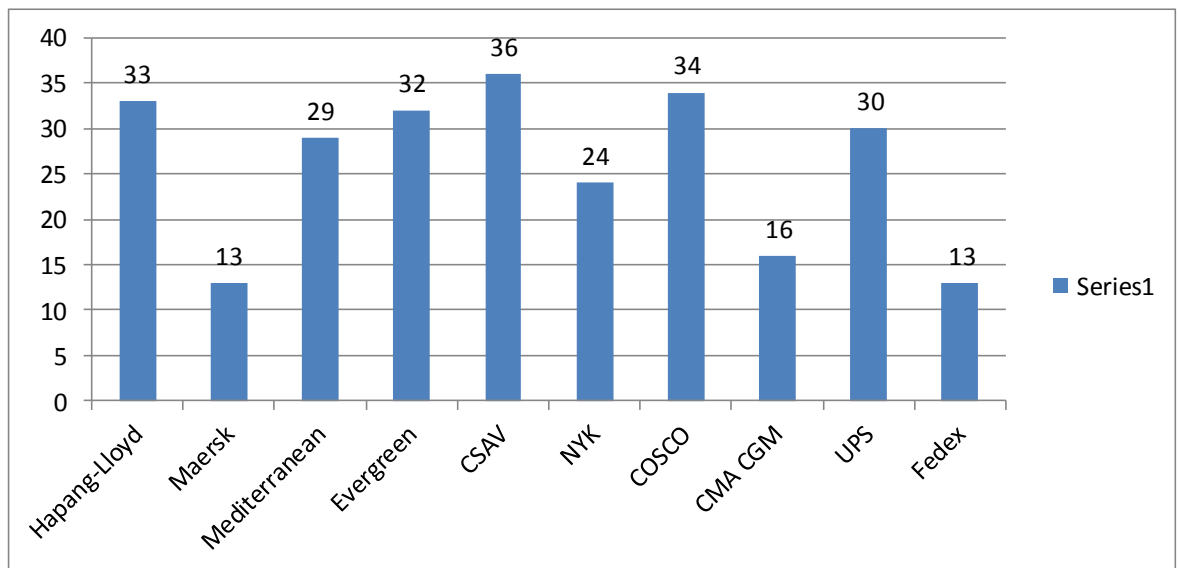


Figure 4: Overall disclosure by the top-ten shipping companies

However, there are significant variations regarding the disclosure of information related to ship recycling among the shipping companies. Appendix (ii) provides a matrix of disclosure items across the different categories. At this stage it is speculated that the apparent variation in disclosure patterns could be explained by the maturity of the ships within the shipping companies. If the shipping company’s particular ship or vessel is going to mature/end its life soon, then possibly the organisation will disclose more information than other companies. Therefore, perhaps COSCO, CSAV and Hapang-Llyod might have some ships which are nearing the end of their lifecycle and that is why they disclosed relatively more information. On the other hand, Fedex and Maersk had relatively newer ships (as found in their annual reports) and it was therefore less likely that some of their ships were going to be scrapped in the near future, so their

disclosures were relatively less. Most of the ships made in early seventies to late eighties needed to be recycled around the time of this research, as these ships had a useful life of about 30 to 40 years. So it is believed that the life of ships within a shipping company is a factor for disclosure of information regarding ship recycling or dismantling. Again, however, this is conjecture, but still a potential explanatory factor.

While reviewing the annual reports, the researcher did not find evidence that any of these top-ten shipping companies has exported their end-of-life ships for recycling to any shipyard of Bangladesh, or indeed, anywhere else. However, it is firmly believed that some of their old ships must have been sent to some shipyards for dismantling, and they deliberately provided no information in this regard. Thus, it can be concluded that shipping companies do so to avoid potential responsibility arising as a result of dismantling or recycling the end-of-life ships. Subsequent research will require various sources of information to try and trace scrapped ships back to their original owners. This in turn might show that companies within the sample changed their ship name or country of origin while exporting the old ships for dismantling, to escape accountability.

While investigating the available rules and regulations regarding ship recycling it was found that there are no uniform international mandatory rules for ship recycling. As a result shipping companies took the opportunity to sail their out-of-date ships to 'safe havens'. 'Safe havens' are mostly located in developing countries, such as Bangladesh, where there are weak regulatory regimes and poor law enforcement. In the absence of international mandatory rules, ship owners can

and do avoid their responsibility for cleaning and safely dismantling their of end-of-life ships. In most cases they change their flags or state names to avoid related responsibility. It should be stressed again that the results in this chapter relate to annual report disclosures only. Whilst not yet undertaken, further research could be conducted to broaden the scope of analysis by investigating other disclosures being made by the companies (such as sustainability reports for the limited number of companies that provide them, and other publicly available information reported through the respective companies' websites), even though it is known that these alternative disclosure methods will not be consistent across the sample companies.

5.3 Conclusion

This chapter provides the results of primary research that investigates 'various disclosure issues' associated with end-of-life ships. The ship-breaking industry is a rising industry in Bangladesh and at the same time it is economically significant for the country as it provides almost all of its steel and provides huge amounts of employment. This chapter finds that the level of disclosure is relatively extensive for some of the organisations. Importantly, however, there was no indication by the shipping companies about where the ships actually went at the end of their life cycle. Given the many issues associated with ship-breaking it could be argued that failure to indicate where ships are scrapped reflects inadequate disclosures and provides limited accountability of their operations. This chapter finds that the global shipping companies' disclosure about ship recycling related information is relatively extensive on average (with low levels of disclosure from some companies) and it possibly varies according to the ships' life-stage within the

shipping company. However, there is no evidence that these shipping companies export their end-of-life ships to Bangladesh or any parts of the world for dismantling. In the next chapter, it is intended to identify shipping companies which are exporting their end-of-life ships for dismantling to the ship yards of Bangladesh. This is not a straight forward exercise, but the researcher intends to pursue this issue through a rigorous 'search process'. Thus the next chapter provides the identification process of the shipping companies who actually supplied their out-of-service ships to Bangladesh and compares their disclosure practices with the global shipping companies in general to understand the accountability of these identified shipping companies.

Chapter 6

Social and Environmental disclosures by identified shipping companies

6.0 Introduction

This chapter explores the disclosure of identified shipping companies to infer the level of accountability being demonstrated. It outlines a detailed search process to identify the shipping companies responsible for supplying their end-of-life ships to Bangladesh. Based on the normative perspective and the accountability model presented earlier, this chapter finds that the identified shipping companies' disclosures are less than those of the sample of global shipping companies; on the basis of expected accountability it perhaps should be the opposite since they supply their out-of-service ships to Bangladesh for dismantling. Thus this chapter provides further evidence of limited accountability assumed by the identified shipping companies. As this part of thesis also uses the same model of accountability (discussed in Chapter Three), the theoretical discussion is not repeated here.

6.1 Objective of this chapter

In the previous chapter, it was found that the social and environmental information disclosures by global shipping companies were extensive for some of the organisations but they tended to assume limited accountability in terms of where they actually send their end-of-life ships. Since the global shipping companies are not necessarily the same shipping companies supplying their end-of-life ships to the ship breaking yards, this chapter investigates the accountability of some of these specific shipping companies. Thus this chapter has two broad objectives; first to identify those specific shipping companies that are alleged to supply their

end-of-life ships to Bangladesh and then to investigate their level of accountability against the model developed in Chapter 3. It is argued that the social and environmental disclosures of the identified shipping companies are important from the corporate social responsibly point of view, since these companies are identified by different publically available sources (as these companies names are come out from the search process) that they were engaged in the supplying of their end-of-life ships to the ship breaking yards of Bangladesh.

Bearing this in mind, this chapter endeavours to identify those shipping companies that are responsible for supplying their end-of-life ships to developing countries, by using a detailed ‘search process’. Once these shipping companies are identified, the researcher investigates the social and environmental disclosures of those shipping companies by using annual report content analysis. As the annual report content analysis has been discussed in the research methods section of chapter five, it is not repeated in this chapter. However the search process is explained in the next section in detail. In brief, this chapter of thesis explores to what extent the identified shipping companies disclose their social and environmental information pertaining to the recycling of ships. Thus this chapter has two specific research questions:

1. Do shipping companies identify how and where disposal and ship breaking occurs (whether directly or through third party intermediaries such as ship breakers)?
2. To what extent do the sample shipping companies provide ‘best practice’ disclosures in relation to the ship-breaking activities? (Best practice being determined as a result of reviewing the appropriate

policies and procedures prescribed by local and international monitoring bodies for ship-breaking).

6.2 Search process:

To compare the disclosure of the global shipping companies with that of the identified shipping companies the thesis utilises a 'search process' to identify some of the shipping companies that supply their end-of-life ships to the developing countries. The 'search process' was undertaken by using publicly available sources to identify the shipping companies that supply their ships to South-Asia, especially Bangladesh. However, there is a scarcity of sufficient publicly available information about shipping companies that supply their end-of-life ships to Bangladesh, despite the fact that they are still doing this. Greenpeace (2003) also states that it is very difficult to identify the shipping companies who supply the end-of-life ships to Bangladesh, as the shipping companies deliberately change the name and flags several times before they ultimately reach Bangladeshi ship-breaking yards, and most ships are sold through ship-brokers and cash buyers to the ship breakers.

However, several attempts were made to use a broad search process to identify the name of the shipping companies that supplied ships to Bangladesh by using the search facilities of Google, Google Scholar, Factiva, Pro-quest, Central Pro-quest, and the RMIT Library website. Searching was conducted by putting in key words such as 'ship-breaking', 'ship recycling', 'Bangladesh ship-breaking', 'environmental effect of ship-breaking', 'social issues in ship-breaking', 'human rights in ship-breaking', 'ship-breaking in developing countries', 'ship recycling' and so forth. In addition to this, the researcher also explored the websites of

different NGOs (Non-government organisations) who often raised their voices about the social and environmental issues of ship-breaking. These include Greenpeace, BELA, YPSA and FIDH. The search process also consisted of reviewing academic article, news article or media reports that provided evidence about a particular shipping company's link with ship-breaking activities.

Sometimes the researcher found some evidence indicating the name of a particular shipping company that supplied its end-of-life ships to Bangladesh, but when exploring further to verify the information about its alleged involvement with the supplying of the end-of-life ships, the author did not find enough information. For example, the researcher found a list of 20 of the largest polluting shipping companies that send their old ships to Bangladesh, India, Pakistan and Turkey from the Greenpeace website. However, when searching further, only one shipping company was found under its real name with a website, NovoShip (Russia). However, no existence was found of the remaining 19 companies or their websites. This implies that the names reported by Greenpeace on their list could have changed or been renamed, and the name that Greenpeace found are not the original names of the shipping companies.

Greenpeace (2002) also released a report on 'corporate crime – the need for an international instrument on corporate accountability and liability', that states 3 specific shipping companies that supplied their toxic ships to Bangladesh. These are Euronav, Bergesen and Vroon. The researcher tried to find out the details of these companies by using the above search engines. This time only one company's website was found (Euronav, from Luxemburg). However, the researcher did not

get any information for the other two companies. The researcher received another document titled 'cargo-vessels-international' and found a clue for another shipping company that supplied its old ships to Bangladesh. This led to a shipping company called 'Wirana' which sent 2 ships to Bangladesh in 2006 and 2007, but under the name of 'Wirana' there is no information within the websites. Then from a newspaper article, it was found that 'Wirana' changed its name to 'Overseas Ship Holding Group' and this time the researcher received the details of this company from its website. In addition to this, the researcher found that the 'Overseas Ship Holding Group' (USA), under this name, sent one of its old ships for scrapping in Chittagong, Bangladesh in 2008.

As noted earlier, the search process is difficult as there was a lack of publicly available information about the shipping companies that supplied their end-of-life ships to Bangladesh. Thus, so far, the researcher has found the name of three shipping companies that supplied their end-of-life ships to Chittagong, Bangladesh, for scrapping, which are 'NovoShip' (Russia), 'Eoronav' (Luxemburg), and 'Overseas Ship Holding Group' (USA). In addition to the online search process, the researcher also sent emails to relevant stakeholders such as Greenpeace, BELA and YPSA to get the names of any shipping companies that supplied old ships for dismantling. However, she did not get any positive replies. Further the researcher also found several websites dedicated to ship-breaking activities such as the NGO-ship-breaking platform, ship-breaking in Bangladesh, shipbreakingbd.info, infomarin.ru, basel.int and atlasobscura.com. However, none of the websites provided any specific information or clues about the name/identity of the shipping company that sold their ships for dismantling.

So the point to be made here is that it is indeed very difficult using publicly available information to identify relevant shipping companies; arguably the public has a right to know, but this is not being satisfied. After identifying the above three shipping companies, the researcher, in line with the attainment of the research objectives of the thesis, collected the annual reports for five years (from 2006 to 2010) to investigate how these particular shipping companies disclosed ship recycling related information. The reason for collecting annual reports for these five years is that annual reports are available only from 2006 on the websites of these companies. However, in an attempt to get the annual reports from before 2006, emails were sent to the respective companies' offices requesting their annual reports but with no response.

So it is notable here that the identified shipping companies sent their ships to Bangladesh at some point not necessarily represented in the years covered by the annual reports collected (from 2006 to 2010). But it is the assumption for this thesis that as these companies are identified for sending their ships to Bangladesh, they might do it frequently and because of the notion of 'accountability' and consistent with the 'accountability model' specifically developed for the purpose of this thesis, they should provide information regarding this in their annual reports in any of the consecutive five years as stated above. However, the researcher does acknowledge that due to the complexity and unavailability of information, this could be a potential limitation of the thesis. Thus after collecting the annual reports, the researcher used the same disclosure index 'SRIDI' to measure and classify the disclosure of ship recycling related information. Since the classification and measurement instrument is the same as that used in the

previous chapter, it enabled the researcher to compare the disclosure practices of the global shipping companies, which do not necessarily supply their end-of-life ships to the ship-breaking yards, with those shipping companies that definitely do. It is noted elsewhere in the thesis that shipping companies usually change the names of the ships or their flags several times before finally sailing their end-of-life ships to the ship breaking yards of Bangladesh. As a result it is less likely that any records could be found from the original owners or ship registers. The researcher sent some emails to some of the identified shipping companies requesting their annual reports (that are not available on the websites) but ended up with no responses. It is less likely that any data could be collected from the original ship owners or register of ships. Furthermore, given the time and resource limitation of this thesis, collection of primary data from these sources were not feasible. The findings are discussed in the next section.

6. 3 Findings

To compare the extent of disclosure of the identified shipping companies that supplied their end-of-life ships for dismantling, with that of global top-ten shipping companies, this thesis uses a broad search process to identify some shipping companies that actually sailed their out-of-service ships to Bangladesh. The three shipping companies found from the search process were Euronav, Novoships and Overseas Ship Holding Groups (OSH); their annual reports for 5 years each were collected. Thus there are 15 annual reports to investigate for this part of thesis. Based on the same disclosure index which was used in the previous

chapter, this being ‘SRIDI’¹², it is found that the identified shipping companies disclosed a total of 342 items out of a possible 900 (3*5*60), which is 38% disclosure on average (Figure 5). Appendix (iii) provides a matrix of disclosure items across the different categories. It is also found that the disclosures increased over the time period. For example, in 2006 there were only 51 disclosures which is 28%; however in the year 2010, it was found that the disclosures were 46%. Thus there is an apparent upward trend in the disclosure of ship recycling related information by the sample shipping companies¹³. Overall an average of 38% of the items was disclosed; Euronav disclosed the maximum amount of disclosures (43%), followed by the OSH group and Novoships during the period under study (Figure 5).

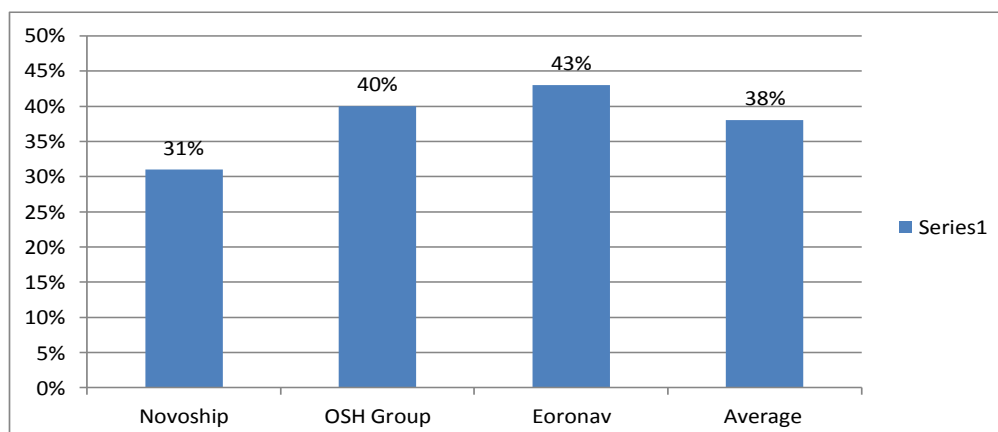


Figure 5: Percentage of disclosures by identified shipping companies

Total number of disclosures by individual shipping company is given in the following figure (figure 6).

¹² The index has been prepared based on the available materials relevant to the ship-breaking industry and suggested by the national and international monitoring bodies for ship-breaking and ship recycling. The development of the disclosures index ‘SRIDI’ and the classification and measurement techniques are discussed in chapter five.

¹³ The researcher did not find any specific evidence (such as implementation of certain marine rules during this period) that might cause the increase of disclosures over the period. Future research might be directed in this regards.

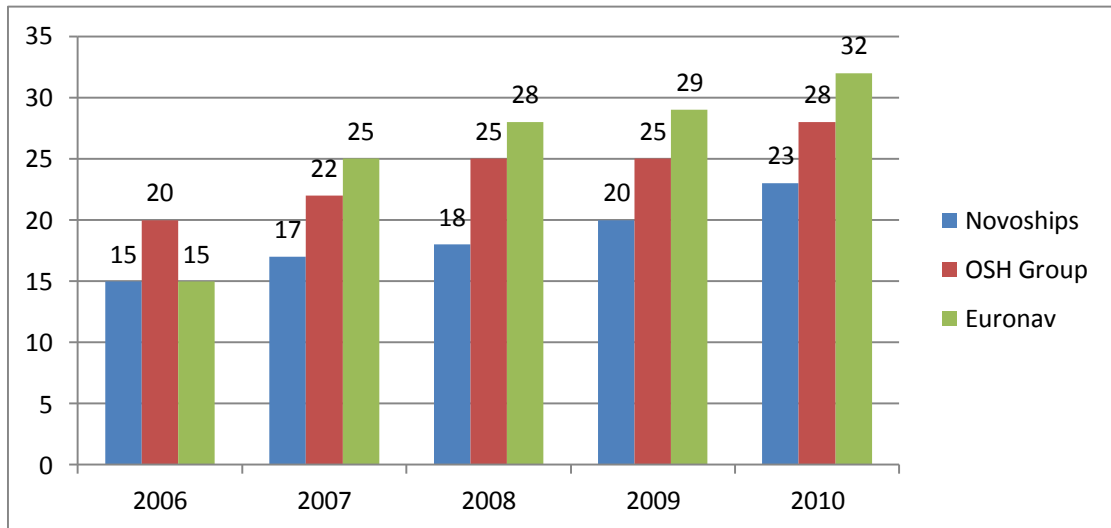


Figure 6: Overall disclosure by identified shipping companies

Interestingly, while reviewing the annual reports of these identified shipping companies for 5 years, the researcher did not find any evidence of where they actually sent their end-of-life ships for dismantling. It is surprising given that all shipping companies will ultimately scrap their end-of-life ships and their involvement with developing countries like Bangladesh where environmental/workplace standards are poor. So this finding is similar in the case of both the global shipping companies (see the findings section of chapter five) and identified shipping companies. However, because of the apparent involvement with ship-breaking activities and based on the accountability model developed for the purpose of this thesis, it was argued that the identified shipping companies would make more disclosures than the global shipping companies in their publicly available documents such as annual reports. But it is found that identified shipping companies' disclosure level is lower than that of global shipping companies.

However, among the three identified shipping companies, Euronav provides the maximum amount of disclosures which is just equal to the average amount of disclosures made by the global shipping companies (43%). While comparing the

ship recycling related information disclosure level of the global top-ten shipping companies with the identified shipping companies, it is found that the top-ten global shipping companies' disclosures about ship recycling related information is more than the identified shipping companies as they reported 43% of the information (Figure 3, chapter 5). Using the same index, it is found that the identified shipping companies disclosed 38% of the necessary information, which is 5% lower than the global top-ten shipping companies (Figure 5). Thus the average disclosure per company per year for the global top-ten shipping companies is 26; whereas the average disclosure per company per year for the identified shipping companies is 22. However, it is interesting that some of the identified shipping companies disclosed more information than many of the top-ten global shipping companies in the year 2010. For example, Euronav provided 32 disclosures in 2010, which was even more than that of 5 global top-ten shipping companies (Figure 6). As the researcher did not have access to the number of fleets and TEU of the identified shipping companies, conclusion cannot be drawn regarding the size effects on disclosures. Further research might be directed to explore this issue.

However, this thesis found one similarity between the global top-ten shipping companies' disclosures and the identified shipping companies' disclosures regarding the lack of acknowledgement of sending their ships to the ship-breaking yards of developing countries, including Bangladesh, for dismantling. This thesis found no information about this in both of these groups of shipping companies. However, as it is found that the identified shipping companies have supplied their end-of-life ships to Bangladesh, the absence of this information disclosure in the

annual reports implies that these shipping companies deliberately chose not to disclose this information to avoid the related accountability.

Also, the identified shipping companies provide fewer disclosures than the global top-ten shipping companies. Thus, the findings of this thesis contradicts with the expectations based on the accountability model that the identified shipping companies would provide more ship recycling related information because of their alleged involvement with the supplying of end-of-life ships into ship-braking yards of Bangladesh. The potential reason could be that these companies are frequently changing the names of their ships when selling their end-of-life ships and often selling them through cash buyers or brokers. Based on the normative perspectives, there is an expectation that an account should be presented, but the finding reveals that they might elect not to disclose the information, thereby demonstrating limited accountability. Another argument could be that they disclose less information as they believe that providing more information might bind them to take the social and environmental responsibility arising from the breaking of the end-of-life ships and thus they deliberately choose to disclose less information.

6.4 Conclusion

In this chapter the thesis utilised annual report content analysis to understand the disclosure practices of the shipping companies who supplied their ships to Bangladesh over a certain time period. This chapter used a broad ‘search process’ to identify those shipping companies who supplied their ships to Bangladesh and found only three. After identifying the particular shipping companies, their annual reports were collected from 2006 to 2010 to understand their social and

environmental information disclosures practices. Using the index 'SRIDI', it was found that the identified shipping companies disclosed 38% of the information, which is 5% less than the disclosures made by the global top-ten shipping companies. Although it was expected that the level of disclosures of the identified shipping companies would be more than the global top-ten shipping companies (based on the accountability model), the results contradicts with the expectation.

The potential reason could be selling the ships through cash buyers or brokers and frequently changing the names of the ships.

It is argued that the lower level of disclosures could be motivated by the avoidance of the potential risk of assuming accountability and thereby assuming social and environmental responsibility. Thus this part of thesis provides insights about the accountability of the identified shipping companies, which is found to be poorer than the global shipping companies. The results suggest that more government rules and regulations are required to regulate this industry. The identified shipping companies could be brought into the international court of justice to provide compensation for the social and environmental harms caused by the supplying of their end-of-life ships to Bangladesh. Perhaps the government of Bangladesh with the help of YPSA and BELA could take this initiative. International regulations such as the IMO ship recycling regulations 2009 and the European waste shipment regulations 2012 need to be enforced with strict monitoring by international agencies such as the UN or the World Bank.

Chapter 7

Discussion of the findings and conclusion

7.0 Introduction

This chapter concludes the thesis by providing some insights about the contribution of the research, the implications of the thesis findings, and directing further avenues for research. At the end of the thesis, the researcher provides some recommendations for the betterment of the ship-breaking industry of Bangladesh and for global shipping companies. This chapter also identifies some potential limitations of the research.

7.1 Discussion of the findings

By combining two different sections of findings as described in chapter five and six, some important facts can be identified. First of all, the thesis finds evidence of actual working conditions, health and safety issues, human rights violation and the environmental damaged by the ship-breaking industry of Bangladesh. Some of these findings are also consistent with the findings of previous research such as those reported in Greenpeace (2006), YPSA (2005), Hossain et al. (2008), Hossain (2010) and Cairns (2011). This thesis specifically answered the three research questions outlined in chapter one. To address the first research question, chapter five investigates the annual reports of top ten global shipping companies. Because of the risk associated with ship-breaking, it was expected that the global shipping companies would have reported, within their annual report, how they were recycling their end-of-life ships. Annual report reviews of the global top-ten shipping companies revealed that there is a lack of disclosure pertaining to what they are doing with their end-of-life ships. Based on the disclosure index “SRIDI”,

specifically designed for this thesis, it is found that global shipping companies disclose 43% of the possible information. It is assumed that the top-ten shipping companies would have ships that need to be scrapped, and they would therefore have information about how they went about this, or where they sent their end-of-life ships for recycling or dismantling. This thesis specifically finds that global shipping companies demonstrate limited accountability in respect of disclosing where and how they dismantle their end-of-life ships.

To address the second research question, the researcher used a 'search process' to identify the shipping companies that supplied their end-of-life ships to Bangladesh for dismantling. The results, as noted in chapter six, revealed that it is difficult to identify those shipping companies that supplied their end-of-life ships to Bangladesh. The 'search process' results in three shipping companies that are identified as supplying their end-of-life ships to Bangladesh. However, the researcher found that these shipping companies did not identify, within their annual report, how and where the disposal and ship breaking occurs.

To address the third research question, the researcher collected annual reports from the identified shipping companies that sent their end-of-life ships to Bangladesh for dismantling. The results are provided in chapter six. After reviewing the annual reports of these shipping companies, it was found that their disclosures are slightly lower than the global top-ten shipping companies, at 38%. Based on this finding, the researcher concluded that identified shipping companies demonstrate limited accountability in their publicly available reports regarding

how they recycle their end-of-life ships, or whether they send their end-of-life ships to the developing countries for breaking.

There is one similarity between these two groups of shipping companies and that is lack of information pertaining to the supply of end-of-life ships to the ship-breaking yards of developing countries including Bangladesh. Even though there is evidence that the alleged shipping companies supplied their end-of-life ships in some years, they did not disclose this information in their annual reports. Perhaps these alleged shipping companies believe that disclosing this information would expose them to assume further accountability. The insights provided by various stakeholders (in terms of interview findings) such as workers and NGOs (insights provided in chapter two) is also consistent with the lack of disclosures found in chapter five and six, which demonstrates a further apparent lack of accountability. Based on the interview findings, which are incorporated in chapter two, further research could be conducted to explore additional insights into stakeholder's perceptions and/or expectations about the disclosures made by the global shipping companies, and the identified shipping companies.

Thus based on the accountability model and on the index developed, this thesis finds limited accountability from both the global shipping companies and from the identified shipping companies. It has been found that accountability should lie with the original shipping companies. The original shipping companies should pre-clean the ship and follow the appropriate procedures, including the maintenance of health and safety issues and human rights/labour rights issues before actually sailing their ships to the 'graveyards'. It is primarily the global

shipping companies within the global shipping industry who should be held accountable for supplying their end-of-life ships to the ship-breaking yards of developing countries. This way the government of Bangladesh, as well as the ship-breaking yards, would be unable to avoid their responsibilities to the workers, local community and the broader environment. The chronic problems of corruption, blaming game to each other and bribery are also important factors within Bangladesh that help the global shipping companies and their local counterparts to ignore the existing laws, rules and regulations. Thus, the findings suggest that a concerted effort to maintain a safe ship-breaking industry, beneficial for the global shipping companies by providing a safe resting place for their end-of-life ships and for the local employment and supply of steel and scraps, provide a win-win situation for both parties.

7.2 Contribution to research

This thesis provides the results of research that investigates various accountability issues associated with end-of-life ships. At the end of their life, every ship needs to go to a destination called the 'graveyard of ships' either for dismantling or recycling. Bangladesh is one such favourite destination, attracting more than 50% of the ships scrapped in a year but it has also attracted huge criticism from the Western media as well as national and international researchers. However, there is no known research that explores the social and environmental disclosures of shipping companies regarding their disposal of end-of-life ships, although this has significant social and environmental impacts. Thus investigating social and environmental information disclosure practices of shipping companies is a contribution to the social accounting literature.

To measure and classify research information, this thesis developed an index based on available materials relevant to the ship-breaking industry and suggested by the national and international monitoring bodies for ship-breaking and ship recycling. This thesis also developed an accountability model to justify the level of accountability of the shipping companies. The development of the accountability model is a significant contribution to the literature as future researchers could use this model to justify the accountability of any business/industry. The accountability model which is based on the normative perspective of research provides some chronological questions and answers that leads to actions/prescriptions for a particular business/industry. Such a model would not otherwise available in the literature.

The development of disclosure index is another significant contribution to the research as future researchers could use this index to measure and evaluate the social and environmental disclosure of shipping company. Finding limited accountability through the development of a disclosure index and by the use of accountability model is also a contribution to the existing body of knowledge; since there is no research so far within the social accounting context that developed accountability model and disclosure index simultaneously to justify the accountability of the companies. The finding of this thesis provides insights about the ship-breaking activities of Bangladesh and an understanding of the related responsibility that the shipping companies are consistently avoiding. Finally it is believed that, this thesis bridged the gap in existing literature on social and environmental disclosure.

7.3 Implications of the findings

The findings of this thesis have significant implications for the ship-breaking industry of Bangladesh in particular, and the global shipping industry in general. The findings of the thesis will help the global shipping companies to realise their social responsibility to local and international communities. The publication of this thesis might help international communities including social, environmental and human rights groups to create pressure on international shipping companies to take more responsibility while sending their end-of-life ships to the developing countries including Bangladesh.

Exploring the social and environmental information disclosures of shipping companies might help the ship-breaking workers to obtain better working conditions, better health and safety measures and sustainable ship dismantling, at the same time as supplying steel demands and providing employment to one of the poorest countries of the world. The findings might improve the working conditions of the ship-breaking yards through raising awareness by publishing papers, talking to the media, and appealing to international communities (such as European Union) through attending seminars/symposiums to formulate international mandatory rules about the recycling of end-of-life ships; this might compels the shipowners to take responsibility for the cleaning and safe dismantling of their end-of-life ships. Moreover, the findings will help the government of Bangladesh to formulate further rules to compel the shipping companies to take more accountability. In this thesis it is emphasised that more government rules and regulations are needed to regulate this industry, as well as

international rules to strictly monitor the movement of trans-boundary hazardous materials.

7.4 Future research

Given the exploratory nature of this research, the findings therefore provide the basis for subsequent research (such as considering the benefits of disclosure, why some items are disclosed and others are not, and so forth). Subsequent research could investigate whether the disclosures being made are actually satisfying the demands or expectations of various stakeholder groups. It also opens up further avenues for research exploring the sustainability issues of shipping companies. Further study could be conducted to investigate the motivations of the shipping companies for the disclosure or non-disclosure of ship recycling related information. Whilst not yet undertaken, it could lead the way for further investigation of other disclosures being made by the companies (such as sustainability reports, and other publicly available information reported through the respective companies' websites), even though it is argued that these alternative disclosure media will not be consistent across the sample companies.

7.5 Limitations of the thesis

One of the limitations of this thesis is the lack of publicly available information; particularly the researcher did not find all the annual reports of the year in which the identified shipping companies supplied their ships for breaking in Bangladesh. The selection of the global top-ten shipping companies' annual reports could be criticised on the grounds that the researcher only used one year of annual reports (2010). Annual report content analysis has its inherent limitations. For example,

Guthrie & Abeysekera (2006) note that content analysis captures the quantity of disclosures rather than quality, and is often subjective in that it captures various narratives as a representation of social and environmental reporting. Krippendorff (1980) also noted that many of the reliability and validity issues in content analysis still remain unresolved. Another limitation of content analysis was identified by Chadwick, et. al. (1984), that this method cannot be used to test casual relationships between variables. However many social accounting researchers used content analysis with other methods of research to overcome the shortcoming of content analysis. Accordingly, the researcher of this study combines content analysis with other methods of data collection, such as conducting personal interviews with various stakeholders to provide a richer empirical understanding of the subject matter. Considering all these limitations, this thesis attempts to contribute to existing literature, particularly regarding the social and environmental disclosures of the shipping companies in respect to how or whether they report their end-of-life ships; this is a first of its kind in social accounting research.

7.6 Recommendations

Although the problems in the ship-breaking industry as found in this thesis are very complex, the ending of ship-breaking in Bangladesh is certainly not the solution. This industry provides job opportunities to millions of workers directly and indirectly, and the country does not have the means to buy steel on the international market. It therefore relies on recycled steel scrapped from the ships. However, the owners of the ships should take responsibility, at least for pre-cleaning the ships and to pressure the local ship-breaking companies into

maintaining health and safety, good working conditions, no child labour and to respect human rights as well as labour rights within the ship-breaking yards.

The government of Bangladesh also needs to assume responsibility by ensuring that the ship-breakers respect domestic legislation in the yards. The government of Bangladesh could revise the existing labour law in consistent with the provision of international human rights and environmental standards and enforce it within the ship-breaking yards. Eradication of child labour from the ship-breaking yards and the improvement of working conditions in Chittagong can only happen if all stakeholders become involved in the process (such as the government of Bangladesh, states exporting the end-of-life ships, the shipping company and its relevant industry, international development agencies such as the UN and the World Bank, local NGOs such as BELA and YPSA, and yard owners and ship breaker in Bangladesh).

The global shipping industry needs to make sure that end-of-life ships are pre-cleaned as much as possible of all hazardous materials within the originating OECD countries before they are sent to non-OECD ship-breaking countries. They need to ensure that end-of-life ships have gas free certificates and take into account international standards for safe and environmentally sound ship-breaking when deciding where to send ships for dismantling. Global shipping companies need to disclose publicly available information pertaining to how and where they dismantle/recycle their end-of-life ships (this recommendation is aligned to first research question).

If shipping companies provide publicly available information pertaining to how, and where, ship disposal occurs, this will help relevant stakeholders to understand the degree of accountability embraced by a particular shipping company over other. Also relevant stakeholders can easily access the information to assess the social and environmental responsibility of particular shipping company (this recommendation is aligned to second research question).

If shipping companies are identified as supplying end-of-life ships to the ship breaking yards of developing countries such as Bangladesh, the owners or the respective shipping companies must arguably be held liable for the proper handling of hazardous materials on board the end-of-life ships and they must respect the international as well as host country rules and regulations relating to ship-breaking (this recommendation is aligned to the third research question). If all these conditions are fulfilled, albeit difficult in reality, it will result in a win-win situation, as the global shipping industry needs Bangladeshi ship-breaking yards, and Bangladesh needs this industry to survive.

This thesis can be concluded by taking the recommendation of Zakaria (2011) that Bangladesh needs to move towards green ship recycling by upgrading the existing facilities in compliance with proposed international regulations such as the IMO ship recycling regulations 2009 and the European waste shipment regulations 2012. Green recycling does not necessarily imply dry docking, which is quite expensive, rather it implies improving the existing beaching method's hazardous waste treatment, and bilge and ballast water treatment, and providing training for the workforce (Zakaria, 2011). He further argues that as India and China have

already moved to green ship recycling, Bangladesh needs to adopt this as soon as possible in order to remain competitive within the region.

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Appendix (i) Ship Recycling-related Information Disclosure Index (SRIDI).

A. Occupational Health & Safety (OH&S):

1. Disclosure of information regarding protection of occupational health and safety.
2. Disclosure of policies regarding how to prevent, minimize and, to the extent practicable, eliminate accidents, injuries and other adverse effect on human health.
3. Disclosure of policies regarding safety for hot work, including cleaning, removal of toxic or highly flammable paints from areas to be cut and testing before any hot work is performed.
4. Information regarding how the ship will be inspected and declared safe for hot work.
5. Information regarding the training procedures of personnel involved in ship dismantling.
6. Disclosures regarding adequate emergency response, marking of all hazardous materials and on-breathable spaces.
7. Company makes disclosures regarding the provision of appropriate and sufficient use of Personal Protection Equipment (PPE).
8. Company makes disclosures regarding disclosure of information such as safety records, training programmes for workers and assessment of the work quality.
9. Company makes disclosures that the recycling facility has sanitation and rest room capability for a minimum of 50 workers, facility for adequate and clean drinking water; workers change room; first aid facility; fire fighting facility and emergency response system.
10. Company makes disclosures that the recycling facility has material handling equipment and a list of the trained labourers of all disciplines including lighting, gas cutting, waste handling etc.
11. Company makes disclosures that the recycling facility has asbestos and glass-wool handling, removing and storage facility.
12. Company makes disclosures that that working procedures and operations are undertaken in a safe manner, for example, safe access to all areas, compartment, tanks, etc. and ensuring breathable atmosphere.
13. Company makes disclosures that Occupational Health and Safety (OS&H) management systems are implemented by each ship recycler; protecting the safety and health of all workers of the facility by preventing work-related injuries and diseases, ill health and incidents.

B. Ship-recycling

14. Company discloses detailed ship-recycling plan – a document that details how the ship will be dismantled.
15. Company makes disclosure about its policy in relation to recycling.
16. Company makes disclosures that the ship recycling facility must maintain and monitor the ship in a gas-free condition and be approved ‘fit for hot work’ during the whole process of ship recycling.
17. Company discloses that the recycling state must check every ship before it accepts the ship for recycling.

18. Company discloses that it ensures a recycling facility that has the capability to recycle the ships in a manner consistent with national legislation and relevant international conventions.
19. Company discloses that it will select a recycling facility that has the ability to safely handle and properly dispose of any potentially hazardous materials that may be present in the ships such as asbestos, PCBs, halons, petroleum products and other residues.
20. Company discloses that it ensures minimizing the use of potentially hazardous materials and waste generation during a ships operating life.
21. Company makes disclosures about assuming the responsibility to address the issue of environmental and worker protection in ship recycling facilities.
22. Company makes disclosures that it ensures final survey and certification before sailing its ship for recycling.
23. Company makes disclosures that on completion of the final survey, an international 'Ready for Recycling' certificate must be issued by the flag state.
24. Company makes disclosures regarding obtaining a green passport or green design before sailing its ships for dismantling.
25. Company discloses its policy to take accountability for the ship's ultimate disposal when designing and constructing a ship, by using materials that can be recycled safely and are environmentally sound.
26. Company makes disclosures about its design of ships and ship's equipment to facilitate recycling and removal of hazardous materials.
27. Company discloses the information that its ship recycling plan 'properly reflects' the information and that the facility is properly authorized.
28. Company makes disclosures that its recycling facilities are authorized and it will take the form of an IMO 'document of Authorization for ship recycling facilities'.
29. Company discloses information that it will take responsibility for decontamination prior to recycling.
30. Company has disclosed its policies that it minimized the use of hazardous substances in the construction of new ships and their equipment.

C. Environment:

31. The company has disclosed its policy that ship recycling activities do not harm the environment costing any way.
32. Disclosure to enhance ship safety, protection of human health and the environment throughout a ship's operating life.
33. Company makes disclosures that it will not allow exporting hazardous waste to a state if the exporting party has a reason to believe that the waste will not be managed by the importing state in an environmentally-sound manner.
34. Company makes disclosures that shipowners are obliged to ensure the availability of adequate disposal facilities within the boundaries of ship-breaking yards.
35. Company has disclosed its environmental practices prior to dismantling, particularly decontamination of the ship before its final voyage for scrapping.
36. Company makes disclosures that it will get permission to beach a vessel, berthing certificate, Environmental Clearance Certificate from the importing state or territory.
37. Company makes disclosures that its environmental policies are consistent with the environmentally sound and efficient management of hazardous wastes.

38. Company has specific disclosures regarding the upholding and protection of human health and environment against the adverse effects which may result from the movement of hazardous waste.
39. Company discloses that after the ship has been accepted, the recycling state is responsible for monitoring the safe handling of any hazardous materials generated during the recycling process.
40. Company makes disclosures that it has a policy of compliance that if it is the last owner, it should remove all asbestos and other toxic materials on board at delivery to the facility.
41. Company has disclosed its environmental control procedures at ship recycling facilities.
42. Company makes disclosures that hazardous wastes and other wastes be accompanied by a movement document from the point at which a trans-boundary movement commences to the point of disposal.
43. Company makes disclosures of its policy to co-operate with the importing country of the end-of-life ships and makes available information upon request with a view to promoting the environmentally sound management of hazardous wastes and other wastes, including harmonization of technical standards and practices for the adequate management of hazardous wastes and other wastes.
44. Company makes disclosures that it will ensure an Environmental Management Plan for the ship dismantling facility to minimize effects and to safeguard the environment.
45. Company has disclosed its policy to ensure that it will take into account social, technological and environmental aspects while generating hazardous wastes and other wastes.
46. Disclosure of policies regarding minimum notification and prior written consent requirement.

D. Pollution:

47. Company makes disclosures that they decontaminated the hazardous wastes before sailing their ship for dismantling and minimize the trans-boundary movement of hazardous waste.
48. Company makes disclosures regarding the prohibition of disposal of industrial wastes and of radioactive waste at sea.
49. Company makes disclosures about the prevention of pollution due to hazardous wastes arising from ship recycling and, if such pollution occurs, to minimize the consequences thereof on human health and the environment.
50. Company discloses that the trans-boundary movement of hazardous wastes and other wastes is reduced to the minimum.
51. Company makes disclosures that the proper labelling, packaging and transport of hazardous wastes has occurred, so the asbestos, PCB waste etc in the end-of-life vessel must be properly identified.
52. Company makes disclosures that it ensures the safe and legal dismantlement of ships.
53. Company makes disclosures to ensure that all hazardous materials such as asbestos, PCBs and other organic pollutant (Pops) should be removed prior to a ships final voyage.
54. Company makes disclosures about maintaining an inventory of potentially hazardous materials on board.

55. Company makes disclosures about the design of the ship and its equipment, to facilitate the recycling and removal of hazardous materials in a pollution free mode.

56. Company makes disclosures that it minimizes the use of potentially hazardous substances to health and the environment.

57. Company makes disclosures that it minimises waste generation during the life cycle of the ship.

58. Company has disclosed its policy to green design or to adopt cleaner production or technologies to prevent hazardous waste generation.

59. Company has disclosed its policy to follow the convention on the prevention of marine pollution by dumping of waste and other matter into the sea.

60. Company has disclosed its policy not to allow the export of hazardous wastes to developing countries.

Appendix (ii): Matrix of disclosures by top ten shipping companies

Category	Hapang-Lloyd	Maersk	Mediterra	Evergreen	CSAv	NYK	COSCO	CMA CGM	UPS	Fedex	Total	%
OH&S	9	5	9	7	8	8	9	3	5	2	65	25%
Ship recycling	7	4	6	6	7	4	7	2	6	1	50	19%
Environment	10	3	5	9	10	7	10	4	10	7	75	29%
Pollution	7	1	9	10	11	5	8	7	9	3	70	27%
Total	33	13	29	32	36	24	34	16	30	13	260	100%

Appendix (iii): Matrix of disclosures by identified shipping companies

Category	Novoship	OHS	Euronav	Total	%
OH&S	24	35	40	99	29%
Ship recycling	22	25	28	75	22%
Environment	25	31	31	87	25%
Pollution	22	29	30	81	24%
Total	93	120	129	342	100%

Appendix (iv): List of interview participants

No. interview	Interview participants	Date
1	Director, Bangladesh Environmental Lawyer's Association (BELA),	02.01.2012
2	State Minister, Ministry of Labour and Employment, Government of the People's Republic of Bangladesh, Bangladesh secretariat	03.01.2012
3	Deputy Secretary, Ministry of Labour and Employment, Government of the People's Republic of Bangladesh, Bangladesh secretariat	04.01.2012
4	Secretary, Bangladesh Ship Breakers Association (BSBA)	21.01.2012
5	Yard Manager, Silvia Group, Muhib steel and ship-recycling industry, Kadamrasul, Bhatiary, Sitakund, Chittagong	22.01.2012
6	Chief Executive, Young Power in Social Action (YPSA)	23.01.2012
7	Program Officer, Young Power in Social Action (YPSA)	24.01.2012
8	Managing Partner, B.Rahman, ship-breaking industry	25.01.2012
9	Managing Director, Prime ship breakers limited and Prime ship recycling limited	26.01.2012
10	Assistant Manager, Sakib Steel industry, ship-breaking yard, Kadamrasul, Bhatiary, Sitakund Chittagong.	29.01.2012
11	Worker-1, Foyjun ship-breaking industry, Chittagong	02.02.2012
12	Worker-2, Kadamrasul, Sitakund, Chittagong.	04.02.2012

Appendix (v): Interview Questions

1. What is your perception about the working conditions, health and safety issues and violation of human rights in the ship-breaking yards of Bangladesh?
2. Who do you think is responsible directly or indirectly for the damage to the coastal environment and the violation of human rights in the ship-breaking yards of Bangladesh?
3. What measures do you think can improve the existing situation of the ship-breaking yards of Bangladesh?
4. Do you ever try to identify the original owners of the ships?
5. How do you identify the original owners or suppliers of ships that supplied the ships to the ship-breaking yards for dismantling?
6. What are the accountability issues you expect owners or suppliers of ships (shipping companies) to disclose, and why do you expect it?
7. Have you received any evidence of shipping companies trying to 'hide' the fact that their ships are being supplied to the ship-breaking companies? How did they 'hide' this?
8. Do you ever try to 'name and shame'? Why or why not?
9. Can you name any companies that are known to be supplying their ships, either directly or indirectly (names of ships, years, and numbers)?