

# Seaweed with several benefits

A qualitative study about companies' interest in an environmental project of seaweed cultivations and important factors to consider when formulating a sustainable value proposition of the concept.

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### **Preface**

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### **Abstract**

Climate change calls for urgent responsibility, not at least from companies, and limiting activities is vital to not suppress Earth's systems. Carbon offsetting is a short-term solution used by companies to lower its environmental impact, but new innovations are needed. Multiple researchers have stated several environmental benefits with seaweed, e.g. having the ability to bind nutrients such as nitrogen and phosphorus as well as carbon dioxide. The seaweed industry is on momentum in Europe, but is yet to be fully explored. A new concept for using the full potential of seaweed cultivations is needed and this research therefore investigates the market possibilities of a seaweed environmental project.

The purpose of this research is to increase knowledge in how the seaweed cultivation industry can potentially expand its business by offering an environmental project for companies to invest in. A qualitative study has been conducted through semi-structured interviews with seven companies. It explores three industries; food, logistics and transport as well as the restaurant industry. The empirical results show that companies have different drivers and desires when it comes to investing in an external environmental project, but slight similarities can be seen within industries. For companies to invest in a seaweed environmental project, more information is needed, since trustworthiness, transparency and legitimacy is important for long term survival for the companies.

**Key words:** Environmental project, Seaweed cultivation, Kelp, Saccharina latissima, Climate change mitigation, Carbon offsetting, Eutrophication mitigation.

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# List of concepts

Environmental project - a project that benefits the environment

External environmental project - a project that benefits the environment which is conducted outside a businesses own operation

Greenhouse Gases (GHG)

Nitrogen (N)

Phosphorus (P)

Planetary Boundaries Framework (PBF) - a framework stating "safe operating space" in which humanity can continue to act

Seaweed cultivation - farmed seaweed in the ocean

Sustainable Development Goals (SGDs ) - 17 sustainable development goals developed by *United Nations* 

### 1. Introduction

In the introducing chapter an overall background in the area of study is presented, followed by further exploration and discussion of the main problem. Thereafter the purpose of the study is stated along with two dependent research questions.

### 1.1 Background

#### 1.1.1 Environmental challenges

Humanity is pressuring Earth's systems to the limits and the outcome may be catastrophic if the limits are exceeded (Rockström et al., 2009). To help society point out the main anthropogenically affected climate issues, and set a "safe operating space" in which humanity can continue to act, Rockström et al. (2009) created the Planetary Boundaries Framework (PBF). In the PBF nine planetary boundaries have been identified. The planetary boundary biogeochemical flows was previously referred to as nitrogen (N) and phosphorus (P) cycles, and is one of two boundaries that are far beyond the zone of uncertainty. It refers to human influence on biogeochemical flows, such as N and P, and when there is an overflow of these nutrients it risks eutrophication to occur (Steffen et al., 2015). The overflows of the nutrients come from e.g. emissions from combustion and vehicles as well as intensive fertilization in agriculture (Naturvårdsverket, 2003). When additional N and P leaks into nature it generates increased growth of algae and other water-plant-growth. Eventually this leads to lack of oxygen on the bottom of the ocean which threatens biodiversity as well as natural resources (Naturvårdsverket, 2003).

Furthermore, climate change is one of the greatest challenges of our time (United Nations, 2017). The Paris Agreement is an attempt to internationally cooperate to reduce global greenhouse gas (GHG) emissions and limit global warming to no more than 1,5 degrees Celsius (United Nations, n.d.a). To succeed with the reductions of GHG emissions it is necessary for all involved parties to take responsibility (UNFCCC, n.d.), meaning that companies amongst others need to take action in order to work in line with the goal. Besides the Paris Agreement and urgent need for decreased GHG emissions in the atmosphere, United Nations has developed the Sustainable Development Goals (SDGs) (United Nations, n.d.b). The SDGs are targeting 17 thematic sustainability issues (United Nations, n.d.b), whereas in particular goal 14.1 is calling for action regarding life below waters and refers to the

prevention and reduction of marine pollution and eutrophication (UNESCO, 2019). In addition to the global goals, Sweden has national environmental goals, with one of them being "No eutrophication" (Sveriges Miljömål, 2021). In order to reach these goals, the most important measures are to decrease the emissions causing both global warming and eutrophication, as well as to reduce the use of nitrogen fertilizer within the agriculture sector, since it is one of the main causes of eutrophication (Naturvårdsverket, 2021a). What is done today to prevent and reduce global warming and eutrophication is not enough (ibid.).

#### 1.1.2 Several benefits of seaweed

As previously mentioned it is of importance to decrease as much of the nutrient input as possible in order to solve the environmental problem of eutrophication. Though, there are possibilities to use preventative measures as a complement which for instance can be to cultivate plants, such as algaes, that are storing nutrients (Garpe, 2008). With this said multiple scholars have conducted research on seaweed (e.g Duarte et al., 2017; Thomas et al., 2020; Hasselström et al., 2018; Hasselström et al., 2020), finding that seaweed, besides being a provisioning ecosystem service, has several other environmental benefits which might make cultivations of seaweed one of many ways to tackle climate change and mitigate anthropogenic pressures on the Earth's systems.

Seaweed grows in different types of waters and is a general name for a countless group of marine species, plants and algaes (National Ocean Service, n.d.). China stands for more than half of the world's seaweed production (Duarte et al., 2017), while South Korea, Japan and Indonesia additionally stand for the larger amount of the cultivation in the world. Though, there are places all over the world where different types of seaweed grow and the industry in Europe is on momentum (Thomas, et al., 2020).

Seaweed production has the ability to sequester CO<sub>2</sub> from the atmosphere, help maintain biodiversity in the oceans, decrease eutrophication and in several ways clean the ocean, at the same time as being a nutritious food for both people and animals. Cultivation of seaweed has much less carbon emissions than land-based food production. About 30 percent of the world's GHG emissions are generated from land agriculture, whereas seaweed plantations are not taking up any land use. In sum, seaweed is beneficial for the ocean environment at the

same time as it is a low-carbon and nutritious food, packed with minerals and vitamins (Thomas et al., 2020; Duarte et al., 2017). Additionally, there has been research regarding using seaweed biomass as biofuel for vehicles amongst other areas (Duarte et al., 2017).

#### 1.1.3 Carbon offsetting

Carbon offsetting is a concept which can be used by companies to compensate for its greenhouse gas emissions caused by its operations, which is done by lowering equivalent amounts of emissions released elsewhere. The aim of doing so is to have a neutral or even positive environmental impact (Naturskyddsföreningen, n.d.). The most common way of carbon offsetting is to pay money for projects made in developing countries, such as tree planting which is a method used for binding and storing carbon dioxide (Naturvårdsverket, 2021b). Carbon offsetting has the potential to work as an incentive for companies to lower its emissions due to the costs of compensating. The higher the emissions, the more money needs to be spent on compensations (Naturskyddsföreningen, n.d.). As for now, carbon offsetting has an important role in mitigating and adapting to climate change (Duarte et al., 2017).

### 1.1.4 Partner company

This thesis is written in collaboration with Nordic Seafarm, a company that cultivates seaweed on the west coast of Sweden with customers mostly in the food industry. Nordic Seafarm was founded in 2016 by a group of scientists, after doing research on larger seaweed cultivation on the Swedish west coast and how it affects its surroundings (Nordic Seafarm, n.d.). Their aim became to make seaweed as self-evident on the European market as it is in for example Japan, where a person eats on average 4 kilograms of Seaweed per year (Nordic Seafarm, n.d.). Nordic Seafarms goal is in other words to make seaweed a more sufficient sustainable food in people's everyday life. The company collaborates with several successful restaurants and food production companies to develop new innovative ways to make seaweed more obvious in the European kitchens (Nordic Seafarm, n.d.). At this point, the company is looking for ways to expand the business to more than food production and make more use of the benefits of seaweed.

#### 1.2 Problem discussion

To this date it is known that seaweed has several benefits other than being a nutritious food. But what is less known is how these environmental benefits of seaweed can be taken advantage of in a corporate setting practically, to mitigate environmental problems. Thus the fact that seaweed cultivations can sequester carbon, it can be thought to be a good fit for a kind of carbon offsetting project. With this said, there is research in the literature looking at carbon offsetting possibilities of seaweed. For instance Thomas et al. (2020) have conducted Life Cycle Assessments (LCAs) of seaweed cultivations, which shows that the cultivations are sequestering more carbon than the amount of carbon emitted during the production chain of seaweed products. Thomas et al. (2020) compares several different ways of hatchery, cultivation and preservation of seaweed cultivations, and points out that it has the potential to produce low-carbon biomass in Europe and in Sweden, while simultaneously contributing to mitigation of eutrophication as well as sequester carbon from the atmosphere. Though, this research has not included emissions caused after selling the produced seaweed products. More research and LCAs need to be developed to further gain knowledge of the true potential of seaweed cultivation as carbon offsetting and to make sure maintaining a sustainable biomass production (Thomas et al., 2020).

Froehlich et al. (2019) investigates the potential of growing macroalgae e.g. seaweed to sequester carbon from the atmosphere, to then deposit the seaweed to the bottom of the ocean in order to act as a carbon sink for thousands of years. The seaweed cultivation industry for carbon offsetting is presented in the paper to have a great potential for scaling up since it does not take up any land, but technology development is said to be needed to facilitate the depositing of seaweed (Froehlich et al., 2019). Furthermore Hasselström et al. (2018) have stated that seaweed cultivations mainly has a positive impact on ecosystem services, as of supporting, regulating, provisioning and cultural services, except for the latter due to the recreational disadvantages around the cultivations.

In sum, previous literature shows the possibilities of carbon offsetting through seaweed cultivations, but as for now it is not proved to keep the promise of offsetting carbon. This may be a consequence of the uncertainty regarding the CO<sub>2</sub> balance in the atmosphere affected by seaweed cultivations' (Hasselström et al., 2020: Hasselström et al., 2018), which

is highly dependent on different factors such as energy use in the production stages and postharvest usage of seaweed (Hasselström et al., 2020).

Furthermore, potential issues regarding carbon offsetting have been identified in the literature, such as uncertainty regarding what emissions actually gets covered by the carbon offset, the time frame of when the carbon reduction will be made and the lack of communication if the project fails to reduce carbon as promised (Polonsky et al., 2010). Considering these issues, the concept of carbon offsetting and how it is shaped today might not fit the seaweed cultivation industry due to the contemporary lack of scientific proof regarding its effectiveness. Instead, solutions can potentially be found in other ways to develop the seaweed industry and make use of the environmental benefits that seaweed is shown to have. Garpe (2008) explains the potential of harvesting nutrient-binding organisms as under-used, stating the future potential for farming algaes to reduce eutrophication. As an example, a successful project between the municipality of Lysekil on the west coast of Sweden and a mussel farm has been conducted where blue mussels are harvested in order to clean the ocean from nitrogen releases caused by a local sewage treatment plant (ibid). This type of project and similar ones can be seen as an *environmental project* aiming to benefit the environment, which might be a better fit for the seaweed cultivation industry.

Thus a new concept for using the full potential of seaweed cultivations is needed, where the seaweed cultivation companies can not only sell seaweed as a food, but expand its business to additionally offer companies to invest in seaweed cultivations, potentially as a part of companies' CSR-efforts. Luyet et al. (2012) writes that it is important to characterize stakeholders to understand their interests in environmental projects, which includes e.g. attitudes and interest to the project and access to resources. Hence, it is of interest to gain knowledge regarding what potential customers desire in terms of investing in environmental projects, as well as how projects like this are perceived, which is missing in the literature today. This is of importance to be able to present a value proposition for a new type of environmental project. A value proposition is the way a company brings value and satisfies customer needs through its product or service and should be shaped to attract the chosen target market, therefore it is important to get to know the target group and their needs (Kotler et al., 2013). Accordingly, the unused potential of seaweed's several benefits is not well investigated in the literature, and this research therefore further investigates the development

of seaweed cultivations as a sustainable and trustworthy environmental project for companies to invest in.

### 1.3 Purpose

The purpose of this research is to increase knowledge in how the seaweed cultivation industry can potentially expand its business by offering an environmental project for companies to invest in.

### 1.4 Research questions

In order to fulfil the purpose, the following questions will be answered:

- What is the corporate interest to invest in seaweed cultivations as a concept of an environmental project?
- In order to meet the needs from potential customers, what is important to take into consideration when formulating a trustworthy and sustainable value proposition of seaweed cultivations as an environmental project?

#### 1.5 Delimitations

This research is delimited to study the possibilities of expanding the seaweed industry on the west coast of Sweden, where the main type of seaweed grown is sugar kelp (*Saccharina latissima*) (Hasselström et al., 2018), which accordingly is the seaweed referred to when writing "seaweed" in this paper. Another delimitation is the business-to-business (B2B) approach regarding whom the sustainable value proposition is aimed towards. In other words, the research is focused on gaining knowledge regarding companies as potential customers of the seaweed environmental project, and does *not* concern individuals as potential customers.

To clarify, areas that are beyond the scope of this paper and *not* researched are e.g. quantitative data on the environmental benefits regarding seaweed, such as how much CO<sub>2</sub>, N or P seaweed can bind or how effective seaweed cultivations are as an environmental project compared with other environmental projects such as tree planting. This research is instead taking a closer look into the market possibilities of a seaweed environmental project.

#### 1.6 Contributions to the literature

From a practical point of view, this research strives to contribute with better insight for companies operating in the seaweed industry on how to develop and present a new concept that creates value to stakeholders at the same time as it favors the environment. By filling the knowledge gap in this field, it may facilitate potential growth of the seaweed farming industry as well as making seaweed an acknowledged mitigator of climate change and eutrophication. At the same time, greater attention may be drawn to seaweed as food which is characterized by its low environmental impact and nutritiousness (Thomas et al., 2020). To not address this problem would be to miss out on a great possibility for expansion of the seaweed industry in Sweden that can contribute to several environmental benefits and play a role in mitigating climate change.

This research will, from an academic perspective, provide market research on businesses perspective and beliefs about carbon offsetting and environmental projects, as well as corporate interests and preferences in the matter of seaweed cultivation projects. This is lacking in the literature today, and the findings of this study strives to contribute to the literature of sustainable value propositions as well as industry attitudes and preferences regarding CSR-activities.

### 2. Theoretical framework

The theoretical framework outlines the foundation of this thesis. Firstly the concept of value proposition is defined, thereafter Corporate Social Responsibility (CSR) is defined along with different drivers for implementing CSR-work in businesses. Next, stakeholder theory is presented which is followed by isomorphism, legitimacy theory and literature on how to avoid greenwashing.

### 2.1 Value proposition

In similarity to Kotler's (2013) description of a value proposition, further explanations regarding the concept exist. Lanning and Michaels (1988) describe the term value proposition as what benefits a business offers customers and to what price. According to the authors it is of importance to analyze the sort of benefits customers desire and how much they are willing to pay for those benefits, as well as taking competitors and costs into consideration, which often requires businesses to research to gain a deeper understanding of the market (Lanning and Michaels, 1988).

Later on scholars have stated that not only customers have needs but multiple stakeholders, therefore value propositions can be formulated to meet their needs, such as value propositions to improve relationships with suppliers or shareholders. Value can also be created on reciprocal terms, where both parties communicate their desires and benefit from the value outcome. Furthermore some scholars additionally argue that the reciprocal value proposition can also be proposed by the customer (Ballantyne et al., 2010). With this said, Ballantyne et al. (2010) states that the concept of value proposition has developed over the years, from businesses delivering value to customers to co-creating value in a more service-based perspective. With reciprocal value propositions, the authors express that trustworthy, long-term relationships can easier be built (Ballantyne et al., 2010).

A value proposition that balances economic, social and environmental needs and creates value for multiple stakeholders, the society and environment can be presented as a *sustainable value proposition* (Boons and Lüdeke-Freund, 2012). With this said, a holistic approach of the value proposition is needed that considers the societal and environmental benefits and costs (Bocken et al., 2013). Baldassarre et al. (2017) writes that a sustainable

value proposition can come from a combination of the three following activities; to create shared value to multiple stakeholders, to address the sustainability problem and lastly to develop a product or a service that tackles the problem meanwhile considering the needs from stakeholders, as shown in Figure 1 below.



Figure 1. Sustainable Value Proposition Framework (Baldassarre et al., 2017, p.177).

#### 2.2 CSR

The movement of Corporate Social Responsibility (CSR) has increased momentum in the last decades (Crawford and Scaletta, 2005). As for now, there is no determined definition (Ihlen et al., 2011) and clarity in the field of CSR has been challenged by researchers (Brown and Forster, 2013). Ihlen et al. (2011) highlights few of the many explanations of CSR, such as it being a strategy for corporations to achieve long-term profit maximization or a way of conducting business while taking the environment and society into consideration. The authors themselves define CSR as an activity where corporations try to meet the demands from not only its stakeholders but the public as a whole, e.g. by making improvements on its policies or an operational level (ibid.). European Commission (2011) defines CSR as "the responsibility of enterprises for their impacts on society", and also puts emphasis on the importance of preventing and mitigating these impacts. With other words the area of CSR involves many concerns for corporations such as ethics, social and environmental impacts (European Commission, 2011; Crawford and Scaletta, 2005), but also profitability and transparency, which therefore requires corporations to have a holistic approach when it comes to strategic thinking and to consider multiple stakeholders (Crawford and Scaletta, 2005).

#### 2.3 Drivers for CSR

In the path to progress and change within corporate climate strategies, it is important to identify and analyze companies' underlying reasons for doing its CSR-efforts (Okereke, 2007). In the literature scholars have suggested several reasons for companies to adopt CSR, which range from multiple internal and external factors (e.g Dummett, 2005; Okereke, 2007; Zhang et al., 2017). Drivers are considered as external forces upon the company to take action, whereas motivations are factors that without external pressure can initiate climate action (Okereke, 2007). Okereke (2007) suggests that the main motivations for undertaking climate actions are e.g. profit, competition for credibility, to avoid risks and to consider ethics and morals. Some of the main drivers are presented as government regulations, market shifts and investor pressures (Okereke, 2007).

Zhang et al. (2017) identifies market drivers as main drivers for adopting CSR, since companies exist in multiple markets which all, in some way or another, affect firms profitability. Consumers are increasingly demanding CSR and therefore prefer to purchase products and services from socially responsible companies. To avoid the risk of boycott, companies will need to comply with consumer demands (Zhang et al., 2017). Dummett (2005) also put emphasis on market forces, more specifically pressure from consumers, as a main driver for companies to take environmental responsibility. Another pressure for adopting CSR is the labour market, as employers want to attract skilled employees that may prefer to work for companies conducting proactive CSR-efforts (Zhang et al., 2017). Moreover, social drivers such as societal pressures, media, community groups and nongovernmental organizations (NGOs) are important drivers (Dummett, 2005; Zhang et al., 2017).

## 2.4 Criticism against CSR

CSR has been criticized in the literature to legitimize unsustainable businesses and may lead to corporations speaking higher of its sustainability efforts than what actually gets done (Ihlen et al., 2011). Thus, three main critical arguments are presented by Freeman and Dmytriyev (2017). The first one says that CSR is immoral and violates the "owners" by investing in social matters where the business is not involved which can be seen as "stealing" from shareholders (ibid.). The critics mean that social matters should be taken care of privately instead (Friedman, 1984). The second argument is that CSR is only being used to

recover a bad reputation by doing something good to cover wrongdoing (Freeman and Dmytriyev, 2017). The third aspect seeks to criticize the part of CSR where it is trying to emerge two subjects that are completely opposite; economic vs. social or business vs. ethics and so on (ibid.). CSR needs to face the criticisms as challenges and Freeman and Dmytriyev (2017) believes some ideas from stakeholder theory can complement CSR theory.

### 2.5 Stakeholder theory

Stakeholder theory is an amalgamation of several different stories and theories that has its foundation in defining stakeholders who have interests in an organization (Miles, 2017). Furthermore, stakeholder theory is not only defining stakeholders, it is a model describing what a corporation actually is. A lot of value is put on stakeholders by stakeholder theorists, expressing that a corporation's relationship to primary stakeholders are crucial for survival. Therefore, it is of great importance for corporations to identify stakeholders and work on these relationships in order to maintain a successful business. Stakeholder theory emphasises that all stakeholders with legitimate interests in an organisation are equally interdependent and they all want to obtain benefits from each other. As shown in Figure 2, it is a mutual dependent relationship with both inputs and outputs from both sides, e.g. the corporation and the customers (Donaldson and Preston, 1995).

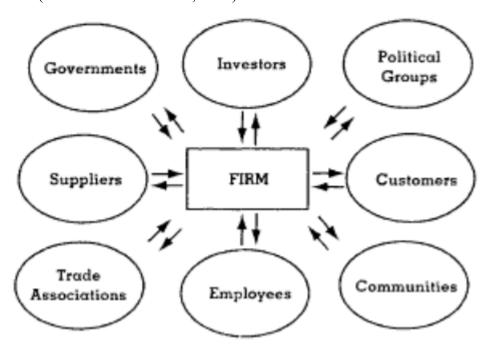


Figure 2. The Stakeholder Model (Donaldson and Preston, 1995, p.69)

A similarity between CSR and stakeholder theory is that both are based on the belief that incorporating societal interests into business operations are important (Freeman and Dmytriyev, 2017). Although stakeholder theory has partly focused on the business connection to society, this is just one of many relations. On the contrary, CSR mainly focuses on the relation to society. Stakeholder theory's main finding is that a corporation should take all stakeholders in consideration and create value for them, whereas trade-offs between primary stakeholders should be avoided. CSR can also be divided into several stakeholders, but only in the context of the society as a whole, and does not touch any other aspects of the business. Stakeholder theory has more focus on stakeholders in the close surroundings, while CSR can go beyond local societal issues, for example help fight diseases in other parts of the world where they are currently not operating. Furthermore Freeman and Dmytriyev (2017) argues that stakeholders are interdependent and when value is created for one stakeholder, it will additionally create value for another. For example, by helping communities, shareholders can get more motivated, employees might get more productive and the reputation of the company can become better, which may lead to bigger sales and increased corporate rankings (Freeman and Dmytriyev, 2017).

### 2.6 Isomorphism

DiMaggio and Powell (1983) explains that organizations are getting more and more homogeneous and the process that causes this is called isomorphism. This process is said to "force" a unit or company to change and accordingly resemble other similar parties that are facing the same environmental conditions (Hawley, 1968). DiMaggio and Powell (1983) mean that organizations, besides competing for customers and resources, also compete for institutional legitimacy and identify three mechanisms where change in the area of institutional isomorphism appears (DiMaggio and Powell, 1983). These three mechanisms are *coercive*, *mimetic* and *normative* isomorphism. Coercive isomorphism is when there are forcing external changes in the surroundings where it is dependent on, and are often due to political influences and legitimacy problems of organizational changes. Mimetic isomorphism refers to the results of the action of uncertainty, where it leads to imitating other similar organizations they perceive more legitimate or successful (DiMaggio and Powell, 1983). Normative isomorphism is associated with professionalization (ibid.), where it refers to professional transmission of norms, but also social pressures from other organizational members (Mizruchi and Fein, 1999).

### 2.7 Legitimacy theory

Legitimacy theory seeks to explain the importance of all organizations to be legitimate (Maroun, 2018). A frequent definition of legitimacy used in academic literature is by Suchman (1995, 574): "Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions". In organizational legitimacy it is essential to be a legitimate part of society and constantly work with legitimacy so important stakeholders continue to support, which is crucial for the existence of an organization. Literature splits legitimacy theory into institutional and strategic, where institutional legitimacy seeks to explain deep beliefs, value systems and definitions of the social system that the operation of external institutions is part of. Legitimacy, in this context, comes from aligning and integrating the business with these factors and expectations from society, rather than 'extract' legitimacy from different actions (Meyer and Rowan, 1977; DiMaggio and Powell, 1983). Strategic legitimacy is said to be an extension of stakeholder theory, whereas legitimacy is used to maintain and manage stakeholder relations. Modern organizations mostly need a mix of institutional and strategic pressures, and therefore both legitimacy perspectives are needed (Maroun, 2018).

What is additionally important to mention is that legitimacy is not constant, potential gaps in the area might occur after changes in the function or operation of the organization (Suchman, 1995), if negative events occur surrounding the corporation (Deegan, 2002) or if there are any changed societal expectations or public pressures (O'Donovan, 2002). Proactiveness is an important factor while developing legitimacy in organizations, being alert to stakeholder expectations and challenges. This can for example be achieved through reacting to certain threats in the surroundings of the organization, by impact limiting activities, presenting and communicating the situation as extraordinary and ensuring stakeholders that they will continue to support them (Ashforth and Gibbs, 1990; Suchman, 1995).

## 2.8 Avoiding greenwashing

It is becoming more and more common for companies to promote their green actions in different communication channels, showing customers what positive effects they are bringing for the environment and society (Dahl, 2010). Since the public is getting more concerned, and it is becoming the "new normal" for all companies in different sectors to advertise its

sustainability efforts, there is a risk of being accused of *greenwashing* (Dahl, 2010). Greenwashing occurs when companies speak too highly of its sustainability efforts and the perceived impact of those efforts misleads customers (Gordon et al., (2011). Communicating transparently can be seen as more important than being a perfect company (OgilvyEarth, n.d.), thus honesty should be a priority (OgilvyEarth, n.d.: Horiuchi et al., 2009). Therefore, a company should adopt a radical transparency policy (OgilvyEarth, n.d.).

# 3. Methodology

The chapter of methodology carefully describes and motivates the methodology chosen for the study and how it was conducted. It begins with motivating the research approach and the choice of participants, further it in detail explains how the authors performed the collection of data and lastly includes a critical discussion of the research methodology.

### 3.1 Research design

This study seeks to understand seaweed cultivation in a context of an environmental project, and how it is perceived by companies. The starting point can be explained to be a study of exploratory kind, which is used when seeking to understand a situation or a problem that is not clearly identified, such as where the area of study is at primary stage (Cooper and Schindler, 2011). Furthermore the research is conducted through a qualitative method which is suitable when researching social processes (USC, 2021). Qualitative research can be used in order to come to terms with, and in-depth describe, why e.g. situations or phenomenons happen, or to understand e.g motivations and experiences, by investigating people, communities or organizations (USC, 2021; Cooper and Schindler, 2011). These characteristics therefore make it an appropriate method for this particular research since it aims to gain knowledge in the corporate perception and interest regarding a new developing service on the market, more specifically seaweed cultivation as an environmental project, and how this project can be presented as a value proposition. The chosen research method has favoured the involvement of the partner company Nordic Seafarm, who has given insights along the process, for example influencing interview questions. It therefore has been suitable in this matter since qualitative research allows flexible ways of data collection (Cooper and Schindler, 2011).

Additionally, regular contact via email has been done with Nordic Seafarm, the distributed supervisor and Miljöbron, which is the organization that connected the authors of this thesis to the partner company for a collaboration. Continuous reconciliations ensured that the research was going the right direction for all involved parties.

The strategy of the research was through an inductive approach (Patel and Davidson, 2019), meaning that the researchers first studied the research case and later connected and related it to appropriate theory. Before the interviews were conducted, it was difficult to know exactly

what theory would suit the research, but was made clearer afterwards. By seeing what the interviews brought, appropriate theory could be found. This way of doing research is additionally appropriate in this matter since the interviews could be made more freely and without assumptions according to Patel and Davidson (2019).

### 3.2 Sampling respondents

In order to make as interesting findings as possible and to be able to answer the research questions, a subjective sampling approach was chosen. Based on the subject of seaweed and its positive environmental effects, the authors of this thesis concluded that the most suitable companies to interview were companies that have an environmental impact through emissions of N and P. This through its direct operations or closely connected to the operation such as through its suppliers. From that starting point, two main industries were chosen; the food- and the logistics and transport industry. Companies in these industries were thought to be the possible main target group of the environmental project that this research is focusing on. Another criteria for the respondents was that the companies needed to be sustainability oriented in one way or another. The respondent needed to be engaged in environmental questions in the company as well as having knowledge of the company's environmental activities to answer the interview questions. Contacting sustainability managers or similar professional roles was therefore prioritized. The chosen way of sampling goes in line with Cooper and Schindlers' (2011) description of purposive sampling, where the participants are chosen for their specific characteristics and new participants may be looked for along the process.

To find suitable participants for the interviews, the authors used the website of CSR Västsverige, which is a not-for-profit association that acts as a sustainability network for businesses in order to develop more sustainable business operations (CSR Västsverige, n.d.). Member companies within the chosen sample frame were requested to take part in an interview by email, and by asking CSR Västsverige's member companies, the authors of this thesis could ensure that the companies were interested in, or working with, sustainability. Furthermore requests from Nordic Seafarm regarding desired companies to interview were taken into consideration when choosing potential participants, though careful review of the suggestions were made in order to ensure that the participants would be suitable in the

context of this research. Additionally, top-of-mind judgement sampling was done by the authors due to lack of responses, so the sample size would at least exceed five interviews. Though, the qualitative research method chosen allowed the sample size to be small in order to get a more in-depth understanding of the situation (Cooper and Schindler, 2011). Time and place (e.g. Zoom) for the interviews were decided through e-mail contact with the willing participants, considering their availability and preferences.

In addition, an expert interview was conducted with a restaurant manager and chef who is active in the seaweed industry. The restaurant manager has won several chef competitions in Sweden and has worked in prestigious restaurants, mostly on the west coast of Sweden. He is the manager of several restaurants in the area, specializing in seafood and local ingredients, and also has experience within many highly nominated restaurants (Årets Kock, 2015). The expert has been in contact with the partner company Nordic Seafarm, developing collaborations between Nordic Seafarm and restaurants regarding seaweed. He has knowledge in the area of seaweed cultivation, the partner company and the restaurant industry. An interview was made with the expert to gain more knowledge of the restaurant industry's point of view, the potential of developing an environmental project in this industry and connect and compare this to the other interviews. Interesting conversations with an expert can be developed since the person is knowledgeable in a certain subject according to Kvale and Brinkmann (2014), thus the insights from the expert were motivated to use in this qualitative research.

#### 3.3 Data collection

Previous literature was firstly carefully searched for. The secondary data was reviewed in order to use the most relevant material, such as for the background information, problem discussion and theory section of this paper. Prior academic literature was searched for and collected physically via the University of Gothenburg's library as well as online via the library's online catalog. Commonly used words for searching relevant previous literature were e.g.; "Environmental projects", "Seaweed cultivations", "Carbon offsetting" and "Sustainable value proposition".

Though, the primary data collection of this research is through seven semi-structured interviews. Semi-structured interviews are useful in research when it is desirable for the interview process to be flexible, open and made with two-way communication between the participants, where new questions and subjects can be brought up along the way, requiring the interviewers to be creative (Elliot et al., 2016; Cooper and Schindler, 2011).

A pilot interview via Zoom was firstly held with a person selected through the author's personal network. The person is experienced in working with university students doing projects and theses and was therefore considered a suitable respondent for the pilot interview. Some of the interview questions were adjusted after the feedback from the pilot interview to make the questions easier to understand. Thereafter the interviews were held via Zoom and Microsoft Teams, at different dates and times during April 2021. Online interviews save time and make it possible to interview objects from a wider geographical area (Cooper and Schindler, 2011), which was prefered by the researchers but also essential in the prevailing pandemic. All interviews were recorded on two phones and notes were written on Google Document during the interviews to ensure back-up if technical issues would occur.

The interviews (*see appendix*) followed hierarchical questioning structure, starting with broader questions to then narrowing it down to the specific interest of the researchers, which facilitates the feeling of having a lot to contribute for the participants according to Cooper and Schindler (2011). In short the interview started off with questions about the companies general CSR-activities, drivers for CSR-efforts and ongoing work with external environmental projects, to further concern the business connection to the ocean environment and lastly interests to engage in, and thoughts regarding, a concept of a local environmental project of seaweed cultivations. The interview questions were constructed after considering the partner company Nordic Seafarms' desires, and the questions were structured and formulated on Google Document as a starting point for the researchers, each the same in every interview. However, as the aim was to conduct semi-structured interviews, the preprepared interview questions were only used as a guide and the researchers allowed open conversations where new, following or slightly changed questions were asked throughout the interviews.

#### 3.4 Research ethics

In order to follow research ethics and as a manner of respect for the participants, the researchers started the interviews by presenting their names, home university as well as informing the participants background facts of the topic, the collaboration with the partner company, the purpose of the study and the purpose of the interview. According to Cooper and Schindler (2011) an introduction like this puts the participants to ease, makes them feel comfortable and improves honest cooperation. Additionally the participants were given the choice to be anonymous, and consent of audio-recording the interview was asked for.

It was important when creating the interview template to find an ethical balance so that the best result and answers possible would be gathered. Therefore, the authors were careful not to ask questions that could be sensitive or offend the respondents, but a risk from this could be that some important material might get excluded. An example, the respondents often wanted to speak about what the companies are doing for the environment, but were not as prone to speak about what the companies are lacking, which is something the authors did not try to question. This is an ethical dilemma fundamental for qualitative research, wanting a deep interview but at the same time wanting to show respect for the respondent so that the empirical material does not end up being on surface level (Kvale and Brinkmann, 2014).

### 3.5 Data analysis

All secondary data collected via websites and the library were firstly analyzed, referred to as secondary data analysis by Bell et al. (2019). When doing so the researchers looked for relevant material to use as a foundation for this research. Further on the collected interview material was listened through and transcribed in order to easily process and compare all material. All irrelevant text, in relation to serving the purpose and answering the research questions, were sorted out. Thereafter the empirical material was analyzed in order to find e.g. similarities and differences between interview responses, patterns, themes and ideas in recurring responses as well as relate the results to existing theories. According to Bell et al. (2019) this method named thematic analysis is common when analyzing qualitative data.

#### 3.6 Critical discussion and delimitations

Qualitative methods can be criticised for being subjective where the importance of the study is decided from the researcher's perspective, as well as being hard to replicate because of the

unstructured procedures (Bell et al., 2019). With this said, there are reasons to discuss and evaluate the research quality. The error sources, characterized by the chosen method of qualitative data collection through interviews, may have affected the relevance of the research results. Firstly the respondents characteristics such as job position may have affected their knowledge in the area, as well as temporary and situational factors like stress or disturbance during the interview may have affected the results (Cooper and Schindler, 2011). The researchers of this thesis are aware that these factors most likely affected the validity of the research, which in sum means to the extent the measuring is relevant. Internal validity is about whether the measuring accomplishes what it claims to do, and external validity is about if the findings can be generalized in a bigger context (ibid.; Bell et al., 2019).

In order to reach good internal validity, previous research was reviewed to find gaps in the literature and what was important to study when researching the chosen area, which thereon was used as a foundation when constructing the interview questions. A pilot interview was held, which can help detect weaknesses in the research design (Cooper and Schindler, 2011). A pilot test was therefore motivated to conduct in order to ensure that the respondents understood the interview questions with clarity as far as possible. Furthermore the times for interviews were chosen by the respondents which might have avoided temporary errors, such as stressed respondents, and enhanced the ability to thoughtfully answer the questions. Emails were also sent to a few of the respondents after the interviews, to ensure what they said was perceived correctly by the researchers. The strive was to interview respondents working with sustainability questions within its organization, yet biased attitudes or lack of knowledge may still have occurred during the interviews. In similar ways, the interviewers may have e.g. influenced or encouraged the respondents answers (ibid.). Additionally, the partner company had influence on the interview questions which moreover can be cause biased questions.

Furthermore, interviews with companies of different sizes and in different industries were chosen to better the external validity, so the findings can be applicable and interesting in a more generalized setting. Though, for a more general conclusion, it could have been beneficial to conduct more interviews. This is in accordance with Bell et al. (2019) who puts emphasis on the problems with generalizing as criticism of qualitative research. But with the given time frame and difficulties finding relevant respondents for the research, only seven companies were interviewed, which therefore have affected the possibility to generalize the

findings to other settings. However statistical generalization is not the purpose of this study, but rather contextual understanding of e.g. values and beliefs as explained by Bell et al. (2019) regarding qualitative research. Moreover, the purposive sampling method can also be criticised for being biased (Cooper and Schindler, 2011), but was relevant for this study because of the criterias the researchers had on the respondents.

Further criticism is that the researchers also believe that it would have been better to explain the concept of seaweed cultivation as an environmental project more thoroughly before the interview. It was briefly explained to the respondents, but knowledge gaps and misunderstandings may have affected the perception of the idea. The concept is yet not fully established, which may have delimited the findings to be more general rather than in-depth. A more thorough explanation could have strengthened the validity.

## 4. Empirical results

In this section we begin to present the respondents from the interviews, with focus on which companies they represent and what the companies are doing, whereas one respondent stays anomonous. After that, the interviews will be presented, each topic by itself. The interview respondents in the food industry will be called F1, F2 and F3 in the empirical results and the transport and logistics companies will be called T1, T2 and T3. There is no particular order on these alias, meaning the respondents are presented in a random order below. This to keep the respondents specific statements anonymous. The public transport company will sometimes be referred to as the "the public transport company" when it differs from the other logistics and transport companies. Lastly, the restaurant manager will be referred to as "the restaurant manager" since it is an expert interview and differs from the other interviews. The interviews were held in Swedish and the quotes in this section are therefore translated from Swedish to English.

### 4.1 Presentation of respondents

Margareta Johannesson is Quality and Sustainability Manager at Almondy. Almondy is a Swedish bakery, producing a variety of frozen almond cakes, selling them to different supervisors, such as supermarkets, around the world. The headquarters and bakery is located in Torslanda, just outside Gothenburg, Sweden. The company produces approximately 75 000 desserts each day, delivering to more than 50 countries (Almondy, n.d.).

AnnaLena Norrman is Director of Sustainable Development and Quality at Martin&Servera. Martin&Servera is a Swedish wholesaler for various restaurants and commercial kitchens and is market leader in the country. It is a family owned concern with approximately 3200 employees and has more than 25000 customers and partners around the country (Martin&Servera, n.d.).

Annika Ohrstrand is QEHS (Quality, Environment, HR and Safety) specialist at Geodis Sweden. Geodis is a global logistics and transport company, and worldwide leader in the market. In Sweden, Geodis has nine offices, 350 employees (Geodis, n.d.a) and generally help their customers with logistical manners, transporting goods through air freight, shipping and road transport (Geodis, n.d.b).

Hanna Björk is Sustainability Manager at Västtrafik. Västtrafik is a public transport company operating in the west of Sweden and is owned by Västra Götaland Regional Council. The company has vehicles all around the area, operating trams, buses, boats and trains (Västtrafik, n.d.).

Michelle Gustavsson is Human Resources Manager at CMA CGM, but is additionally the one taking care of sustainability at the Gothenburg office. CMA CGM is a global shipping, logistics and cargo company, operating in over 160 countries and is the world's fourth largest container shipping company. The Scandinavian regional head office is located in Gothenburg, and the number of employees in Scandinavia is approximately 100 people (CMA CGM, n.d.).

One of the respondents is a Sustainability Manager at a large supermarket chain in Sweden. The respondent will stay anonymous.

Thomas Sjögren was the chef of the year 2015 in Sweden, now operating and managing several restaurants and taverns on the west coast of Sweden. He has experience within several large "star" restaurants and won several chef prizes and competitions (Årets Kock, 2018).

### 4.2 Empirical results from interviews

#### 4.2.1 Drivers for working with sustainability

Most of the interviewed companies express that customer demands are the most important drivers to act environmentally friendly and in general work with CSR. This is because the demands from customers are putting pressure on the corporations. T1 explicitly expresses that customers' sustainability interest has risen a lot the last few years. However, T1 explains that the demand from customers varies, some customers are concerned about the environment while some are not. The company is therefore more or less controlled by customer demands when it comes to conducting sustainability activities if it affects the price to the customers, and since the demand fluctuates, the company's activities have to change accordingly. T1 also says that a strategy the company works with is to create awareness and educate its customers.

F3 believes that it is getting more mandatory for all companies to work with environmental questions today; it would be weird if large companies did not. Furthermore F2 expresses that by not working with sustainability, a company will not survive in the long term.

Three companies, F1, F3 and T2, additionally express that the owners', board's or management's interest is a main drive. For instance, F3 says that the company's management has been interested in sustainability for a long time and therefore they believe it is at the core of their business. T2 tells that the CEO of the company is very concerned about future generations and therefore works with CSR and sustainability. F2 also adds that the organization has very interested and engaged employees, which F2 believes is a necessity to do successful sustainability work. The respondents also mention other stakeholder pressures that are drivers for working with sustainability, such as shareholders, future employees and the surrounding society.

On the contrary, T3 says it is politically driven, which therefore is the reason for working with CSR. T3 mentions that the company has to work with political goals, such as the climate goals when it comes to the environment.

F4 explains that the main driver for the restaurants to work sustainably is that they want to influence and educate guests. They hope to make a difference by talking to them in the

restaurants, e.g. by giving them stories about how they grow their own local food. F4 says that not many guests go to a restaurant to demand sustainable meals, they just desire a tasteful meal.

#### 4.2.2 Engagement in external environmental projects

F1 in the food sector explains that the company is involved in something called "Hållbar livsmedelskedja" (eng. "Sustainable food chain") together with World Wide Fund for Nature (WWF), where 14 other big food companies and producers also are involved. The respondent means that the collaboration aims to make the food industry more sustainable. Another organisation F1 is working with is one that aims to reduce food waste, which most interviewed respondents in the food industry agreed was one of the most important environmental concerns of its industry.

None of the food companies do carbon offsetting yet. Several interviewed respondents express disbelief in carbon offsetting projects, due to it not always being as solid and trustworthy as these companies would wish. Two respondents, F1 and F2, mentions carbon offsetting as "the last way out", and means that focusing on reducing emissions within the operation is firstly more important. F1 is aware of the critique towards the concept, but at the same time sees some qualities of it that might be useful in the future.

"I guess that we will do carbon offsetting maybe within 4-5-6 years or so, whenever we can say with pride that we carbon offset the last bits we cannot decrease" - F1

Furthermore, F2 mentions that the company has been working with Tricorona when counting the carbon dioxide equivalents on a few of its products. Tricorona is a company that helps other companies with e.g. carbon offsetting. F2 tells about Coop's new concept where it is possible for customers to scan products on their phones to be able to see the climate impact the product has, and F2's products are included in this concept and therefore can see the ingredients impacts. F2 believes this concept may be big in the future. The respondent also speaks about how some kind of offsetting towards clean water could be interesting, because of its high water usage.

T1 expresses the importance of being transparent to its customers, and has therefore not conducted carbon offsetting. The company has previously looked into carbon offsetting

projects but experienced difficulties because the companies conducting the projects could not precisely report where all the money went. T1 would prefer the information to be more precise, since the customers would ask for this. Additionally, the company has seen little interest from customers to carbon offset, especially during these uncertain times due to the pandemic. Though, if a customer demands some kind of carbon offsetting, the company can fix it with help from Tricorona on behalf of the customer. This has happened one time, T1 says.

T2 mentions it is working specifically with the 17 SDGs, and internally the company is working to engage employees in CSR-efforts. T2 believes that external environmental projects as well as engaging employees in doing good for the planet and the people will benefit the organization. Two respondents in the logistics and transport industry express that the demand from customers for carbon offset is not specifically high, and that it is more important with lower prices right now, but that the demand potentially has decreased because of the ongoing pandemic.

F3 does one external project in partnership with Rädda barnen (*Save the Children International*), where customers can donate money from recycling cans and bottles. However, F3 states that most of the company's environmental efforts are decided by its owners. She also mentions that carbon offsetting for instance, and other external projects, are a matter for the owners and owner foundation, therefore the company itself can probably not decide too much. F3 means this is because if a good idea occurs, it will be more effective top-down as it will be spread to all parts of the business group.

The respondent from the public company says it is not possible to invest in external projects, since the organization is driven by tax money. Either way the public company nor the region is carbon offsetting its public transport industry, so far.

#### 4.2.3 Relevance of external environmental projects

All respondents believe it is important that environmental projects are closely connected to its operation. T1 says that the relation of the environmental project and the company itself is of great importance, and if the project is too disconnected from the business, the company can probably not join the project.

"You have to speak for what you do... What is in it for us?" - T1

F1 believes it would look a bit odd if the company invests in a project that is not connected to the products the company is offering. But, the respondent believes investing in tree plantations is not a "too far away thought" if the company ever wants to do some kind of carbon offsetting.

"Each organization has to look at its own part, and then you will have to hope that, in the bigger picture, most involved parties will solve its own issues" - F2

T1 states that the environmental projects can pretty easily be connected to transport but clearly states that the project needs to have a connection to the business, whereas T2 means that local projects that are relevant for the location of the office for instance may also be relevant for the company.

Furthermore T3 says that it is important that environmental projects the organization invests in should also have a connection to the business plan and that objectives set are being involved in the projects.

#### 4.2.4 Importance of ocean environment

Two of the food companies see the ocean environment as important (F1 and F3), since these companies have a big part of the food selection coming from the ocean. F3 explicitly utters the importance of working to improve the ocean environment and other environmental aspects now, or the company will not have anything to sell in the future which is not secure long term. F2 is more interested in working with projects concerning fresh water, rather than the ocean environment. According to the company, the ocean environment is important since the company is transporting its raw materials through ocean shipping all over the world, but not a huge importance for its operation, since the company is not using anything from the ocean in its production or selection.

The logistics and transport companies see a bigger connection to the ocean environment, since these are operating and affecting the ocean environment through the ships. T1 says the ocean environment is vital for the company, due to a lot of ocean shipping. The company works towards a better ocean environment together with international organisations and other companies in a more discussion-based way to find solutions for all, but the company's own

ocean-related work is not as common. Though, T1 adds that maybe this is something the company should reconsider.

T3 does not see the ocean environment as one of its main issues. But T3 adds, that in general it is always important, since the company has a few ferries which have less technically developed motors than the vehicles on land whose motors are more developed in terms of greener technology.

F4 can see a close relation to the ocean environment and says to believe the ocean environment is vital for its survival.

"One can notice - there has been many years of overfishing and unbalanced ecosystems, and this is noticeable on the availability of raw materials of course... So that is something We are passionate about, to be able to make it better in some kind of way." - F4

Furthermore, most of the respondents do not know exactly how its operation affects the ocean environment. F1 believes the suppliers of seafood have more knowledge surrounding this. On the contrary, T3 considers how its emissions affect the ocean environment, and states to set contract requirements on the emissions of nitrogen oxides on its vehicles, but does not pursue any other issues or work with the ocean environment other than following up the agreements.

4.2.5 Interest in investing in external environmental projects connected to the ocean F1 believes that the organization is a bit "far away" from the production level to get involved in an external environmental project connected to the ocean. But, F1 states that if e.g. a fish supplier that provides fish and seafood for the company would engage in a project and want the company to join, the chance would be bigger for the company to get involved. But if the concept were to be a carbon offsetting project, it might be a good fit for F1 in the future. This organization is currently not doing any external environmental projects. F2 would not say no directly, but the chance is bigger to engage in the concept if the company actually would include seaweed in any of its products. F2 also thinks it could be more interesting if the company includes seaweed in products or the selection in the future. F3 believes the chance is bigger to get involved if the owners of the food retail group make decisions regarding support of environmental projects. This respondent thinks that if the project is exciting, relevant and

if she sees a future where the company can sell seaweed products in the stores, then it could potentially be a good idea.

T1 says it could be interesting if more information is provided. T2 expresses that the company had some difficulties finding projects and activities for its employees to engage in regarding the environment. It would be very interesting to them to have something to physically engage in.

T3 says that the biggest chance for the company to engage in an environmental project like this would be if there were any residues from the production that could not be used for other purposes and instead be used as biofuel and biogas. The respondent believes that if there was a project to test if it is even possible to use seaweed as biofuel, the company could potentially engage in it.

#### 4.2.6 What is needed before engaging

Precise numbers, information about the exact effects and where the money goes are important things to know for many of the interviewed companies before investing in an environmental project. The amount of engagement the employees need to spend on the project is also something some would like to know. T2 shows interest in engaging in real life, making the project an activity for employees, while T1 did express that the company does not have time to engage much.

F1 believes there is a lack of information regarding the benefits of seaweed. F1 mentions following newsletters but has not seen anything about seaweed, following up that it could be valuable to communicate it more to the society.

"It takes a good presentation that clearly shows what benefits we would get as buyers from such a project, so that we would even start thinking about it" - F1

All other respondents also mention having little knowledge about the benefits of seaweed cultivations, and that knowledge is very important when investing in anything. Some discuss that it is often easier to invest in larger, well known organizations because it feels more trustworthy and legitimate. T2 wants a full story about the seaweed cultivation such as; how come anyone should invest in it, what does the future look like for the seaweed industry, how will the company succeed with this idea, etc.

"It is not super easy to find projects that feel right for us. You think that these people do this to make money... You want to find an organization that really focuses on doing something for the environment and not just make money from it." - T2

Lastly, many respondents still show interest in the fact that it could be a *local* project, because local projects are easier and more interesting to get involved in, even if the project is a bit disconnected from the corporation's operation.

### 4.3 Expert interview with restaurant manager

The restaurant manager explains what he believes are the interests in investing in seaweed cultivations within the restaurant industry. The respondent says that their greatest environmental contribution is that they try to grow and get their food and products as local and organic as possible. Therefore he sees a great opportunity in a collaboration between local seaweed cultivations and restaurants. The respondent has ideas on how this concept would look like. He believes that highly nominated restaurants could be a good start since those are more likely to take risks and are also more interested in using local and special ingredients. When the concept has been more established, the restaurant manager believes that it could spread to other restaurants as well. The respondent continues to explain that this is often the case within the restaurant industry; "star" restaurants start a trend and those trends later spread to other smaller restaurants.

The restaurant manager also explains ideas that have been discussed with the seaweed company. A concept could be that restaurants and other interested parties could invest in a small piece of seaweed cultivation and pay an over-price for the seaweed, for the several benefits that comes with growing it. Restaurants and other companies can potentially get, for example, a placard or a kind of "certificate" to prove that the company is supporting something good for the environment. Later on, the restaurant who "owns" the piece of seaweed cultivation could decide if they themselves want to use the seaweed, donate or sell it to another company, or potentially donate it back to the cultivating company.

## 5. Analysis and discussion

This following section gives a broad analysis of the empirical material in connection to the theoretical framework. It starts with analyzing corporations' drivers and attitudes towards engaging in external projects in general as well as investing in or supporting local seaweed cultivation projects in particular. Further it discusses how these findings may be used to present a sustainable value proposition of the concept.

## 5.1 Companies' drivers and attitudes towards CSR

To be able to understand the corporate interest in a seaweed environmental project, it is important to characterize stakeholders e.g. by learning about their attitudes and interests, as Luyet et al. (2012) explains when learning about stakeholders interest in environmental projects. Therefore, the following analysis is of value in this paper.

The interviewed companies show different approaches to work with CSR, and a diverse set of activities are conducted by the companies to benefit the planet or society. While some focus on lowering its environmental impact or donating money for societal good, others join collaborations with cross-border organisations to benefit the environment, which goes in line with how CSR is argued in the literature involving many concerns (European Commission, 2011; Crawford and Scaletta, 2005). As all respondents state the importance of working with CSR today, it gives indications that it continuously will be a relevant area in the future, meaning different kinds of environmental solutions can be of value for businesses.

Continuously, all interviewed companies state to make operational improvements, where different stakeholders often are drivers for doing so. This is in accordance with Ihlen et al. (2011) who explain that the reason companies conduct CSR is to meet demands from stakeholders and the public as a whole. Additionally, institutional legitimacy theory states the importance for a company to align and integrate the expectations from society (Meyer and Rowan, 1977; DiMaggio and Powell, 1983), which can be seen as an explanation why companies want to improve its entire business in a more sustainable direction to please the external societal expectations.

Both the empirical results and the literature show that the general main driver to work with CSR is customer pressure, which is an external pressure that forces corporations to take

action (Okereke, 2007). The empirical results confirm how vital it is to understand and follow customer needs, and if customers demand CSR-efforts from the company, it needs to act accordingly. As an example, a customer to an interviewed company in the logistics industry demanded carbon offsetting for its transported goods, and thus the company executed the request for them. The respondents' answer shows an action to comply with customers, which Zhang et al. (2017) discuss is important in order to avoid boycotts. Going against customers and risk being boycotted most likely harm long-term profitability, and the empirical results show that this is an approach the companies think of, as one respondent explicitly expresses the need of CSR for long-term survival. Furthermore Ihlen et al. (2011) additionally mean CSR can be used for long-term profit maximization, which may give incentives for companies to conduct CSR. Another driver the respondents mention is the internal desire to do good for future generations, initiated by engaged employees or the management of the companies. The internal desire can on the contrary, from the perspective of Okereke (2007), come from ethical reasons and is not affected by external pressure.

Two companies show indications of having strong labour market pressures, which also can be a reason for businesses wanting to explore new ways of conducting CSR-efforts, in accordance with Zhang et al. (2017) who identified labour markets as a main driver. One of the companies, in the logistics and transport industry, expresses demand for physical CSR-activities for a local office and its employees, while the other company in the food sector mentions the importance of CSR-efforts to attract future employees. Moreover in the public sector, companies are more driven by political objectives when it comes to sustainability, and CSR-efforts in these kinds of companies need to follow decisions made by governmental authorities. This can be supported by the presentation of Okerekes (2007) and Dummetts (2005) main drivers which also includes government regulations and policies. It is understood that all companies have to follow government regulations, though it is important to point out that the public company interviewed is controlled by authorities and therefore has less freedom to make its own decisions as a business.

As the restaurant manager says his restaurants' main driver is to educate customers about sustainability, and especially their sustainability efforts, it therefore indicates more internal drivers in accordance with Okereke's (2007) description of it. Though, this cannot be generalized since other restaurants might have other drivers, but the fact that restaurant

visitors mainly come to have a tasteful meal, and do not consider as much sustainability, a slight indication can be made regarding less external pressure in the industry.

With this said, the reasons for conducting CSR-efforts can vary. Knowing why companies conduct these efforts may facilitate presenting a concept that will suit companies needs. The empirical results indicate that all companies follow external pressure, though the external pressure of demanding CSR-efforts is mainly higher within the food industry compared with the logistics and transport industry. For instance, one respondent expresses that the demand when it comes to sustainability in the logistics and transport sector is not high at this point, which therefore lowers the company's need to conduct efforts. Meanwhile, a company in the food industry says the customers are demanding a sustainable range of products, which is driving the company to do better in terms of sustainability. It can therefore be thought that some industries have come further with the norms of sustainability, which in general can be explained by normative isomorphism as discussed by DiMaggio and Powell (1983). A respondent explains the logistics and transport industry is more focused on price rather than sustainability demands, which can be seen as a professionalism norm in the industry that has not included as much sustainability as in the food sector. If the norms in the industry changes, the demand will probably also change. The food industry may also be a case for mimetic isomorphism, in addition to norms, since sustainability is a common topic and if one concept becomes successful other companies may mimic. A respondent speaks about the supermarket Coop's new concept which is believed to become a common concept in the future in the food industry, and to stay competitive other food companies may mimic to survive. Whereas the empirical results indicate varying norms in the industries investigated, the consumers' demands and therefore companies' drivers to conduct sustainability efforts differ.

## 5.2 Companies' interest of the concept

When asking about engaging in external environmental projects specifically, the respondents are more hesitant than when discussing internal CSR-efforts, since the companies want to focus on internal improvements first. Several of the respondents point out disbelief in investing in projects such as carbon offsetting. On the other hand several companies engage in panels and cross-border collaborations for education and to come up with general environmental improvements within the industry it is operating in. Willingness to engage in external CSR-projects therefore seems to differ depending on the project.

Carbon offsetting projects are relevant to look at in this matter, since the seaweed environmental project can be used similarly in a corporate setting. In general, carbon offsetting does not feel trustworthy according to a few respondents, but might still be relevant in the future as a last option to offset the emissions that cannot be reduced internally. The empirical results indicate that transparency is vital in this matter, which in the literature is an important factor to avoid greenwashing (OgilvyEarth, n.d., referred in Dahl, 2010). The fear of being accused of greenwashing may therefore be a reason for companies to have low trust in carbon offsetting projects, which can be important to keep in mind when developing a new similar concept. Hence, the literature discussing how to avoid greenwash can be used in this matter when continuously working with this avoidance. By being transparent and not hiding any information regarding the concept, the risk of being accused of greenwash may decrease.

Moving forward, the interest of investing in an environmental project increases if the company believes the project can be connected to the business operation. An underlying reason for this could be companies' desire to stay legitimate towards its stakeholders, as Suchman (1995) defines legitimacy for instance as the perception of appropriate actions within socially constructed norms. This shows indications that if companies engage in external projects that are too disconnected from its operation, it may lose legitimacy and support from important stakeholders. Freeman and Dmytriyev (2017) explains how CSR critics say that it is immoral to invest in social matters too far away from business operations, and may risk to be seen as "stealing" from shareholders, which can be applied in this context if the customers to the seaweed environmental project cannot see a close connection.

In one way or another, the respondents find the ocean environment important for its operation. Though, efforts to improve the well-being of the ocean are not conducted on a bigger scale. On a smaller scale, several interviewed companies show interest in local solutions, but that the need for more detailed information is vital before engaging in an external project connected to the ocean, as well as a win-win presentation of what value the project brings to the company and the environment. In sum, the empirical results show that the food companies seem more interested in an environmental project connected to the ocean, if these companies would involve seaweed in its selection or products. The suggestion regarding using seaweed as biofuel is another indication that companies can be interested in investing in these kinds of projects if it is usable for its operation. Again, this can be

explained by the need for companies to stay legitimate to its stakeholders (Suchman, 1995) and indicates the importance of a strong, trustworthy value proposition, which Ballantyne et al. (2010) means can be done by a reciprocal value proposition where the value is co-created.

On the contrary, the two logistics and transport companies that do not have an interest in using seaweed in its operations, still express interest in engaging in environmental projects externally, since these companies believe its industry affects the ocean negatively and the project therefore somehow is connected to its operation. Hence, as mentioned earlier, hesitation exists and more detailed information specifically regarding the seaweed project is needed before investment is in question. In addition, the respondents signal the importance of the project organization being legitimate, and not just trying to make money, which indicates that companies in the seaweed industry not only have to provide legitimate, precise information, but also need to build trustworthy relationships with its stakeholders.

## 5.3 Importance of identifying new stakeholders

According to stakeholder theory it is important to identify all stakeholders who have an interest in an organisation (Miles, 2017), such as employees, investors, suppliers and communities (Donaldson and Preston, 1995). The relationship to primary stakeholders are mandatory in order to maintain and sustain a successful business (ibid.). Hence, when a company strives to expand its business, new stakeholders need to be identified. For now, most customers of companies in the seaweed industry are interested in using the seaweed for food products. When seaweed companies additionally offer an environmental project for companies to invest in, it will bring new customers for other reasons than purchasing seaweed for food products, and as a consequence of this, many new stakeholders will have an interest in the seaweed companies.

The empirical results show that highly nominated restaurants in first hand might be interested in seaweed environmental projects and later on other restaurants might join the concept, indicating that the restaurant industry is subject to what DiMaggio and Powell (1983) explains as mimetic isomorphism. This may happen if successful, highly nominated restaurants with large influence sets the standards for "best practice". From this perspective, estimations can be drawn that highly nominated restaurants may be suitable customers to target when introducing the concept on the market. This because these restaurants potentially

can influence the whole industry by setting new trends, which can facilitate the concept of seaweed environmental projects to grow bigger on the market.

New stakeholders to the seaweed companies introducing the concept can also be e.g. NGO's. In the interviews several companies mention being part of groups working towards making environmental improvements or different sustainability projects with organizations such as e.g. WWF. The empirical results indicate that companies perceive these types of collaborations or projects as positive, since these are common amongst the interviewed companies. This may be because the collaborations or projects involve many companies, or that the organizations arranging them are large and well-known, which the latter is mentioned by the respondents as more legitimate and trustworthy. Accordingly Dummett (2005) states community groups as drivers for corporate environmental responsibility, which could explain why many of the companies are involved in these sorts of efforts. It can be thought that when large, powerful NGOs initiate environmental activities, companies feel pressure to get involved to stay legitimate. Normative isomorphism, as discussed by DiMaggio & Powell (1983), may therefore be the reason for companies to join these voluntary efforts, meaning that if several companies do it, it will set a new norm for competitors in the same industry to follow in order to stay competitive and survive.

Since stakeholder theory states that after identifying stakeholders, it is important to maintain these relationships (Donaldson and Preston, 1995), it can be understood that the relationships with NGOs are equally important. NGOs could potentially stand as intermediaries between the seaweed companies and customers interested in investing in the concept. Any type of collaboration between NGOs and seaweed companies may increase the legitimacy and trustworthiness of the concept, as well as gain more customers because these companies feel pressure to keep up with competitors due to normative isomorphism.

One idea from stakeholder theory is that value should be created for all stakeholders (Freeman and Dmytriyev, 2017). Proactiveness, as well as being alert to stakeholder expectations and challenges, is important in order to stay legitimate (Ashforth and Gibbs, 1990; Suchman, 1995), which the empirical results express is vital. Since the analysis so far has discussed the different drivers and needs amongst potential customers, different value propositions might be needed to satisfy these, depending on which target group is being considered. Hence, the analysis will onward continue defining what is important to consider

when presenting a trustworthy, sustainable value proposition for a seaweed environmental project.

## 5.4 Sustainable Value Proposition

By the combination of the following three steps; creating shared value to multiple stakeholders, addressing the sustainability problem and developing a service that tackles the problem while considering stakeholders needs, a sustainable value proposition can be presented in accordance with Baldassarre et al. (2017) framework. The three steps of the framework are analysed with important factors from previous literature and findings from the interviews in order to define what is important to consider when presenting a sustainable value proposition of the concept.

### 5.4.1 Step 1 - Create shared value to multiple stakeholders

Lanning and Michaels (1988) state the importance of firstly understanding the market when presenting a value proposition, which e.g. can be done by analyzing the benefits customers desire. The interviews together with previous literature can mutually explain what benefits are demanded. In sum, the empirical results indicate that potential customers are seeking winwin projects that will benefit the company itself as well as benefit the environment. Investors are looking for economic growth and employees and management teams are looking for internal satisfaction to do good for the environment and society. It is stated in previous literature that environmental status needs to improve (e.g. Naturvårdsverket, 2021a) and governments and cross-border organizations are looking for ways to reach environmental goals (e.g. United Nations, n.d.b). When one stakeholder receives value creation, it will eventually create value for several other stakeholders since they are interdependent (Freeman and Dmytriyev, 2017).

As one respondent would like physical activities for its employees, it would be developed as a kind of co-created value between the two involved parties, the seaweed company and the customer, as well as multiple stakeholders. This is also the case of a value proposition where companies use seaweed in the production, like other respondents expressed. This can be called a reciprocal value proposition in accordance with Ballantyne et al. (2010), since the value in these ways become co-created. With this said, together with the facts regarding the benefits of seaweed, seaweed environmental projects have potential to create shared value for many stakeholders at the same time.

### 5.4.2 Step 2 - Define sustainability problem

A sustainability problem that connects to the concept can clearly be defined - the abundance of the nutrients N and P spreading in nature have passed its planetary boundary and it needs to decrease in order to avoid eutrophication for the well-being of the ocean (Rockström et al., 2009). Most interviewed companies do not know its impact on the ocean environment, nor do much to decrease the N and P emissions from its operation. Only one interviewed company has a goal to decrease its N emissions. It can therefore be seen that companies need more knowledge regarding its impact on the ocean's well-being, thereafter it is necessary with information about how the sustainability problem of the marine environment can be tackled through seaweed cultivations. Since it is important with transparency when doing CSR-efforts according to both the respondents and the literature (e.g.Crawford and Scaletta, 2005), exact facts need to be provided to the customers of the concept and its stakeholders.

Further on, most interviewed companies signify interest if more information was provided on the concept. As for now, there is lack of information in the area of how seaweed cultivations impact the environment. Therefore it could be beneficial for several stakeholders and the seaweed industry itself to spread the information further to the society, potentially by joining newsletters made for people interested in environment and sustainability, just like an interviewed respondent suggested.

# 5.4.3 Step 3 - Develop a service that tackles the problem while considering stakeholder needs

Eutrophication could partly be mitigated with the help of cultivating seaweed and the concept investigated in this research. It has the potential to act as a kind of offsetter or environmental project for companies to invest in, or alternatively a sort of CSR-activity. If the value proposition would promise some kind of offsetting activity, more information needs to be provided before this is possible. This since it might cause problems if it cannot be presented transparently, and thereby risk being accused of greenwashing (OgilvyEarth, n.d.; Horiuchi et al., 2009). If the value proposition on the other hand seeks to provide a CSR-activity e.g. for employees, it may be less formal than when seeking to provide an offsetting-activity and therefore might need to provide less precise and scientific information to start with. Though, the empirical results indicate that the need for transparent and scientifically proven climate mitigation solutions suitable for companies are demanded the most, and therefore transparency should always be prioritized.

Since the interviewed companies show slightly different desires, it may be beneficial to present different value propositions. Similarities can be seen within each of the investigated industries, as well as differences between the industries. The empirical results point to the food industry being more interested in a seaweed environmental project if seaweed were to be incorporated in companies' products. Therefore, a value proposition towards the food industry should consider offering this. However, the logistics and transport industry shows a weak indication of being more interested in local external projects, without actually using the seaweed in its operation but doing something beneficial for the local ocean environment. The value proposition towards companies in this industry may therefore be more focused on bringing value to the employees and management by engaging them in environmentally beneficial activities, suitable for companies with a strong internal desire to do good for the environment. This since there is not strong external pressure in this industry, compared with the food industry's high customer demands. Though, more research needs to be made to enable proper conclusions about the differences and similarities of the industries, especially the logistics and transport industry, since these companies express differentiated needs and only weak indications can be estimated about the industry in general.

Furthermore, the value proposition towards the restaurant industry should focus on offering the seaweed environmental project at the same time as the restaurants can purchase the cultivated seaweed to use as a local, climate neutral ingredient. As the restaurant manager mentions, it may additionally be suitable with a service that gives restaurants a kind of "certificate" of the positive impacts on the ocean environment. This might spread knowledge and educate customers, which the respondent mentions as a main driver to conduct sustainability efforts. In addition to this, taking advantage of the isomorphism occuring in the industries can benefit the spread of the idea, if it becomes successful.

The public transport company has a different idea regarding how to use the seaweed, and mentions a potential interest to test if seaweed biomass can be used as biofuel in its vehicles. This indicates future potential that can make the seaweed industry grow, which also is discussed in previous literature (Duarte et al., 2017). Though, further research is needed to estimate the corporate interest of it.

### 6. Conclusions

The conclusion aims to answer the research questions and present the main findings of the research, as well as putting the research in a bigger context.

The review of existing literature shows that multiple scholars have put emphasis on the environmental benefits of seaweed cultivations, indicating that the industry holds a lot of potential, but also that the future possibilities of seaweed are yet to be fully explored. The empirical results in sum goes in line with this idea, showing indications of corporate interest and curiosity in the area of seaweed cultivation which can be thought to strengthen the business potential of the industry, but at the same time it also shows knowledge gaps which point out the need for more information regarding the concept.

The findings indicate that the corporate interests in seaweed cultivation as a concept of an environmental project differs, as the interviewed companies in general have different approaches to CSR and preferences on which CSR-efforts are important. Curiosity of the project is confirmed, but in order for companies, in other words "potential customers", to make a legitimate investment that is well connected to the operation and that goes in line with involved stakeholder expectations, companies require more information about the concept. Information such as what the project will actually convey and more precise numbers are requested.

Due to companies' different thoughts on the seaweed environmental project, the empirical result shows the importance of identifying stakeholder needs and desires. The project may create value differently for potential customers, therefore it can be beneficial to formulate different value propositions that can fulfil the needs for the customer. The findings indicate that the food industry has greater customer demands and hence external pressure when it comes to CSR, in comparison to the logistics and transport industry. Companies in the food industry demand a win-win concept where the companies can implement seaweed in its selection or products, while the logistics and transport industry shows indications of having desires to do local external environmental projects, but the companies' desires in general differ.

These findings are important to take into consideration when formulating a value proposition of the concept. In addition for it to be sustainable, it should create value for multiple stakeholders and tackle a defined sustainability problem. To this day, the sustainability problem of overflowing nutrients that causes eutrophication is yet to be solved, but the findings indicate that it is not highly prioritized within corporations. In order to create value through a seaweed environmental project, the sustainability problem and how seaweed cultivation may tackle it needs to be better acknowledged and further information on the project's benefits needs to be provided. In addition, the research overview in accordance with empirical findings indicate that it is important to consider legitimate and transparent facts, and if this is not given, a trustworthy and sustainable value proposition is not possible.

To conclude, companies have different demands and desires regarding external environmental projects and these desires should be considered when conducting a sustainable value proposition of a seaweed environmental project. Most importantly, companies in the seaweed industry wanting to expand the business have to prioritize staying legitimate and avoiding greenwash, which can be done by complete transparency. As OgilvyEarth (n.d.) expresses it; it is better to be honest than to be perfect.

This research covers a gap in the literature with further information regarding corporate interest in seaweed cultivation as an environmental project, as well as knowledge in important factors to consider when formulating a sustainable value proposition for the concept. The study may be of importance for companies operating in the seaweed industry wanting to expand its business and gain more knowledge on how to develop a service and formulate a value proposition in this matter to meet the needs of potential customers. Though, the findings in this research only give indications, and more comprehensive research on companies' attitudes and preferences can complement these in order to make generalizations.

# 6.1 Suggestions for future research

This paper has presented qualitative research through semi-structured interviews about the corporate interest of engaging in a concept of seaweed cultivation as an environmental project and how these findings can be used for presenting a sustainable value proposition of the concept. It is suggested that further market research can be conducted to complement and strengthen the findings of this study as well as to make proper conclusions about the

corporate interest and differences and similarities between industries. Additional research regarding companies Willingness to Pay (WTP) for seaweed environmental projects is suggested to gain more knowledge of the market.

Further research is needed in the area of environmental benefits of seaweed cultivations, in order to conclude e.g. the net effect of carbon, N and P as well as the long term effects on the ocean environment caused by seaweed cultivations. This in order to gain knowledge in and evaluate the effectiveness and impact of the cultivations, as well as to present precise numbers for corporations that demand more information.

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# **Appendix**

#### Uppvärmning:

- Hej, tack snälla för att du ställer upp på den här intervjun. \*Presentera oss\*.
- Vi är studenter på Handelshögskolan här i Göteborg och skriver en kandidatuppsats inom området corporate sustainability. Vår uppsats syftar till att öka kunskapen kring hur marknaden för tångodlingar skulle kunna växa för att utnyttja tångens miljöfördelar och mildra klimatförändringarna, och för att ta reda på detta gör vi en marknadsundersökning hur företag arbetar med ekologisk hållbarhet och då framför allt miljöprojekt eller samarbeten med miljöorganisationer, samt drivkrafter och preferenser kring detta.
- Vi skriver uppsatsen med uppdrag från företaget Nordic Seafarm som odlar tång utanför Kosteröarna i Strömstad. Tång har många miljöfördelar såsom att binda koldioxid, kväve och fosfor från havet, renar vattnet och ökar biologisk mångfald kring odlingarna.
- Vi vill börja med att förtydliga att intervju är en marknadsundersökning och svaren endast är till underlag för vår kandidatuppsats. *Ditt svar är ingen förbindelse till att engagera sig i miljöprojekt*.
- Är det okej att vi gör en ljudinspelning av intervjun? Det är endast för att kunna transkribera och kommer sedan att raderas.
- Vill du vara anonym i vår rapport?

### Intervjufrågor:

- Skulle du vilja börja med att kort och övergripligt beskriva era viktigaste miljöfrågor inom er verksamhet?
- Arbetar ni med externa miljöprojekt? Hur och på vilket sätt isåfall? Om inte, varför? cause-related marketing, klimatkompensation, miljöorganisationer, samarbeten, andra projekt?
  - Lokal/nationell/global nivå, varför och med hur mycket (i Kr) per år om ni har siffror på det?
- Hur hittar ni vilka externa projekt ni väljer att investera i? (Hemsidor, organisationer, certifieringssidor, personligt intresse, osv...)
- Vilka är era största drivkrafter när det kommer till att bedriva miljöarbete? Med andra ord - varför arbetar ni med hållbarhet? (kundansökan, samhällspåtryck, konkurrensfördel, värderingar)
- Är det viktigt att de miljöprojekt ni stöttar har en tydlig koppling till er verksamhet, och på vilket sätt isåfall?
- Marknadsför ni vidare de miljöprojekt ni engagerar er i till era kunder, och vilket värde skapar det för er isåfall? *Om inte, varför?*
- Tycker ni att havsmiljön är en viktig miljöfråga för er verksamhet och på vilket sätt?

- Vet ni hur er verksamhet påverkar havsmiljön? Om inte har ni någon kunskap kring hur havsmiljön påverkas av exempelvis för hög kvävetillförsel (övergödning)?
- Skulle ni kunna tänka er att investera i ett lokalt miljöprojekt som bidrar till att upprätthålla en god havsmiljö, och på vilket sätt skulle ni föredra att investera i ett sådant projekt? (donera pengar vid enstaka tillfällen, köpa en prenumeration, bidra med något annat än pengar såsom kompetens?)
  - Med hur mycket? Vi förstår att det kan vara svårt att uppskatta, men vi tänker ungefär hur brukar/skulle sådana betalningar kunna se ut?
- Vad krävs för att ni ska engagera er i ett miljöprojekt kopplat till tångodling, vilken information behöver ni och vad är viktigt att veta innan ni kan ta dessa slags beslut?
  - siffror med resultat/effektivitet, att sponsring syns fysiskt vid tångodlingarna
  - behövs ett ekonomiskt värde för er (att det ska vara lönsamt och ge er marknadsfördelar exempelvis) eller räcker ekologiskt värde (att ni bidrar till positiv miljöpåverkan)?
  - Utveckla hur ni tänker
- Om ni tänker er en tjänst där ni kan på något sätt betala för en tångodling som har positiva effekter på miljön Hur väl skulle det passa in i er verksamhet att investera i den typen av projekt?
  - Om de säger nej utveckla gärna tankarna lite här, varför inte?
- Övriga tankar/synpunkter?
- Om det dyker upp fler frågor från vår sida, skulle vi kunna maila dem i efterhand?

Tack så mycket för intervjun - vi kan givetvis skicka vår uppsats om ni vill ta del av den i juni.