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Need for an Integrated Sustainable Shipping Index

ABSTRACT

According to the United Nations, the three pillars of sustainability are social, environmental, and economic and these are inextricably linked. Currently, there are reporting and accounting standards for sustainability which can be used by the shipping industry and these include the Triple Bottom Line (TBL) framework for sustainability accountability, Global Reporting Initiative (GRI) Sustainability Reporting Standards, and the Sustainability Accounting Standards Board (SASB) Marine Transportation Sustainability Accounting Standard. There is also a rating system for environmental performance of ships known as the Clean Shipping Index (CSI). However, there is no index globally which covers all three critical areas of sustainability in shipping. This article looks at the TBL, GRI, SASB and CSI and then argues why it would be useful for the shipping industry to have an Integrated Sustainable Shipping Index (ISSI).

1. INTRODUCTION

According to the United Nations, the three pillars of sustainability are social, environmental, and economic and these are inextricably linked (UN, 2012).

There has been a greater emphasis on environmental sustainability in shipping by the IMO in the recent years through the various International Conventions. These are the Prevention of Pollution from Ships (MARPOL) Annex VI to reduce emissions of greenhouse gases (GHG) from ships, the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM) Convention to prevent the spread of invasive harmful aquatic organisms carried by ships' ballast water, and the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships.

Social sustainability in shipping has also

progressed with the IMO's and the ILO's efforts in improving the training, safety and employment standards of the seafarers through the Standards of Training, Certification and Watchkeeping for Seafarers (STCW) Convention and the Maritime Labour Convention (MLC) respectively.

Economic sustainability in shipping has however experienced drastic changes due to the shipping cycles in both dry and wet cargoes. The swings in the shipping economy have caused disruptions to the industry resulting in insolvent companies, seafarers without jobs, new-builds abandon at shipyards, ships at the anchorages without charters, and banks left with non-performing loans.

As such, the International Chamber of Shipping reasoned that the stakeholders of the shipping industry should give equal priority to each of the three pillars of sustainable development because unless the industry is economically viable it will also not be able to deliver the improvements in environmental and social sustainability (ICS, 2013).

John Elkington also argued that "the social and economic dimensions of the agenda - which had already been flagged in the Brundtland Report (Brundtland et al., 1987) - have to be addressed in a more integrated way if real environmental progress was to be made" (Elkington, 2004).

The need for companies to look at all three dimensions of sustainability performance in an integrated manner has resulted in different business reporting models which can guide the organisations to understand, demonstrate, communicate, report and improve such performance (Medel-González et al., 2013).

The reporting and accounting standards for sustainability which can be used by the shipping industry include the Triple Bottom Line (TBL) framework for sustainability accountability, Global

Reporting Initiative (GRI) Sustainability Reporting Standards, and the Sustainability Accounting Standards Board (SASB) Marine Transportation Sustainability Accounting Standard. There is also a rating system for the environmental performance of ships known as the Clean Shipping Index.

This article looks at TBL, GRI, SASB and CSI and then argues why it would be useful for the shipping industry to have an Integrated Sustainable Shipping Index. The article is organised into five main sections: Introduction; Overview and Comparison of TBL, GRI and SASB; Clean Shipping Index; An Integrated Sustainable Shipping Index, and Concluding Remarks and Recommendations.

2. OVERVIEW AND COMPARISON OF TBL, GRI and SASB

2.1 TBL framework for sustainability accountability

The term Triple Bottom Line (TBL) was coined in 1994 by Elkington (1997). He argued that organisations should be preparing three different bottom lines instead of just one bottom line, which is the traditional measure of profit or loss in the profit and loss account statement. The other two bottom lines are the “people account” – a measure in the form of how socially responsible an organisation has been throughout its operations, and the “planet account” – a measure of how environmentally responsible it has been (Hindle, 2009).

However, the 3Ps (Profit, People, and Planet) do not have a standard unit of measure. Profits are measured in dollars, but what should social capital and environmental health be measured in? Hence, finding a conventional unit of measurement is a challenge. Furthermore, there is no universal standard method for calculating the TBL (Slaper and Hall, 2011).

In his report to the Norwegian Shipping Association on the “Corporate Social Responsibility and the Shipping Industry”, Vilsted (2004) considered that the triple bottom line was a supplement and not a replacement for the financial results as an indicator of the company's performance, and that good financial results were not only the first bottom line, but also the most important one.

In their research project on Corporate Social Responsibility (CSR) in the Baltic Sea Maritime Sector, Kunnaala et al. (2013) had asked the shipping companies they surveyed as to what CSR measures their company were involved in. The CSR measures selected by the participants included Safety, Social, Environmental and

Economic. Although there was no direct link in the report that these shipping companies might be using the TBL framework for sustainability accountability, it could be inferred that the TBL concept was being practised by these companies as Safety measures could also be grouped under Social measures.

2.2 GRI Sustainability Reporting Standards

The Global Reporting Initiative (GRI) was founded in Boston, the United States of America in 1997. It is an independent international organisation that is now based in Amsterdam, the Netherlands. It promotes the use of sustainability reporting as a way for organisations to become more sustainable and contribute to sustainable development (GRI, 2017a). The GRI Sustainability Reporting Standards (GRI Standards) which were released in October 2016 have superseded the G4 Guidelines and will be required for all reports or other materials published on or after 1 July 2018 while the G4 Guidelines remain available until then (GRI, 2017b).

GRI has also actively participated in the international multi-stakeholder ISO 26000 development process from the beginning, and supports this first ever non-certifiable ISO standard on (Corporate) Social Responsibility. ISO 26000 was published in November 2010 and provides guidance on how businesses and organisations can operate in a socially responsible way. Both ISO 26000 and the GRI Guidelines cover the most common economic, environmental and social issues and impacts. However, while ISO 26000 is intended to give guidance on the actions and expectations for organisations to address each of these topics, the GRI Guidelines provide guidance on what to report for each of these issues specifically (ISO, 2010).

There is also a link between TBL and GRI. John Elkington had been involved since the early days of GRI and was also a former member of the GRI Board of Directors. He was responsible - alongside General Motors - for switching GRI from an environmental focus to a triple bottom line focus (GRI, 2012).

According to Singhal and Dev (2016), integrating non-financial reporting, such as sustainability and CSR reporting is a relatively recent trend which has expanded over the last twenty years.

This geographic expansion could be seen when in August 2016, the Maritime and Port Authority of Singapore (MPA) announced an initiative to help publicly-listed shipping companies with the cost of their sustainability reports. Companies which took up MPA's offer would have to publish their

sustainability reports before 31 December 2017 and would have to meet international reporting standards such as the GRI. Earlier in June 2016, the Singapore Exchange (SGX) made sustainability reports mandatory for all listed companies on a 'comply or explain' basis from the financial year 2017. Hence, the MPA scheme was expected to support maritime companies in their sustainability efforts. According to Andrew Tan, the Chief Executive of MPA, "the triple bottom line - people, planet and profits - will enhance (the maritime companies) shareholder value" (Eco-Business, 2016, SGX, 2016).

An exploratory study of the ten largest container shipping companies done by Olsen (2015) based on the GRI Guidelines had found that sustainability reporting among the container shipping corporations varies widely in both quality and level of disclosure, from companies issuing several hundred pages lengthy sustainability reports to companies with only a single webpage with information on sustainability. The best aspect reported was the category; Economic, Environmental and Social Aspects, with social elements being the weakest part.

2.3 SASB Sustainability Accounting Standards

The Sustainability Accounting Standards Board (SASB) was established in 2011 and is based in San Francisco, the United States of America. It is an independent standards-setting organisation for sustainability accounting standards. The standards are designed to improve the effectiveness and comparability of corporate

2.4 Comparison of TBL, GRI and SASB standards

Table below provides a summary comparison of TBL, GRI and SASB standards:

Item	TBL	GRI	SASB
1. Year started	1994	1997	2011
2. Number of standards/topics	The three sustainability pillars of Social (People), Environmental (Planet), and Economic (Profit). No detailed topics under each and no universal standard method for calculating them.	G4 has 36 GRI Sustainability Reporting Standards consisting of 3 universal standards and 33 topic specific standards are grouped under economic, environmental and social.	Marine Transportation standard has 4 topics, of which 3 can be grouped under environmental and social. Business ethics could be considered the only economic topic. Cruise Lines standard has 5 topics which can be grouped only under environmental and social. No economic topic.
3. Relation to other international standards	Not applicable	ISO 26000:2010 Guidance on social responsibility	Not applicable
4. Industry specific standard	No	No	Yes. More than 80 industries in 10 sectors including marine transportation and cruise lines.
5. Specific Unit of Measure for reporting requirements	No	Yes. Examples are injury rate (social), GHG emissions in metric tons of CO ₂ equivalent (environmental), and percentage of procurement spent on local suppliers (economic).	Yes. Examples are air emissions for NO _x , SO _x and particulate matter in metric tons (environmental), lost time injury rate (social), and regulatory fines associated with bribery (economic).
6. Usage in the shipping industry	Not believed to be widely used but this is also because there are no detailed topics under TBL. It is more of a conceptual framework.	Believed to be the most widely used sustainability framework among the three based on the literature review carried out for this article.	Not much information available on its usage in the shipping industry from the literature review carried out.

disclosure on material environmental, social, and governance (ESG) factors in the United States Securities and Exchange Commission (SEC) filings. The SASB currently has a provisional standard for the marine transportation industry that was published in September 2014. There is also a separate provisional standard for the cruise lines that was published in December 2014 (SASB, 2017).

In the exploratory study of the cruise industry sustainability, Szymanowicz (2016) had found that large cruise ship firms are more likely than small cruise ship firms, to report the outcomes of their sustainability activities through official reports following the GRI's disclosure framework. He had also cited the critical environmental and social concerns raised by the cruise lines research brief by SASB.

Using the SASB's provisional standard for cruise lines as a guide, Jones et al. (2016) also had a similar finding in their exploratory review as Szymanowicz. Only the top two cruise ship operators published extensive sustainability reports which covered some environmental, social and economic issues while the other leading cruise corporations published more limited information on sustainability. They even suggested that the leading cruise companies' current commitments to sustainability are "primarily couched within existing business models centred on continuing growth and consumption and that these commitments represent a weak approach to sustainability".

3. CLEAN SHIPPING INDEX (CSI)

CSI was set up in Gothenburg, Sweden in 2007 by Ulf Duus and Jan Ahlbom (Green4Sea, 2014). It is a non-profit organisation and is coordinated by a secretariat and overseen by an independent board. To guarantee that all technical data is fairly scored and up-to-date, the methodology for determining the index is reviewed by a professional committee of experts and researchers (CSI, 2017a).

It is an online tool where transport purchasers can compare the environmental performance of different ships. All the shipping companies that are affiliated to the index publish information about their ships. On the other side, transport purchasers can see how the different ships perform in relation to each other (Green4Sea, 2014). A network of cargo owners from Sweden, Germany and the Netherlands has agreed to use CSI in their procurement process. Several ports are also using CSI for lowering their port dues for clean ships. From 2018 onwards, the Swedish Maritime Administration intends to give a significant tax reduction for well-performing vessels according to the CSI (CSI, 2017b).

The environmental parameters used by CSI are CO₂ emissions, nitrogen oxides (NO_x) emissions, sulphur oxides (SO_x) emissions, particulate matter (PM) emissions, use of chemicals, and water and waste management. For the scoring of CO₂, the vessel efficiency is compared to a reference vessel of the same type and size, calculated mainly using data published by the International Maritime Organisation (IMO). For NO_x, the level of emissions defined by Tier I, II and III levels set by the IMO serve as the reference for scoring. The basis for scoring in SO_x and PM is how much sulphur is present in the fuel, or whether the exhaust gases are treated. In the chemicals section, scoring depends on the chemical used in antifouling paint, the type of stern tube oil, hydraulic fluids and gear oils used, the type of boiling cooling water treatment system installed, the chemicals present in cleaning agents used and the type of refrigerants applied. The waste water section covers the treatment of sewage and grey water, management of solid waste, sludge oil handling and bilge water treatment. The shipping company will submit the data for the above environmental parameters, which will then be audited by a CSI accredited classification company (CSI, 2017b).

The environmental standards of the GRI are wider in scope than CSI as they cover eight main groups which are material, energy, water, biodiversity, emissions, effluents and waste, environmental compliance, and supplier

environmental assessment (GRI, 2017b). However the environmental parameters of the CSI would already be adequate for shipping as they are more industry specific and hence relevant. Besides, CSI is an index which allows for more straightforward comparison.

The shortcoming for CSI is that it looks only at environmental sustainability and not economic and social sustainability as well. It leads to the next section on why there is a need for an integrated sustainability index.

4. AN INTEGRATED SUSTAINABLE SHIPPING INDEX (ISSI)

Medel-González et al. (2013) claimed that sustainability problems cannot be analysed or understood if an integral perspective is not considered. As mentioned earlier, CSI only looks at the environmental aspect and does not cover the economic as well as social aspects of sustainability.

The economic aspect of sustainability cannot be neglected and is always essential. An organisation that is loss-making would not be able to sustain operations in the long run. However, economic sustainability is not just revenues, operating costs, and profits but should also look at the wages paid to the employees ashore and on board, the tax contributions to governments, the investments made to community projects, as well as the positive and negative indirect economic impacts of the organisation. An example of positive indirect economic impact is the adoption of information technology tools such as ship performance monitoring system which could help to increase ship energy efficiency, thereby reducing fuel costs as well as emissions.

The authors would like to propose that organisations should also carry out detailed risk planning when considering investments such as the ordering of newbuilds at shipyards. The over-ordering and speculative building of new ships during the boom years in a shipping cycle has never been sustainable and have also exacerbated the over-supply of vessels during the bust years. Such a situation can be found not only in dry bulk shipping but container ships, tankers and the offshore sector as well and this cycle is repeated. Although the shipping cycle cannot be prevented as it is subjected to geopolitics as well as economic ups and downs, however, its volatility can be mitigated if organisations are financially disciplined and “not to jump on the bandwagon” and place speculative orders during good economic times and when capital is readily available.

The social aspect of sustainability cannot be left out of the equation as well. It would cover topics such as occupational health and safety, training and education, wages, contractual terms, as well as non-discrimination and equal opportunity. According to Kunnaala *et al.* (2013), “shipping companies engage in CSR to gain competitive advantage and to increase maritime safety. The social aspects of CSR take into account the well-being and skills of the employees, corporation and other stakeholders of the company.”{Kunnaala, 2013, Corporate Social Responsibility and Shipping: Views of Baltic Sea Shipping Companies on the Benefits of Responsibility}{Kunnaala, 2013, Corporate Social Responsibility and Shipping: Views of Baltic Sea Shipping Companies on the Benefits of Responsibility}

Although GRI considers all the three key areas of sustainability, it is not as easy as CSI, which is an index, to compare the sustainability performance of different shipping companies. According to Medel-González *et al.* (2013), “an index offers decision makers condensed information for performance monitoring, benchmarking comparisons and decision making. [It is] an aggregation of statistics and or indicators, which often summarised a lot of related information, using an organized method of weighting, scale and normalisation, adding multiple variables into a summary”.

An integrated sustainable shipping index (ISSI) would be useful to ship owners to assess and monitor on how well they are doing in overall sustainability compared to their industry peers and where are the areas for improvement. Such an assessment could be verified by a third party auditor, similar to CSI.

The benefits of attaining a good index score for a ship owner could include:

- Improved reputation in its corporate social responsibility (CSR)
- Increased loyalty from internal stakeholders such as employees ashore and at sea (seafarers)
- Increased goodwill from external stakeholders such as charterers and shippers
- Better confidence of the other stakeholders such as financial institutions, creditors, and shareholders in the shipping company

5. CONCLUDING REMARKS AND RECOMMENDATIONS

The following can be concluded from the above findings on the reporting and accounting standards for sustainability which can be used by the shipping industry:

- Triple Bottom Line (TBL) is one of the earliest available sustainability accounting framework, but it is not believed to be widely used in the shipping industry because there are no detailed topics under TBL. The originator of TBL, Elkington can be attributed to switching the Global Reporting Initiative (GRI) from an environmental focus to a triple bottom line focus.
- Among the three sustainability reporting and accounting standards, GRI has the most comprehensive framework with three universal standards and thirty-three topic specific standards. It is also believed to be the most widely used in the shipping industry among the three. However, GRI sustainability reporting varies widely in both quality and level of disclosure, from companies issuing several hundred pages lengthy sustainability reports to companies with only a single webpage with information on sustainability.
- Among the three, Sustainability Accounting Standards Board (SASB) accounting standards are the most recent with industry specific standards for marine transportation and cruise lines. However, there is not much information available on its usage in the shipping industry from the literature review carried out, and there is only one economic related topic for its marine transportation standard and none for its cruise line standard.

Clean Shipping Index (CSI) is an environmental specific index used by shipping and allows for easier comparison between shipping companies using it. However, it does not look at the other two areas of sustainability, which are economic and social.

This article, therefore, explains the need for an Integrated Sustainable Shipping Index (ISSI), which allows for more natural comparison between shipping companies on their overall sustainability performance. It is recommended that further research is carried out on setting the framework for such an index. Such research could begin with the gathering of data from shipping companies. This data will then be analysed to identify the sustainability aspects and impacts. Indicators will be selected from the significant impacts, and the ISSI will be calculated based on the indicators which are determined by the weight of the indicator in each aspect.

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