Driving green growth in pelagic fish capture businesses in the North-East Atlantic

A case study developing a sustainable balanced scorecard

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Preface

This dissertation concludes our masters' studies within business administration at University of Agder School of business and law. We both started our studies in 2021 with full-time jobs and a busy family life. The Covid-19 pandemic and lock-downs were still ongoing which resulted in improvement of digital solutions flexibility. The university of Agder and its employees deserve credit for the work they have put in to making the studies interesting and engaging, even during Covid-19 lock-downs and social distancing. During our studies we have acquired new and relevant knowledge along with useful skills for tackling contemporary challenges in our field. The idea of "big change starts small" drove us towards pelagic fisheries. The research subject was chosen based on our fascination with both strategy and green growth, in addition to our interest in working with an actual business. Being able to contribute to the limited research on the subject of using a sustainable balanced scorecard for a pelagic fish capture business has been an interesting and educational experience. We recognize the importance of sustainability and the complexity of balancing economic growth with other aspects of sustainability, particularly in for-profit businesses.

We are grateful to many people for helping us on this academic journey. We wish to especially thank the general manager and the other interviewees from the case company for enabling the study, by giving us access to the company and providing valuable information for our research. Further, we would like to thank our supervisor Stine Rye Bårdsen for going above and beyond, and for always encouraging us. Her academic knowledge, honest feedback, and clear guidance has been invaluable to us during this process. We would also like to extend our gratitude to Alfrún Sigurgeirsdottir, whose hard work and honest critique significantly raised the quality of our dissertation. Last but not least, we wish to thank our families for encouraging and supporting us throughout the whole process.

ABSTRACT

Management innovation within sustainability has become increasingly relevant with heightened international focus, demand for sustainable development, and green growth. Still, some industries are falling behind. Typically, the pelagic fishing industry is traditionally managed, financially oriented, and bottom line driven, while being completely dependent on sustainable fish stocks. While policy and regulation are the main causes for sustainable progress in the industry, there is a largely untouched potential for driving green growth on the business level. The balanced scorecard from Kaplan and Norton is a management tool that supports the successful implementation of strategy, and it has been modified to include sustainability measures. The sustainable balanced scorecard links sustainability with the traditional balanced scorecard, and it makes it possible to consider non-monetary strategic success factors to impact green growth. Sustainability management, with the sustainable balanced scorecard, is an attempt to overcome the shortcomings of the traditional approaches to environmental and social management. This is done by integrating the triple bottom line framework into the core processes of a business. In our case study, we gather qualitative data through semi-structured interviews from a pelagic fish capture business. Based on results from our data analysis, we propose a sustainable balanced scorecard for driving green growth in the business. Thus, we create a possible starting point for the development of new strategic tools for driving green growth in the pelagic fishing industry.

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1. Introduction

Economic growth and an abundance of resources has greatly benefited humanity. However, it is acknowledged that there are limits to what our planet can provide, and that humanity is pushing those limits (Rockström et al., 2009). This raises the question of how we can continue to pursue economic growth without depleting our planet's resources. Some would argue that continued economic growth is not sustainable and that we need to pursue *degrowth* (Hepburn et al., 2018). Others strive to find new ways of creating economic growth, while also tackling environmental and social issues, in accordance with the UN's sustainable development goals (SDGs) (United Nations, 2015). The SDGs aim to link social, environmental, and economic aspects to achieve a sustainable future (Haas et al., 2019). This has given rise to ideas such as *green growth* and *stakeholder capitalism* (Freeman et al., 2007; Hickel & Kallis, 2020). Moreover, policy- and regulatory changes resulting from COP 21[1], and the Paris Agreement[2] force businesses to make changes. Businesses must leverage research, innovation and changing policies to reach common sustainability goals. However, businesses in some sectors, like pelagic fisheries[3] that use natural capital for economic growth, have more difficulty adopting sustainable development strategies than others (Asche, 2015). While sustainability is widely researched and regulated on a policy level, there is little research on developing sustainable strategies for pelagic fishing on a business level.

Kaplan & Norton (1992) introduced the balanced scorecard (BSC) as a way of driving performance. The idea behind BSC is that "what you measure is what you get" (p.71). Measuring aspects within efficiency, technology, management, social impact, and economics, with the intention of improving and managing them better, is the foundation of a BSC (Kaplan & Norton, 2004a). Based on their idea, incorporating sustainability measures in a balanced scorecard should drive performance toward sustainability (Butler et al., 2011; Figge et al., 2002; Hansen & Schaltegger, 2016; Kalender & Vayvay, 2016; Zhanbo, 2021). With the introduction of the United Nations' SDGs, general measures and targets for sustainability were introduced. (United Nations, 2015a).

[1] Conference of the parties (COP) is the main decision-making body of the United Nations Framework Convention on Climate Change (United Nations, 2023). 21 signifies the 21st convention which was in Paris, 2015.
[2] A legally binding international treaty on climate change introduced at COP 21. The agreement forces the signing nations to present a plan on how to reach certain sustainability goals (United Nations, 2015c).
[3] Pelagic fish, by definition, are found near the ocean surface or middle depth (Stephenson & Smedbol, 2001).

1.2 Sustainable fishing

Fishing is the last major hunting and gathering industry, where the oceans play a central role in providing fish, supplying jobs, and sustaining livelihoods (Asche et al., 2018). United Nations' Sustainable Development Goal 14 "life below water" is directed at the sustainable use and conservation of the oceans and marine resources (Haas et al., 2019). While it is unclear whether the fish capture industry can achieve the aspirations of the UN (Asche et al., 2018), it is unequivocal that climate change and biodiversity loss impact how industries and markets function today.

Scholars argue that the pursuit of economic objectives can lead to the decline of fish stocks and undermine the social objectives of the three-pillar approach (Asche et al., 2018). An economic theory known as *the tragedy of the commons* suggests that individuals with access to public resources will deplete them to serve their own interests, without consideration for long-term consequences (Ostrom, 1990). An illustrative example of this theory is the pelagic fishing industry[4] after the Second World War. Development of new fishing technology and overfishing during that period nearly led to the extinction of the herring (Nofima, 2023). This development initiated the transformation of the whole wild fish capture industry. As a result, the North-East Atlantic sector[5] (the sector) is currently one of the best managed marine harvesting sectors in the world. Norway is one of the biggest actors in the sector (Bjørndal & Ekerhovd, 2014) and oriented toward sustainability (Fiskeridirektoratet, 2021). This fact, along with the sector being highly regulated, makes Norwegian pelagic fish capture businesses representative for such businesses in the sector. The case company in this study is a small Norwegian pelagic fish capture business, and Norway will therefore gain some focus further on.

1.2.1 The pelagic fishing industry

Prior to the 1980's the management of pelagic fishery was nonexistent. This led to overfishing that almost caused the extinction of the Norwegian spring-spawning herring and resulted in a total ban of the capture of herring by the North-East Atlantic coastal states [6](the coastal states) (Nofima, 2023). The coastal states gained governance rights after negotiations initiated by the

[4] The pelagic fishing industry is in this paper referred to as pelagic fish capture businesses, processors, and other actors whose business concerns pelagic fish in the North-East Atlantic sector.
[5] The North-East Atlantic pelagic fishing sector is comprised of the EU, Norway, Iceland, Russia, and Faroe Islands (Bjørndal & Ekerhovd, 2014).
[6] The EU, Norway, Russia, Iceland, and the Faroe Islands (Bjørndal & Ekerhovd, 2014).

UN to ensure sustainability of natural capital in the oceans. This resulted in the states gaining governing rights of natural capital 200 nautical miles from their shores. The determination of fishing quotas and its allocation, is now decided among the coastal states.

The individual transferable quotas system, based on vessels and vessel sizes, was implemented to avoid race fishing[7] from a shared total quota (ITQ) system (Nofima, 2023). This system enabled the firms to gain private property rights to the resource and trade this property amongst each other. Yet, there was still an overcapacity of fishing vessels, resulting in low profitability in the industry. Along with government subsidiaries, the ITQ system resulted in a smaller fleet, larger quotas, and increased profitability for the residual vessels (Fiskeridirektoratet, 2021). The industry still struggles to meet the current sustainability goals, since current methods for measuring green growth are perceived as inadequate. Thus, the industry needs new methods for measuring sustainability, including social, ecological, and economic factors to drive green growth. (Anderson et al., 2015; Asche, 2015; Nielsen et al., 2014)

In a global economy where sustainability and green growth is gaining more and more attention, the role of businesses and other organizations cannot be underestimated. The pelagic fishing industry relies heavily on the availability and sustainability of fish stocks to survive and thrive. Even though government managed quotas and policies provide rules and guidelines on how to fish in the North-East Atlantic, both businesses and fishing vessels play a significant part in the green transition within the industry. Although the industry has been experiencing high demand and higher prices, it is in no position to increase production to respond to growing demands (Nielsen et al., 2014), as an increase in production would mean an increase in capture. Considering most exploited fish stocks are at max capacity (Haas et al., 2019), an increase in production could threaten the future of pelagic fisheries and marine biodiversity. However, the development of Pisciculture[8], or fish farms, allows for more product substitution, which may alleviate pressure on demand for pelagic fish. Pisciculture is a large and growing industry competing with wild fish capture (Fiskeridirektoratet, 2022). However, Pisciculture is extensively researched and debated, and will not be discussed further in this study.

[7]Race fishing is a situation caused by a shared total quota system where fishing vessels are trying to catch the most amount of fish possible before the total quota is reached.
[8] Pisciculture is a commercial process of cultivating fish with the purpose of selling it, primarily as food.

1.2.1.1 The Norwegian sector

As mentioned, Norway represents a leading part of the sector, and the Norwegian fishing industry is a major contributor to the country's economy. As such, examining the Norwegian sector is relevant for the North-East Atlantic as a whole. Pelagic fish capture is the largest segment in the industry, has played an important part for the Norwegian economy, and become a highly profitable industry (Fiskeridirektoratet, 2021). Pelagic fishing makes up 55,2 percent of all fish caught in Norway, in 2021 (Fiskeridirektoratet, 2021). The industry is facing significant challenges, including declining fish stocks and environmental degradation, because of unsustainable fishing practices. In response to these challenges, the international community focuses on promoting sustainable fishing practices that minimize the negative environmental impacts of fishing and promote the long-term health of fish stocks (Fiskeridirektoratet, 2021).

The Norwegian fishery regulations build on four main objectives (Årland & Bjørndal, 2002):

(i) Increasing the profitability of the fishing sector
(ii) Protection of the resource base
(iii) Securing employment opportunities in coastal communities
(iv) Maintenance of the settlements along the coasts

The objectives target economic, ecological, and social objectives. The objectives aim to ensure sustainable fishing in accordance with the three-pillar framework explained in chapter 2.

1.3 Managing sustainability in fisheries

Fish stocks are a renewable resource. They can replenish themselves when their relative and absolute population is sufficiently high, and yet global fish stocks are now massively overharvested (Hepburn et al., 2018). The level of human activity in the ocean continues to increase, affecting marine life and all other aspects of the oceans (Halpern et al., 2008). Ding et al. 2017 estimated that over 35% of global fish stocks suffered overexploitation between 1950-2010. This resulted in 332,8 million tons of lost catch and a direct economic loss amounting to US $298,9 billion, where US $17,6 billion are contributed to the North-East

Atlantic (Ding et al., 2017). The environmental and economic significance of fishery-management has resulted in the European Commission stating that the fisheries are key to managing the transition to a greener economy (European Commission, 2019).

Asche et. al (2018) recognized the three pillars of sustainability within fisheries as economic development, social development and environmental protection. There is an ongoing discussion on whether economic growth and social objectives are mutually exclusive within fishery. These arguments have entered the policy dialogue surrounding fishery management, mainly through two broad narratives (Asche et al., 2018). On one hand, "Economic benefits require high harvest levels that undermine ecological sustainability"(Asche et al., 2018 p.11221). On the other hand, "Only policies that limit access to a subset of fishers can reduce the effect of high harvest levels, but when implemented they potentially compromise the achievement of wider social objectives" (Asche et al., 2018 p.11221).

Several studies support the first narrative by arguing that the pursuit of economic objectives leads to overfishing and decline in the marine ecosystems (Asche, 2015; Asche et al., 2018; Nielsen et al., 2014), i.e., a typical example of the tragedy of the commons, where those with access to unregulated shared goods deplete them for rapid individual gain (Ostrom, 1990). Restrictions on harvesters' behavior are necessary to maintain or improve fish stocks, reducing profitability in the short run. Although, while the restrictions limit short-term profitability, they enable long term financial sustainability within the industry (Asche et al., 2018). It is increasingly recognized that economic and environmental objectives are not in conflict when efficiently managed (Asche et al., 2018). Sustainable socio-ecological systems in the marine harvest industries require sufficient and maintainable resource stocks, profitable businesses, and communities that accept and support these industries (Anderson et al., 2015).

Several papers suggest that green growth within wild capture fisheries is detrimental to the survival and growth of the industry. Asche, (2015) and Nielsen et al., (2014) emphasize the importance of green growth as a goal within the wild fish capture sector. Both studies outline the triple bottom line (TBL) framework, focusing on economic, environmental, and social aspects, as a key factor for achieving green growth. Anderson et al. (2015) propose the Fishery Performance Indicators (FPI) framework for measuring the performance of fisheries based on TBL. However, this framework and other current research on green growth in

pelagic fish capture, focuses on fisheries in general, missing opportunities for green growth on the business level.

In a world which is increasingly shifting towards a greener future, the integration of sustainability measures can be a source of competitive advantage (Freeman et al., 2007; Porter & Kramer, 2011). Since the fishing industry is heavily reliant on the sustainability and management of the different fisheries, aligning the strategy of the fisheries with the fishing vessels could enhance green growth within the industry. The three pillars of sustainability are widely recognized by scholars as an important part of green growth within fisheries (Anderson et al., 2015; Asche, 2015), and several FPIs are propounded as adequate measurements (Anderson et al., 2015). This leaves the question of how management of individual fish capture businesses can contribute toward green growth.

In Anderson et al.'s (2015) FPIs, Norwegian purse seiners scored 4,75 on ecology, 3,88 on economy and 3,98 on community, on a scale of 1-5, which implies that there is potential for additional value creation within economy and community. To capitalize on this unused potential, it is necessary to know how to measure creation of such value on a business level. Kaplan & Norton (1992) propose the Balanced Scorecard (BSC) for a balanced measuring of business goals, that extend beyond the financial goals. As mentioned earlier, Kaplan & Norton (1992) stated that "What you measure is what you get", and thus, by measuring green growth, green growth should be achieved. By introducing sustainability measures into the sustainable balanced scorecard (SBSC) such as proposed by Butler et al., 2011, Figge et al., 2002, Hansen & Schaltegger 2016, Kalender & Vayvay 2016, and Zhanbo 2021, the sustainability is integrated in the measuring of performance, and consecutively, should be achieved.

1.4 Research objective

The pelagic fishing industry takes advantage of natural capital to produce economic value, and the industry's dependence on the survival of fish stocks has made sustainability a central theme. Any growth is made challenging because the industry's economic growth relies on cost effective and efficient measures due to a limited production level (Asche, 2015).

The Norwegian Government (2019) and OECD (2015) emphasize the importance of achieving green growth within the industry. BSC is adopted by numerous businesses in different industries worldwide (Wu, 2012), since it is recognized as an efficient management tool when aligned with the business' strategy (Braam & Nijssen, 2004). Because of the intangible nature of many of the internal processes within fish capture, it can be challenging to precisely measure the efficiency and the competitiveness of the business' output. Research suggests that it is indeed possible to target green growth as a goal when integrating sustainability into BSC and design a BSC to achieve it (Figge et al., 2002; Hansen & Schaltegger, 2016; Kalender & Vayvay, 2016).

Based on a review of existing literature, an effective way of managing green growth, and the potential use of a SBSC, has yet to be proposed specifically for the pelagic fishing industry on a business level. When searching databases like Web of Science and Scopus with the words "sustainability" and "management," within article title, abstract, and keywords there are tens of thousands of results. By adding "balanced scorecard," to the search there are hundreds. When adding "green growth," "fish capture," "fishing," or even just "fish" to the search, there are no results. By searching "balanced scorecard" and "fishing" on Scopus we find two conference papers. One of which presents a quantitative model for designing a strategy map as a representation of the cause-effect relationship between the objectives of a BSC (Quezada & Quinteros, 2011). The other paper explores SBSC and its application to the management of fish farms in Sicily (Calabrò et al., 2005). While there exists relevant research on the various topics used in our study, there is a lack of research focusing on combining them, specifically for pelagic fish capture businesses.

As a way of narrowing the gap between existing research on green growth for pelagic fisheries and deficient research for the business level, our study aims to provide pelagic fish capture businesses with a framework that measures their degree of success in achieving green growth. According to Kaplan and Norton (1992) this should help drive such growth within these businesses, and consequentially, for the industry. Thus, the primary objective of this study is to: *create a strategic management tool for efficiently driving green growth within pelagic fish capture in the North-East Atlantic on a business management level.* To reach this objective, we ask the following research questions:

- *What strategic goals are important to drive green growth in a pelagic fish capture business, and how would they come together in a strategy map?*
- *What key performance indicators are important to measure to achieve those strategic goals, and how should they be implemented in a sustainable balanced scorecard?*
- *Is a sustainable balanced scorecard a suitable tool for driving green growth in a pelagic fish capture business?*

These questions are central to the objective because if using the SBSC for driving green growth in pelagic fishing is feasible, it would allow us to further build upon that framework. Moreover, identifying key performance indicators of green growth in the sector would provide a selection of metrics for measuring green growth. Successfully incorporating those metrics in a SBSC would provide a tool for measuring and, subsequently, driving green growth on a business management level within pelagic fish harvest. Hence, reaching the primary objective of this study.

This study focuses on how to maximize long-term financial growth in a situation that demands or incentivizes green growth, while penalizing social and environmental irresponsibility. It does, however, not focus on whether corporations should be socially responsible. Demands and incentives for green growth are not only created by governments and other external stakeholders, but also shareholders and employees (Freeman et al., 2007). It should be in the firm's interest to have a positive, or at least neutral, impact on the environment and society, according to the theory of creating shared value (Porter & Kramer, 2011). Neglecting these could harm the firm and undermine its entire foundation. Naturally, this is especially true for firms that rely on renewable natural capital, such as wild fish. The importance of this is highlighted throughout the thesis.

In the next chapter, theories relevant to the objective are presented, outlining the purpose of the firm, sustainability, green growth, the BSC, and the fishery performance indicators. Chapter three presents the purpose of the scientific methods used in the study and how they are charted through research design, data collection, data analysis, and data quality. In chapter four, the data collected through case- documents and interviews is presented and analyzed. Subsequentially, opportunities are identified, and a SBSC is proposed and discussed. In the final chapter, the findings are summarized and discussed before conclusions regarding the research- questions and objective are made.

2. Theoretical foundation

2.1 The purpose of the firm

One of the core aspects of capitalism is the purpose of the firm. Capitalism arguably produces the best results for businesses and society (Jordi, 2010). Some argue that the sole purpose of the firm is to maximize profits. Friedman (1970) advocates that the main purpose of the firm is to maximize profits, and to prioritize other alleged responsibilities is to neglect the core responsibility of the firm. Today, stakeholders value companies that extend their priorities beyond maximization of profits, and companies that solely focus on maximization of profits may become unattractive for stakeholders (Jordi, 2010). Porter and Kramer's theory of creating shared value emphasizes that maximizing profits at the expense of societal needs is a short-term solution for the company, and will be short lived in the new stakeholder driven capitalism (Porter & Kramer, 2011).

There are several criticisms and questions of what maximization of profits really entails. Should profit maximization be a short- or long-term goal, what does maximization mean in the real world of decision making and are there other goals that must be taken into consideration for sustaining long term profit (Jordi, 2010). A new credo of purpose for large corporations and institutional has emerged. According to a statement from The World Economic Forum "The purpose of a firm is to engage all its stakeholders in shared and sustained value creation. In creating such value, the company serves not only their shareholders, but all its stakeholders - employees, customers, suppliers, local communities, and society at large. The best way to understand and harmonize the divergent interests of all stakeholders is through a shared commitment to policies and decisions that strengthen the long-term prosperity of a company"(Ferrarini, 2021 p.88). This aligns with Freeman et al.'s (2007) theory on stakeholder capitalism that suggests that value is a social phenomenon that can only be created with the help of others who value what is being created.

Shareholder capitalism is still the dominant model, but the goal of solely maximizing profits to increase shareholder value is becoming increasingly disconnected from the real economy. As a result of increased focus on sustainability, corporate responsibility and stakeholders, stakeholder capitalism is becoming more prevalent (Ferrarini, 2021).

2.2 Sustainability

A major concern in sustainable seafood initiatives is how to define sustainability (Jacquet et al., 2010). Sustainability is a concept with multiple dimensions and has been discussed in numerous by scholars (Brundtland Report, 1987; Millennium Ecosystem Assessment Program, 2005; UNEP, 2011; United Nations, 2015). The importance of sustainability is widely acknowledged (Roach et al., 2019), yet, there is no universally accepted definition of the concept. There are numerous publications presenting varying interpretations and definitions of the concept. Some of the best known and widely cited publications on sustainability are:

1. Brundtland report (1987 p.41): "Development that meets the needs of the present without compromising the ability of future generations and needs."
2. Millennium Ecosystem Assessment Program (2005): The ability to sustain the quality of life for all people, now and in the future.
3. UNEP (2014): A future in which human well-being, social equity, and economic prosperity are maintained, and the ecological systems that sustain life on earth remain healthy and resilient.
4. United nations (2015): The balanced integration of economic, social, and environmental factors in decision-making to ensure a better quality of life for all, now and in the future.

The economic analysis of environmental issues has two main approaches, environmental economics, and ecological economics. According to standard environmental economics approach, sustainability is defined by providing future generations of humans the capacity to be at least as well-off as the current generation (Roach et al., 2019). Environmental economics apply insight from traditional economics to environmental issues. Ecological economics emphasize sustainability based on ecosystem integrity, valuing natural capital higher than produced capital (Roach et al., 2019). These approaches are often referred to as weak and strong sustainability. Weak sustainability considers natural capital to be substitutable with other forms of capital, while strong sustainability does not consider natural capital as substitutable and aims to maintain an overall level of natural capital over time (Roach et al., 2019).

The definitions of sustainable development are perceived as relatively vague (Nielsen et al., 2014). What to be sustained, what to be developed, how to link environment and development and for how long differs between proponents (Parris & Kates, 2003). Still, a combination of development, equity and environment are found in many definitions. United Nations' Sustainable Development Goals (SDGs) assigned common targets to sustainability and sustainable development (United Nations, 2015). The 17 different SDGs presented collective and uniform goals that aimed to develop economic, social, and environmental growth (United Nations, 2015).

The different interpretations of sustainable development can, in general terms, be categorized into three different categories; the capital approach, the environmental approach and the three-pillar approach, also called the triple bottom line (TBL)(Nielsen et al., 2014). The capital approach considers natural capital as substitutable by created capital. Ethical issues of weak and strong sustainability as defined by with Roach et al.'s (2019) determine the degree of substitutability (Nielsen et al., 2014). The environmental approach on sustainable development assumes that economic and social systems are secondary to the global environment, which emphasizes that the focus should be on ecosystems and their preservation (Nielsen et al., 2014). The three-pillar approach combines the three aspects of sustainability: Economic, social and environmental. One aspect should not be measured individually, but rather in relation to each other and as one unit (Nielsen et al., 2014). TBL measures the social, environmental, and economic results as a package, which sets the foundation for green growth.

Although TBL gained traction for its focus on several aspects, it has some challenges. Sridhar & Jones (2013) highlight three criticisms of the TBL framework; (1) measurement, (2) TBL as a systemic approach, and (3) integration.

1. **Measurement**: The challenges of measuring include measuring each of the three categories, finding applicable data, and calculating a projects contribution to sustainability (Slaper, 2011).
2. **TBL as a systemic approach**: criticize the TBL approach since it is often looked at in three different aspects and not as a whole system, disregarding the interrelationship between the three aspects, often ignoring the cause-effect relationship between the three aspects (Sridhar & Jones, 2013).

3. **Integration**: The integration between the three aspects of TBL could be difficult as people often are trained in only one field (Sridhar & Jones, 2013).

TBL often comes with the assumption that sustainability is about balancing, not accounting for the interdependence of factors and the need for mutually supporting measures in all three aspects (Sridhar & Jones, 2013).

2.3 Green growth

Economic growth is defined as an increase in production value over time and is often measured in Gross Domestic Product per capita (GDP) (Nielsen et al., 2014). The use of GDPs and improved living conditions, as an indicator of growth, is criticized for not providing the full picture of the progress of human welfare (Nielsen et al., 2014). GDP ignores negative externalities of economic growth and disregards the sustainable aspects of development. For businesses GDP is the equivalent of financial results, or the bottom line. The term green growth emerged as a response to the simplicity and political appeal of the traditional measure of growth, reflecting a more focused emphasis on the environment and natural capital (Hepburn et al., 2018).

Economic and environmental objectives are often presented as mutually exclusive. However, green growth combines the social, economic, and environmental aspects to create a holistic picture (Harris & Roach, 2017). The notion of green growth became central at the Rio+ 20 Conference on sustainable Development [9] in 2012 (Hickel & Kallis, 2020; United Nations, 2012). The term has since become a dominant response to increasingly serious warnings about climate change and ecological breakdown (Hickel & Kallis, 2020; Rockström et al., 2009).

There are several definitions of green growth (Hickel & Kallis, 2020), all targeting continued economic growth with reduced negative externalities. Hepburn et al. (2018) define green growth as "Gross Domestic Product (GDP) growth that preserves or enhances natural capital" (Hepburn et al., 2018 p.751). Nielsen et al. (2014) argue that if economic growth is to continue it must be green, to avoid undermining its entire foundation. The issue of green

[9] United nation's conference on sustainable development. It was the third international conference that targeted sustainable development towards common goals in economic, environmental, and social factors (United Nations, 2012).

growth is a priority in several industries globally (United Nations, 2015), driving the focus of decoupling[10] economic growth from environmental and natural resource degradation.

There are two main opposing views to green growth: business-as-usual- and the degrowth position (Hepburn et al., 2018). The business-as-usual position claims that there are no environmental constraints and that the economic development should continue as is, into the indefinite future (Hepburn et al., 2018). The discussion of how to continue economic development are characterized by polarizing views. Business-as-usual advocates that the economy will always find substitutes when depletion of resources reaches a level where retrieval of the resources becomes too expensive. In other words, as soon as sustainability is profitable, the economy will adjust. The degrowth position claims that society should aim to achieve prosperity without growth (Hepburn et al., 2018). Degrowth accentuates that we are too close to the planetary boundaries, and we need to reduce consumption and stop the growth in GDP (Hepburn et al., 2018).

2.3.1 Measuring green growth

As mentioned above, economic growth is measured in GDP. Green growth, however, is measured in the degree of decoupling of economic growth and negative externalities associated with this growth (Harris & Roach, 2017). OECD proposes a framework for measuring green growth which consists of 26 indicators to capture the main features of green growth and monitor progress in four main areas (OECD, 2017).

[10] Decoupling is the breaking of correlation between increased economic activity and similar increase in environmental impacts (Harris & Roach, 2017)

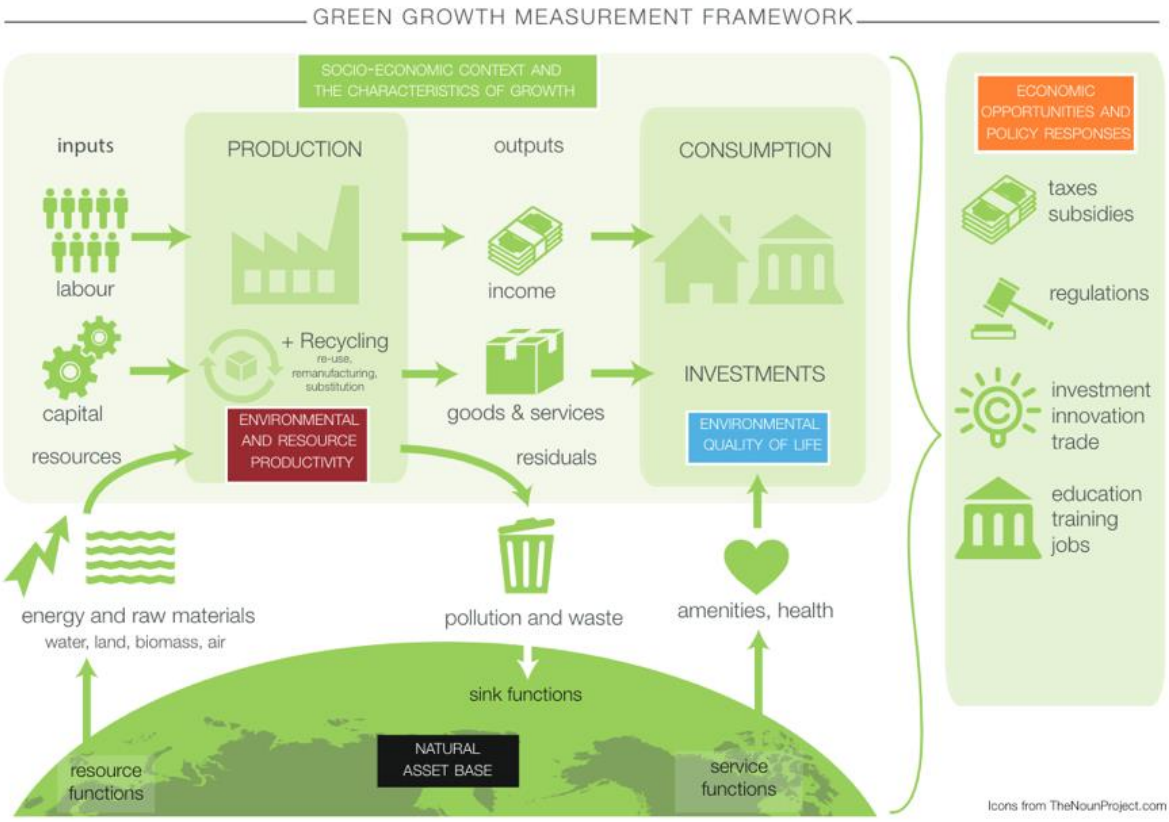

Figure 1: Conceptual green growth measurement framework from OECD (2017 p.14)

These main indicators are:

1. The environmental and resource productivity of the economy
    - CO_2 Productivity
    - Non-energy material productivity
    - Environmentally adjusted multifactor productivity
2. The natural asset base
    - Natural resource index
    - Changes in land cover
3. The environmental dimension of quality of life
    - Population exposure to air pollution
4. Economic opportunities and policy responses

The indicators build on data regularly regulated by OECD member countries, international sources, and peer-reviews (OECD, 2017). The indicators are however created for measuring green growth on a general national level and do not provide a precise measuring framework for corporate level growth. To successfully transition to a greener economy, it is necessary that companies implement strategies and methods to support the transition (Norwegian

Government, 2019). The balanced scorecard (BSC) has been proposed as an efficient tool for measuring TBL outcomes (Zhanbo, 2021). BSC provides businesses with a measuring system that includes non-financial dimensions in measuring of performance (Kaplan & Norton, 1992) and has been further developed to consider sustainability dimensions (Butler et al., 2011; Figge et al., 2002; Hansen & Schaltegger, 2016; Kalender & Vayvay, 2016; Zhanbo, 2021).

2.4 The Balanced Scorecard

Management control systems have been conceptualized in numerus ways, and performance measurement systems are widely researched by several fields of study (Ferreira & Otley, 2009). BSC is a strategic management system that aims to clarify strategy and translate it into action (Braam & Nijssen, 2004). The concept of BSC was introduced by Kaplan & Norton (1992). Its purposes is to effectively communicate a company's strategy to its employees, improve organizational performance and increase competitiveness, by controlling the strategic development (Wu, 2012). Executives are provided with a comprehensive framework that translates a company's strategic objectives into a set of performance measures. By selecting a limited number of critical indicators or key performance indicators (KPI) within each perspective, BSC highlights the strategic targets of the company (Kaplan & Norton, 2004a).

The BSC measures the company's performance based on both tangible and non-tangible assets (Zhanbo, 2021). It was originally introduced as a strategic management tool, to operationalize and measure strategies of the organization and organizational units. However, it can also serve as a comprehensive management tool (Hansen & Schaltegger, 2016). BSC assumes that the efficient use of invested capital is no longer the sole determent for competitive advantages, but places bigger emphasis on soft factors such as intellectual capital, knowledge creation and excellent customer orientation (Figge et al., 2002). There are typically four different perspectives in BSC (Butler et al., 2011; Figge et al., 2002; Zhanbo, 2021):

1. **The financial perspective**: Whether the transformation of a strategy leads to improved economic success.
2. **The customer perspective**: Defines the customer/market segments in which the business competes.

3. **The internal process perspective**: Identifies those internal business processes that enable the firm to meet the expectations of the customer in the target market and those of the shareholders.
4. **The learning and growth perspective**: Describes the infrastructure necessary for the achievement of the other three perspectives.

The main purposes of the BSC is to create a hierarchical system of strategic objectives within the four perspectives, derived from the business strategy and aligned towards the financial perspective. Based on the strategic objectives a corresponding set of measures is created in all four perspectives. Moving forward we distinguish between two main forms of KPIs: leading and lagging indicators (Figge et al., 2002). Leading indicators are predictive and serve the purpose of guiding towards a desired outcome and are often linked to internal processes or the learning and growth perspective. Lagging indicators measure the results from past events and are often connected to the financial perspective. BSC interlinks the different perspectives into a cause-and-effect relationship, making it clear which leading factors (leading indicators) are impacting the lagging indicators (Figge et al., 2002).

BSC has some important advantages; sequential objectives, potential for selecting relevant performance measures, multiple feedback levels, and the capability to support long-term goals. This is why BSC is considered a fundamental strategic framework for individual organizations (Dror, 2008). However, BSC has multiple limitations. Dror (2008) mentions: (1) focus on learning as the only source for causality, (2) lack of basic guidelines for the selection of KPIs, (3) the lack of method for setting targets to measure, (4) the complexity of the feedback from the financial perspective to the customer and the process perspective, and (5) no consideration of time lag between causes and effects, as the main limitations of the BSC framework. Merchant & Van der Stede (2017) highlights the cost of implementing BSC as one major disadvantage. The cost of designing and implementing BSC is often outsourced to consultants and is time consuming as it requires executives' participation, which can inflict large costs towards the firm and seize valuable time from executives (Merchant & Van der Stede, 2017).

2.4.1 Strategy map

A main component of the BSC is the strategy map. The strategy map is a visual representation of causal relationships between strategic objectives within the organization while representing

the firm's strategy (Quezada et al., 2014). In addition, the strategy map describes how the organization creates value throughout the value chain (Kaplan & Norton, 2004b). A good alignment between strategy and BSC is a key for success (Braam & Nijssen, 2004). The strategy map is based on five principles; "(1) Strategy balances contradictory forces, (2) strategy is based on differentiated customer value proposition, (3) value is created through internal business processes, (4) strategy consists of simultaneous, complementary themes, and (5) strategic alignment determines the value of intangible assets" (Kaplan & Norton, 2004b p.11).

1. **Strategy balances contradictory forces**: Investing in long term intangible forces are often in conflict with short-term financial performance. The dominant objective in private organizations is to achieve sustained growth in shareholder value. Long-term financial goals can always be scarified for short term profit. The starting point in describing a strategy should therefore be to balance the long-term and short-term financial objectives (Kaplan & Norton, 2004b).
2. **Strategy is based on differentiated customer value proposition**: Pleasing customers is the foundation of value creation. A good strategy requires a clear formulation in in how to attract and retain customers (Kaplan & Norton, 2004b).
3. **Value is created through internal business processes**: The financial and customer perspective is characterized by lagging indicators and describes the desired outcome the business hope to achieve. Processes in the internal processes and learning and growth is what drives the strategy, and describes how value is created and sustained (Kaplan & Norton, 2004b)
4. **Strategy consists of simultaneous, complementary themes**: The different perspectives deliver results in different points in time. Improvements in operational processes tend to be short-term oriented, the customer perspective can give results usually between six months to a year, and innovation processes can take even longer to produce results. Having a strategy targeting all four perspectives should improve short- and long-term results (Kaplan & Norton, 2004b).
5. **Strategic alignment determines the value of intangible assets**: It is the strategic alignment in the strategy of intangible assets that determines the value of them. Intangible assets are split into human capital, information capital, and organization capital(Kaplan & Norton, 2004b).

- **Human capital**: refers to strategic competences such as: the availability of skills, talent, and know how (Kaplan & Norton, 2004b).
- **Information capital**: is strategic information such as information systems, knowledge applications, and infrastructure (Kaplan & Norton, 2004b).
- **Organization capital**: refers to the organizational culture and is how awareness towards the mission, vision, and values of the organization (Kaplan & Norton, 2004b).

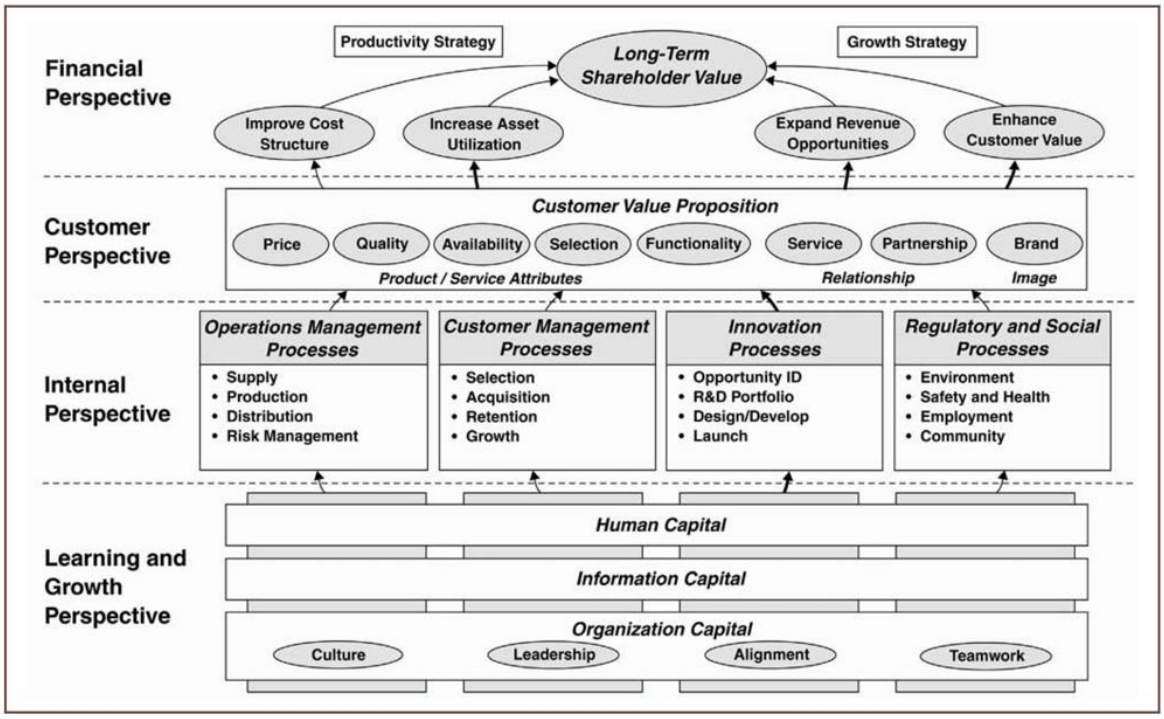

Figure 2: Strategy map (Kaplan & Norton, 2004b p.12)

Figure 2 is an example of a strategy map where strategic objectives in each of the BSC perspectives build upon each other in layers, link together, and finally contribute to long-term shareholder value. The strategy map template can be used as a checklist. "If a company's strategic map is missing an element on the strategy map template, the strategy is most likely flawed" (Kaplan & Norton, 2004b p.11) Learning and growth creates the foundation of a successful strategy and is the infrastructure of the strategy map and BSC. It is the intangible assets in learning and growth which generate the building stones for the internal perspective. The processes in the internal perspective are what create the value proposition for the customer perspective (Kaplan & Norton, 2004b). Finally, it is through initiatives to attract and retain customers in the customer perspective that creates the foundation in which financial results can be measured.

2.4.2 The Sustainable Balanced Scorecard

BSC is traditionally used for measuring performance not incorporating the dimensions of sustainability. As many environmental and social issues are non-financial and often influence an organization, BSC is, as mentioned, considered an appropriate tool to account for sustainability issues (Hansen & Schaltegger, 2016). Sustainability management with BSC seeks to address the problem of corporate contributions to sustainability in an integrative way. To contribute to the sustainable development, it is desirable that corporate performance is improved in all three dimensions of sustainability; economic, social, and environmental (Figge et al., 2002). This coincides with the three-pillar approach (Nielsen et al., 2014) and the focus areas of the Brundtland Report (1987) concerning the needs of future generations. Figge et al., (2002) advocates for the integration of the three pillars of sustainability into general business management based on the three major advantages TBL offers.

1. "Sustainability management that is economically sound is not endangered by economic crisis because it is not only carried out when the firm is successful." (Figge et al., 2002 p.273) When firms are in economic distress non-essential costs are the ones that are cut first. "Sustainability management that is economically sound will in times of crisis be practiced regardless of the financial situation of the firm" (Figge et al., 2002 p.273).
2. Firms that want to promote or reinforce their environmental and social management often compare themselves with competitors. Therefore, sustainability management that also contributes to economic objectives helps to spread the idea of sustainable development, since it serves as a role model for their businesses (Figge et al., 2002).
3. The integration of environmental and social aspects into general business management ensures that corporate sustainability management covers all three dimensions of sustainability, and that the business should aim to improve all three aspects simultaneously (Figge et al., 2002).

BSC enables the identification and management of simultaneous improvements of environmental, social, and economic goals. Therefore, the sustainable balanced scorecard (SBSC) fulfills the central requirements of the sustainability concept for a permanent improvement of the three pillars of sustainability. According to Butler et al. (2011) and Figge et al. (2002) there are three ways of integrating sustainability into BSC:

1. **Adding a fifth perspective to the BSC**: Adding an additional perspective to the BSC is the simplest approach of integrating sustainability to BSC (Butler et al., 2011). This approach is supported by Kalender & Vayvay 2016 and Zhanbo 2021 as a plausible method for implementing sustainability perspective in the BSC (Kalender & Vayvay, 2016; Zhanbo, 2021). The sustainability perspective consists of social and environmental indicators that link with the other four perspectives, and highlights TBL as a goal (Butler et al., 2011). The method is debated, and it is argued that linking sustainability measures to a firm's economic wellbeing and strategies is troublesome, since market-based prices for goods and services may not always reflect environmental and social activities (Butler et al., 2011).
2. **Develop a separate SBSC**: This method is appropriate for many companies, especially for firms that currently haven't implemented a BSC. Developing a separate SBSC enables companies to measure or integrate sustainability without the disruption and costs of adopting a full-scale BSC (Butler et al., 2011). A SBSC can also be appropriate for companies that have already implemented BSC and are reluctant to change it. Butler et al. (2011) suggest that a SBSC should include sustainability, stakeholders, process and learning as its four perspectives. The sustainability perspective should emphasize measuring TBL aspects, the stakeholder perspective measuring business ethics, labor practices and society, and internal processes and learning and growth would remain the same as in a BSC. An advantage of this approach is that companies does not need a well-defined corporate social responsibility strategy, and the development of the separate SBSC can serve as the development of sustainable strategy. The drawback of this approach is the separation of the SBSC from core processes and may result in SBSC being more of a gimmick than a part of the core strategy (Butler et al., 2011).
3. **Integrating measures throughout the four perspectives**: Integration of sustainability measures into the four traditional BSC perspectives manages the cause-and-effect relationship between corporate strategies and sustainability efforts (Butler et al., 2011). Butler et al. (2011) argues that sustainability measures should be implemented into daily processes to make it a core part of operations. By integrating sustainability measures throughout the BSC the business recognizes the causal relationships between sustainability measures and success. Management must define the metrics that are relevant in measuring progress towards organizational

sustainability objectives and understand how sustainability progress impacts organizational success or failure (Butler et al., 2011). This approach has the advantage of allowing measures to be seen as fundamental to day-to-day activities and central to the firm's economic well-being (Butler et al., 2011). The approach is considered comprehensive since it requires the integration of BSC and commitment to sustainability.

A crucial part of creating a SBSC is to identify KPIs which effectively measure the successful implementation of the strategy (Kaplan & Norton, 1992, 2004a). . Including sustainability measures is a demanding task, and the identification of relevant KPIs can be an extensive process (Butler et al., 2011). As mentioned, there is little research regarding BSC and SBSC in pelagic fisheries, especially on a business level. However, some research has been done to identify KPIs on a general fisheries level (Anderson et al., 2015), which to some extent can be made relevant for the business level.

2.5 Fishery Performance Indicators

KPIs are an integral part of the BSCs measuring capacities (Kaplan & Norton, 1992). Anderson et al. (2015) has proposed a series of KPIs, called Fishery Performance Indicators (FPIs), to assess the sustainability of the fishing industry (see Appendix A). The FPIs are a tool for identifying management strategies that work under combinations of external circumstances when the goal is not only stock sustainability, but TBL (Anderson et al., 2015). The FPIs are designed for evaluating the performance of fishery management systems by assessing different stocks individually (Anderson et al., 2015).

FPIs were developed to address the lack of standardized, reliable data on the social and economic dimensions of TBL (Anderson et al., 2015). Instead of measuring a few indicators with great precision, several dimensions of greater interest are identified. For each dimension multiple metrics that capture important aspects of that dimension using a 1-5 scale are created based on expert assessment. Combining multiple metrics enables robust dimension scoring when there is uneven availability of information.

FPI consists of the three indicators of TBL: community, economics and ecology. It is further constructed by 68 metrics of fishery performance that each are coded in levels from 1-5,

where 5 reflects great performance. TBL is represented in the far left of the figure where the three aspects are divided into individual dimensions. The ecology indicator summarizes scientific assessment work with coding guidelines that enable accurate scoring based on the available information. The economic indicators measure whether the fishery is effectively generating market benefits and is reflected in six distinct dimensions. While the community indicators capture the extent of which the fishery contributes to livelihoods and other benefits to the community (Anderson et al., 2015). For example, *harvest safety* is a metric which connects to the *health and sanitation* dimension under the *community* indicator. The right side of the figure has its own dimensions and indicators, but they are intended for potential investors in different segments of the fishery (Anderson et al., 2015). This part, however, is not relevant to this study and will not be discussed further.

The findings from the study indicate that developed countries, such as those in northern Europe and the US, in general score higher in ecology than developing countries. However, the high score in ecology has no correlation with scores in community and economy. Ecology seems to represent an inadequate substitute for the other pillars of the TBL framework, and thus Anderson et al., (2015) argues that each dimension should be measured separately.

3. Research methodology

Research, in some form or another, increases knowledge and helps in decision-making (Bougie & Sekaran, 2020; Saunders et al., 2016). Business research is described as a systematic and organized effort to investigate a specific problem encountered in a business setting (Bougie & Sekaran, 2020). The purpose of this chapter is to outline the research methods used, in order to enhance the validity, reliability, and replicability of the study.

3.1 Research design

According to literature on research methodology, the research objective determines the directions for the research method used (Bougie & Sekaran, 2020; Saunders et al., 2016). The research objective of this study is to create a strategic management tool for efficiently driving green growth within pelagic fish capture in the North-East Atlantic on a business management level. Thus, the research objective for this study is considered exploratory. Exploratory research questions are typically developed when (1) not much is known about a particular phenomenon, (2) existing results are unclear or suffer from serious limitations, (3) the topic is highly complex, or (4) there is not enough theory available to guide the development of a theoretical framework (Bougie & Sekaran, 2020). Several of these four elements are true for this paper's research objective and supporting questions. Due to the complexity of exploratory research, it often relies on qualitative research approaches to collecting data (Bougie & Sekaran, 2020). Dror (2008) explains that there are no standard performance measures. This implies that designing a new strategic management tool with constituent metrics for a business without having profound knowledge of its operations, challenges, and goals would be futile. Furthermore, a new strategic management tool would hardly be considered by a business if it were introduced by someone who did not have an in-depth understanding of the business in question. Thus, using qualitative methods, that can provide the level of understanding we need to reach the research objective, is appropriate.

Due to the nature of qualitative methods, it is considered the most effective way of gaining better understanding of the research subject. In qualitative studies, researchers need to make sense of subjective and socially constructed meanings expressed about the phenomenon being studied. Hence, qualitative studies are considered interpretive (Saunders et al., 2016). Qualitative method receives criticism for its lack of subjects and its need for subjective interpretation of data (Saunders et al., 2016). However, qualitative methods can provide more

detailed, in-depth knowledge of the studied subject than quantitative methods, which is suitable when studying subjects that are not very well understood or researched. It is an appropriate method when trying to understand why people think and act as they do (Johannessen et al., 2020). A business is an institution for value creation (Freeman et al., 2007), and "value can be created, traded, and sustained because human beings are complex psychological creatures capable of acting from many different values and points of view" (Freeman et al., 2007). Hence, qualitative methods focusing on understanding people are suitable when seeking to understand a business. In qualitative methods, interviews are the predominant form of data collection because interviews help provide detailed and extensive descriptions of the studied subject. (Johannessen et al., 2020).

Our primary data collection is through semi-structured interviews with individuals with various roles within the case business on both the administrative and operational levels: The general manager, head of finance, a captain, and a fisherman. It is essential to understand what is important in all parts of the business and what their challenges are before proposing a new approach to strategy and green growth. Thus, we deem speaking with leaders and managers, as well as workers in the business, as critical for the case study. Four interviews may seem rather narrow. Yet, considering the size of the business and the interviewees' significant and representative roles within it, we regard it as enough to provide the data necessary for analysis.

As previously indicated, there appears to be limited research done on the use of a sustainable balanced scorecard (SBSC) for pelagic fish capture businesses. Earlier studies are focused on the fishing industry at large and the policy level. We therefore consider qualitative methods ideal for gaining understanding that is adequate to assess whether an SBSC is apt for driving green growth in pelagic fish capture businesses. Furthermore, gaining in-depth understanding of the business' goals, and their approach to green growth, demands the use of a qualitative method instead of a quantitative method. Quantitative methods would not provide the information needed to propose a new strategic tool for businesses on the management level.

3.1.1 Case study

Considering the exploratory nature of the research objective, and limited existing research, we deemed it appropriate to choose a narrowly focused research design. A case study focuses on collecting information about specific objects, events, or activities. The idea behind a case

study is that one must examine the real-life situation from various angles and perspectives, using multiple methods of data collection, to obtain a clear picture of a problem (Bougie & Sekaran, 2020). A case study is used in many situations to contribute to increase knowledge of different phenomena and is for that reason a common research method (Yin, 2009). The case study method allows researchers to retain the holistic and meaningful characteristics of real-life events such as organizational and managerial processes (Yin, 2009). Due to the complexity of the research objective and insight needed from people in the business, we utilize a case study approach.

3.1.1.1 Sample

To reach the research objective, a Norwegian pelagic fish capture business has agreed to aid in providing financial statements and informants for interviews. Moreover, the case company (hereafter CC) has expressed a desire to contribute towards green growth on a corporate level. Based on our need for in-depth understanding of how pelagic fish capture businesses operate, and Norway's central role in the North-East Atlantic, the case study design is considered relevant to reach the research objective. The business is chosen because of our ease of access, owing to one of us having an existing relationship with the firm. We use the snowball method for selecting informants by reaching out to one person in the case business, who then puts us in touch with other potential interviewees. (Johannessen et al., 2020).

The CC is a pelagic fish capture business located in western Norway. The fishing vessel is a purse-seiner/trawler measuring 64 meters long and 13 meters wide with more than 6000 tons of total quota and an annual revenue of around 90 million NOK. The total quota is divided into different fish species such as herring, mackerel, capelin and whiting which are caught mainly in the North Atlantic. The fish is caught throughout the whole year, depending on when the fish is traversing into the north Atlantic. The capture of fish is the primary source of income for the company.

The firm has more than 10, but less than 20 employees. It is divided into an administration department, a crew, and a workshop. The crew consists of captains, machinists, stewards, and fishermen, whereas the administration department consists of the CEO and head of finance. The CEO runs and supervises the daily operations, while the head of finance oversees controlling and other administrative tasks to relieve the manager. Lastly one person administers maintenance and reparations in the workshop.

Daily operations consist of maintenance of the boat and equipment, travel to the locations, the capture of fish, and the delivery of the fish. When fish is captured, it is immediately put in cold storage containers that preserve the fish until they get to shore to deliver the fish to the processors. When fish is caught the crew reports the catch to Norges Sildesalgslag[11] who then puts the catch out for auction in which the processors must outbid each other to buy the catch. When a catch is bought, the boat travels to the processor who won the bidding war and unloads the fish. During the delivery of the fish the quality of the fish is tested by the processors to determine the final price of the catch.

The management and strategy of the company is considered traditional as they are bottom line focused. Measures for sustainability are taken due to regulations from the government, and to decrease costs related to these regulations. Within the company they value sustainability and want to achieve green growth. However, measures are implemented as a result of being proactive towards new regulations, more than a desire from within the company to be sustainable and green. The business is certified "Miljøfyrtårn[12]" which is a "recognized effective tool to help businesses create a competitive advantage in sustainability" (Sletnes, 2023).

A challenge for the company is that the fish is now traversing further north due to the warmer temperatures of climate change. The increase in travel distance results in higher fuel costs, which is the company's largest expense. The development of regulations and increased focus on sustainability has further affected the bottom line. Emission taxes, high fuel prices and variations in quotas affect the financial result which creates a desire at the CC for new efficient management systems which can make the company more proactive for new regulations.

3.2 Data collection

[11] Norges Sildesalgslag is a sales-organization that sells captured fish to different buyers along the coast (Sildelaget, 2023b).
[12] Miljøfyrtårn is a Norwegian certification program and environmental management system for businesses and organizations. It aims to promote sustainable practices and reduce environmental impact across various sectors (Sletnes, 2023).

The data in this study is primary data collected through interviews and secondary data collected from financial statements[13] received from CC. Information gathered from interviews and documents provides us with the necessary data foundation for this study's analysis. The qualitative method of interviews enables us to get the interviewees experiences and opinions on a topic and enables us to get a deeper understanding of the research problem (Saunders et al., 2016).

3.2.1 Financial statements

We are given access to financial statements, which are sent to us via electronic mail in PDF format. These documents are from the year 2018 to 2021, because 2022 is not yet completed and verified. While the 2018 documents contain results from 2017, we refrain from using them because that year the company had sold an asset for a substantial amount of money. Hence, we decide to avoid presenting results from 2017 that would result in misleading representation of the data. The documents provide information relevant to data gathered from the interviews.

3.2.2 Interviews

Interviews are an apt way of collecting a wide variety of different sorts of data when studying a business, such as this study does. The reason is that businesses are largely a social phenomenon (Freeman et al., 2007) and much of the information needed to make decisions in business comes from people (Bougie & Sekaran, 2020). According to Bougie & Sekaran (2020), semi structured interviews are used when it is known what information is needed. Since we know the type of information we needed to answer our research questions, we opt for semi structured interviews. We also realize that we need an interview method that will, to some degree, allow us the option of identifying and exploring subjects we have not considered beforehand.

The interviews in this study are digital password-protected meetings using the ZOOM application, shared only with one interviewee at a time. Semi structured interviews often take the form of face-to-face meetings where aids like computer assisted personal interviews (CAPI) can be used (Bougie & Sekaran, 2020). The main disadvantage of face-to-face

[13] Financial statements are written records that convey the business activities and the financial performance of a company.

interviews is the geographical limitations that may be imposed. That is why we use CAPI to conduct the interviews in the study. We deemed CAPI interviews sufficient considering the time and resources required to travel to the interviewees, the high-quality voice and video technology available, and the normalized use of such interactions in the past few years. The main advantage of face-to-face interviews, including CAPI, is that we can adapt the questions as necessary, clarifying possible misunderstanding and doubts to ensure that the respondents properly understand the questions by repeating or rephrasing the question (Bougie & Sekaran, 2020). Moreover, the interviews are conducted in Norwegian with the purpose of making interviewees more at ease, and not risk having their answers and thoughts restricted by having to speak in a foreign language. The interviews are conducted at various times a day, depending on the availability of the interviewee. The duration of the interviews varies from 40 minutes to 90 minutes.

Interviews may be recorded if the respondent has no objection, but to ensure the anonymity of CC and its respondents, we do not recorded the interviews. Instead, we take thorough notes from the interviews. That is why we deem it unnecessary to report the project to SIKT[14]. Notes are an important aspect of interviews because memory is often imprecise and incorrect and may introduce bias to the dataset (Bougie & Sekaran, 2020). When the interviews are not being recorded it is important for the researchers to make comprehensive written notes of the conversation (Bougie & Sekaran, 2020), which is why we both take notes of the interview to compare and confirm the validity of the notes.

All interviewees are told the purpose of the interview and our research. They are shown a form of consent (see Appendix B), which they all verbally accept before the interviews. They are also told that we will only store notes from the interview and no personal data. All interviewees are asked the same questions in the same manner to improve the reliability and replicability of the study. This allows us to build upon ques from respondents' answers and delve deeper into the subject matter when relevant, even if the questions are not in the interview guide (Bougie & Sekaran, 2020). By doing this, we identify new aspects we have not considered beforehand, resulting in a deeper understanding of the subject. The capability

[14] Norwegian Agency for Shared Services in Education and Research. The organization is a public administrative body under the Ministry of Education and Research and provides services that strengthens education and research in terms of information security, data protection and data processing (SIKT, 2023).

to obtain experiences and thoughts on different subjects related to the research objective makes interviews suitable for the study. It is also worth noting that certain interviewees reach out to us a few days after their interviews to provide us with information they had not thought of conveying during the interview.

3.2.2.1 The interview guide

The interview guide is produced by us and structured in a way that aligns with the research questions. It is semi structured and comprised of four main subjects, each with its own set of questions (see Appendix C). A semi-structured approach enables us to compare results through a standardization of questions while providing ourselves, and the interviewees, some flexibility during the interviews (Johannessen et al., 2020). The topics and questions in the interview guide are based on the existing theory on sustainability, green growth, and BSC. Central themes such as green growth and BSC are introduced by the interviewer before questions on the theme are asked. The topics are as follows:

- Green growth
- Current views on success
- Charting elements for a BSC
- Important aspects for environment and society

The first topic, green growth, explores attitudes and thoughts toward green growth. This is primarily to engage the subjects thought process around green growth, but also to map areas we have not considered prior to the interviews, that might be important regarding the creation of a strategic management tool to drive green growth in the business. The second topic, current views on success, examines how success is measured in the business today. The questions on this topic are meant to identify the metrics used to measure financial results, but also to explore whether environmental and social aspects are considered part of growth and success in the business today. The third topic, charting elements for a BSC, is focused on the components of a traditional BSC and is meant to discover key metrics to potentially use in a BSC. The final topic, important aspects for environment and society, is centered around the environmental and social parts of the triple bottom line (TBL) and explores the interviewees' thoughts on factors the business may affect to make a positive impact in those regards. It also looks at how these factors affect the components of a traditional BSC. Shedding light on this could be helpful when selecting metrics for an SBSC.

3.3 Data analysis

We review and analyze financial statements from 2018 to 2021 prior to analyzing the interviews with the purpose of better understanding the interviewees' views. We then assemble findings relevant to results from the interviews and presented them with percentages and visual graphs, instead of actual numbers, to preserve the company's anonymity.

When analyzing interview results, we combine and analyze data from the interviews one topic at a time, instead of analyzing each interview individually. We read the notes from each interview to get a general overview of the results, before we analyze the notes in detail, to further identify relevant aspects of the case business. Further, we categorize the data according to questions corresponding to answers. Moreover, if part of an answer is more relevant to another question, it is copied there so that it may be considered when analyzing both questions. Finally, the results of the data are listed and analyzed. Relevant information from the documents is retrieved and isolated in order to make relevant conclusions from the numbers affecting the results found in the analysis.

Qualitative data is data in form of words and are aimed at making valid inferences from the often-overwhelming amount of collected data (Bougie & Sekaran, 2020). There are generally three steps in a qualitative data analysis: Data reduction, data display and the drawing of conclusions. Data reduction refers to the process of selecting, coding, and categorizing data, data display is how the data is represented, and drawing of conclusion is where the data is interpreted (Bougie & Sekaran, 2020). Although three steps are identified in the qualitative data analysis process, it is not a linear, step by step procedure, but a continuous and iterative process (Bougie & Sekaran, 2020).

3.4 Data quality

The conclusions made in this thesis are derived from qualitative data. Therefore, the data must be verified through methods that ensure it is plausible, reliable, and valid. (Bougie & Sekaran, 2020). Reliability and validity are central in assessing the quality of the data in a study (Saunders et al., 2016).

3.4.1 Reliability

In qualitative research, category reliability and interjudge reliability are used. Category reliability relates to formulating categories and defining them in a way that allows judges to agree on the categories and use them to classify the qualitative data (Bougie & Sekaran, 2020). Interjudge reliability pertains to the level of consistency between those processing the same data (Bougie & Sekaran, 2020). In this study we have chosen interviewees that have a good understanding of how the case business operates while their roles are different enough to provide different perspectives. We use anonymity as a way of ensuring that interviewees will not be concerned about what others might think of their answers. We allot each interview a generous timeframe and they ended up lasting, as mentioned earlier, between 40 and 90 minutes. This ensures that the interviewees always have sufficient time to answer and finish their reasoning. We encourage elaborations whenever it is unclear what the interviewee means, and we take extensive interview notes, which are written separately and simultaneously as a further step toward increasing reliability. The notes are then read in their entirety before each topic is compared separately. The results are then written down for each topic before they are used in the data analysis. To further ensure reliability, all citations are confirmed by the interviewees.

3.4.2 Validity

In qualitative research, internal validity refers to how well the research results correspond to the collected data. External validity within qualitative research pertains to whether the research results can be generalized or transferred to other contexts or settings (Bougie & Sekaran, 2020). Generalizations are made in this study based on whether they are repeated by interviewees or supported by interviewees' answers and previous research. Conversely, deviant cases which may contradict other findings are highlighted if they occur.

The semi-structured interview guide ensures that the interviewees all answer the same questions in the same categories. The purpose of the study, central themes, and definitions are explained to each interviewee during the interviews, to establish a similar understanding of the topics and interview questions. This makes comparing results straightforward and increases validity.

3.4.3 Ethical considerations

A general ethical principle is to maintain the objectivity of the data (Saunders et al., 2016), which we strive to do in several ways. One of the authors has existing relations with the business but is not otherwise involved in the business. Since the nature of the questions is non-personal, we find it appropriate that both of us are present in all the interviews, in spite of the relation to the business. However, to ensure the objectivity of the data, this author does not lead the interviewsKlikk eller trykk her for å skrive inn tekst.. The relation is one of the main reasons it was important to anonymize the interviewees and the business. This is done by describing the company as best as possible without compromising revealing information about who CC may be. To ensure the anonymity of the interviewees as best as possible, the interviewees' responses are coded as interviewee 1, 2, 3, and 4 to avoid CC's employees identifying each other. This means that interviewees will not have to worry about any reactions or consequences to their participation in the study. Once an assurance of anonymity is given it is essential that these promises are maintained (Saunders et al., 2016), which we do by not recording, presenting, or storing any data that may be traced back to the interviewees.

The data collection stage is associated with numerous ethical issues (Saunders et al., 2016). One ethical consideration when conducting qualitative research and interviews, is that personal contact with the interviewees enables the interviewer to exercise a greater level of control (Saunders et al., 2016), in contrast to quantitative studies where there is little contact with the subjects. A general ethical principle is to maintain objectivity (Saunders et al., 2016). We address this concern by speaking as little as possible during the interviews, and letting the interviewees finish their reasoning without commenting on their thoughts.

4. Results and analysis

In this chapter we present results and an ensuing analysis from the document data and the interviews, which are categorized in the same manner as the interview guide. The results from the interviews are presented as interpretations of interview notes and include some quotes from the interviewees. Results from the document analysis are explained and presented with visual graphs.

The purpose of the analysis is twofold. Firstly, it aims to answer the research questions. Secondly, it attempts to achieve the purpose of the study which is to *create a strategic management tool for efficiently driving green growth within pelagic fish capture in the North-East Atlantic on a business level.*

4.1 Document analysis of financial data

The primary data in this study is derived from the interviews., However, the company also provided us with secondary data in the form of financial statements. To better understand and analyze data from the interviews, we first analyze accounting data from the case company (CC) between 2018 and 2021. Not all the data is relevant to the research objective, but we have chosen some relevant results that we discuss and present with graphs. With the purpose of preserving the anonymity of the company, we have chosen to only present in percentages, and not actual numbers. All numbers are purposefully presented as positive, so that they are easier to compare. Lines for positive numbers are colored with shades of green.

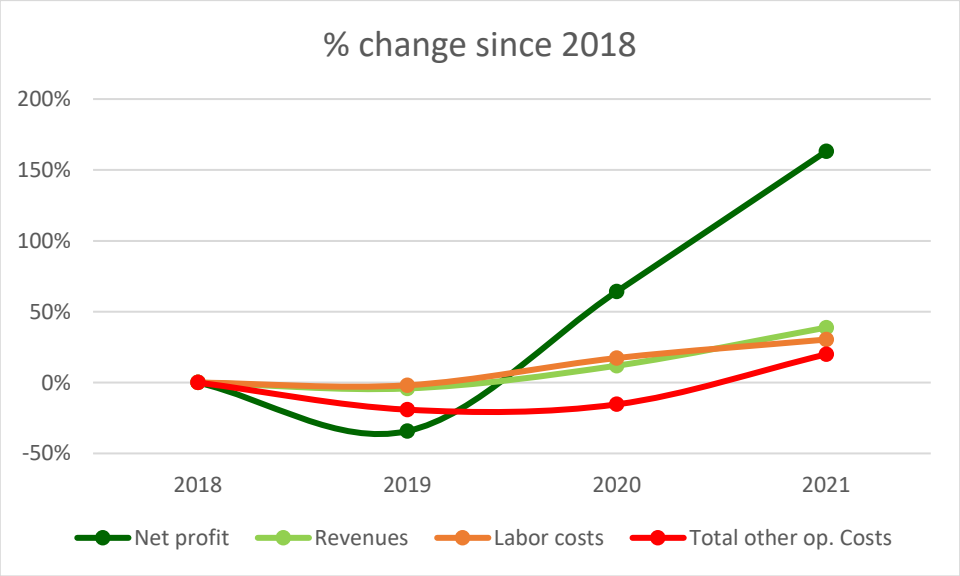

Figure 3: Results over time in percentages for case company

This chart shows how some key results have developed since 2018. This is a better visual presentation of development over time, than the year over year percentage, because similar changes in percentage would appear in a near straight line, even if there were substantial development. The lines have also been smoothed to improve readability, but the measured datapoints are shown with dots. Net profit, or the bottom line, increased by 163% between 2018 and 2021, after having decreased by 39% in 2019. Revenues also decreased slightly in 2019 but have risen steadily since. The 2019 drop may to some extent be explained by lower quotas that year (Sildelaget, 2023a). Paying crews a percentage of revenues may explain the correlation between revenues and labor costs. Operating costs besides labor costs and depreciation were lower in 2019 and 2020 but have since risen.

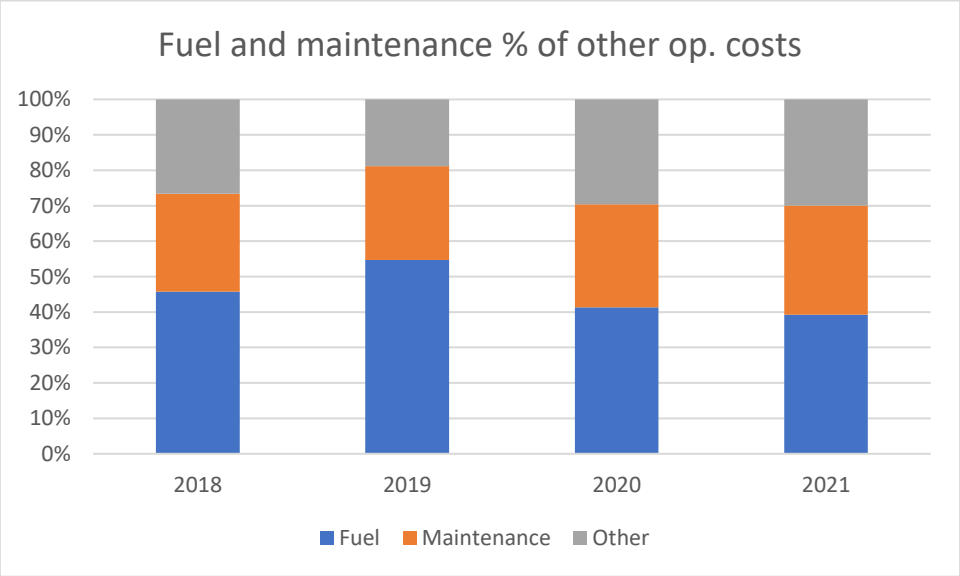

Figure 4: Fuel and maintenance as parts of other operational costs for case company

The company's three largest costs are labor costs, depreciation, and other operational costs, which are all other operational costs bundled. Fuel- and maintenance costs are a substantial part of these, as shown in the graph below. The results highlight the significance of fuel and maintenance for the company.

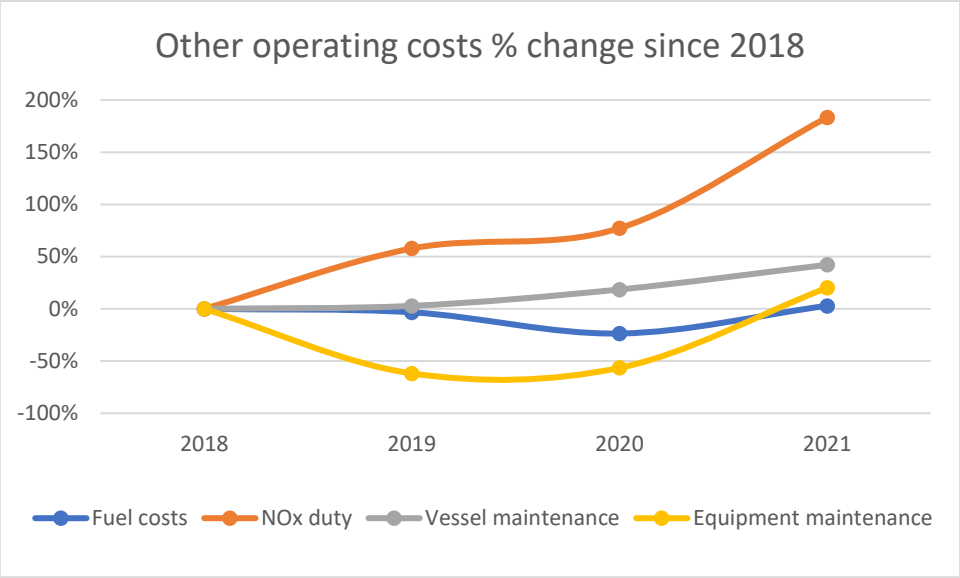

Figure 5: Other operational costs over time in percentages for case company

Looking further into other operational costs, we notice that vessel maintenance costs rise steadily, perhaps indicating that a vessel needs increased maintenance as it ages, while equipment maintenance costs seem more cyclical. Fuel costs remain relatively stable, but that is likely coincidental since both oil prices and fuel spent fluctuate. NOx duty costs, while not significantly large costs at this time, may be more apt for deducing how much they've sailed, since the duty itself only rose about 7% in the same period (Skatteetaten, 2023).

4.2 Green growth on the business level

To integrate green growth measures into the BSC it is necessary to redefine green growth to fit into a business level. We redefine green growth based on Hepburn et al.'s (2018) definition of green growth "Gross Domestic Product (GDP) growth that preserves or enhances natural capital" while also incorporating all pillars of the triple bottom line (TBL), which we do by defining green growth as: *financial growth which preserves or enhances natural- and social capital*. The interviewees are given this definition of green growth during the interviews, and this definition is used throughout the analysis when green growth is considered.

In the first part of the interview, we clarify how we define green growth and sustainability, before interviewees are asked about their views and experiences on the subject. We then delve further into the interviewees' views on the company's potential to achieve greener growth, and how they believe sustainable development in society will affect their financial results in the future.

All the interviewees seem aware and informed of sustainability challenges, especially within the marine harvest sector. They seem genuinely positive towards sustainable practices and even regulations they must comply with, apart from the costs of emission duties. One interviewee expressed a belief that sustainable development will be beneficial to them and that *"…everyone needs food, especially fish. It's healthy and not particularly harmful to the environment. Beef, for example, produces much higher emissions."* However, in general, CC believes that there isn't much more they can do. All interviewees emphasize that they already provide the greenest production of protein, in terms of CO2 emission, besides being governed by quotas based on research and fish stock measurement, which prevents them from overfishing. Hence, they see the rising demand for green products as very positive for their sector and future profits. Conversely, the sector is increasingly taxed through rising emission duties aiming to discourage emissions and non-green practices. Interviewee 1 mentions that the only way to reduce emissions is by building new and bigger vessels that run on greener fuel. However, the interviewee claims no one in the business can afford to build such new vessels and that those who have modified their vessels to run on liquid natural gas (LNG) have converted back to diesel because of high LNG-prices.

4.2.1 Technology and increased collaboration

Technology and increased collaboration are drawn out as important factors of green growth. The company has invested in a NOx catalyst upgrade on the vessel's engine, which will reduce NOx emissions. This will lower their NOx emission and subsequent duty costs, but it is still not a particularly profitable endeavor today, according to them, even when about 60 percent of the investment is subsidized by the NOx fund. They claim to have done it mainly because they wish to reduce their emissions and environmental footprint. Yet, according to one interviewee *"NOx emission duty will increase for those that don't have a NOx catalyst"*, which would increase the value of the investment in the future. Their desire to reduce their emissions as a way of becoming greener seems to be their main focus on the subject of green growth. However, they say there are no more technical solutions that allow them to do that. Interviewee 2 points out the fact that onshore facilities are fixed in place, but other factors, such as timing, increased coordination, and cooperation are not. Improvements in these factors could be leveraged to increase efficiency and reduce emissions for the entire fleet.

The investment in NOx catalyst indicates that there is an increased awareness of the emission from fossil fuel in the fishing industry. While there currently is no feasible substitute for fossil

fuel in long distance sailing there is an increased focus in limiting the emission from these fuels. According to one interviewee, *"The main problem is that there are no more actionable solutions [to improve green growth and sustainability] in the short term."* CC is under the impression that they have limited influence on research and development (R&D) regarding sustainable solutions within the industry. They can invest in the newest technology when it comes to market if this is cost effective or subsidized, but they indicate that they have limited to no ability to invest in R&D by themselves.

4.2.2 Emissions and policy regulation

The interviewees seem united in the thought that improvement of regulation is what will make their sector greener. One mentions a positive regulatory change, which allows them to become more efficient in terms of distance travelled and time spent fishing. This was made possible by allowing two vessels, each with a quota in two different seas, to give away their quota in one area in exchange for the other vessels quota in the other area. Thus, allowing both vessels to fill their quota in one trip, in one sea, instead of two trips as they would have had to do if not for this change in regulation. In addition, Brexit resulted in using up to four times as much time fishing their mackerel quota than before. Brexit resulted in a ban from fishing in British waters for non-British companies and CC must traverse further to find and catch the mackerel. This may explain some of the increase in NOx duties in 2020 and 2021 found in the document analysis. The interviewees mention that they are investing in new instruments and fishing equipment, such as purse seine and large trawls. This is done to increase efficiency, which will lower emissions, and to reduce the risk of fishing equipment breaking and sinking into the sea.

Much previous research on green growth within fisheries focuses on policy and regulation (Anderson et al., 2015; Asche, 2015; Asche et al., 2018; Nielsen et al., 2014), and the importance of these areas are made increasingly obvious during the interviews. However, small- and medium sized businesses in the sector have limited ability to influence this, except through the Norwegian Pelagic Union, which works towards maintaining and improving the quality and sustainability of pelagic fishing and their members.

4.3 Current views on success

In the second part of the interviews, we examine how the company measures growth, why the chosen variables are important, and what affects those variables. The interviewees were asked to outline how they perceive the company's prospects regarding those variables, and whether they believe the company can remain profitable in the far future with their current operating practices.

The answers vary, depending on how they measure growth, but they all focused on financial factors , such as the bottom line, costs, production, and sales price. This coincides with Friedman's (1970) traditional shareholder capitalism model. The interviews revealed that the board is interested in how much the company has caught and how much fuel they've used. Fishing is their sole revenue and fuel is one of their largest costs, in addition to maintenance. Revenue is also important for the crew since they only earn a percentage of the total catch. Previously there was a bigger focus on gross production, or capture, but with rising duties and rising prices it is now possible to have lower gross production and less emissions with an equal bottom line.

The interviewees' outspokenness about the importance of sustainability, along with traditional management focus, may imply that they wish to become greener, but without sacrificing profits, or at least long-term profits. This corresponds with Freeman et al.'s (2007) and Porter & Kramer's (2011) views on stakeholder capitalism, while overlapping with Friedman's (1970) views on shareholder capitalism. It is within these two, often conflicting, goals the challenge of increasing sustainability without sacrificing profitability lies (Hepburn et al., 2018).

4.3.1 Price and revenue

The company cannot fish more than their quotas allow and as such, they depend on lower costs and higher sales prices for continued growth. The interviewees point to several variables that impact sales price, such as the composition of customers. The interviewees emphasize that there are only a few large buyers, which gives them the ability to push down prices. These buyers continue to grow, while the number of smaller actors is diminishing, resulting in less competition and lower prices at auctions. According to interviewees 1, 2, and 4, many vessels fishing at the same time increases supply and puts a downward pressure on price.

Quality and treatment of fish is highlighted by the interviewees as another important variable for price. Poor equipment, too high storage temperatures, and long storage time are expressed as factors that may damage the fish and reduce price. Buyers may not be willing to pay the agreed upon auction price when the fish is received if they feel the quality is not as promised. A weak Norwegian Krone is also positive for exported fish. A strengthening of the currency would reduce revenues from exports. One interviewee perceives well-managed fishing quotas as positive for the environment in the long term, and positive for price in the short term since it limits supply. As such, extended quotas will not necessarily result in higher profits.

Since the company cannot increase production beyond their quota, influencing price seems like their best option to improve the bottom line through increasing revenue. The interviewees believe that this is something they can achieve by changing their customer perspective and improving internal processes, making the SBSC suitable. As such, increasing revenues could be a relevant financial strategic goal, wrought by actions taken to increase sales price.

4.3.2 Costs

The interviews revealed that the company is conservatively managed. Thus, they strive to improve their bottom line and keep debts to a minimum. According to interviewee 1, revenue has been relatively stable in the past five years and mainly affected by changes in operating costs, duties, and fuel price. In addition, increasing interest rates also influence costs, albeit slightly less impactful since they have a low debt ratio and fixed rates on some loans.

Days at sea are often mentioned as an important driver regarding operating costs and emissions. The more time spent at sea, the more fuel is used, the more wages are paid, and the more wear to the vessel and equipment. Interviewee 2 specified that *"being stuck in bad weather and breakdowns at sea is bad for business. We need top equipment, and everything needs? to be ready when we're at sea."* Quota and fishing regulation, and particularly the aftermath of Brexit, are once again indicated as forces that negatively impact efficiency in terms of the number of operating days at sea. Further, they stresses the importance of a well-maintained and well-prepared vessels, a well-prepared, experienced crew, in addition to high quality, modern equipment.

From the interviews, revenues seem relatively fixed and price dependent, reducing cost might seem paramount for improving the company's bottom line. While some factors are out of

CC's control, increasing efficiency appears to be the best way to increase the bottom line. Considering the financial benefits of reducing costs and the positive effects achieving cost reduction could have on the environment; it could be an applicable strategic financial goal for the company.

4.3.3 Future prospects

All interviewees are confident that with today's practices the company will remain profitable 30 years into the future. They predict increased demand and don't believe that taxes will rise to the extent that CC stops being profitable. Yet, one mentions concern regarding climate change since weather affects access to fisheries. Additionally, CC has noticed that fish are moving further north, which increases the time and distance sailed for the vessel.

4.4 Charting elements for a balanced scorecard.

In the third part of the interview we describe the traditional BSC, prior to asking the interviewees about what they deem important regarding the various perspectives of a BSC.

According to Kaplan & Norton (2004a), BSC is a management tool that supports the successful implementation of business strategies for achieving CC's strategic targets. Given a clear strategy, with corresponding strategic targets, a well thought out SBSC provides the business with KPIs in which the business can measure and control success (Butler et al., 2011). Traditionally, the majority of KPIs are linked to the financial aspect of a company, and businesses measure their success in financial results (Kaplan & Norton, 1992). In this study, strategic targets are set based on their contribution to the definition of green growth on a business level.

4.4.1 The financial perspective

Factors that directly affect the bottom line and other financial growth in the company, are implied as priorities in terms of improvement. The focus seems to be on sales price and costs, operating days in particular.

Unambiguously, improving the bottom line is CC's main strategic financial goal. This could be achieved through increasing efficiency, and increasing revenue by influencing sales price, as mentioned in previous chapters.

4.4.2 The customer perspective

CC's customers are mainly two large and a few smaller exporters who buy fish at auctions. When asked who CC's customers are, interviewee 1 expressed intrigue and was pleased that we used the word customer, and not buyer. They themselves normally use the word "buyer" and do not view their buyers as customers, although the buyers are the sole customers of CC. The reason, according to the interviewee 1, for referring to customers as buyers is because the customers often abuse the time sensitivity of pelagic fish capture businesses' need to sell fish as fast as possible, by delaying their bids. In addition, the buyers have incentives for detecting lower quality in the fish, even though this is not representative for the whole sale. These are some of the reasons for friction sometimes occurring between CC and their customers. The interviewees implies that this is representative for the whole industry. Nevertheless, there is a recognition from CC that they need to adapt their views and realize that the buyers are indeed their customers.

The quality of the fish is stressed by all interviewees as paramount to improve customer relations. The customers appreciate carefully handled fish that is rapidly cooled and brought to shore. Interviewee 4 states that *"[the customers] would rather not buy from vessels that often deliver poor quality."* Quality, along with good communication and professionalism when interacting with the customers develops reputation, is highlighted by the interviewee as important factors that may increase price. However, a high level of customer scrutiny at the docks may lead to attempts at price reduction which may result in disagreeable interactions. Furthermore, the interviewee suggests that better dialogue and exchange of knowledge with their customers could be beneficial for both parties.

Interviewee 1 mentions that successful marketing and access to expanding markets has proved to have a positive impact on sales price. Yet, small pelagic fish capture businesses don't have the resources to do this themselves, so they are obligated to pay a duty to fund the Norwegian Seafood Council (NSC), which in turn does marketing for all Norwegian seafood. Notably, the NSC does not necessarily spend money funded by pelagic fishing on promoting pelagic fish.

As mentioned by one of the interviewees, the quality of the fish affects price and improves the reputation of the harvester. There seems to be consensus throughout the interviews that

indicates that there is potential for increased value creation within the customer perspective, and that the relationship towards the customer could be subject to improvement. We propose a set of general strategic targets within the customer perspective that aim specifically at establishing better customer relationships, where establishing better customer relationships is the overall strategic goal within this perspective. Strategic sub-targets that further support establishing better customer relationships could be improving customer interaction and increasing customer awareness. By setting these targets, product quality from capture to delivery would improve.

4.4.3 The internal processes perspective

Most of the interviewees seem satisfied with CC's internal processes as they are. One mentions that there is already a certain degree of cooperation with other vessels in terms of finding fish. Another mentions a digital maintenance program which gives weekly updates on what needs maintaining. Yet another emphasizes the importance of being efficient. A shared view amongst the interviewees is that they want to fish as much as possible in as little time as possible. However, they have to account for two increasingly important variables, environment, and price. As interviewee 1 puts it: *"It's better to fish 100 tons at 10kr. than 200 tons at 5kr."*

Based on information from the interviews, our proposed strategic targets, within the internal processes' perspective, could be targeted towards efficiency. There are several ways of increasing efficiency when harvesting. Those mainly consist of fishing as fast as possible when demand and price is high. However, higher prices usually occur when fish are more demanding to catch, and at times inefficient, as the costs of capturing the fish is higher than the revenue of the sales. Furthermore, breakdowns and malfunctions at sea are inefficient and should therefore be avoided. Hence, minimizing equipment failure could be an applicable strategic target to reduce breakdowns and malfunctions. Considering the earlier implied importance of quality to succeed with both the customer- and financial perspectives, increasing product quality could also be an appropriate strategic objective within the internal processes' perspective. Accidents and sick days at sea are not mentioned in the interviews. Considering that minimizing sick days would have much the same effect on efficiency as equipment malfunctions, we believe it could be a suitable strategic goal as well. Health and sanitation are also one of Anderson et al.'s FPIs, and the strategic goal would tie directly into the social aspect of green growth.

4.4.4 The learning and growth perspective

The answers differ when asking about the learning and growth perspective. Two interviewees are unaware of any potential within this category and says little about the subject of learning and growth. Investing in new equipment was the only aspect mentioned by more than one interviewee. There is an apparent focus on the positive effects new and better equipment has on the quality of the fish. Additionally, one remarks that proper equipment, along with good wages, is necessary to recruit and retain the best employees.

One interviewee stresses the importance of increasing and improving cooperation within the fleet, while another speaks of improving their digital maintenance system. The implementation and use of this system has proved successful. Yet, some adjustments should be made in terms of pausing intervals for equipment that does not wear when not in active use. The importance of productive political dialogue is emphasized by one interviewee, since the entire fleet relies on appropriate regulation and successful negotiations between Norway and other coastal states regarding suitable division of zones, and zone access.

The high level of education among the employees in the company is referred to as valuable, and they would like this to be maintained. At the time of the interviews, a fisherman is undergoing education to become a first mate, sponsored by the company in return for a binding labor contract for a set period. Interviewee 4 said that: *"it would be beneficial to get young people in such positions."* Finally, we suggest investing in acquiring larger quotas as a way of growing the business by increasing the top line. However, this would be a large investment.

Goals regarding both efficiency and quality are suggested within other perspectives. Interviewees have on several occasions mentioned that high-quality equipment is vital to succeed in both of those areas. As such, targeting improvement of equipment could be a suitable objective. Moreover, improvements to maintenance could be a suitable objective, since it could contribute to avoiding malfunctions, and reduce costs by increasing efficiency. The importance of policy and regulation is emphasized during the interviews; however, the company has limited influence in these areas. While being vested in politics could be beneficial, it is likely not an apt strategic objective. Crew expertise, on the other hand, is something the company can affect. During the interviews, a highly educated and skilled crew

is noticeably valued and maintaining a high skill level could be a relevant target for the company. It should be noted that there are limits to how much the company can grow through increased efficiency. At some point, they will have to scale their operations if they wish to grow further. At this point, their sole option for growth seems to be buying up quotas, which is capital intensive and not feasible in the short term. Still, it could be an appropriate long-term goal. Maximizing the utility for the best vessels in the fleet, by centralizing quotas, would allow fishing the quotas with fewer vessels, which might benefit the environment.

4.5 Important aspects for environment and society

In the final part of the interviews, we explore areas the interviewees view as important concerning their impact and possibilities with respect to environment and society. We then examine whether they believe succeeding in these aspects may influence the perspectives of a traditional BSC.

4.5.1 Environment and society

It is expressed by the interviewees that pelagic fishing is already the most environmentally friendly production of meat today in terms of emissions. Despite that, reducing emissions is still identified as the most important contribution CC can make in this respect. As stated by interviewee 3, *"other energy consumption and waste control is trivial in comparison."* As mentioned earlier, one interviewee points out that reducing emissions, any more than what they achieve with the new NOx catalyst upgrade, is very challenging and costly. Electricity is not an option for the distances they travel, and LNG has proved too costly with high gas prices. Increased efficiency is identified as the most important way of reducing emissions. As interviewee 4 puts it, *"the more trips in the field, the larger the environmental footprint. Increasing efficiency is environmentally friendly."*

Equipment that breaks, is lost at sea or discarded is mentioned by one interviewee as something that should be avoided. Another interviewee describes how waste is sorted before delivering it for recycling and proper discarding whenever they dock. This is something the fleet are obligated to and is described as positive. However, interviewee 2 states that "It feels redundant when all waste is thrown into one container when received at the docks." Moreover, waste oil is also thoroughly handled, documented, and delivered at the docks according to regulation.

Interviewee 1 states that: *"Most of the crew is local …. It's the jobs we create and the repercussions [that are positive for the local community]."* Providing well-paid work and recruiting local workers is underlined as their most important contribution to the community. It is worth noting that not one interviewee spoke of labor costs as an expense, although it is in fact the largest operating cost. However, the importance of paying competitive wages was mentioned as important to recruit and maintain talented workers, which is a positive social contribution. Other than that, taxes paid, use of local suppliers, and sponsoring local sports teams are mentioned by various interviewees.

Environmental and social considerations are included in most answers up until this part of the interviews. This indicates that they are largely tied to the strategic objectives that have already been suggested. This supports Butler et al.'s (2011) view on SBSCs where sustainability measures should be integrated in the traditional perspectives. For example, one of the important ways of reducing costs is identified as increasing efficiency at sea, which would reduce fuel consumption and subsequent emissions. In addition, maintaining a highly educated and skilled crew would contribute to efficiency. This would typically be achieved by offering both training and formal education, as well as paying competitive wages.

4.5.2 Effects on a BSC

All interviewees believe that succeeding with their environmental and societal efforts could contribute to financial growth. One interviewee reiterates that customers are demanding, or preferring, green products and that, because of technological advancements, it is now possible to trace which vessel caught a single fish. In terms of the customer perspective, they are equally positive that achieving strategic targets will contribute to financial growth. They believe that being green will attract positive attention, garner more customers, and broaden their options for financing in the future.

The interviewees' answers are ambiguous regarding how they believe succeeding with environmental and societal efforts will impact the internal processes- and learning and growth perspectives, but their answers are generally positive. Interviewee 3 states that:

in terms of environmental footprint, there's a continuous learning curve. It's not easy, but everything else can be improved [by succeeding with environmental and social efforts]. We need to be aware who we trade with and where products are coming from.

And interviewee 1 iterates that *"as mentioned, we've shifted our focus. Focusing on environment and society will not make us ineffective."*

The interviewees' belief, that succeeding with environmental and social efforts will improve financial results, further supports Butler et al.'s (2011) views on integration of sustainability measures in the traditional perspectives of a BSC. This supports the fact that SBSCs are sustainable for a for-profit business and not just something it can afford when times are good (Figge et al., 2002).

4.6 Strategic goals

Financial sustainability is the enabling factor for sustainability in other fields and should be the core focus of any firm (Friedman, 1970). This study focuses on achieving green growth by means of measuring the things that drive green growth, but not on strategy formulation, or implementation. Yet, the strategy is the first step in developing a BSC, and needs to be considered (Zhanbo, 2021). The study identifies several strategic targets that are aimed at achieving further green growth within a pelagic fish capture business. The purpose of BSC is to measure and manage internal processes with the ambition to achieve the company's goals (Kaplan & Norton, 2004a). To create a BSC for the case business it is necessary to have specific business targets and goals. The BSC serves the purpose of measuring key performance indicators, which tell if the business is successful in its strategy for achieving its goals and targets (Kaplan & Norton, 2004a). Thus, we assume that any pelagic fish capture businesses intending to use a SBSC to achieve green growth already has a strategy built around green growth in place.

The strategic targets are based on Friedman's (1970) idea of the company. By incorporating ideas from Ferrarini (2021), Jordi (2010), and Porter & Kramer (2011), that imply that the firm's purpose extends beyond only financial results. Hence, sustainability measures may be a source for competitive advantage and ultimately beneficial to financial results. Although sustainability has become an important aspect of today's economy (United Nations, 2015) and

the environmental and social aspects are becoming an increasingly important focus areas for companies, it is the financial results of the companies that determines their survival (Friedman, 1970). As said, we do not formulate a complete strategy in this study but base the SBSC on the strategic targets discussed in the previous section. The strategic targets within their respective perspectives are as follows:

Financial perspective:

- Reduce costs
- Increase revenue
- Improve bottom line.

Customer perspective:

- Increase awareness of product quality
- Improve customer interaction
- Establish better customer relationships

Internal processes perspective

- Increase efficiency
- Minimize equipment failure
- Minimize accidents and sick days
- Increase product quality

Learning and growth perspective

- Retain high expertise employees
- Improve maintenance
- Improve equipment
- Increase quotas (long term)

4.6.1 Case strategy map

The visual representation of cause-effect relationships between the different perspectives from within the strategy map provides valuable insight for both executives and employees and can be as beneficial as the BSC itself (Kaplan & Norton, 2004b). Without comprehensive representation of the strategy, it is difficult to communicate the strategy to the whole organization. Without a shared understanding of the corporate strategy, it is hard to create an alignment around the strategy, and without alignment new strategies cannot be implemented

(Kaplan & Norton, 2004b). Based on our suggested strategic objectives in chapter 4.4, the following strategy map is proposed for the company.

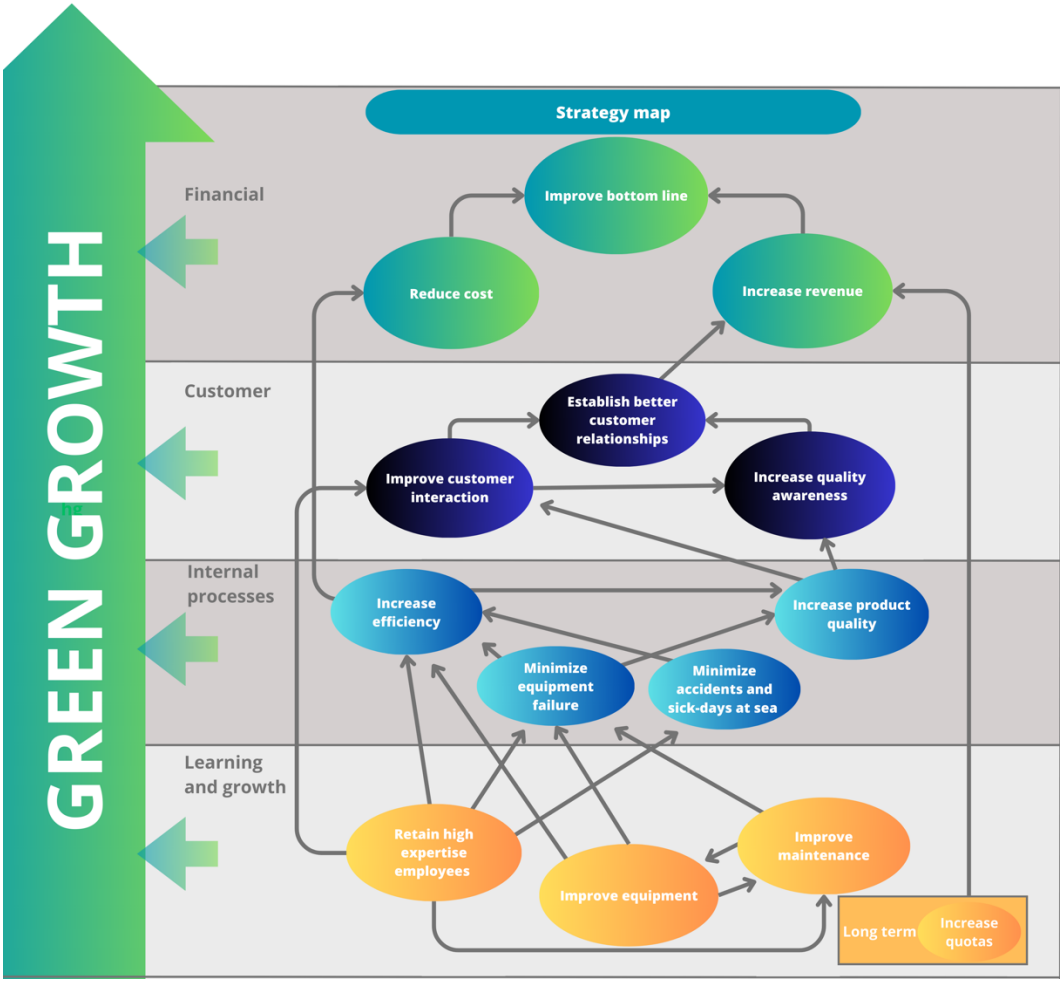

Figure 6: Proposed strategy map for the case company

In figure 7, a visual representation of the strategy map is presented. Here we see the causal relationships between the strategic targets and how they are interlinked with each other. At the top we see the financial perspective with the main strategic target of CC which is to improve the bottom line. Increasing revenue and reducing costs support this strategic target and are targets within themselves. When we go further down in the model we see the Customer perspective, which is the source of sustainable value creation (Kaplan & Norton, 2004b). A main strategic objective within the customer perspective is to establish a better customer relationship. Increasing quality awareness and improving customer interaction supports this main strategic goal within the customer perspective. The financial- and customer perspectives describe the results the organization hopes to achieve, and they consist of the lagging indicators (Kaplan & Norton, 2004b). It is through internal processes that value is created, and

this section consists of the leading indicators. Here, increasing product quality, increasing efficiency, and minimizing equipment failure are the main strategic targets, which facilitates achieving the targets within the lagging indicators. Finally, the learning and growth perspective, which is the foundation of the BSC, is presented at the bottom. Value creation starts here and provides the organization with the necessary tools to succeed in the other perspectives. Within the learning and growth perspective we target retaining high expertise employees, improving equipment, and improving maintenance as the main strategic goals. Increasing quotas is set as a long-term strategic target to achieve growth within the company.

Finally, the green growth column on the left symbolizes that it is considered and reinforced through the financial-, customer-, internal processes-, and learning and growth perspectives. It may not be evident by looking at the strategic objectives, but it should be made clear through the key performance indicators used to achieve the goals. For instance, educating and paying employees competitive wages is good for society and the local community. Increased efficiency in terms of less fuel used will reduce emissions, which is good for the environment, and better customer relationships may increase revenues, which is good for financial growth. Not all goals will strengthen all three pillars of the TBL, but all perspectives support at least one pillar, and all pillars are supported in at least one perspective.

When reading a strategy map, it is important to perceive relationships between the strategic targets to understand how they intertwine. When discussing the connections within the strategy map it is appropriate to start from the learning and growth perspective to understand how the strategic goals build upon one another and ultimately affect the bottom line.

4.6.1.1 Causal relationships

There is a mesh of causal relationships across and within all four perspectives. Within learning and growth, we see that improving equipment and improving maintenance are reinforcing each other. New and better equipment may require less maintenance, or be easier to maintain, and good routines in maintenance may improve the quality and life expectancy of equipment.

Retaining highly skilled employees may increase efficiency in maintenance. Skilled workers may possess knowledge and skills which increases the quality and speed of maintenance compared to unexperienced or uneducated workers. The risk of equipment failure is reduced

through having high quality equipment, superior maintenance systems, and skilled workers who know how best to operate the equipment. Retaining high expertise employees will also increase efficiency at sea. Expert captains will find fish faster and make better decisions, while expert crew will work fast with few or no accidents. By focusing on maintenance and investing in new equipment, CC reduces the risk of losing equipment to the sea, which again reduces their environmental footprint.

Further, avoiding equipment failure may reduce inefficiency at sea, because failures may necessitate repairs which, in the worst case, could force the vessel back to shore. Otherwise, it might force the crew to spend time repairing or changing equipment at sea, which is both time consuming and expensive for CC. Moreover, time lost and distance traveled, due to malfunctions, increase unnecessary emissions. Having a qualified crew may reduce accidents and sickness of the crew at sea. By avoiding accidents and crew members getting sick while sailing, efficiency can be maintained. Accidents may lead to a stop in fishing, or in the worst case, force the vessel to shore to disembark the injured crew member. If the cooling system fails, the quality of the fish is affected, they would have to abort the trip, perhaps without maximizing capacity. Furthermore, equipment failures or damaged equipment may directly impact quality by damaging fish during capture. Increasing efficiency at sea increase product quality as well as lowering emissions, for example, getting the fish to shore as fast as possible. Achieving high efficiency also reduces the days at sea, which reduces the amount of fuel used and subsequently reduces emissions, as well as costs for CC.

The crew directly interacts with the customer at product delivery, thus talented and educated workers could be better equipped to successfully interact with the customer. Good communications in and of itself should improve customer relations, but when these interactions are supported by high product quality, deemed satisfactory by the customer, they should further cement better customer relationships. Workers that are good at communicating quality will increase the customers' awareness of it and improve CC's reputation.

Better customer relationships supported by good communications and customer awareness of product quality could positively impact sales price, because customers are willing to pay more for high quality fish. Besides, good relationships could result in more sharing of information, which could lead to fishing the right fish when the demand is high, increasing sales price for both the harvester and the processor. Investing in higher quotas remains the sole means of

increasing production to spur financial growth. Higher production in CC while total production is capped by quotas, would result in increased revenues without lowering prices. As mentioned earlier, high efficiency avoids circumstances that would result in higher costs for CC. When costs diminish and revenues rise, net profits, or the bottom line, will ultimately improve.

4.7 Key performance indicators

The purpose of the KPIs is to measure if the company is successful in their implementation of the strategy. Furthermore, once the KPIs and associated targets are set, those areas should gain focus within the business. “What you measure is what you get” (Kaplan & Norton, 1992). As previously discussed, we distinguish between leading and lagging indicators. Leading indicators are expected to affect the lagging indicators which measure performance. As such, succeeding with leading indicators should accompany success within the lagging indicators. We use information gathered in the interviews, financial statements, and theory, such as Anderson et al.’s (2015) FPIs, to identify relevant KPIs for the strategic objectives in the strategy map. The KPIs are developed and designed in such a way that they can be measured and reported by crew, captains, and administration. It is deemed appropriate to create the metrics in such a way that the employee closest to the KPI reports it. When developing KPIs for SBSC it is important to identify the KPIs that measure whether one is successful in achieving the strategic targets. In the following section KPIs for the SBSC are identified.

4.7.1 for the learning and growth perspective KPIs

Targets for measuring how much equipment has been improved would likely vary from year to year based on the type of new equipment identified as essential by CC, as well as the outdated equipment. Examples of new equipment could include installing a NOx catalyst or a new sonar. CC should therefore measure the percentage of equipment upgrades based on the goals they set for the year. To measure improvements in maintenance and changes in frequency of equipment replacements would indicate how well they’ve succeeded with improvements. With the aim of retaining high expertise employees, CC should measure wages compared to regional industry average earnings, and the education level of their employees. These KPIs correspond to Anderson et al.’s (2015) FPIs in the labor returns and community services dimensions, which directly impact the social pillar of the TBL. Since

buying small amounts of ITQs isn't feasible, CC should rather measure the amount of equity they raise annually as investing in bigger quota should be a long-term solution.
Research and observation are important to identify targets for each KPI within the learning and growth perspective. Finding the optimal new equipment, knowing what needs to be replaced, knowing regional average earnings, what is relevant education, and identifying who should be educated, is crucial. When this is known, CC should set targets in each KPI, and start the accompanying processes required to reach the targets.

4.7.2 Internal processes perspective KPIs

When identifying KPIs for measuring success within the internal processes perspective it is important to find KPIs that specifically target the strategic goals we want to measure. Crucial equipment failures affecting efficiency and quality within CC are trawl and purse seine malfunctions, and cooling system malfunctions . These, or other malfunctions that extend time at sea could be measured to track progress with minimizing equipment failure.

Sick days and accidents involving crew also affect efficiency. Measuring the percentages of accidents at sea involving crew members, as well as percentage of sick days at sea, compared to the total number of days at sea would indicate how much this is affecting efficiency, and how change is progressing. Focusing on these metrics would correspond to Anderson et al.'s FPIs in the health and sanitation dimension and are direct contributors to the social aspect of green growth. Measuring these would also be a direct indicator of whether improvements in the learning and growth perspective have had an effect, since retaining talented crew supports this. Highly educated, skilled and experienced workers are more likely to know how to use equipment properly as well as the importance of having and following sanitation protocols.
Further KPIs for the strategic target of increasing efficiency should be encapsulated down to the number of days and fuel consumed compared to sales revenue. Comparing the measurements to revenue would account for variables such as changes in annual quotas and price, ultimately indicating how efficiency is progressing. Moreover, reducing fuel consumption is identified, by the interviewees, as one of the best ways of improving CC's environmental footprint, which contributes to that part of green growth, while also lowering a significant operating cost.

Measuring improvements to quality could likely be done in several ways, but quality control is time- and resource consuming work. CC could leverage the fact that customers already, to

various extents, perform quality controls. As such, we suggest measuring feedback from customers regarding quality by tons of fish sold at a discount to auction price. Incidents where price is discounted happen when CC concedes that quality is not as promised at the customer's quality control.

4.7.3 KPIs for the customer perspective

Customer interaction primarily occurs during product delivery at the docks. This is when the crew works to efficiently unload their catch with the expected product quality. During this phase, customers may to various extents perform quality controls. As mentioned earlier, if the customer is dissatisfied, they may attempt to renegotiate the price, which can spark disagreements. Some negotiations may end with CC offering a discount on the auction price if they agree that the quality controls reveal that the quality is not as promised. As such, tracking the percentage of negative customer interactions, which would include renegotiations of the price, displeasure with the unloading process, or any other form of disagreement from either party would be an adequate measurement on the quality of customer interactions. In addition, short post-interaction surveys prompting feedback from customers could further increase the measurements of customer interaction quality. Such a survey could be paired with internal evaluations of interactions from the crew's perspective, which could give further indication toward possible areas for improvement.

Tracking the frequency of quality controls and the number of consecutive sales without price negotiation could be appropriate indicators of changes in the customers' awareness of CC's product quality. An increase in consecutive sales without price negotiation would imply that customers are pleased with quality over time, while a reduction in quality controls would suggest that customers increasingly trust that CC delivers the quality they promise. Trust and mutual benefits indicate good relationships. Interviewee 1 mentioned that increased cooperation and sharing of information could be beneficial to both harvester and processor, which would require trust. Hence, we propose measuring the number of times valuable information is shared between CC and their customers as a KPI for establishing better customer relationships.

4.7.4 KPIs for the financial perspective

As it is required by law, as well as a decidedly reasonable thing to do in business, CC already measures a lot concerning its finances. However, considering the underlying strategic goals in the SBSC, we would suggest focusing on measuring changes in operating costs, average sales price compared to industry averages, and revenues from fishing. Measuring average sales prices would indicate whether CC is successful in fishing at the right time, in terms of price, and whether efforts within product quality, and customers' awareness of that quality, is increasing price. Ultimately, changes in these will also impact the bottom line.

4.7.5 KPI summary

Figure 8 is a combined list of the proposed KPIs. Further developing the SBSC, by annually evaluating the KPIs and benchmarking the results, should be done to further cement its value. We will not suggest targets for KPIs in this study, but we emphasize the importance of setting realistic, yet challenging targets. When selecting targets for each KPI, identifying what can be done to reach those targets, starting processes for reaching them, and appointing responsibility is vital for success.

Key Performance indicators	
Financial perspective	**Internal processes perspective**
- Operating costs	- Number of days added due to malfunctions
- Annual avg. Sales price (by fish type) cf. Industry avg.	- % of accidents at sea involving crew cf. total days at sea
- Revenue from fishing	- % of sick days at sea cf. total days at sea
- Bottom Line	- Number of days at sea cf. sales revenue
	- Tons of fish sold at a discount to auction price
Customer perspective	**Learning and growth perspective**
- % negative customer interaction	- % equipment upgraded
- % positive feedback	- % equipment replaced
- Number of consecutive sales without price negotiation	- Earnings cf. regional average earnings
- Customer quality control frequency	- % of crew fully certified
- Number of times valuable information was shared with customer	- Free equity raised annually
- Number of times valuable information was shared by customer	

Figure 7: Proposed key performance indicators for the case company

5. Final Discussion

As Nielsen et al. (2014) argued, if economy is to grow it must, in some sense, be green. This is especially true for fisheries. If the pelagic fishing industry were to rely on the business-as-usual mindset, the North Atlantic fish stocks would be depleted, and the industry would, eventually, most likely perish. Based on the research in this study, and our definition of green growth on a corporate level, there appears to be evidence supporting that SBSC can drive green growth at CC. By setting clear strategic targets for green growth and corresponding KPIs Kaplan & Norton's (1992) statement "what you measure is what you get" seem plausible for pelagic fish capture businesses. BSC is developed in such a way that every perspective links towards improving the financial perspective, arguably the most important perspective (Friedman, 1970). By having this link, it enforces the importance of the different perspectives, especially in bottom line-oriented businesses. When getting a visual representation of the effects the different strategic targets have on value creation throughout all perspectives, it could be more attractive to implement a SBSC. All the social and environmental targets within the SBSC are correlated with financial growth and are therefore beneficial to both the company and society.

Several scholars have emphasized the importance of internalizing sustainability into the core practices (Ferrarini, 2021; Porter & Kramer, 2011). Asche (2015) Nielsen et al. (2014) argues that green growth in fisheries and integrating the triple bottom line (TBL) in regulations and the industry level is paramount for reaching the SDGs (United Nations, 2015). Given the nature of the BSC and its emphasis on financial results, integrating sustainability measures and creating a SBSC should provide businesses with a strategic advantage by internalizing sustainability measures (Butler et al., 2011; Figge et al., 2002). By integrating sustainability measures throughout the four perspectives the company can incorporate sustainability in all aspects of value creation within the business (Butler et al., 2011). BSC and SBSC has wide consensus in its effectivity and is today considered as a fundamental managing system (Dror, 2008).

Using the identified strategic goals and associated KPIs, we present and suggest a SBSC for CC, apart from targets for each KPI, which the company should set themselves on a yearly basis.

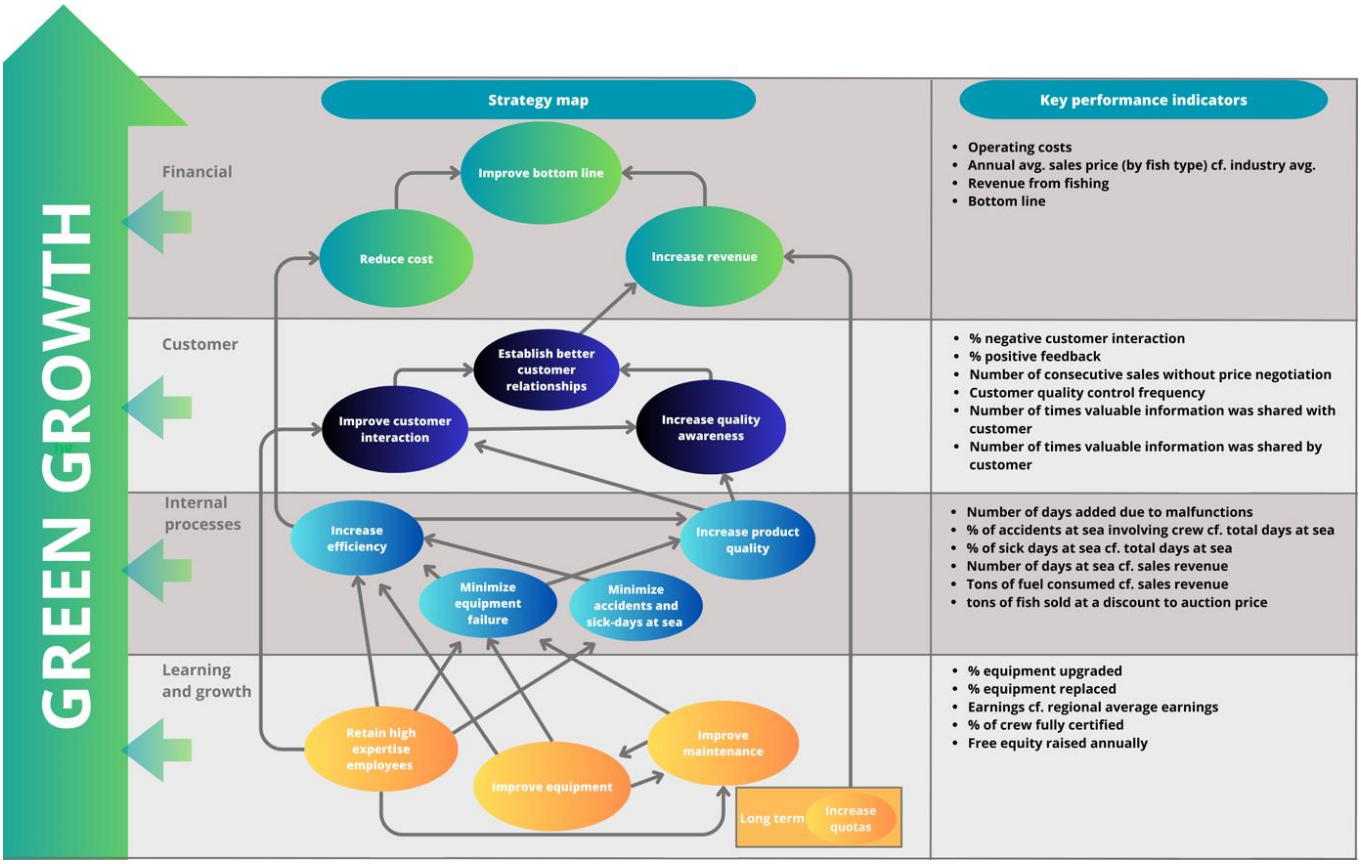

Figure 8: Proposed sustainable balanced scorecard for case company

However, implementing a SBSC requires consensus throughout the whole company for it to gain traction and have the desired effect. The BSC is a comprehensive and complex management tool that demands time and energy to be successfully implement and integrated in the business. If done correctly it can serve as a powerful tool for reaching the strategic targets of the business, but if done incorrectly, it will be a waste of time and resources for the company (Dror, 2008). Having this in mind, one cannot expect the whole fleet to adopt this way of measuring right away. In the short term, implementing an SBSC such as this would require significant effort and resources in the short term. While there is also a risk of the endeavor failing. Hence, pelagic fish capture businesses that do not incorporate green growth in their strategy and adopt tools such as our proposed SBSC could gain short term competitive advantages compared to those that do. However, this study suggests that succeeding with green growth would provide long term advantages. Moreover, should one or more harvesters succeed with implementing an SBSC, it could incentivize those that have not strived for green growth to follow suit. Regulations prevent further examples of tragedies of the commons to occur, and appropriate regulation is underlined as important for green growth in the sector. Corporate social responsibility (CSR) is defined as corporate efforts beyond what is required

by law (Porter & Kramer, 2011), which would suggest that relying on regulation is not particularly socially responsible. While CC is positive toward regulation that supports green growth, they could be able to further improve internal efforts towards green growth by using a SBSC. Furthermore, we argue that CSR is of little consequence so long as green growth is maximized. The best outcomes may come of regulation alone, CSR, or a combination of the two. Environmental regulations are expected to increase in pelagic fishing. The SBCS proposed in this study can serve as a pro-active solution.

The causality between the leading and lagging indicators of this study is based on assumptions. Due to the difficulty of testing these causalities, the only way of constructing a SBSC was to make such assumptions based on the results from both primary- and secondary data and logical reasoning. Through presuppositions by theory and logic we are sufficiently confident that the proposed causal relationships are viable. However, we recommend further study on correlations and causalities between the leading and lagging indicators identified in this study to further confirm our results.

Notably, the study is limited to one case business. When developing a SBSC for a case company it is important to view the business individually, gaining an understanding of its goals, challenges, strengths, and weaknesses to identify the appropriate strategic targets and corresponding KPIs. The limitation to one case business may question the transferability of the study. However, attempting to create a universal SBSC for the whole industry would likely result in a highly generalized product no one could use, since different companies require different strategic objectives and KPIs. Thus, the subject is investigated based on a single business. Yet, the proposed SBSC, and further research confirming its utility, could pave the way for researching the use of such SBSCs in the pelagic fishing sector. The study supports that financial results should not have to suffer at the hand of preservation of natural and social capital, but rather capitalize on it. Regulations have an important part to play in order to make green growth financially beneficial, and when regulations are expected to increase, the firms have to adapt.

5.1 Addressing the research objective

Based on the data collected and consecutive analysis, the proposed strategic goals and their composition in the strategy map are deemed central for driving green growth in the studied pelagic fish capture business. Moreover, the suggested key performance indicators, and their use in the SBSC, are essential for reaching the strategic goals. Considering the theory presented combined with results from data analysis, the SBSC framework can be an effective managing tool for driving green growth in pelagic fish capture businesses if done correctly.

While every SBSC needs tailoring to each individual business to be effective, this study shows that the proposed SBSC would be an appropriate management tool for efficiently driving green growth within the specifically studied pelagic fish capture business. Furthermore, the proposed SBSC could serve as a foundation for other businesses to build upon, to strategically drive green growth and eventually propel green growth on a larger scale.

5.2 Limitations and further research

As mentioned, the study is purposefully narrow, which impacts the transferability of results. Furthermore, as the business we studied operates in one of the best managed marine harvest sectors in the world, the results may be less relevant in poorly managed sectors. The outcome should not be considered as a general practice for the industry, but rather as an exploration of the potential for sustainable development and alternative strategic management. The results represent an important example of the possibilities that exist for green growth within the industry and create a foundation for further research on the topic. We would specifically propose researching the effects of pelagic fish capture businesses using an SBSC over time, and on a broader sample of businesses. The analysis of strategic objectives and KPIs in the customer perspective revealed that there could be benefits for the entire industry if harvesters and processers increased cooperation. Hence, we would suggest researching the possibilities for network innovation in the industry.

The fact that we have created a SBSC based on only one interaction with four individuals in the case business, because of time limitations for both the researchers and the business, is a weakness. Since this study is not done at the behest of the case business, we attempted to keep the level of invasiveness as low as possible. Had the final product been through several revisions by both the business and researchers, it would likely be better adjusted to the case

business. While the sample interviewees were sufficient to gather the information required to conclude the research, interviewing more crew members could have further confirmed results from interviews, or revealed new information. Increasing the sample in regard to number of businesses would have given us a broader perspective and understanding of the industry but retracted from the explicitness of the end product.

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Discussion paper

Tómas Valur Thorleifsson

A discussion on the thesis' relevance to international trends and forces

Thesis summary

Our study tackles important, and sometimes conflicting, issues of economic growth, society, and environment (Rockström et al., 2009; United Nations, 2015b) with a narrow focus on the pelagic fish capture sector in the Nort-East Atlantic. We do this by creating a triple bottom line (Nielsen et al., 2014) oriented sustainable balanced scorecard (Butler et al., 2011; Hansen & Schaltegger, 2016; Kalender & Vayvay, 2016; Kaplan & Norton, 1992; Zhanbo, 2021) to drive green growth (Hepburn et al., 2018a; Nielsen et al., 2014; OECD, 2017) within businesses in the sector. We chose to focus on pelagic fish capture because it is a vital industry in terms of global food production, that faces several challenges (Bjørndal & Ekerhovd, 2014; Ding et al., 2017; Fiskeridirektoratet, 2021; Halpern et al., 2008), and because there is a lack of research on the business level. We found that while there exists research concerning sustainable governance of fisheries, and the sector as a whole, for green growth, we found no research focusing on managing green growth on the business level for the pelagic fish capture industry.

Green growth is usually as an alternative to traditional economic growth, or gross domestic product growth (Nielsen et al., 2014), and Hepburn et al. (2018) define green growth as "Gross Domestic Product (GDP) growth that preserves or enhances natural capital" 2018 p.751). However, we need a definition that is more relevant for the business level. Hence, we define green growth for the business level as *financial growth which preserves or enhances natural- and social capital*, which is based on Hepburn et al.'s (2018) definition combined with the triple bottom line (Nielsen et al., 2014). The three-pillar approach, or triple bottom line, focuses on improving environmental and social aspects, in addition to the traditional financial focus (Nielsen et al., 2014). The balanced scorecard was introduced by Kaplan & Norton (1992) as a way of driving performance by using measurements and targets, or key performance indicators, within various perspectives that support economic growth. Anderson et al. (2015) proposed several fishery performance indicators for each pillar of the triple bottom line, but these are oriented towards entire fisheries, not fish capture businesses. Yet, when combining the balanced scorecard with the triple bottom line and some relevant fishery

performance indicators, we are able to create a sustainable version of the balanced scorecard (Butler et al., 2011; Hansen & Schaltegger, 2016; Kalender & Vayvay, 2016; Zhanbo, 2021) for a pelagic fish capture business.

The case study focuses on a single Norwegian pelagic fish capture business, which we believe to be representative for the sector because of Norway's significant role in the North-East Atlantic, and the fact that the sector is highly regulated (Bjørndal & Ekerhovd, 2014; Fiskeridirektoratet, 2021). It is a qualitative study where primary data is collected through interviews with people within the case company whereby, we are able to identify key elements needed to propose a sustainable balanced scorecard for the case company. We conclude that the sustainable balanced scorecard framework is suitable for driving green growth in the sector, and that the version we produced and propose for the case company is, to a large degree, transferable to other businesses in the sector. We thus believe that the results should be adequate to drive green growth in the Nort-East Atlantic sector if adopted by pelagic fish capture businesses.

Discussion

In this discussion paper, the Thesis' relevance to international trends and forces will be identified and discussed. The relevance will be discussed in terms of how international trends and forces influence the thesis' foundation and results, but also the thesis' relevance from an international perspective. First, I discuss the international relevance of the topic and some of the main theories included in the thesis. Then I highlight the international foundation for the study's objective, before discussing the sample's, or case company's, international operating space. Finally, I present the international implications of the results and conclusion.

The topic

In a broad perspective, the thesis explores strategy and sustainability. More specifically, the balanced scorecard (Kaplan & Norton, 1992) and green growth (Hepburn et al., 2018a; OECD, 2017). Both fields of study are internationally relevant.

Planet earth has its limits, as explained by Rockström et al. (2009). Social issues and productivity are highlighted as essential in the United Nations' (2015) sustainable development goals, in addition to environmental issues. It is evident that increased

international attention to this has affected several countries, particularly in terms of policy and regulation. The United Nations' 21st climate change convention, Conference of the Parties (COP 21) held in Paris in 2015, produced the Paris Agreement, which is an international treaty, legally binding the signing countries to improve sustainability.

It is clear that the desire for sustainable development and green growth has grown considerably among consumers as well. This development challenges the traditional views on the firm's purpose of maximizing profits (Friedman, 1970), which has led to situations supporting a theory known as *tragedy of the commons*, where those with access to shared resources deplete them in their own self-interest (Ostrom, 1990). An example of this relevant to our thesis is the near extinction of the Norwegian Spring-Spawning Herring after The Second World War (Nofima, 2023). Fortunately, the individual transferable quota system prevents new race-fishing incidents (Nofima, 2023). Cooperating with and creating value for all stakeholders should be in the interests of the firm, giving rise to ideas such as *stakeholder capitalism* (Freeman et al., 2007; Jordi, 2010; Porter & Kramer, 2011).

The increased international focus on sustainability, subsequent policy changes, and regulations resulting from this focus, unequivocally affects businesses from any nations existing or operating in regulated areas, forcing some to adapt or desist. In addition to government intervention, the increased pressure from other stakeholders incentivizes sustainable practices (Freeman et al., 2007; Porter & Kramer, 2011) and green growth (Hepburn et al., 2018a). Consequentially, research focusing on sustainable strategies have emerged, such as sustainable versions of the balanced scorecard (Butler et al., 2011; Figge et al., 2002; Hansen & Schaltegger, 2016; Kalender & Vayvay, 2016; Zhanbo, 2021).

Coastal states collaborate on maintaining and regulating fisheries though the individual transferable quota system. While the study mainly focuses on a single Norwegian pelagic fishing business, that business is subject to the outcomes of international collaboration and many aspects of international trade, and the global economy.

The objective

The study focuses on pelagic harvesters operating in the North-East Atlantic sector, that is comprised of the European Union, Norway, Faroe Islands, Iceland, and Russia (Bjørndal & Ekerhovd, 2014), all of which are bound to the Paris Agreement and the UN's 17 sustainable

development goals (United Nations, 2015b, 2015a). The aim is to introduce a strategic tool for driving green growth within pelagic fish capture on a business management level. Yet, since the thesis explores a specific case company, the result is tailored toward the specific case. However, since all pelagic harvesters in the North-East Atlantic are influenced by many of the same international forces, the results should, to various degrees, be transferable to equivalent businesses across all the nations in the sector.

The case company and its operating environment

The pelagic fish capture business we studied exists and operates in a highly international environment. While they appertain to Norway, they sail and fish in the entire North-East Atlantic. They also, on occasions, export directly to other countries and deliver their catch there. Moreover, their product is to a large extent exported, by third parties, all over the world. Not only are they influenced by changes in global demand for pelagic fish, but also by international regulations that limit their ability to produce supply through the individual transferable quota system. The North-East Atlantic coastal states negotiate and set the annual quotas based on international marine life research (Årland & Bjørndal, 2002; Bjørndal & Ekerhovd, 2014). Furthermore, their exposure to exports and international trade makes them sensitive to the global economy. As stated in the interviews, currency fluctuations have an impact on the case company's profitability. A strong Euro compared to the Norwegian Krone increases profits in Norwegian Krones from sales in Euros, because they have not experienced a change in the price of fish in Euros. This also means that a weaker Euro compared to the Krone would decrease their profits. The interviews also reveal that changes in interest rates have a meaningful effect on the company's financial costs. When considering the reason for changes in currency valuations and interest rates, the company is unambiguously susceptible to changes in the highly interconnected global economy. The case company's representability for the rest of the sector suggests that this is also true for other pelagic fish capture businesses.

Results and conclusions

Pelagic fish capture in an of itself supports, to some extent, sustainable development. It is one of few remaining major hunting and gathering industries in the world and is an important contributor to global food production (Asche et al., 2018). Furthermore, it already produces much less emissions than other meat production. This is important for sustainable

development goal 2, *zero hunger*. When adding in the individual transferable quota system, which ensures viable fish stocks, the pelagic fish capture industry seems like a highly sustainable food production industry. Yet, there is room for improvement, especially considering the industry is important for sustainable development goal 9, *industries, innovation and infrastructure*. The industry is an important societal foundation with regard to food production, economic growth, and meaningful employment.

Based on the data we gathered, we are able to create a sustainable balanced scorecard for the case company. This includes a strategy map with 14 different strategic objectives spread across the four different perspectives in a balanced scorecard: the financial perspective, the customer perspective, the internal processes perspective, and the learning and growth perspective. These strategic objectives are interconnected and affect each other, ultimately strengthening economic growth. The sustainable balanced scorecard we propose supports green growth, because in addition to strengthening economic growth, each objective includes one or more metrics, or key performance indicators, many of which are directly related to preserving or enhancing natural- and social capital. If implemented and found successful in one or more pelagic fish capture businesses, it would contribute toward global sustainability issues and several of the United Nations' sustainable development goals, in particular goal 14, *life below water* and goal 8, *decent work and economic growth*. The study is certainly narrow, but it serves as a step towards closing a gap in existing research on green growth and sustainable development in pelagic fish capture businesses. It could serve as an inspiration and foundation for further research on the topic and lead to new solutions for green growth in the industry.

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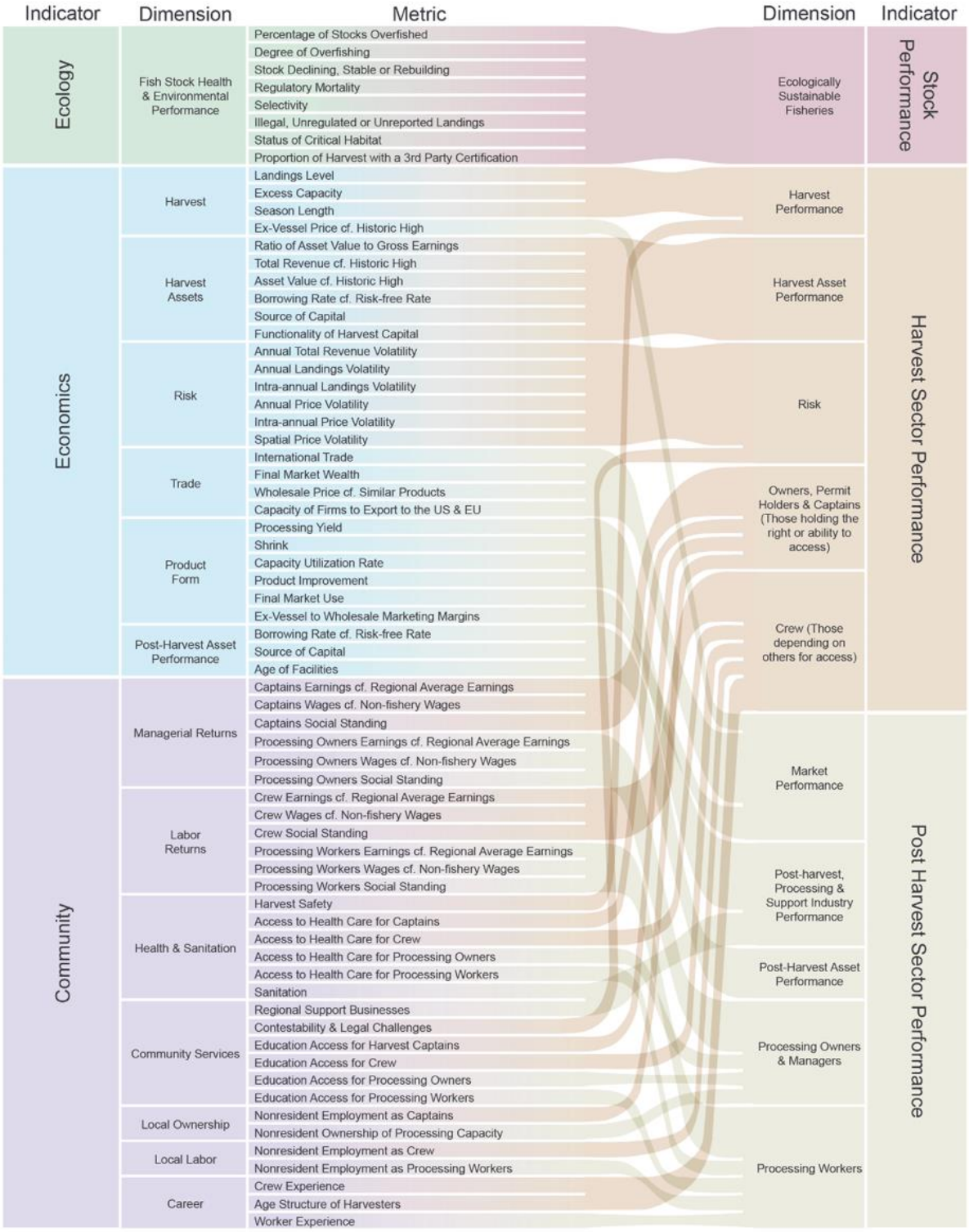
Appendices

Appendix A: Fishery performance indicators



The fishery performance indicators (Anderson et al., 2015 p.6)

Appendix B: Form of consent

PERSONVERNERKLÆRING FOR FORSKNING VED UNIVERSITETET I AGDER

1. INNLEDNING

Universitetet i Agder, heretter omtalt UiA, er behandlingsansvarlig for personopplysninger vi har registrert og behandler i forbindelse med forskningsprosjekter med prosjektleder ved UiA. Denne personvernerklæringen gir deg informasjon om hvordan vi behandler dine personopplysninger og hvilke rettigheter du har.

1.1. GRUNNLAG FOR BEHANDLING

UiA ber normalt om samtykke for å behandle personopplysninger i forskningsøyemed, jf. EUs personvernforordning Artikkel 6 nr. 1 bokstav a. Som oftest skjer dette via et samtykkeskjema som du signerer eller bekrefter digitalt. Alle som har gitt samtykke kan når som helst trekke samtykket tilbake.

UiA kan også ha grunnlag for behandling av personopplysninger hjemlet i EUs personvern forordning artikkel 6 nr. 1 bokstav e, når det utføres en oppgave av allmenn interesse. Dette gjelder når personopplysninger behandles for vitenskapelig eller historisk forskning eller for statistiske formål.

2. HVILKE PERSONOPPLYSNINGER BEHANDLES?

Personopplysninger er alle opplysninger som kan knyttes til deg som enkeltperson.

2.1. UNDER ER TYPISKE OPPLYSNINGER VI REGISTRER OM DEG

Det er svært ulikt fra forskningsprosjekt til forskningsprosjekt hvilke personopplysninger som registreres. Typiske opplysninger vil være navn, alder, kjønn, bosted, utdanning, yrke, epostadresse og telefonnummer. Du skal normalt samtykke til innhenting av disse opplysningene, jf. punkt 1.1. Komplett oversikt over hvilke personopplysninger som behandles oppbevares i meldingsarkivet til NSD Personverntjenester.

3. SIKRING AV OPPLYSNINGENE

UiA har et internkontrollsystem som inneholder regler og rutiner for hvordan personopplysninger skal behandles. Vi gjennomfører regelmessig risiko- og sårbarhetsanalyser av datasystemene vi benytter, for å sikre personopplysningene dine.

I tillegg har vi sikkerhetstiltak, slik som tilgangskontroller for å hindre at flere ansatte en nødvendig får tilgang til personopplysningene dine. Slike tilgangskontroller kan være både tilgangskontroll i datasystemer og fysisk kontroll i form av låsbare arkiv/skap. Ansatte og studenter som behandler personopplysninger er underlagt taushetsplikt og gis opplæring i personvern.

4. HVEM DELER VI DINE OPPLYSNINGER MED

Vi gir ikke personopplysningene dine videre til andre aktører med mindre det foreligger et lovlig grunnlag for slik utlevering.

Vi benytter databehandlere som bistår oss med ulike prosesser. Ulike typer kategorier av databehandlere er angitt under:

- Leverandører som drifter it-systemer

- Leverandører som bistår med drift av ulike kjernesystemer
- Leverandør som drifter arkivsystem

5. GEOGRAFISK LAGRING AV PERSONOPPLYSNINGENE

UiA forsikrer at dine personopplysninger lagres i henhold til personvernreglementes regler for geografisk lagring. Eventuell lagring i tredjestater gjøres på lovlig måte gjennom EUs godtatte overføringsmekanismer. Dersom det er ønskelig med konkret informasjon om hvor de enkelte personopplysninger lagres, kan du ta kontakt med vårt personvernombud, se kontaktinformasjon angitt under punkt 8.

6. HVOR LENGE LAGRER VI PERSONOPPLYSNINGENE OM DEG

Vi lagrer dine personopplysninger så kort som mulig og kun så lenge det er nødvendig eller vi er pålagt lagring ved lov.

7. DINE RETTIGHETER

Du kan be om mer inngående informasjon om hvordan vi behandler opplysninger om deg og du har rett til **innsyn** i dine personopplysninger. Dersom dine personopplysninger er feil, har du rett til å få dem **rettet.** Personopplysninger vi eventuelt ikke har grunnlag for å behandle, skal **slettes** og du kan kreve dette gjort om vi ikke har sørget for det på eget initiativ. Du kan be om at vi **begrenser** bruken av dine opplysninger. Du har rett til såkalt **dataportabilitet** og å be om at dine personopplysninger overføres til deg eller til en annen virksomhet i et strukturelt, alminnelig anvendt og maskinlesbart format. Du kan **motsette deg vår bruk** av dine opplysninger. Du kan også motsette deg å være gjenstand for helt automatiserte individuelle avgjørelser av rettslig karakter. Dersom du mener at vi behandler dine personopplysninger uten rettslig grunnlag, kan du **klage** til Datatilsynet, men vi anmoder deg å kontakte oss slik at vi dels kan ta stilling til dine innvendinger og dels at vi kan oppklare eventuelle misforståelser.

Personvernregelverket har omfattende bestemmelser om overfor nevnte rettigheter og det kan gjelde unntak fra enkelte rettigheter. Dersom du ønsker å gjøre bruk av rettighetene, henvender du deg til oss, se kontaktinformasjon under, og vil vi besvare din henvendelse så fort som mulig, og normalt innen 30 dager.

8. KONTAKTINFORMASJON

Vi er tilgjengelige for eventuelle spørsmål du måtte ha- bruk gjerne kontaktinformasjon angitt under:

- Personvernombud: Ina Danielsen
- Telefonnummer: 452 54 401
- E-postadresse: personvernombud@uia.no
- Adresse: Universitetet i Agder Postboks 422 4604 Kristiansand

Appendix C: Interview guide

Intervjuguide

Innledning:

- En kort oppvarming for å bli litt kjent. Presentasjon av tema og problemstilling og hva hensikten med intervjuet er. Intervjuobjekt leser gjennom samtykkeerklæring før selve intervju starter.

En stor del av intervjuet vil omhandle grønn vekst og vi vil derfor kort forklare grønn vekst slik vi definerer det i oppgaven før vi går videre.

Tema 1: Grønn vekst

- Hvilke erfaringer eller tanker har du om grønn vekst og bærekraft?
    - Vil du si dette selskapet i opplever grønn vekst i dag/i fremtiden?
        - Kan du gi eks.?
- Hvordan tror du fokus på bærekraftig utvikling i samfunnet vil påvirke de økonomiske resultatene i dette selskapet?

Tema 2: Dagens syn på suksess

- Hvilke variabler brukes i dag til å måle vekst i selskapet?
    - Hvorfor er disse variablene viktige?
    - Hva påvirker disse variablene?
- Hvordan opplever du fremtidsutsiktene til selskapet ut fra disse variablene?
- Tror du selskapet kan forbli lønnsomt i 30 år til slik det driftes i dag?
    - Hvorfor/hvorfor ikke?

Resten av intervju vil primært handle om BSC og en kort forklaring av BSC blir derfor gitt før vi går videre.

Tema 3: Kartlegging av element i et mulig BSC

- Hva mener du er viktig å styrke for å forbedre økonomisk vekst?
- Hvem er deres kunder?
- Hva mener du er viktig å styrke for å forbedre kundeforhold?
- Hvilke interne prosesser mener du det er viktig å effektivisere?
- Hvilke aktiviteter mener du det er viktig å utvikle/gjennomføre for å bli bedre på de faktorene som du hittil har nevnt?

Tema 4: Viktige elementer for miljø og samfunn

- Hva mener du er viktig i forhold til å forbedre selskapets miljøavtrykk?
- Hva mener du er viktig i forhold til å forbedre selskapets påvirkning på lokalsamfunnet?
    - Tror du økonomisk vekst kan styrkes dersom selskapet lykkes med tiltakene du foreslår innen miljø og samfunn?
        - Hvorfor/hvorfor ikke?
    - Tror du kundeforhold kan styrkes dersom selskapet lykkes med tiltakene du foreslår innen miljø og samfunn?
        - Hvorfor/hvorfor ikke?
    - Tror du interne prosesser kan styrkes dersom selskapet lykkes med tiltakene du foreslår innen miljø og samfunn?
        - Hvorfor/hvorfor ikke?
    - Tror du læring og utvikling kan styrkes dersom selskapet lykkes med tiltakene du foreslår innen miljø og samfunn?
        - Hvorfor/hvorfor ikke?

Avslutning:

- Har du noen avsluttende kommentarer eller spørsmål?
- Takk for samtalen.