Seafood Stewardship Index:

Evaluating the strategies and sustainability performance of keystone actors in the seafood industry

Table of Contents

Introduction

One of the United Nations' (United Nations, 2023) Sustainable Developments Goals (SDGs) (included in the 2030 Agenda for Sustainable Development), focuses specifically on the conservation and sustainable use of the ocean, sea and marine resources (SDG14, Life Below Water). However, the increasing global consumption of seafood products raises concerns over the sustainability and conservation of marine resources in the long term.

Global production of seafood is estimated to vary between 111 and 179 million tonnes per year, increasing over the last 30 years (FAO, 2022). The products from these fisheries are used in a variety of ways, ranging from providing sustenance to international trade. However, the combined effects of unregulated exploitation of fisheries against the backdrop of climate change is a pressing issue for the ocean's biosphere and sustainability broadly (Lam et al., 2016). Increasing sustainability action in the fisheries sector is a global focus, specifically addressed under UN SDG 14, Life Below Water (United Nations SDG, 2023). This SDG is a universal call for all nations to shift the current fishery paradigm to a broader, more sustainable outlook, and in response, the sustainability indices concept was developed. Sustainability indices are instruments that compile a plethora of financial, social and environmental metrics to determine the overall progress of a company, organisation, or country towards sustainability (Usubiaga-Liaño & Ekins, 2021).

Every industry relies on different sustainability indices to track performance depending on their individual development. For the purpose of this resource, our focus is specifically on the seafood industry.

The seafood industry currently employs around 58 million people globally, supporting the livelihoods of 600 million people (FAO, 2022). Consumption is estimated at 20kg per capita across the globe, and is the central food system for addressing nutritional security in most developing countries across Asia, Africa and the Oceania region (FAO, 2022; World Economic Forum, 2019). Despite this, 90% of the fish caught in these countries are sold to wealthier developed countries, indicating a major global issue with seafood consumption levels and its impact on poorer areas (World Economic Forum, 2019).

The seafood industry continues to face a number of social and environmental challenges including overfishing, antibiotic resistance, impacts on biodiversity, unethical labour practices and human rights violations (World Benchmarking Alliance, 2021). Around 50% of the 30 most influential seafood companies do not report antibiotic use, animal welfare or high-risk commodities in aquaculture feed. Only 30% of companies have a policy reducing antibiotic use (World Benchmarking Alliance, 2021). Forced labour and human rights violations have also been significant, with 57% - 82% of assessed ports linked to both overfishing, labour violations or human rights abuses (Selig et al., 2022). Human slavery and labour abuses have

been a significant reality within the global fishing industry, particularly concerning Thai, East and South East Asian regions, in both aquaculture (fish, shrimp and other invertebrates), as well as on fishing vessels (Vandergeest & Marschke, 2021). There has also been an extreme amount of environmental damage caused by buoyant debris from discarded fishing gear, biodiversity collapse from ocean trawlers, as well as serious damage to the ocean floor. According to a recent study, 75-86% of buoyant ocean debris was found to be from discarded fishing gear (Lebreton et al., 2022). The impacts on the ocean's biosphere, ecosystems and biodiversity by commercial fishing are extreme; the number one cause of damage to the ocean floor and seabed habitat is by deep-sea trawlers. This is ahead of all other impacts such as offshore mining (Caddell, 2020). Significant ecosystem damage and biodiversity loss (Marine Stewardship Council, 2023) are more likely to occur due to issues with regard to lack of regulation within the industry (Office of the Auditor General, 2022).

The Need for Transparent Evaluation of Sustainability

Evaluation of the sustainability performance of the seafood industry is essential to ensure alignment with UN SDGs. The way to enable this is to benchmark the sustainability performance of influential seafood companies using a Seafood Stewardship Index tool as exemplified by THRIVE Project's investigation. Another such example has been adopted since THRIVE's investigation was also published by the World Benchmarking Alliance (Packer & Beukers, 2022).

This tool uses publicly available information to measure company performance across a broad spectrum of interest areas, inspired by the SDGs, including governance & strategy, ecosystems, social responsibility and traceability, to reflect a level of alignment with UN SDGs.

The study conducted by THRIVE calculated and ranked the impact of organisations across a range of 60 material topics. It identified the key issues affecting the impact of organisations in their sector. The study also goes a step further by transparently displaying the impacts of each of the material topics in reference to thresholds and allocation, and lower and outer limits at each successive scale-linked level (Fedeli & Glinik, 2021).

Research Methodology

The investigation by THRIVE adopted the THRIVE Framework and used the THRIVE Platform to analyse the sustainability performance of 30 companies operating in the seafood industry, with a broad multi-level entity approach (Fedeli & Glinik, 2021). The sample data we attained was retrieved for further analysis and sub-segmentation. The main purpose of the study was to investigate the relationship between the Sustainability Performance Index (SPI) of each company and their Business Model (BM), and to understand the impact of segments and sub-segments on the SPI for each of these companies. A detailed qualitative content analysis was conducted using official sources, annual reports and sustainability reports to understand the product line, business model and operations of each company. Deriving the sub-segments was partly assisted by studying the sustainability reports, which were the most valuable source of information. The content analysis laid the foundation for the segmentation and sub-segmentation process. To increase the reliability of the data, an extensive peer review process was used, where multiple THRIVE Project researchers performed the content analysis on these companies. The researchers then discussed the results of their content analysis in detail, before finalising the segments and sub-segments.

THRIVE Project Ocean Governance Task Team analysed the Sustainability Performance of the 30 most influential companies, who could be referred to as the keystone actors in the seafood industry. The 30 companies were selected based on the keystone actors principle (Ostrom, 2007). The data from the sustainability report of these 30 companies were taken for analysis using the THRIVE Platform to arrive at the SPI. A detailed content analysis was done on the company websites and the sustainability report to get some background of the company, with regard to revenue, business model type, product/service mix (segmentation), headquarters, country and ownership type.

Results

The findings from this pilot study showed that the maximum SPI score achieved among these companies is 2.698 (Figure 1). This is only 54% of the maximum achievable SPI score of 5. This draws attention to the fact that this sector has room for improvement in achieving a higher level of sustainability. A summary of the SPI scores of the selected 30 companies from the research findings is shown in Figure 1. To be noted, the analysis also revealed that there was a weak correlation between the organisation's revenue and SPI scores (Figure 2).

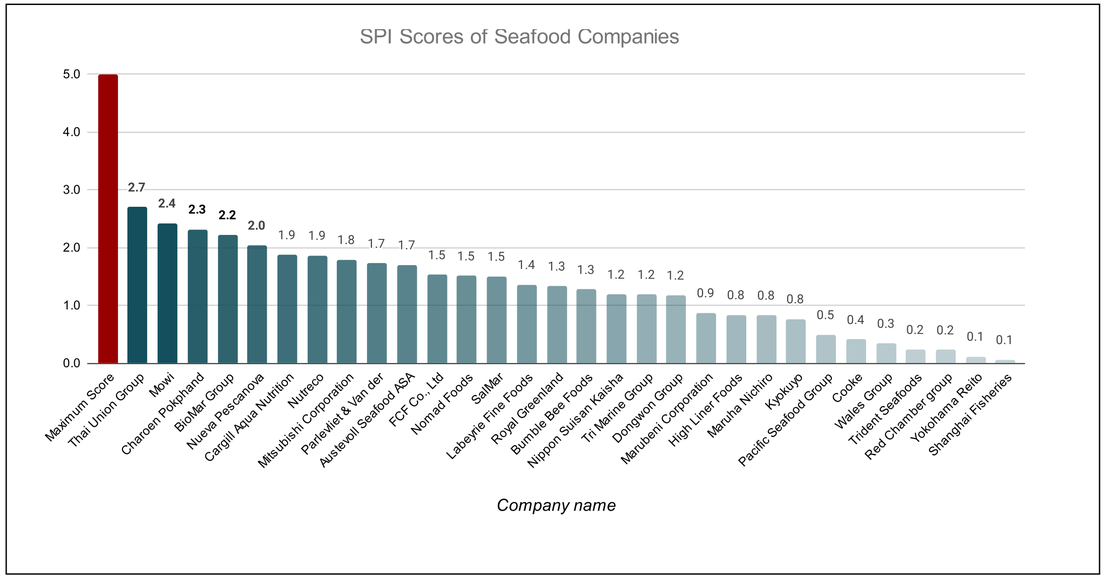

Figure 1 : SPI scores of the 30 keystone companies in the seafood industry, with the maximum SPI score of 5.0 as the benchmark (red bar).

The maximum achievable SPI score remains

54%

of the ideal benchmark

Only

5

companies have a SPI greater than 2

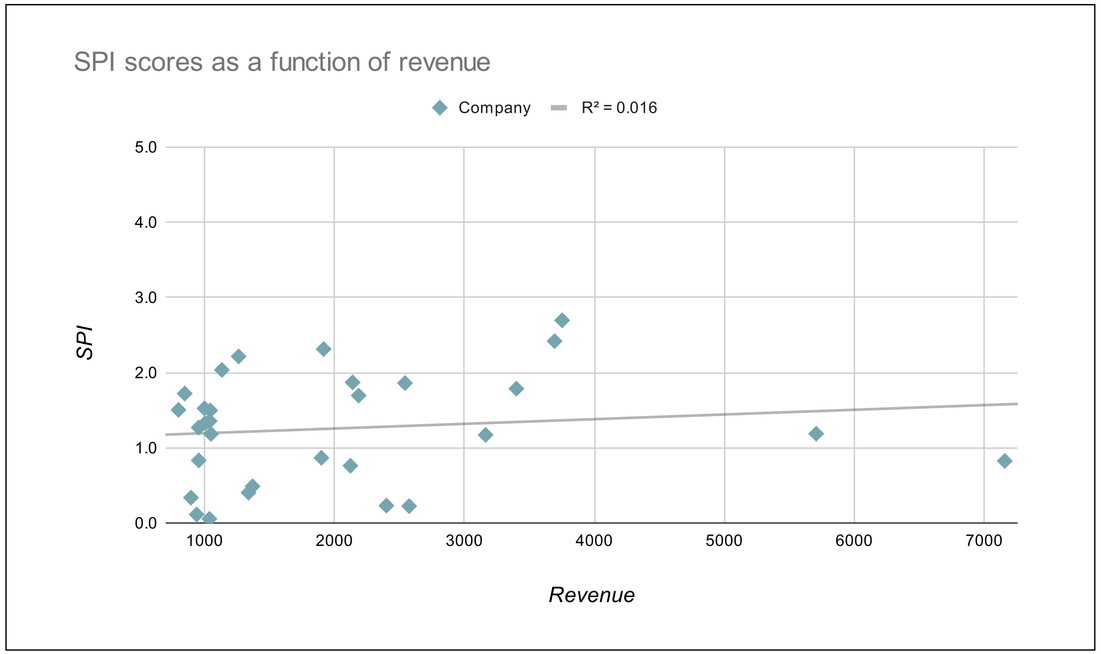

Figure 2: Simple regression analysis showing the relationship between SPI scores and company revenue.

Our team of researchers further analysed the type of business model adopted by these 30 companies. The findings showed that one of the most widely adapted business models is the combination of Green Supply Chain Management and Maximise Material Productivity and Energy Efficiency (Figure 3). Initial insight showed that more than 90% of these companies focused on the Green Supply Chain Business Model, and 80% used it as their main business model. Furthermore, 70% of the companies with SPI value of more than 1 followed a similar business model, focusing on the Green Supply Chain Business Model. These companies also contributed to 30% of the total revenue from these 30 companies. These suggested that BMP could potentially be one of the critical aspects for the organisation to achieve the desired level of sustainability performance. Figure 1, Figure 2 and Figure 3 showed the details of the SPI, revenue details and Business Model Pattern (BMP) of the 30 selected companies.

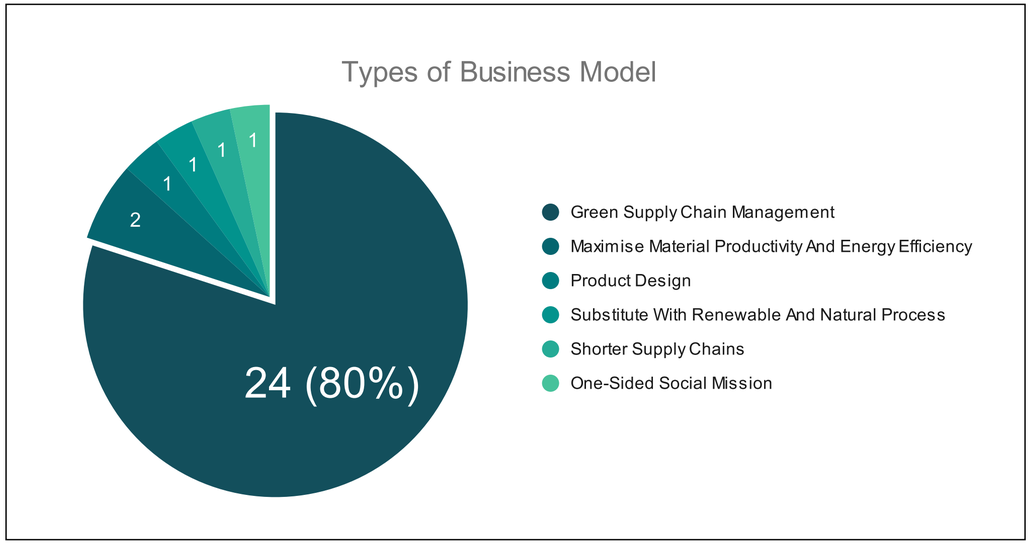

Figure 3. Diagram representing the highest percentage of the type of business model (in this case, Green Supply Chain Management) most adopted by the selected 30 seafood companies.

Green Supply Chain is adopted by

80%

of the companies as the main Business Model Pattern

The segmentation of these companies also showed that research is one of the important aspects of these companies with higher SPI scores. Further analysis of the ownership pattern explained that out of the 30 companies, 16 are Public, 12 are Private and 2 are state-owned. Findings showed that 69% of the Public owned companies have SPI scores of more than 1, the remaining 31% have SPI scores of less than 1, 59% of the Private owned companies have SPI scores of more than 1, remaining 41% have the SPI scores of less than 1, and 50% of the state-owned companies have SPI scores of more than 1.

The use of the THRIVE Framework will give a comprehensive analysis of which business model will fit the organisation to achieve a high level of sustainability performance, taking all stakeholders into consideration at seven different entity levels referred to as the 7Cs (THRIVE Project, 2021).

Discussion

Though our investigation revealed that SPI is not strongly linked to BMP, we argue that some of the reasons for companies performing better environmentally can be attributed to the sustainability approaches that are enforced. For instance, with regard to greenhouse gas (GHG), mitigation strategies have been proven to be effective in decreasing GHG emissions throughout the supply chain (Long & Young, 2016; Ugarte et al., 2016). According to the Thai Union Group 2020 Sustainability Report (2020), the company have set standards and targets to be achieved, including a 30 per cent reduction in GHG emissions when they launched SeaChange, as part of the organisation's commitment to implementing a sustainability strategy through supply chain management. Following the installation of solar panels on its factory's 10,000 square metre rooftop in Samut Sakhon, the company has seen a decline in total GHG emissions. In 2016, there were 594,453 tonnes of carbon dioxide (CO2) per year, but that decreased to 489,723 tonnes of CO2 per year by 2020, missing the target by 2 per cent (Thai Union Group 2020 Sustainability Report, (2020). It is evident that incorporating renewable energy sources reduces energy consumption, improving the efficiency of energy utilisation (Ghasemi Mobtaker et al., 2016).

Additionally, the level of transparency and disclosure could explain the dissimilarities in SPI scores among organisations. As demonstrated in numerous studies, corporate governance plays a crucial role in deciding the environmental, social and governance (ESG) performance, where better internal governance structure enhances environmental performance and transparency (Cong & Freedman, 2011; Jacoby et al., 2019; Van Hoang et al., 2021). Such postulation is reinforced by the fact that the top performers (which were Thai Union Group, alongside Mowi and Charoen Pokphand), disclosed their environmental information, including their social sustainability performance, as part of the corporate social responsibility (CSR) strategies (Charoen Pokphand 2021 Sustainability Report, 2021; Mowi Integrated Annual Report, 2021; Thai Union Group 2020 Sustainability Report, (2020). Conversely, our investigation found that those with low SPI scores need more transparency across many areas, contributing to weak sustainability performance.

Despite the slightly varied SPI (which can be partly explained by mitigation strategies), it is apparent that mitigation of some environmental factors, and adoption of better transparency/ sustainable business models, still find leading companies falling significantly short of any remotely acceptable SPI score. This means that, whilst certain aspects of performance are addressed, when it comes to some of the weightiest areas of the seafood industry, each company faces considerable shortcomings with regard to acceptable SPIs. On the one hand, some environmental issues may be addressed, while simultaneously utilising highly unsustainable operations on another. Overall, the Seafood Stewardship Index investigation by THRIVE is an avenue to provide clear data on sustainability performance. The approach uses the performances of 30 dominant seafood companies that control the vast majority of the seafood products in the industry, known as keystone companies. These keystone companies were used to analyse sustainable business models and strategies, and are ranked to identify the actual impact they had, and how business entities manage the environmental impacts of their operations and human rights policies. Green Supply Chain Management was the most commonly adopted strategy, used by 90% of keystone companies. 69% of those had an SPI score of more than 1 out of 5, or more than 20% of total SPI. Despite this, the adoption of this Sustainable Business Model only resulted in a score that was, at most, only 2.689 out of 5, (or 54% of the total SPI possible score). Only 5 of the top 30 keystone actors of the international seafood industry achieved an SPI over 2 out of 5, or 40% of the possible SPI score.

THRIVE Framework as a Tool

In addressing current sustainability challenges posed to business entities, it warrants a crucial need for the integration of a multidisciplinary approach, taking the complex interconnectedness of environmental, social, economic and cultural aspects into account. Hence, this is where THRIVE Framework enters the picture, as the core concepts it enforces possess the dynamic capability to deliver clear and constructive results in measuring sustainability, helping inform better decision-making and the best path forward. In short, the THRIVE Framework utilises the approaches of 12 Foundational Focus Factors, which come together to create a framework that can assess sustainability performance in an integrated and holistic way. These approaches, which include Context Based Metrics, Science Based Targets, Systems Thinking and Strong Sustainability, are able to assess the breadth of the sustainability performance of a company's operations, not in separation from each other; making the THRIVE Framework unique, and essential in assessing sustainability performance. For instance, the incorporation of THRIVE Framework in this study was showcased through the identification and measurement of key variables that were paramount in assessing sustainability performance. Said Framework provides a critical analysis of the findings, without compromising the goal, to extend the message about the gravity of the current state of the seafood industry (in the sustainability sphere). In order to develop a full explanation as to why the performance of the keystone actors within the seafood industry are so low and inadequate, the THRIVE Framework is required to provide this insight (which a future study can seek to illuminate).

Conclusion

Whilst 90% of companies used Green Supply Chain Management, 80% used it as their main Business Model. Only five companies had an SPI over 2 out of 5. The highest performance, which is by Thai Union Group, achieved an SPI which is only barely over 50% of what can be attained, which may demonstrate innate environmental, social and regulatory impacts that the seafood industry is riddled with. Additionally, a third of keystone actors (11 companies total) achieved a score lower than 1 out of 5, or less than 20% of possible SPI. Most of these companies also used Green Supply Chain Management and other sustainable business models, which had little bearing on the SPI score. This investigation illuminates significant issues for the seafood industry, and its ability to adhere to sustainability in its performance or its ability in reality to adhere to United Nations SDGs. This investigation also demonstrated how the THRIVE Framework application to assess sustainability performance is vital if we want clear and transparent data, and the ability to inform the path forward. The illumination of these findings demonstrates that significant industrial change is required in order for the seafood industry to not only achieve a higher SPI score, but to therefore adhere effectively to the UN SDGs.

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