



Norwegian University of  
Science and Technology

# Shared Value Creation in an Industry Context

Assessing How Governmental Policies Can  
Contribute to Increased Corporate  
Sustainability in the Norwegian Aquaculture  
Industry

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## PROBLEM DESCRIPTION

Corporate sustainability considers how corporations manage to combine social, environmental and economic performance over time. The concept of shared value creation introduced by Porter and Kramer (2011) furthermore represents an approach to corporate sustainability in which companies attempt to create value for the society simultaneously as creating private company value, by taking the needs of all stakeholders into consideration. This thesis serves to develop an analytical framework for creating shared value in an industry context, by expanding the concept of shared value creation to fit industry contexts. The framework is further applied to Norwegian aquaculture, with the intention of assessing how shared value creation can be achieved in the industry.

The study takes place in the Norwegian aquaculture industry, which is currently experiencing distinct sustainability challenges. These challenges have become so prevalent that the current authorities refuse to issue any new commercial production licenses until the industry manages to sufficiently cope with these challenges, which have resulted in a halted growth of the industry.

As an incentive for developing new solutions which potentially can overcome the sustainability challenges, the authorities have issued a new governmental policy, the *development licenses*, which intends to facilitate long-term investments in new, innovative solutions that are to benefit the entire industry and solve the current sustainability issues. A qualitative case study is furthermore conducted in order to determine how shared value creation can be achieved in the Norwegian aquaculture industry.



## PREFACE

This diploma work is the concluding part of the authors' Master of Science degree in Industrial Economics and Technology Management at the Norwegian University of Science and Technology (NTNU), graduating in June 2016.

Corporate sustainability in the Norwegian aquaculture industry is chosen as a topic based on personal interests and its importance for Norwegian value creation. We find our work highly relevant and hope that industry actors and the authorities can find inspiration and guidance towards contributing to the industry becoming more corporate sustainable in the future.

We would like to thank our academic supervisors, Luitzen de Boer, Jonas Ingvaldsen, and Sigurd Vildåsen for all the help and support throughout the project. The knowledgeable discussions throughout the process have motivated continuous learning and given valuable perspectives to our research.

We would also like to thank the 13 interviewees for their time and contribution to the result of the research. The friendliness in the industry and willingness to contribute to the thesis have been overwhelming, and the research could not have been conducted without their help.

*Trondheim, 9th of June 2016*

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## EXECUTIVE SUMMARY

We argue in this thesis that the concept of shared value creation introduced by Porter and Kramer (2011) contain weaknesses when it comes to providing guidance for how industries can achieve shared value creation. An analytical framework which adapts the concept into an industry context is therefore developed in this thesis, where four aspects, namely innovation, long-term orientation, cooperation and stakeholder trust, are found to be crucial. Furthermore, the authorities are argued to have a particularly important role in facilitating shared value creation in industries through the implementation of regulatory frameworks.

The analytical framework is furthermore applied to the Norwegian aquaculture industry in order to investigate how the industry can become more corporate sustainable. The Norwegian aquaculture industry is currently experiencing severe sustainability challenges that need to be overcome if the industry is to realize growth, in which shared value creation emerges as an important measure.

Two research questions associated with how shared value creation can be realized in the Norwegian aquaculture industry are answered in the thesis. The first research question identifies the current barriers to shared value creation in the industry, while the second research question determines how governmental policies can help the industry to overcome these barriers. The research questions are answered through a qualitative case study of the development licenses, in which 12 semi-structured interviews with different industry stakeholders are conducted.

Several barriers are found to prevent the Norwegian aquaculture industry from creating shared value, and the development licenses are further found to overcome some of these barriers. However, a substantial amount of barriers are still seen to be present after the implementation of the development license policy. The policy is thus found to come short in facilitating shared value creation in the industry, and propositions for how governmental policies can better facilitate shared value creation in the industry are provided. We furthermore argue that governmental regulations alone do not have the potential of overcoming all of the barriers to shared value creation, and aquaculture companies must take several measures for the industry to achieve shared value creation.

Another important aspect to consider is whether the framework would be applicable in other industry contexts. When addressing this concern, the validity of the analytical framework was found to be strengthened as the presumptions of the framework was consistent with the empirical data from the analysis.

## SAMMENDRAG

Vi hevder i denne studien at konseptet shared value creation introdusert av Porter og Kramer (2011) er utilstrekkelig i industrisammenheng. Et analytisk rammeverk for å fasilitere shared value creation i en industriell kontekst er derfor utviklet i denne masteroppgaven, hvor fire aspekter, nemlig innovasjon, langsiktig tenkning, samarbeid, og tillit mellom aktører, er ansett som avgjørende. Myndighetene er videre ansett å ha en spesielt viktig rolle i å fasilitere shared value creation i en industriell kontekst.

Det analytiske rammeverket er anvendt i norsk akvakultur for å undersøke hvordan industrien kan bli mer bærekraftig. Den norske akvakulturindustrien opplever for tiden alvorlige bærekraftsutfordringer som må håndteres for at industrien skal kunne vokse. I denne sammenheng fremstår shared value creation som et viktig virkemiddel.

To forskningsspørsmål som tar for seg hvordan shared value creation kan oppnås i norsk akvakultur er besvart i denne masteroppgaven. Det første spørsmålet er besvart ved å identifisere aktuelle barrierer til shared value creation i industrien, mens det andre spørsmålet er besvart ved å undersøke hvordan politiske tiltak kan bidra til å overkomme disse barrierene. Forskningsspørsmålene er besvart ved hjelp av en case studie av de nylig innførte utviklingstillatelsene, hvor 12 semistrukturerte intervjuer med ulike industriaktører er gjennomført.

Flere barrierer som hindrer norsk akvakultur i å oppnå shared value creation er identifisert, og noen av disse barrierene forventes å bli redusert ved å innføre utviklingstillatelser. En del av barrierene forventes imidlertid ikke å bli påvirket av utviklingstillatelsene, og det politiske tiltaket er derfor ansett som utilstrekkelig i å fasilitere shared value creation i en industriell kontekst. Forslag til hvordan politiske tiltak bedre kan fasilitere shared value creation i en industri er derfor presentert. Vi mener derimot at politiske tiltak alene ikke kan håndtere alle barrierene til shared value creation, og at akvakulturselskaper også må bidra for at industrien skal oppnå shared value creation.

Et annet viktig aspekt å vurdere er om rammeverket er anvendbart i andre industrikontekster. Da dette ble vurdert, ble validiteten til det analytiske rammeverket ansett som styrket, da rammeverkets antagelser var funnet å overensstemme med den empiriske dataen fra analysen.

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# 1. INTRODUCTION

Corporate sustainability has become an increasingly important concept for companies to consider when making strategic decisions. The risk of financial penalties, bad reputation and negative stakeholder attention has resulted in corporate sustainability developing into a necessary means for corporations to acknowledge. A well-known definition of the concept is provided by Dyllick and Hockerts (2002, p.131), who define corporate sustainability as “...meeting the needs of a firm’s direct and indirect stakeholders without compromising its ability to meet the needs of future stakeholders”.

The concept of shared value creation (Porter and Kramer, 2011) furthermore represents an approach to corporate sustainability that has become increasingly prevalent in business and academia, and is adopted by a number of the world’s major corporations. Shared value creation is defined as “policies and operating practices that enhances the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates” (Porter and Kramer, 2011, p. 66), and concerns creating private company value simultaneously as creating value for the society.

Further on, this thesis positions the concept of shared value creation as a synthesis of the two main approaches to corporate sustainability, namely the instrumental view, seeing private value as the main objective of implementing corporate sustainability (Husted and de Jesus Salazar, 2006; Margolis and Walsh, 2003; Porter and Kramer, 2006), and the integrative view, aiming to create value with all stakeholders (Figge and Hahn, 2012; Gao and Bansal, 2013; Hahn et al., 2014).

The concept of shared value creation has however met some critique regarding its applicability in real life industry contexts (Crane et al., 2014; Dembek et al., 2015). Porter and Kramer (2011) clearly describe how shared value creation can result in benefits on a company level, but can shared value creation benefit a whole industry? Is it realistic that industries will obtain increased levels of corporate sustainability by implementing Porter and Kramer’s (2011) concept of shared value creation?

There is provided little theoretical guidance of how industries can realize shared value creation, which will be the main concern of this thesis. A theoretical analysis will thus be conducted in order to develop an analytical framework for how shared value creation can be achieved in an industry context. This framework will further be applied in the Norwegian aquaculture industry to assess its potential of shared value creation.



## 1.1 INDUSTRY CONTEXT

Future food supply is a challenge that must be taken seriously. To meet the increasing demands for foods while at the same time protect the world's natural resources for future generations, there is a need for sustainable food production, of which an increase in food production from aquaculture is considered to be especially important (FAO, 2014). The goal of increased aquaculture is supported by the Norwegian government (Ministry of Trade, Industry and Fisheries, 2015a), and the Norwegian aquaculture industry has an objective of doubling today's production by 2025 (FHL, 2012). This production growth is however not currently achievable, as distinct sustainability challenges prevent new licenses from being issued.

Norwegian aquaculture is an industry where the whole value chain depends on salmon-breeding companies being granted production licenses. A production license is a legal permission salmon-breeding companies need to acquire through allocation rounds or through transfer from other aquaculture companies, which gives them permission to produce a certain amount of fish per year (The Aquaculture Act, 2005). The number of licenses issued is determined by the Norwegian government, and is used as a tool to control the Norwegian salmon production.

The negative environmental effects of the aquaculture industry are considerable, with sea lice and fish escapes as the most prominent problems, severely affecting the wild Atlantic salmon (Ministry of Trade, Industry and Fisheries, 2015a). Due to the industry's negative impact on the environment, the authorities have decided not to issue any additional commercial licenses and tighten the requirements of increased production volume on existing licenses before these problems are dealt with (Ministry of Trade, Industry and Fisheries, 2015a). These regulatory policies are seen to affect the growth of the industry in the long-term and make it difficult for Norway to achieve their goal of being the world's leading seafood nation (Meld. St. 22 (2012-2013)).

The authorities have however realized that the industry is not able to overcome the sustainability challenges on its own, and see the need for change in regulation strategies to facilitate the development of innovative solutions to sustainability challenges. This has resulted in the introduction of a new type of governmental policy in November 2015, the *development licenses*, which intend to facilitate the development of long-term innovative solutions to the sustainability challenges the industry currently is facing. To be granted development licenses, aquaculture companies must deliver a comprehensive application to the Directorate of Fisheries, describing how their solution intends to solve one or more of the sustainability and area challenges preventing industry growth (Laksetildelingsforskriften, 2004, §23b). If the applicants are granted licenses, these can be transformed into commercial licenses if the project is considered as successful.

## 1.2 RESEARCH QUESTIONS

The motivation of this thesis is to help the Norwegian aquaculture industry realize sustainable growth by implementing shared value creation. In Norwegian aquaculture there is a need for the whole industry to contribute in overcoming the sustainability challenges currently affecting the industry, if growth is to be realized. There is thus a need of viewing shared value creation in wider perspective and expand the current concept by Porter and Kramer (2011) to fit industry contexts. The main objective of this thesis is thus to address the following question:

*How can shared value creation be achieved in an industry context?*

To answer this question a purely theoretical analysis will be conducted, resulting in an analytical framework on how shared value creation can be achieved in an industry context. The framework will further on be used to answer industry-specific research questions on how shared value creation can be realized in the Norwegian aquaculture industry.

To assess how shared value creation can be achieved in the Norwegian aquaculture industry, it is important to first consider whether there are any current barriers to shared value creation in the Norwegian aquaculture industry. The first research question is thus as follows:

*RQ1: What are the current barriers to creating shared value in the Norwegian aquaculture industry?*

Further on, for achieving shared value creation in an industry context, governmental policies are seen as important. The authorities have a substantial amount of power in the Norwegian aquaculture industry, which makes them an important facilitator of shared value creation and a natural starting point of change processes in the industry. The second research question therefore addresses how the authorities can overcome the current barriers to shared value creation in the industry:

*RQ 2: How can governmental policies overcome the current barriers to shared value creation in the Norwegian aquaculture industry?*

When answering the second research question, the newly issued development licenses will be used as a case, as they represent a governmental policy that intends to facilitate increased corporate sustainability in the industry. After considering how the development licenses will affect the current barriers to shared value creation in Norwegian aquaculture, and distinguish what potential weaknesses the policy has, propositions on how governmental policies in the Norwegian aquaculture industry can be designed in order to overcome the current barriers to shared value creation will be presented.

### 1.3 SCOPE AND SYSTEMIC BOUNDARIES

In this case study of the Norwegian aquaculture industry, both the industry level and policy level will be addressed. This choice is based on industry policies and industry actors being interdependent in the industry. Changes in policies and regulations affect industry actors that have to comply with the regulations, and changes in how industry actors do business affect the level of regulation needed. The analysis will thus both consider the industry level and the regulatory level in Norwegian aquaculture to answer the research questions.

When addressing the second research question, concerning how governmental policies can facilitate shared value creation in Norwegian aquaculture, the newly issued development licenses are chosen as a case study of a governmental policy in Norwegian aquaculture. This choice is based on the development licenses representing a newly implemented governmental policy with the potential of creating shared value, considering the intention of the licenses is to incentivize aquaculture companies to develop long-term innovative solutions to sustainability challenges that will benefit the whole industry.

When addressing how shared value creation can be achieved in an industry context, only one of the three ways of creating shared value presented by Porter and Kramer (2011) is given considerable focus, namely “Enabling local cluster development”. We argue that for an industry to become corporate sustainable, the features that characterize the industry as a whole is considered as more relevant than the features of single companies’ specific products and value chains. While reviewing the products and value chains of companies is highly relevant for achieving competitive advantage for single companies, enabling cluster development is regarded as beneficial for industries as a whole. Hence, the two other ways of achieving shared value creation are given less attention in this study, as interactions between industry companies and the common attitudes and strategies of the industry actors are considered as more relevant in an industry perspective.

#### TERMINOLOGY

An *aquaculture company* is in this thesis defined as a company that either produces farmed salmon, or supplies a service or equipment to salmon-breeding companies.

The term *industry actor* is in this thesis applied to salmon-breeding companies and their value chains, in addition to research institutions and academic institutions who contribute in developing the industry.

*Authorities* is in this thesis used as a description of the governmental authorities controlling the Norwegian aquaculture industry, and *departments* is used to describe the different sector authorities of the industry, i.e. The Food and Safety Authority and The Directorate of Fisheries.

The term *Norwegian aquaculture industry* is limited to the part of the industry associated with the production of farmed salmon.

## 1.4 THESIS STRUCTURE

Figure 1 shows the structure of the thesis, with chapters 3, 4, 5, 6, and 7 as the most essential for answering the research questions.

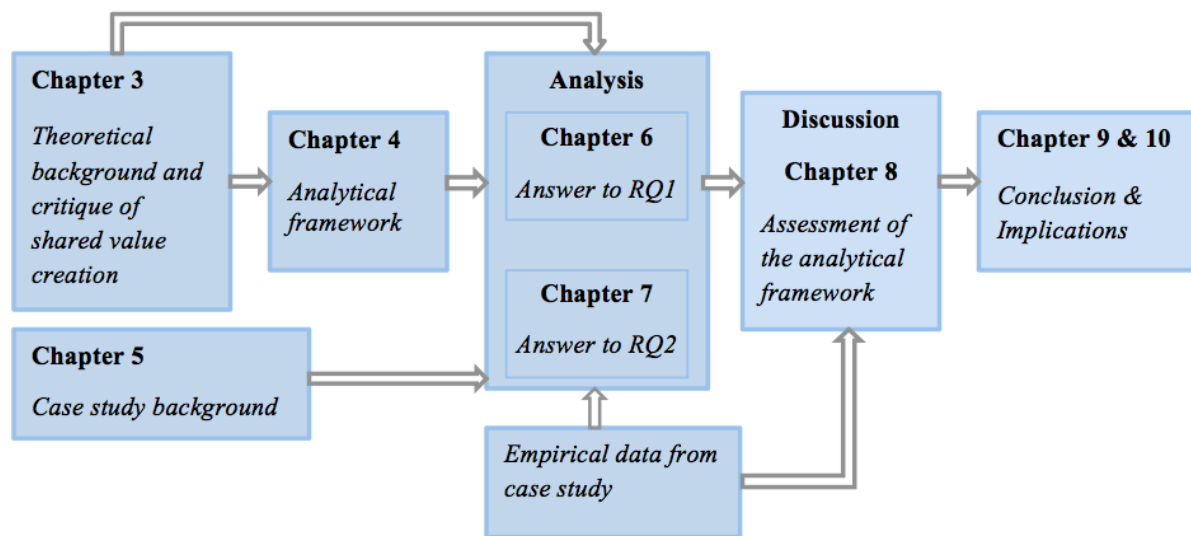


FIGURE 1: THESIS STRUCTURE

Chapter 3 forms the theoretical background of the project thesis, and discusses the concept of corporate sustainability and the different approaches to the concept found in literature. Shared value creation is in this regard considered as an important tool to increase corporate sustainability, and an analytical framework on how to achieve shared value creation in an industry context is presented in chapter 4.

Chapter 5 addresses the case study background, exploring literature describing the Norwegian aquaculture industry, with emphasis on sustainability challenges and industry regulations.

Chapter 6 and 7 consist of an analysis of shared value creation in Norwegian aquaculture, and serve to answer research question one and two respectively. Chapter 6 answers the first research question by considering the current barriers to shared value creation in the Norwegian aquaculture industry, while chapter 7 answers the second research question of how governmental policies can facilitate shared value creation in Norwegian aquaculture by using development licenses as a case study.

Chapter 8 consists of a discussion to whether the presumptions of the analytical framework presented in chapter 4 are strengthened or weakened when assessing them in the context of the Norwegian aquaculture industry.

Chapter 9 provides implications for the analytical framework, for aquaculture companies and for future research, while chapter 10 concludes the thesis.

## 2. METHODOLOGY

This master's thesis was conducted partly as a literature study and partly as a qualitative case study. The theoretical background, the analytical framework and the case study background addressed in chapter 3, 4 and 5 respectively, were developed through a literature study, while the research questions were answered by conducting a case study of the newly issued development licenses in the Norwegian aquaculture industry.

In the following sections the research design, the data collection, the data analysis and quality of the research will be addressed.

### 2.1 RESEARCH DESIGN

A research design is the logic that links the data to be collected and the conclusions to be drawn to the initial questions of study (Yin, 2003), and to investigate how increased corporate sustainability can be achieved in the Norwegian aquaculture industry, a case study research design was chosen. This research design was chosen because it currently exist little research on the area, making a literature review alone insufficient. Also, as 1) the research was mainly triggered by "how" questions, 2) there was no need to control behavioral events, and 3) the focus was on a contemporary event of solving the current sustainability challenges in the industry, a case study was seen to be the most beneficial research method according to Yin (2003).

The nature of the research was furthermore seen as exploratory, as it intended to provide additional knowledge on the intersection of Norwegian aquaculture and corporate sustainability; a field where a small amount of knowledge currently exists.

The case study was further on narrowed down to the newly issued development licenses, which was defined as a revelatory single-case study, based on the licenses being a one of a kind phenomenon that no other researchers have had the opportunity to analyze yet. The case study design was thus holistic, with the aquaculture industry as the unit of analysis.

#### 2.1.1 DEFINING THE RESEARCH QUESTIONS

The current pressures for the Norwegian aquaculture industry to become more sustainable in order to realize industry growth, in addition to the fact that Norwegian aquaculture potentially can play an important role in producing food to an increasing world population, triggered us to devote our Master's thesis to the subject of sustainability in the Norwegian aquaculture industry. Our personal interests of sustainability and our academic background in strategic change management, guided us into the theory of corporate sustainability and the question of how it can be achieved in the Norwegian aquaculture industry in order to facilitate industry growth.

To assess how increased corporate sustainability can be achieved in the Norwegian aquaculture industry, a literature review on the topic of corporate sustainability was firstly

conducted with the objective of developing a framework on how corporate sustainability can be achieved in an industry context.

Simultaneously as the literature review was conducted, a narrative approach was applied to formulate the research questions through an iterative process of refining the scope and conducting the literature review. The iterative approach did in such a way enable us to define more specific research questions, which mirrored existing gaps in the literature. The research questions were consequently continually reformulated as the scope was modified throughout the iterative literature review process. The concept of shared value creation emerged here as a relatively new and interesting concept of corporate sustainability, and was chosen to provide the main basis of the analytical framework of the thesis. Research questions related to the potential of achieving shared value creation in Norwegian aquaculture thus emerged, focusing on how governmental policies can facilitate shared value creation. The research questions emerged as follows:

*RQ1: What are the current barriers to creating shared value in the Norwegian aquaculture industry?*

*RQ 2: How can governmental policies overcome the current barriers to shared value creation in the Norwegian aquaculture industry?*

, where the first research question is needed in order to answer the second research question. In assessing governmental policies in the industry, the newly issued development license policy was chosen as a case study, considering it being a policy which intends to increase the level of sustainability in the industry.

### 2.1.2 THEORETICAL FOUNDATION

A literature review was conducted to achieve a sufficient understanding of the theoretical concept of corporate sustainability. A review of the literature is important to obtain knowledge about the area in question and be able to interpret what is already written (Bryman, 2012). A narrative approach was applied to the process of reviewing theory, which was conducted by initially studying two distinct approaches to corporate sustainability, namely the instrumental view and the integrative view. The snowball method was further used by reading relevant articles found in the bibliography of articles describing the two approaches, resulting in the concept of shared value creation by Porter and Kramer (2011) emerging as a synthesis of the two views. Shared value creation was thus found to be the most beneficial approach to achieve increased corporate sustainability. Considering that the motivation of the thesis is to assess corporate sustainability at an industry level in Norwegian aquaculture, we further expanded the concept of shared value creation and developed a framework on how shared value creation can be achieved in an industry context

According to Yin (2003) theory development as part of the design phase is essential when conducting a case study. He argues that by developing theory the complete research design will provide surprisingly strong guidance in determining what data to collect and what

strategies to use when analyzing the data. This is consistent with the case study in this thesis, where an analytical framework is developed in order to answer the research questions.

In addition to discovering relevant literature by applying the snowball method, searches in several databases were conducted in order to investigate different views and perspectives of the key concepts. Databases of Oria, JSTOR and Google Scholar were frequently used when exploring the corporate sustainability aspect.

### 2.1.3 SUMMARY OF RESEARCH DESIGN

Case study was chosen as a research design to assess how corporate sustainability can be achieved in the Norwegian aquaculture industry. Firstly a literature review was conducted in order to provide a theoretical background for the case study. Secondly, appropriate research questions were developed and the case study narrowed down to a revelatory single-case study of the development licenses.

## 2.2 DATA COLLECTION

According to Yin (2003) there are six sources of evidence when conducting data collection in case studies, namely documentation, archival records, interviews, direct observations, participant observation and physical artifacts. In this case study the data collection consisted of interviews and documentation.

The choice of not conducting observation was based on the case study assessing strategies on the industry level, which are hard to observe. There was thus no arena for observation that was considered as beneficial for this study. When considering archival records and physical artifacts, which often are associated with individual or organizational level (Yin, 2003), these sources of evidence were neither seen as relevant in an industry context.

The sampling process and the chosen data collection methods will be further elaborated upon in the following subsections.

### 2.2.1 SAMPLING PROCESS

The sampling of this qualitative study was *purposive*, meaning that the participants were selected in a strategic way, so that those sampled were relevant to the research questions (Bryman, 2012). We used a *sequential approach*, in which sampling was an evolving process where we began with an initial sample and gradually added to the sample as it benefitted the research questions and the development of the study (Bryman, 2012). The sampling was in the first step conducted by *criterion sampling*, which entails sampling all units that meet a particular criterion (Bryman, 2012). In this case, these units represented the aquaculture companies that had applied for development licenses. These were chosen as they represent a group of salmon-breeding companies and equipment suppliers that have actively taken part in the change process that is initiated by the implementation of the development licenses. We ended up with in total 6 representatives from salmon-breeding companies that had applied for development licenses and 2 representatives from equipment suppliers that both were involved in development projects related to the development licenses.

The major part of the chosen participants represented persons in leader positions at high levels or top positions of the companies. This choice was made in order to understand the strategic approaches and decisions made, and to ensure that the participants truly represented the attitudes and stance of the firms. We were however concerned that some interviewees were not truly honest when answering the questions asked. Some interviewees seemed used to speak to external parties about their attitudes and their operations, thus answering to questions in a very professional and politically correct manner, while others were perceived as being afraid to say something “wrong”, and thus holding back information.

By interviewing only one homogenous group of people, you risk to end up in pitfalls of only reflecting one side of the case, which makes it hard to provide a holistic picture of the industry. In order to achieve a true impression of the industry and how it will be affected by the development licenses, the stakeholders of aquaculture companies emerged as additionally interesting participants. The sample was therefore further expanded by using *stratified purposive sampling*, in which typical individuals within subgroups of interests were chosen (Bryman, 2012). These subgroups was 1) the authorities managing the regulatory framework of the industry, 2) industry associations 3) biologists having broad competence on the environmental dimension of the industry, and 4) the opposition movement and the media, providing a critical view to the industry. By interviewing persons that are not representing the aquaculture industry, we attempted to reveal features that would not be brought up by the industry actors.

### 2.2.2 INTERVIEWS

Interviews represent one of the sources of data for this study. According to Yin (2003), interviews are considered to be one of the most important sources of case study evidence, as it allows the interviewer to obtain targeted and insightful information first-hand. In depth, perceived causal explanations and knowledge is important to ensure the quality of a qualitative case study (Yin, 2003). Hence, interviews were a natural choice of data collection method.

The interviews were chosen to be *open-ended*, in which you can ask the interviewees about the facts of a matter as well as their opinions about events (Yin, 2003). This was viewed as beneficial in this case study based on the exploratory focus of the research, in addition to the interviewees sometimes holding additional information about some areas of the case. *Survey interview* was not chosen based on it mainly producing quantitative data (Yin, 2003), which was not seen as useful for this study were open questions was needed to discover underlying assumptions and opinions which could not be detected by doing a survey.

In total, 12 interviews with duration of between 40 minutes and 2 hours were conducted. The interviews were semi-structured, with four main themes being addressed in all interviews. These themes were directly related to the analytical framework presented in chapter 4. This is consistent with the arguments made by Yin (2003) in which the development of theory will provide surprisingly strong guidance in determining what data to collect. The themes of innovation, long-term orientation, cooperation and stakeholder trust was thus addressed in all



interviews, while some of the sub questions varied between the groups. In addition some questions were not planned, but emerged as a natural extension to the subjects the interviewees chose to address during the interview.

The interview guide consisted mainly of open questions, in forms of *how*, *why*, and *in what way*- type of questions. This is advantageous for exploring new areas or ones in which the researcher has limited knowledge (Bryman, 2012), and was thus seen as useful when conducting an exploratory case study. The interview guide also consisted of some closed questions, which enhanced the comparability of answers (Bryman, 2012). This was particularly useful when addressing distinct *yes/no* questions related to the opinions of the different participants concerning the subject of sustainability. Some of these questions are shown in tables in the analysis.

The selection of interviewees included 6 representatives from aquaculture companies that have applied for development licenses, 2 representatives from equipment suppliers, 2 advisors from the Directorate of Fisheries, 1 journalist, 1 biologist, and 1 representative from an industry association. The names, companies and roles of the people participating in the study are shown in table 1.

<b>Participant</b>	<b>Company</b>	<b>Role</b>	<b>Group</b>	<b>Code name</b>
Aina Valland	Sjømat Norge	Director of Industrial Development and Public Relations	Industry association	Representative from an industry association
Kjersti Sandvik	Fiskeribladet Fiskaren	Journalist and author	The media	Journalist
Yngvar Olsen	NTNU	Professor	Researcher	Biologist
Tor-Arne Helle	Directorate of Fisheries	Senior Advisor	Authorities	Advisor X
Erlend Hopsdal Skjetne	Directorate of Fisheries	Advisor	Authorities	Advisor X
Noralf Rønningen	Aqualine	Project and Development Manager	Supplier	Supplier X
Klaus Hoseth	Stranda Prolog	Managing director	Supplier	Supplier X
Arvid Hammernes	Ocean Farming	Managing director	Applicant	Applicant X
Gustav Witzøe	SalMar	Founder and principal owner	Applicant	Applicant X
Trond Williksen	AkvaGroup	CEO	Applicant	Applicant X
Gunnar Myrebø	Ocean Farming	COB/ Project advisor	Applicant	Applicant X
Kjell Lorentsen	Gigante Offshore	Managing director	Applicant	Applicant X
Olav-Andreas Ervik	SalMar	COO - Farming	Applicant	Applicant X

TABLE 1: LIST OF PARTICIPANTS

In the analysis and discussions of the thesis, the participants will be presented by the code names shown in table 1. Representatives from supplier companies, companies that have applied for development licenses and advisors from the Ministry of Fisheries will be given randomly selected numbers instead of “X” and will thus be semi-anonymous. This procedure is chosen based on requests by several of the participants.

It is worth noting that one of the applicants is a supplier of equipment, and that one of the suppliers also was preparing an application for development licenses when conducting the interviews. The distinctions made in this study are based on what the interviewees preferred to be identified as and be questioned as.

### 2.2.3 DOCUMENTATION

In addition to conducting interviews, documentation was also used to collect data. In this case study, various legal and governmental documents related to the development licenses, development license applications and newspaper articles represented the main part of the documentation. According to Yin (2003), documents can be useful to ensure a sufficient knowledge base on the areas of interest. However, they must be carefully used, considering that they are not always accurate and may not be lacking in bias. A critical sense is thus important.

The documents reviewed in this study were mainly used to corroborate and augment evidence from the interviews, but were also used during the interviews to ask the participants how they interpreted the requirements of the legal documents associated with the development license policy. This was done to detect aspects of the development license policy that potentially could cause misinterpretation and disagreements.

### 2.2.4 SUMMARY OF DATA COLLECTION

In this section the data collection of the case study has been addressed. The sampling of this qualitative study was purposive, where the participants were selected in a strategic way (Bryman, 2012), resulting in those sampled being very relevant to the research questions. The sample ended up with 13 interviewees from the following stakeholder groups; applicants, suppliers, authorities, researchers, the media, and industry associations. The interviews were open-ended and semi-structured.

In addition to interviews, documentation was also chosen as a source of evidence, both in addition to and as a part of the interviews.

## 2.3 DATA ANALYSIS

This section serves to provide insights to the analysis of the data. The analysis strategy, the coding technique, and the coding process of the research will thus be assessed in the following subsections.

### 2.3.1 ANALYSIS STRATEGY

The analysis strategy of the study has largely been relying on the analytical framework that was developed from the theoretical discussion, which provided a set of theoretical propositions deduced out of theoretical concepts. These propositions shaped the data collection of the study, and gave priorities to the relevant analytical strategies.

Grounded theory was chosen as a general strategy of the qualitative data analysis, as it is particularly suited for capturing complexity (Bryman, 2012), which was considered highly relevant when studying an industry context. In order to answer the research questions, coding was used as the key qualitative data analysis technique, as it is considered as the main method in grounded theory. Coding furthermore provides the possibility to systematize and analyze the data through the use of concepts and categories (Bryman, 2012). This process did eventually lead to the generation of *substantive theory*, in which the theory generated is applicable only in certain empirical instances.

### 2.3.2 THE CODING TECHNIQUE

In order to answer the research questions, all the written material after transcribing the interviews was coded. The coding was conducted electronically through the use of a computer-assisted qualitative data analysis named NVivo. This choice was based on the software facilitating a faster and more efficient coding and retrieval process, simultaneously as it is argued to enhance the transparency of the qualitative analysis (Bryman, 2012). As the analysis was conducted by using grounded theory, the software was especially advantageous. Firstly, the software facilitated the coding and categorizing of a large amount of text in a structured manner. Secondly, NVivo made it possible to generate analysis based on the coded material, as it invites the researchers to think about codes that are developed in terms of “trees” of interrelated ideas (Bryman, 2012). This made it easier to create and visualize the many relationships between the concepts and categories.

### 2.3.3 THE CODING PROCESS

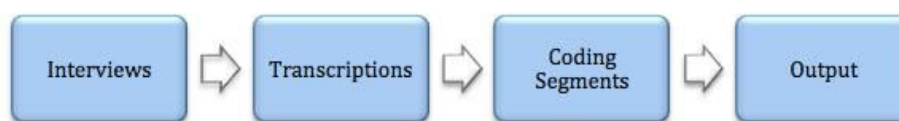


FIGURE 2: THE CODING PROCESS

The coding process of this research consisted of three steps. First, all interviews were transcribed and imported into the NVivo library. Secondly, all relevant segments from the interviews were connected to different codes, and several concepts were developed through open coding. In this step, important synergies and relationships between the different codes and concepts were drawn, which resulted in a complex network of data. This initial coding process was conducted by the two researchers in collaboration, in order to prevent the coding output from inconsistencies due to individual bias. Finally, the output from the coding process was retrieved by developing categories and substantive theories out of the coded data. This

process was well supported by NVivo, as it provided the data from the interviews carefully sorted within the concepts and categories developed. The sorted output was thereafter transferred to a cloud so that the data at any time was available for both researchers. The output that proved to be relevant was further analyzed to answer the research questions of the thesis.

#### 2.3.4 SUMMARY OF DATA ANALYSIS

Grounded theory was chosen as the analysis strategy of the study, with coding as the key qualitative data analysis technique. The coding process was conducted in NVivo, making the coding and retrieval process faster and more efficient, simultaneously as it is argued to enhance the transparency of the qualitative analysis (Bryman, 2012). The interviews were first transcribed, before they were coded in NVivo by connecting segments from the interviews to different codes. The codes were connected to different concepts, which furthermore acted as building blocks of different categories. Substantive theory could lastly be drawn out of the analysis of the data, which will be the basis of the discussions in chapter 6 and 7.

### 2.4 QUALITY OF RESEARCH

In order to ensure the overall research quality of this qualitative case study, central research quality criteria have been addressed. The research quality will be assessed by evaluating the research in terms of the research criteria presented by Yin (2003): *construct validity*, *internal validity*, *external validity*, and *reliability*.

#### 2.4.1 CONSTRUCT VALIDITY

*Construct validity* refers to the extent in which all dimensions of a concept are studied and if the study actually represents the concept of interest (Bryman, 2012). It furthermore concerns establishing correct operational measures for the concepts being studied, and according to Yin (2003) there are three case study tactics that can be implemented to increase construct validity when doing case studies. Firstly multiple sources of evidence should be used during the data collection so that data can be cross-checked, which also goes by the name *data triangulation*. We used two data sources in order to obtain features of the industry, namely interviews and documents. The two methods were seen to represent the most beneficial sources of evidence when conducting the case study of the development licenses, as explained in section 2.2. Additionally, the interviewees represented several different stakeholder groups, which made it possible to cross-check the data collected amongst several different segments of the industry.

Secondly the researchers must establish a chain of evidence, which is a principle to allow the reader of the case study to follow the derivation of any evidence, ranging from initial research questions to ultimate case study conclusions (Yin, 2003). This is seen to be well documented in the case study, considering all theory and empirical data used in the analysis and discussion are presented in the study, the interview guide is presented in the appendix, and the analysis of the thesis describes the detailed procedures of answering the research questions.

Thirdly the researchers should have key informants to review a draft of the case study report. This measure is not accomplished in this thesis, due to lack of time.

Two of the three tactics are thus implemented at a satisfactory level, strengthening the construct validity of the research. Also, we ensured that the study actually represents the concepts of interest by structuring the interview guides in accordance with the analytical framework developed in the theoretical discussions.

The main aspects of the developed theoretical framework, namely innovation, long-term orientation, cooperation and stakeholder trust can however be argued to be quite comprehensive and vague, and the framework can thus be criticized for the four chosen aspects being too unclear to measure corporate sustainability in an industry context.

#### 2.4.2 INTERNAL VALIDITY

*Internal validity* measures to which extent there is a good match between the researcher's observations and the theoretical ideas they develop (Bryman, 2012). Internal validity is only a concern for causal explanatory case studies, in which an investigator is trying to determine whether event x led to event y (Yin, 2003). Seeing that this case study is exploratory, and that it is challenging to establish strict causal relationships between events based on qualitative data from interviews, internal validity is found to be of little relevance to address.

#### 2.4.3 EXTERNAL VALIDITY

Furthermore, *external validity* concerns to which degree the findings can be generalized across social settings (Bryman, 2012). As the case study is conducted to see whether the development license policy will facilitate shared value creation, and if not, what weaknesses the policy has that other governmental policies must account for, there is no need for generalizing the case study. The case study is thus used to investigate how governmental policies can facilitate shared value creation, and only intends to contribute to extending the existing knowledge in this particular area.

There is however another part of the thesis that has the potential of being generalized under certain conditions, namely the analytical framework. We tested the external validity of the framework by assessing whether the presumptions of the framework are applicable in the context of the Norwegian aquaculture industry. This assessment was conducted both by considering the applicability of the critique of the shared value creation concept (Porter and Kramer, 2011) in Norwegian aquaculture, by testing whether the case study data conforms with the propositions presented in the framework, and by addressing the framework's weaknesses. We did only have the opportunity to address whether the presumptions made are applicable in the Norwegian aquaculture industry, but by testing the presumptions in a number of other industries, the analytical framework can potentially be generalized.

#### 2.4.4 RELIABILITY

Finally, *reliability* represents to which degree the study can be replicated i.e. it can be repeated and provide the same findings (Bryman, 2012). Achieving a high reliability is often hard in qualitative case study research, since it is impossible to freeze social settings and the circumstances of an initial study to make it replicable. As the case study in this thesis is based on a distinct process, namely the issuing of a new policy in the Norwegian aquaculture

industry, there is a considerable chance that attempting to repeat the study will result in other findings and conclusions, as the policy probably will affect the industry in a different way over time than what industry actors anticipates at this point in time.

However, documentation and transparency, along with reliability of methods used, can lead to increased reliability. According to Yin (2003) this can be achieved in two ways, namely by the use of a case study protocol and by developing a case study database.

In this case study a case study database was developed in the initial phase of the research in order to ensure a safe and organized collection of data and resources. The case study database was stored electronically by the use of cloud-storage, accessible from all computer platforms with internet connection. All interview-guides were documented, along with the transcription and coding of all the interviews, which are available for other researchers if requested. This makes it possible for other researchers to retrieve information easily and review the evidence directly if needed.

The case study protocol was also developed in order to ensure a methodological correct collection of data. Considering that the case study was primarily based on interviews, the protocol mainly functioned as an interview guide through the semi-structured interviews.

#### 2.4.5 SUMMARY OF QUALITY OF RESEARCH

The construct validity is considered relatively high based on the use of both data triangulation and chain of evidence, and the reliability is good in terms of the data needed to replicate the case study is well documented. However, the results of the case study will be difficult to replicate as it considers the implementation process of the development licenses.

Furthermore, addressing internal validity is not seen as relevant when conducting an exploratory research, and external validity is not a premise of the case study, considering the case study of development licenses is not meant to be generalized. The analytical framework does however have the potential of being generalized if the presumptions of the framework are tested in other industry settings.

### 3. THEORETICAL BACKGROUND

This chapter will elaborate on the concept of corporate sustainability. In section 3.1, the general terms of sustainability and sustainable development will first be discussed, before the concept of corporate sustainability will be addressed, focusing on different understandings and conceptualizations of the term. There will further be made a distinction between instrumental corporate sustainability and integrative corporate sustainability, and theories related to these views will be discussed in section 3.2 and 3.3. The concept of shared value creation will furthermore be introduced as synthesis between integrative and instrumental corporate sustainability, and its features will be comprehensively discussed in section 3.4.

#### 3.1 CORPORATE SUSTAINABILITY

This section will elaborate on the emergence of corporate sustainability. This includes a discussion of definitions and understandings related to the term.

##### 3.1.1 DEVELOPMENT OF THE CONCEPT

*Sustainability* has become a fashionable word during the last decades, not only among scientists but also among the general public. The term originates from the ecology discipline, where it is defined as the capacity to endure, and further describes how biological systems can remain diverse and productive indefinitely. The term has in recent times been transferred to a broader meaning which includes several aspects of the society other than the ecological ones. In 1987, the United Nations' World Commission on Environment and Development (WCED) released the report '*Our common future*', commonly referred to as the Brundtland Report after the chairman of the commission, Gro Harlem Brundtland. This document coined and defined the term sustainable development as "*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*" (WCED, 1987, p. 43).

*Corporate sustainability* is a term that has evolved as a big concept within business management, and the phenomenon has been described and discussed in all of the large management journals during the last couple of decades. There are several different understandings of the concept, but it is commonly seen as an alternative to traditional, short-term, profit-oriented approaches to managing the firm (Montiel, 2008).

Some researchers (Shrivastava, 1995; Starik and Rands, 1995) follow the original ecology discipline in their understanding of corporate sustainability, and identify it primarily with the environmental responsibility of businesses. Other scholars (Baumgartner and Ebner, 2010; Dyllick and Hockerts, 2002; Hahn et al., 2014) follow the WCED definition in a broader sense. Dyllick and Hockerts (2002) are some of those who transpose the sustainability term from '*Our Common Future*' (WCED, 1987) into the corporate sector, and define corporate sustainability as "*...meeting the needs of a firm's direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities etc.), without compromising its ability to meet the needs of future stakeholders*" (p. 131). Instead of mainly focusing on the ecological aspects of sustainability, these researchers identify corporate sustainability as a

tridimensional construct that includes the environmental, economic, and social dimensions, as shown in figure 3. This tridimensional construct is also referred to as *the triple bottom line*, a principle first coined by John Elkington in the book '*Cannibals With Forks*' from 1997.

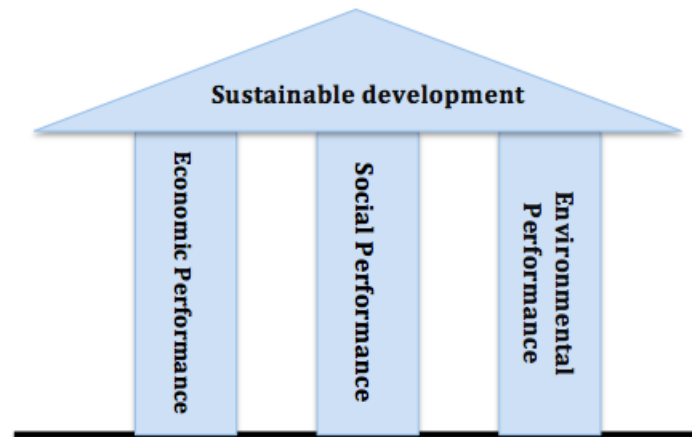


FIGURE 3: THE THREE DIMENSIONS OF CORPORATE SUSTAINABILITY

The bottom line is in traditional business accounting and common usage referred to as the economic profit or loss, which is usually recorded at the very bottom line on a statement of revenues and expenses. Elkington (1997) further argues that the three dimensions; economic, environmental, and social, must be integrated in the triple bottom line if the corporation is to become fully sustainable.

The *economic dimension* of the triple bottom line represents general aspects that lead to good financial conditions and economic success of the corporation. The aspects of the economic dimension of corporate sustainability are profitability, innovation and technology, collaboration, knowledge management, processes and efficiency (Baumgartner and Ebner, 2010).

The *environmental dimension* of corporate sustainability deals with impacts on environment due to corporate activities. Such environmental impacts are caused by resource use, emissions into air, water or ground, as well as waste and impacts on biodiversity (Baumgartner and Ebner, 2010).

Finally, the *social dimension* deals with the corporation's impacts on the society in which it operates and to the people within the corporation. Such social impacts include ethical behavior, human rights, corruption, health, safety and human capital development (Baumgartner and Ebner, 2010).

### 3.1.2 CORPORATE SUSTAINABILITY AND RELATED TERMS

In addition to corporate sustainability, literature on sustainable business practices addresses several other terms that describe the environmental and social focus of corporations. One of the most frequently used terms is *corporate social responsibility* (CSR), which can be difficult to distinguish from corporate sustainability (Montiel, 2008). In order to determine



whether literature concerning CSR can be used in corporate sustainability discussions, it is important to achieve an understanding of the CSR term and its applicability, in addition to assessing similarities and differences between CSR and corporate sustainability.

Dahlsrud (2008) found that CSR historically has largely excluded the environmental dimension, and hence differs from the current understanding of corporate sustainability. However, when reviewing literature published from 1998 onwards, Dahlsrud (2008) found that CSR is most frequently defined as “*A concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis*” (p. 7). Hence, CSR has over the last decades shown to move towards the concept of corporate sustainability by including environmental issues to a greater extent.

This is supported by Montiel (2008), who argues that in CSR, environmental issues have evolved to become a subset of a broader social performance dimension, while the social dimension has become an increasingly important part of the corporate sustainability paradigm. The conceptualization of CSR, that integrates economic, social and environmental dimensions, and the conceptualization of corporate sustainability, which comprises economic, social, and environmental dimensions in terms of the triple bottom line, has thus become quite similar. It can thus be concluded that, despite their paradigmatic differences, CSR and corporate sustainability are converging, and possess approximately the same understandings. Hence, the terms can be used interchangeably, and we have chosen to use the term corporate sustainability throughout the discussions of this thesis.

### 3.1.3 PERSPECTIVES ON CORPORATE SUSTAINABILITY

The discussions in the previous subsections give a general understanding of what corporate sustainability is about. However, finding a universal definition of the term may not be expedient. All organizations are different, and it is argued that ‘one solution fits all’-definitions of corporate sustainability should be abandoned, accepting various and more specific definitions matching the development, awareness and ambition levels of organizations (Van Marrewijk, 2003). This is also emphasized by Porter and Kramer (2006), who argue that the efforts that most companies have done to improve the social and environmental consequences of their activities, have not been nearly as productive as they could be because many companies think of CSR in generic ways instead of in the way most appropriate to each firm’s strategy.

Traditional approaches to corporate sustainability have been mainly associated with the *instrumental view* on the concept, where environmental and social concerns are predominantly motivated by financial incentives (Gao and Bansal, 2013). Within the instrumental perspective, managers seek immediate financial gains from their social and environmental investments, rather than embracing the tensions between the economic, social and environmental elements of the system. With the economic dimension consequently being prioritized over the two other dimensions in the triple bottom line, situations where there are conflicts between the financial goals and environmental and social objectives have often been

abandoned (Hahn et al., 2014). On the other hand, the *integrative view* has emerged as a different approach to corporate sustainability that accounts for such tensions and conflicts when making decisions (Hahn et al., 2010; Gao and Bansal, 2013). Proponents of the integrative view argue that firms need to pursue sustainability strategies in all three dimensions simultaneously, even if they appear contradictory, in order to achieve corporate sustainability (Dyllick and Hockerts, 2002; Hahn et al., 2014). The instrumental view and the integrative view on corporate sustainability will be elaborated upon in section 3.2 and 3.3, respectively.

## 3.2 INSTRUMENTAL CORPORATE SUSTAINABILITY

Instrumental logics of managing social and environmental issues have historically dominated organizational theories and corporate sustainability research (Gao and Bansal, 2013). Instrumental theory delineates and investigates the consequences, most notably, the economic benefits, which follow from attending to a range of stakeholders (Margolis and Walsh, 2003). The instrumental logic posits that firms can benefit financially when they address environmental or societal concerns (Husted and de Jesus Salazar, 2006), and the main objective of incorporating corporate sustainability is to achieve financial benefits of the commitment. To create win-win situations that ensure shareholder gains is thus the main objective of the instrumental approach to corporate sustainability. In the following subsections the win-win paradigm will firstly be assessed, before the shareholder value perspective is elaborated upon.

### 3.2.1 THE WIN-WIN PARADIGM

In instrumental corporate sustainability, economic gains are preconditions for investing in social and environmental aspects. The ultimate focus of businesses with this mentality is thus on the identification of situations and strategies in which environmentally friendly or socially responsible corporate behavior pays off financially (Dyllick and Hockerts, 2002). Such ‘win-win’ situations represent occasions where financial gains can be identified from social and environmental investments. According to the win-win paradigm, economic, environmental and social aspects of corporate sustainability are in harmony with each other and management should seek to identify those cases in which all these three dimensions can be achieved simultaneously (Hahn et al., 2010). The importance of embracing win-win situations is emphasized by Nidumolu et al. (2009), who argue that way too many CEOs are not able to see beyond the costs of being corporate sustainable, and thus does not realize the possible financial benefit.

This approach of involving in only environmental stewardship and social responsibility that pays off for companies is also known as the so-called *business case for sustainability*, where economic success is increased while performing well in social and environmental issues (Dyllick and Hockerts, 2002). The relevance of environmental and social issues for corporate sustainability is thus in this approach derived from a purely economic perspective. Accordingly, corporate sustainability is regarded as a business approach that creates long-term shareholder value by embracing opportunities and managing risk from the economic, environmental and social dimensions (Lo and Sheu, 2007). It can therefore be argued that the

economic dimension of sustainability is considered as more important than the others, and that shareholders are perceived as the most important stakeholders within the instrumental logic. The shareholder value perspective will be further elaborated in the next subsection.

### 3.2.2 A SHAREHOLDER VALUE PERSPECTIVE

All organizations have several stakeholders that are, directly or indirectly, affected by its operations. Shareholders represent the stakeholders that are the owners, or investors, of the corporation. A broad understanding is that organizations must be profitable in order to survive, and in order to be an attractive investment a company must earn a higher return on the shareholder's equity than could be realized in the bank. In a shareholder's perspective, profitability is the very purpose of economic organizations, and represents an important source of competitive power (De Wit and Meyer, 2014).

Friedman (1970) is a proponent of the shareholder value perspective, arguing that the main objective of any company should be to serve their shareholders, which in most cases means maximizing the profits of the company to ensure that the shareholders' returns are as high as possible. The executives spend the shareholders' money if they engage in social issues that do not generate a higher income than the costs, so Friedman (1970) argues that the individuals who wish to engage in social issues should do so in their leisure time, and let businesses concentrate on fulfilling their shareholders objectives. Margolis and Walsh (2003) support this view, stating that: *"If corporate social performance contributes to corporate financial performance, then a firm's resources are being used to advance the interests of shareholders, the rightful claimants in the economic contractarian model"* (p.277).

Supporters of a shareholder's perspective further argue that the only social responsibility of a firm is to pursue profitability within the boundaries of the law (De Wit and Meyer, 2014). This view contributes to an approach to corporate sustainability where the economic dimension is prioritized over the environmental and social dimensions, as in the instrumental approach to corporate sustainability. Further on, as Friedman (1970) points out; if the society wants social and environmental concerns to be taken care of, it is their responsibility to establish a framework of law to comply this.

### 3.2.3 SUMMARY OF THE INSTRUMENTAL VIEW

This section has addressed the instrumental perspective on corporate sustainability. This paradigm views the economic dimension as more important than the social and environmental dimensions of corporate sustainability, and companies following this approach only conduct sustainability engagement in situations where economic gains are expected. The shareholders are furthermore considered as the most important stakeholders, and the main purpose of the business is to maximize shareholder wealth.

## 3.3 INTEGRATIVE CORPORATE SUSTAINABILITY

In contrast to the instrumental view, where economic profits are preconditions for making investments in social and environmental aspects, the integrative perspective accepts the need for a simultaneous integration of all of the sustainability aspects (Badaracco, 2013; Dyllick and Hockerts, 2002; Gao and Bansal, 2013; Hahn et al., 2010). The integrative approach

presumes that all three elements in the triple bottom line are produced and reproduced as part of a system, and can thus not be considered separately (Hahn et al., 2014). This view is aligned with the original approach to sustainability, where none of the individual elements can be isolated, but are integrated in a woven interconnected system where they need to be seen in relation to each other (Gao and Bansal, 2013). The integrative perspective thus addresses trade-offs, which often occur when taking all stakeholders' views into account. In the following subsections the trade-off paradigm will firstly be assessed, challenging the win-win paradigm discussed in the previous section, before the stakeholder value perspective is elaborated upon.

### 3.3.1 THE TRADE-OFF PARADIGM

Proponents of the integrative view are critical to the win-win paradigm discussed in subsection 3.2.1, as strategies with minor economic outperformance in any case will be prioritized over strategies with significant environmental outperformance (Figge and Hahn, 2012). It is argued that the inherent focus on win-win situations found in the instrumental logic does not guarantee that the most sustainable strategy options are identified. Rather, this can result in situations where options that are overall more sustainable are discarded in favor of less sustainable options that provide some financial benefit to the firm (Figge and Hahn, 2012). This results in a limited perspective on corporate contributions to sustainable development (Hahn et al., 2010).

According to Hahn et al. (2014) there exist tensions between the different sustainability dimensions, which makes it hard to achieve success in all three dimensions simultaneously. Hahn et al. (2010) support this argument and believe that the underlying assumption in the win-win paradigm, of all three sustainability dimensions being in harmony with each other, is rather simplistic given the complex and multi-faced nature of sustainable development. Tensions can occur on three different dimensions, namely level, change, and context (Hahn et al., 2014). Tensions at the level-dimension occurs when values and objectives on the lower levels often contradicts with the needs of higher levels. Tensions at the change-dimension occur between the three sustainability dimensions because sustainable development involves a transition from currently unsustainable to more sustainable business practices. Finally, tensions at the context-dimension represents temporal tensions, which refer to the question whether firm strategies undervalue long-term outcomes in economic, environmental and social aspects in favor of short-term performance, and spatial tensions, which refer to conflicts between different environmental and social standards.

Such tensions furthermore cause trade-off situations to occur in organizations (Hanh et al., 2014). In trade-off situations it is impossible to achieve two or more desirable objectives simultaneously. Decision makers rather need to weigh a loss in at least one dimension against a gain in other dimensions (Hahn et al., 2014). This contradicts to the win-win paradigm, and scholars supporting the trade-off paradigm argue that many corporate decisions related to social and environmental problems, however creative the decision-maker may be, do not present themselves as potential win-wins, but rather will manifest themselves in terms of dilemmas (Badaracco, 2013).

Simon (1964) suggests an approach to handle trade-off situations within corporations. He argues that a goal in one organizational area should be optimized with regard to certain constraints of other organizational areas. In assessing sustainability decisions this implies that you can strive to optimize i.e. the environmental performance of your business, but within certain economic and social requirements. In contrast to the win-win approach, where the profit-maximizing strategy always will be preferred to trade-off cases, Simon's (1964) approach claims that you can perform well within the social and environmental dimensions while simultaneously achieving adequate financial performance. A similar approach is presented by Epstein et al. (2015) where managers decide in favor of financial performance whenever financial performance and sustainability are in conflict, yet avoiding actions that would be really bad for sustainability. This is done by defining minimally acceptable irresponsible behavior, in which these conditions delineate "trade-off-free zones" in managerial decision making, where decisions are automatic in favor of sustainability. These views represent approaches to managing trade-offs where financial, social, and environmental gains are balanced, which challenges the view of Hahn et al. (2010), who argue that you occasionally must accept losses in the different dimensions.

### 3.3.2 A STAKEHOLDER VALUE PERSPECTIVE

According to the integrative logic, corporate sustainability involves the simultaneous recognition of varying, but often conflicting demands of a wide set of stakeholders (Clarkson, 1995; Gao and Bansal, 2013). Within stakeholder theory, the primary objective of a company is to create as much value as possible for its stakeholders (Strand and Freeman 2013), and a widely used definition of stakeholders is formulated by Freeman (1984, p. 46) as "*any group or individual who can affect or is affected by the achievement of the firm's objectives*".

Proponents of the stakeholder value perspective are convinced that an organization is not only responsible to its primary stakeholders, but also have a moral responsibility towards secondary stakeholders, and thus should take their interests into account when making decisions (De Wit and Meyer, 2014; Eccles et al., 2014; Strand and Freeman, 2013). Secondary stakeholders are not directly affected by the firm's operations, but experience benefits or disadvantages by external effects that are often excluded from the corporation's decision making processes. These effects are called *externalities*, and arise when firms create social costs that they do not have to bear.

The concept of externalities is described by Demsetz (1974) as external costs and benefits affecting the society. He argues that no harmful or beneficial effect is external to the world, and some persons always suffer or enjoy these effects. What converts a harmful or beneficial effect into an externality is that the cost of taking responsibility of the effect is too high to make it worthwhile. *Internalizing* such effects refers to a process where these effects are accounted for by the responsible actors. Tools and regulations are frequently used by governments in order to reduce the socioeconomic efficiency loss related to such externalities.

Eccles et al. (2014) argue that negative externalities to stakeholders occur due to an organization's short-term focus, and that superior stakeholder engagement is based on a

company's ability to establish long-term relationships with key stakeholders. Proponents of an integrative view consider externalities as something that the firms must take into account, regardless of it being profitable or not (Hahn et al., 2014), which implies that the organization is willing to act in a responsible way, even when this entails sacrificing profitability.

### 3.3.3 SUMMARY OF THE INTEGRATIVE VIEW

In this section we have reviewed the integrative perspective on corporate sustainability. This paradigm views the economic, social and environmental dimensions of corporate sustainability as equally important, and considers all stakeholders' interests as essential. The section introduced the trade-offs that occur between the different dimensions, implying that it is hard to achieve success in all of the dimensions simultaneously.

## 3.4 CREATING SHARED VALUE - A NEW WAY TO ACHIEVE CORPORATE SUSTAINABILITY

Instrumental corporate sustainability and integrative corporate sustainability are extremes that both have weaknesses. The instrumental view can prevent the most sustainable solutions to be chosen, based on its prioritization of the economic dimension of corporate sustainability, while the acceptance of trade-offs in the integrative view makes it less attractive for companies, considering satisfying shareholders is the main objective of most businesses. The concept of *shared value creation* here emerges as a synthesis of the two extremes, describing how firms can enhance its competitiveness while simultaneously advancing the economic and social conditions in the communities in which it operates (Porter and Kramer, 2011).

This section serves to give a detailed review of the concept of shared value creation, and assess how the concept conforms to both the instrumental and integrative view. Further, the way in which shared value creation attempts to integrate business and society will be elaborated upon. Finally, how the authorities can facilitate shared value creation is discussed before three specific ways of achieving shared value creation are presented.

### 3.4.1 THE CONCEPT OF SHARED VALUE CREATION

The idea of shared value was initially explored in a December 2006 HBR article by Michael E. Porter and Mark R. Kramer, "Strategy and Society: The Link Between Competitive Advantage and Corporate Social Responsibility", but it was only after the authors published a follow-up article in December 2011, "Creating Shared Value", where the authors provided a detailed description of the concept and its usages, that the concept became highly recognized. Since then, several publications have elaborated upon and discussed the concept, and shared value creation has evolved to become a field of research and a business approach applied by companies worldwide.

Shared value creation is, according to Porter and Kramer (2011), a way of achieving a more sustainable world without forcing firms to specific practices by tightening the governmental regulations. They argue that corporations themselves must realize the potential that lies in creating economic value in a way that also creates value for society by addressing its needs

and challenges. Corporations must stop viewing value creation narrowly, seeking only to optimize short-term financial performance while missing the most important customer needs and ignoring the broader influences that determine their longer-term success (Porter and Kramer, 2011).

The concept of shared value creation proposes three distinct ways in which companies can create economic value by creating societal value, namely by reconceiving products and markets, redefining productivity in the value chain, and building supportive industry clusters at the company's location (Porter and Kramer, 2011).

- I. **Reconceiving products and market:** Considers whether products actually benefit their customers. Firms need to identify all the societal needs, benefits and harms that are embodied in their products, and try to find a way of making profits by improving the social value of the products.
- II. **Redefining productivity in the value chain:** Considers whether the value chain can become more productive by being more sustainable. Societal problems can create economic costs in the firm's value chain, and thus firms will benefit in the long run from dealing with these problems.
- III. **Enabling local cluster development:** Considers the external environment for the company and how cluster development can increase the performance of a company. Clusters are defined as geographic concentrations of firms, related businesses, suppliers, service providers and logistical infrastructure in a particular field, and also include institutions such as academic programs.

#### 3.4.2 INSTRUMENTAL OR INTEGRATIVE?

The instrumental features of the shared value creation concept are evident in how it relates to the win-win paradigm, considering that the key in creating shared value is to see beyond the trade-offs and focus on the gains that can be obtained by simultaneously creating shared value with stakeholders and obtaining win-win situations (Porter and Kramer, 2011). The concept does however also have several similarities to the integrative view on corporate sustainability, as it is rooted in a systems perspective where societal progress and economic growth are necessarily interconnected. It recognizes that social and environmental issues to a large extent are the responsibility of the business, and that the health of its community has an important impact on productivity, innovation and profits (Porter and Kramer, 2011).

Even though shared value creation is seen to have similarities with both the instrumental and the integrative approach to corporate sustainability, it is clearly rooted in the instrumental view. This becomes evident by seeing that shared value creation is considered as "*a new way to achieve economic success*" (Porter and Kramer, 2011, p. 4), which distinguishes the economic dimension of corporate sustainability as the driving force. Shared value creation is therefore by definition found to originate from the instrumental view on corporate sustainability.

The concept does however distinguish itself from the originating instrumental view by focusing on creating shared value with all stakeholders, not only shareholders. Shared value creation considers addressing the needs of the society and simultaneously expanding the total pool of economic and social value as the key to long-term economic success and competitiveness. A tight connection to the local community, with all its stakeholders, is thus crucial, and can bring competitive advantage.

Despite the fact that shared value creation is based on a win-win approach, in which managers should try to see beyond trade-offs (Porter and Kramer, 2011), it is evident that Porter and Kramer (2011) recognize the existence of trade-offs to a certain degree. Especially the trade-off between short-term profits and long-term sustainability is addressed. This becomes apparent when they argue that firms should focus on achieving success in the long term rather than optimizing short-term financial performance. Hence, they accept that profits in the short run occasionally will need to suffer for both economic and societal value in the long-run, which is in line with the integrative approach to corporate sustainability. However, in the integrative view, all trade-offs amongst different sustainability dimensions and different stakeholders are accepted. This can be viewed as a sharing of the value already created - a redistribution approach involving taking value from one party and give it to another. On the contrary, the concept of shared value creation is about expanding the total pool of economic and societal value (Porter and Kramer, 2011). This eliminates the trade-offs found in the integrative view, as value will never be taken from one party to another. There will rather be an overall expansion of total value, creating win-win situations where several parties can benefit.

Based on the discussions of this subsection, shared value creation is found to represent a new and more modern branch of instrumental corporate sustainability, which is influenced by the integrative view. This relationship is shown in figure 4.

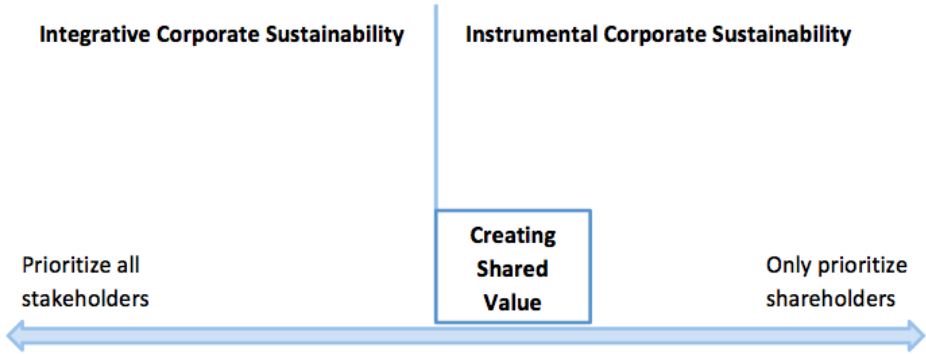


FIGURE 4: POSITIONING OF SHARED VALUE CREATION

3.4.3 INTEGRATING SOCIAL AND ENVIRONMENTAL ACTIVITIES INTO THE FIRM’S STRATEGIES  
 One way in which the concept of shared value creation (Porter and Kramer, 2011) distinguishes itself from traditional approaches to corporate sustainability, is its emphasis of connecting social and environmental activities to the business strategies. Porter and Kramer (2011) argue that in order to achieve shared value, the social and environmental activities of a firm must be integrated into the economic thinking of the company, instead of being treated as



external matters. This is supported by Eccles et al. (2014), who define *sustainable organizations* as a category of modern corporations that compete by integrating social and environmental issues into their strategies and processes.

Already in their 2006-article, Porter and Kramer emphasized that the prevailing approaches to CSR are so fragmented and so disconnected from business and strategy that they obscure many of the greatest opportunities for companies to benefit society. This is supported by Eccles and Serafeim (2013), who slaughters the way companies frequently try to “greenwash” their business by spending money on issues that are not *material*, meaning that they are not relevant to their strategy and operations. They argue that “...a *mishmash of sustainability tactics does not add up to a sustainable strategy*” (Eccles and Serafeim, 2013, p.4).

One way of achieving a better integration of social and environmental issues into a firm’s economic thinking is through integrated reporting (Eccles and Saltzman, 2011). Integrated reporting combines a company’s material information on financial and nonfinancial performance in one document. This is according to Eccles and Serafeim (2013) a crucial step to creating a more sustainable society, as it serves as a key platform for stakeholder engagement.

Porter et al. (2011) published a report called “Measuring Shared value” in 2011, where they present a model describing an integrated shared value strategy and measurement process as shown in figure 5. This model builds on the idea of integrated reporting by providing a framework to link social progress directly to business success, and vice versa. It is designed as a four-step ongoing feedback loop that provides a roadmap for understanding and unlocking shared value creation:

- I. **Identify the social issues to target.** A systematic screening of unmet social needs and gaps and an analysis of how they overlap with the business across the three levels of shared value.
- II. **Make the business case:** Identifying the targets and specifying the activities and costs involved for each shared value opportunity, modeling the potential business and social results relative to the costs, and making go/no-go decisions.
- III. **Track progress against desired targets:** Tracking inputs and business activities, outputs, and financial performance relative to projections.
- IV. **Measure results and use insights to unlock new value:** Validating the anticipated link between social and business results and determining whether the outlay of corporate resources and efforts produce a joint return. Insights from this analysis will inform opportunities to unlock further value creation through refining the shared value strategy and execution.

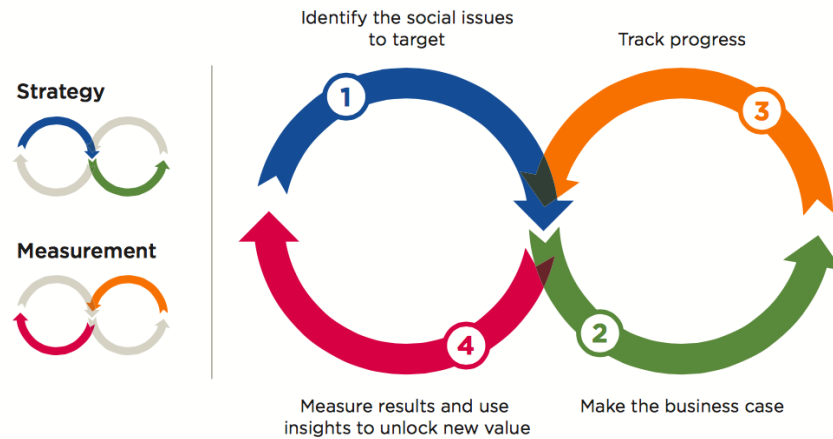


FIGURE 5: THE FOUR STEPS OF MEASURING SHARED VALUE (PORTER ET AL., 2011)

#### 3.4.4 IMPORTANT ASPECTS OF SHARED VALUE CREATION

When we assessed the concept of shared value creation, four aspects emerged as especially important for achieving shared value creation, namely innovation, long-term orientation, cooperation and stakeholder trust. How the four aspects was extracted from the shared value creation concept by Porter and Kramer (2011) and why we consider them as important for achieving shared value creation in an industry context will be further elaborated upon in chapter 4.

#### 3.5 THE ROLE OF GOVERNMENTAL POLICIES

Porter and Kramer (2011) are critical to the way governments currently regulate industries. They argue that the diminished trust in business has resulted in public policies that typically undermine competitiveness and weaken economic growth. Hence, while companies have the main responsibility in altering their business practices to achieve shared value creation, governments also possess an important role in facilitating this change process.

According to Porter and Kramer (2011), regulations that enhance shared value creation set goals and stimulate innovation. Such regulations have a number of characteristics: 1) They set clear and measurable social goals, 2) they set performance standards, but do not describe the methods to achieve them, 3) they define phase-in periods for meeting standards, which reflect the investment or new-product cycle in the industry, and 4) they implement universal measurement and performance reporting systems. Appropriate regulations further require efficient and timely reporting of results, which can then be audited by the authorities as necessary, rather than impose detailed and expensive compliance processes on everyone.

On the other hand, there exist regulations that discourage shared value creation. These regulations force compliance with particular practices, rather than focusing on measurable social improvements. They also typically mandate a particular approach to meeting a standard - which blocks innovation and almost always inflicts costs on companies (Porter and Kramer, 2011). This kind of governmental behavior undermines shared value creation, as it triggers fierce resistance from businesses.

### 3.6 A CRITICAL ASSESSMENT OF SHARED VALUE CREATION

The concept of shared value creation has found enormous success in the management literature during the last decade, and has been cited in various articles and journals. However, the concept is also deemed quite controversial among some scholars in the business and society field. The critique shared value creation has met from other scholars will be the focus of this section.

“Contesting the value of the shared value concept” written by Crane et al. (2014) is one of few articles contributing to a critical assessment of the concept of shared value creation, elaborating on several weaknesses of the concept. All weaknesses will be addressed, except for the critique of shared value creation glossing over the complexity of value chains, which is related redefining productivity in the value chain, and critique of not concerning what goods companies produce, which is related to reconceiving new products and markets, based on these being outside the scope of this thesis.

#### UNORIGINAL CONCEPT

In some of their critique, Crane et al. (2014) claim that the theoretical aspects of the shared value creation concept is unoriginal, draws a caricature the concept of CSR and takes credit for other's work. The concept's unoriginality is associated with striking similarity to existing concepts of CSR, stakeholder management, and social innovation. By drawing a caricature of CSR, Porter and Kramer (2011) also defines CSR as separate from profit maximization, which ignores several decades with research on how CSR can be combined with economic success. The concept has also met critique of taking credit for other's work, for example regarding the notation of creating shared value for stakeholders, which is a known principle in stakeholder theory (Freeman, 1984).

#### MAINLY CONCERNS HOW TO ACHIEVE COMPETITIVE ADVANTAGE

Crane et al. (2014) further argue that shared value creation is based on a shallow conception of the corporation's role in society, and is basically a strategy to differentiate the corporation from its competitors and achieve competitive advantage. Porter and Kramer (2011) claim that creating shared value will require long-term orientation, which is contradicting to the short-term focus often found in competitiveness. Shared value creation is mainly implemented in projects that corporations do on their own or in cooperation with selected partners, while keeping the ownership over their projects (Crane et al., 2014). This may undermine cooperation and stakeholder trust with other stakeholders, and lead to sustainability issues affecting a whole industry being overlooked. This argument is supported by Dembek et al. (2015) who state that by limiting the scope of policies and practices to redesigning product, value chain and building clusters, Porter and Kramer's (2011) concept of shared value creation is only applicable at an organizational level. According to Crane et al. (2014), a true societal perspective would consider many of the problems corporations try to deal with at a local level, as problems requiring broader solutions embedded in democratically organized multi-stakeholder processes. They further argue that societal responsibility in a broader sense would rather result in industry-wide solutions and multi-stakeholder initiatives where

corporations would perceive themselves as a stakeholder of the problem rather than as the center of a stakeholder network.

#### ASSUMES COMPLIANCE WITH LEGAL AND MORAL STANDARDS

Crane et al. (2014) also states that creating shared value is naive about the challenges of business compliance. Porter and Kramer (2011) state that “*regulation will be needed to limit the pursuit of exploitative, unfair, or deceptive practices in which companies benefit at the expense of society*” (p. 14). However, the concept of shared value creation is simply built on the assumption that compliance with these legal and moral standards is given. Seeing that some corporations today are found to be involved in severe corruption cases and the trend of outsourcing work to countries with poor work conditions is increasing, compliance with legal and moral standards is hardly given for many corporations in many industries.

#### FOCUSES ON A LIMITING NUMBER OF STAKEHOLDERS

In their literature review, Dembek et al. (2015) argue that shared value creation is limited to addressing the needs and issues in the society that directly generates economic profit for the organizations. Dembek et al. (2015) also question who benefits when implementing shared value. According to their literature study, there are divided opinions to this question, and a need to determine better what needs that should be addressed is apparent. However, if shared value creation is to deliver on the promise of advancing society, it should focus on unmet basic human needs. They further argue that human well-being is closely related to the well-being of organizations that depend on their members and external stakeholders for access to resources. The concept of shared value creation seems to recognize this fact, but it focuses on a limited number of selected stakeholders and needs to rather adopt a systemic perspective. This is supported by Brown and Knudsen (2012) who argue that limiting the focus to primary stakeholders directly involved in the companies’ activities may result in omission of important needs of others.

#### IGNORES TENSIONS BETWEEN SOCIAL AND ECONOMIC GOALS

Crane et al. (2014) also claim that shared value creation ignores the tensions between social and economic goals. As shown in subsection 3.4.2 shared value creation is found to be rooted in the instrumental approach to corporate sustainability, leaving financial gains and win-win situations its main priority. This confers to Crane et al. (2014) who are critical to how shared value creation ignores trade-offs. They further argue that while seeking win-win opportunities is clearly important, this does not provide guidance for the many situations where social and economic outcomes will not be aligned for all stakeholders. This is supported by Brown and Knudsen (2012), arguing that “*telling companies how to look for shared value opportunities does not prepare them for the complexities and trade-offs that are entailed in addressing social issues*” (p. 5). Crane et al. (2014) are therefore concerned that shared value creation might promote a sophisticated strategy for greenwashing, a statement that is supported by Dembek et al. (2015), arguing that shared value creation is mainly focused on corporate “win”. This entails that many sustainable solutions that cannot be made profitable will be ignored. This argument is further supported by Vogel (2005) who argues that because there is no evidence that behaving more virtuously is financially beneficial, being ethical and virtuous is less prioritized by companies. This is also pointed out by Haffar and Searcy (2015), who

argue that there is a fundamental tension between the creations of private company value versus the creation of shared value. They argue that under resource constraints, this private value - shared value tension translates into a cost-benefit trade-off among the various sustainability dimensions, across different time-horizons, and among various key stakeholders. These trade-offs are smoothly ignored by Porter and Kramer (2011), implying that situations where private value are restrained by shared value creation will not be taken into consideration.

#### DEVELOPS CLUSTERS ONLY TO ACHIEVE WIN-WIN SITUATIONS

Lastly Crane et al. (2014) argue that the concept of shared value creation does not deliver on the promise of addressing issues of societal embeddedness of corporations. According to Porter and Kramer (2011), enabling cluster development will enhance shared value creation by facilitating innovation and increased productivity through cooperation with local industry actors. Crane et al. (2014) does however not see social needs as a driver of cluster development, but rather considers clusters a way of solely achieving win-win situations. As they put it: *“the most likely ‘clusters’ shared value creation may lead to are islands of win-win projects in an ocean of unsolved environmental and social conflicts”* (p. 16).

### 3.7 SUMMARY OF THEORETICAL BACKGROUND

As shown in this chapter, two distinct approaches to corporate sustainability has emerged; namely the instrumental view and the integrative view. The instrumental view sees economic profits as the main objective of implementing corporate sustainability, and is characterized by seeing shareholders as the most important shareholders and searching for win-win situations, while the integrative view emphasizes the need of serving the interests of all stakeholders, and accepts that trade-offs between the three sustainability dimensions must be considered.

The concept of shared value creation introduced by Porter and Kramer (2011) has recently emerged as a synthesis of the two approaches, facilitating enhanced competitiveness by addressing the needs and challenges of the society.

The concept of shared value creation emphasizes that companies should realize the potential of addressing the needs of the society, by reconceiving products and markets, redefining the value chain, and by enabling local cluster development. However, the concept also presupposes that the authorities impose regulations that facilitate shared value creation by stimulating innovation and set clear and measurable goals (Porter and Kramer, 2011).

Even though shared value creation is a popular concept among management scholars, it is still prone to some critique. Several researchers are critical to certain aspects of the concept, and points to a number of weaknesses and shortcomings of the concept. The main areas being criticized is that shared value creation basically is a strategy to differentiate the corporation from its competitors and achieve competitive advantage, that it's built on the assumption that compliance with legal and moral standards is given, that it does not see social need as a driver of cluster development, that it doesn't question who benefits from the strategy, and that it ignores the tensions between social and economic goals.

## 4. ANALYTICAL FRAMEWORK FOR ACHIEVING SHARED VALUE CREATION IN AN INDUSTRY CONTEXT

In this chapter an analytical framework for achieving shared value creation in an industry context will be developed. Section 4.1 will elaborate on how the framework was developed, while section 4.2-4.5 serve to expand the concept of shared value creation to fit an industry context by elaborating upon the aspects of innovation, long-term orientation, cooperation and stakeholder trust, which represents the four main elements of the analytical framework. These aspects emerged as crucial for achieving shared value creation when reviewing the concept by Porter and Kramer (2011) in chapter 3. Section 4.6 further extends the framework to provide guidance on how governmental regulations should facilitate the process of achieving shared value creation in an industry context. This section is regarded as important because governmental authorities in many industries represent a highly salient stakeholder that provide the regulative frameworks that govern the industry, and that an industrial transformation thus must be initiated in congruence with this regulatory framework. The way in which the governmental regulations are designed is therefore of high relevance for the potential of creating shared value in an industry.

### 4.1 DEVELOPING THE ANALYTICAL FRAMEWORK

The concept of shared value creation introduced by Porter and Kramer (2011) primarily addresses how companies can enhance their competitiveness while simultaneously advancing the economic and social conditions of the society. The concept has however reaped criticism for being based on a shallow conception of the corporation's role in society, mainly focusing on how companies can differentiate themselves from their competitors and achieve a competitive advantage. As shown in section 3.6, Crane et al. (2014) argue that societal responsibility rather should result in industry-wide solutions and multi-stakeholder initiatives. The concept is criticized of lacking a holistic and systemic perspective, which is a common criticism of instrumental approaches to corporate sustainability (Gao and Bansal, 2013; Hahn et al., 2014). Porter and Kramer (2011) attempt to secede from this weakness by integrating social, environmental and economic matters, but Dembek et al. (2015) question whether focusing on shared value at only the organizational level is going to help develop a more holistic and systemic perspective.

This concern is strengthened by considering the tensions at the level-dimension in the framework of Hahn et al. (2014) introduced in subsection 3.3.1. They argue that values and objectives on the lower organizational level often contradict with the need of higher, industrial levels. The concept of shared value creation, which is created to guidance single companies to achieve increased competitiveness, can thus be seen as a concept mainly applicable at the lower organizational level, unable to guide companies on how to solve the challenges restraining the industry as a whole.

Following these arguments, the original concept of shared value creation by Porter and Kramer (2011) comes short in an industry context. We therefore argue that in order to overcome the large challenges related to the environmental and social dimensions in an

industry, one must see beyond the competitive advantage of single companies, and rather address the larger industry context. Larger social and environmental issues that have major implications for the larger community require industries as a whole to alter their behavior and operation practices in order to enhance the level of corporate sustainability of the industry. The objective of this chapter is thus to provide a framework that guides the process of creating shared value in an industry context.

The concept of creating shared value can serve as a means to increase the level of corporate sustainability, as seen in section 3.4. The concept does however mainly focus on how single companies can create shared value by either reconceiving products and markets, redefining productivity in the value chain, or enabling local cluster development. Certain features of these measures, especially the last concerning the development of local clusters, can furthermore be adapted to fit into an industry context. However, even though the concept of shared value creation has been applied to several different industries, the concept itself does not provide guidelines on how industries as a whole can facilitate shared value creation.

Section 3.6 pointed to several weaknesses of the concept of shared value creation originally presented by Porter and Kramer (2011). The concept is among other things criticized for being vague and more of a buzzword than a substantive concept providing specific measures for achieving shared value creation (Dembek et al., 2015). In order to provide an analytical framework for achieving shared value creation in an industry context, the shortcomings of the concept must be accounted for. Dembek et al. (2015, p.2), argue that “*extended knowledge about shared value as a theoretical concept is important because theory is of value in empirical science only to which it connects fruitfully with the empirical world*”. This implies that the concept of shared value creation will be strengthened by further theoretical development, making the concept more applicable in the real world. We thus argue that the concept of shared value creation will be strengthened by assessing how it can be made applicable in real world industry contexts, and a literature review of theory provided by well-known theorists on the academic field of corporate sustainability and shared value creation have therefore been conducted in order to compensate for its weaknesses.

The concept has also been accused of being unoriginal as it has several similarities to other existing theories such as corporate social responsibility, corporate sustainability, and stakeholder theory (Dembek et al., 2015), which implies that several of the features of shared value creation also are found in other related literature regarding corporate sustainability. The following discussions in sections 4.2 - 4.5 thus serve to combine the shared value creation concept with additional theory on the field of corporate sustainability, in order to provide a comprehensive framework for creating shared value in an industry context.

## 4.2 INNOVATION

Innovation is seen as both a result of, and a means for, shared value creation, and is directly connected to all the three ways of creating shared value provided by Porter and Kramer (2011). The processes of reconceiving products, redefining the value chain, and developing clusters all requires innovation for being successful, and innovation is therefore seen as an

important aspect of creating shared value. In the following subsections the importance of innovation and how it can be realized in an industry context will be addressed.

#### 4.2.1 THE IMPORTANCE OF INNOVATION

Porter and Kramer (2011) ambiguously state that shared value creation will “...drive the next wave of innovation and productivity growth in the global economy” (p. 4). They describe how an ongoing exploration of societal needs, being the main idea of shared value creation, will lead companies to discover new opportunities for differentiation and repositioning in traditional markets, and thereby companies will recognize the potential of new markets they previously overlooked, such as underserved markets. Meeting needs in underserved markets furthermore often require redesigned products or different distribution methods - requirements that can trigger fundamental innovations. Porter and Kramer (2011) also describe how innovation can lead to reduced costs, pollution and cycle time, and improved flexibility and efficiency.

The importance of innovation in achieving a more sustainable society is also emphasized by Nidumolu et al. (2009) who argue that the quest for sustainability is starting to transform the competitive landscape and force companies to change the way they think about products, technologies, processes, and business models. They state that innovation is crucial in order to develop sustainable sources of raw materials and components, increase the use of clean energy sources, such as wind and solar power, find innovative uses for returned products, and develop compact and eco-friendly packaging. Hence, shared value creation and innovation are highly interconnected and interdependent, and are both necessary to develop solutions that will create value for the firm as well as for the stakeholders (Eccles et al., 2014; Porter and Kramer, 2011). This argument is further on supported by Freeman et al. (2010) who propose that “if the possibility of innovation and the redefinition of interests is always present, then we can more profitably focus on the jointness of interests rather than the conflict” (p. 9). This statement implies that even though Freeman et al. (2010) are supporters of prioritizing stakeholder needs, they agree that if the conditions of shared value are met, innovation is an important driver of increased stakeholder value. Innovation is thus seen as a necessary means for creating shared value at a company level. However, to achieve the needed level of innovation to realize shared value creation in an industry context the concept of innovation must expand. In the following subsections two ways of accomplishing this, namely by open innovation and major innovation, will be presented.

#### 4.2.2 IMPLEMENT OPEN INNOVATION

The creation of industry clusters are broadly emphasized as an important means for innovation and creating shared value. According to Porter and Kramer (2011), clusters are prominent in all successful and growing regional economies and play a crucial role in driving productivity, innovation and competitiveness. This is supported by Chesbrough (2003), who introduces the principle of *open innovation*, a new way of creating value where external ideas and knowledge is embraced in conjunction with internal research and development. He argues that an internally oriented, centralized approach to research and development has become obsolete. Hence, companies must start looking for other ways to increase the efficiency of



their innovation processes. This can for instance be achieved through active search for new technologies and ideas outside of the firm, but also through cooperation with suppliers and competitors (Chesbrough, 2003). We argue that an approach to open innovation that entails blurring of the lines between companies of an industry to obtain an overview of the combined capabilities of the companies within it is crucial for solving comprehensive sustainability problems that no single company until now have managed to handle individually. We thus argue that open innovation is an important means to achieve shared value creation in an industry context.

4.2.3 IMPLEMENT MAJOR INNOVATION

Eccles and Serafeim (2013) argue that innovation is crucial for improving environmental, social, and governance performance without suffering a decline in financial performance. This implies that in order to achieve win-win situations in which social and environmental success can be combined with the economic success of companies, innovation is crucial. Eccles and Serafeim (2013) provide a model called *The Performance Frontier* illustrating the relationship between the performance in the sustainability dimensions and the financial performance given the level of innovation, as shown in figure 6. The model shows that a high performance in the social and environmental dimensions can only be economically beneficial if the company can keep a substantial level of innovation simultaneously (Eccles and Serafeim, 2013). This implies that shared value creation cannot be achieved without a high level of innovation.

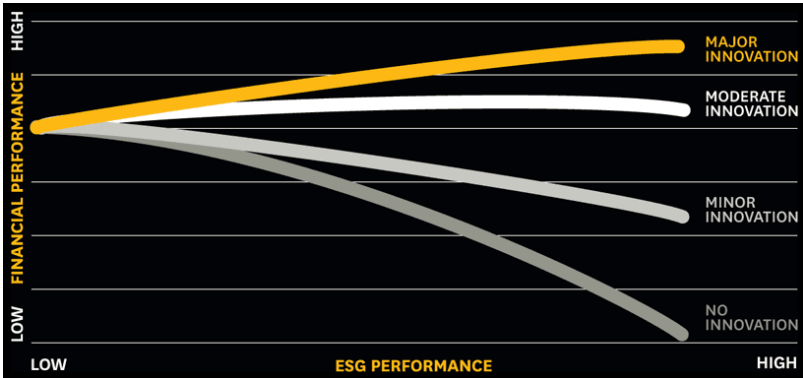


FIGURE 6: THE PERFORMANCE FRONTIER (ECCLES AND SERAFEIM, 2013)

Eccles and Serafeim (2013) further on emphasize that minor, or incremental innovations, such as efficiency improvements and waste reductions, only can nudge a downward-sloping performance frontier a bit up. In order to shift the slope from descending to ascending, major innovations in product, processes, or business models are required. Such innovations are characterized by high risk, involving large-scale investments and long payback periods of often five years or more (Eccles and Serafeim, 2013). They often concern a bundle of related environmental and social issues and tackle significant, unsolved challenges in a sector. Hence, shared value creation not only requires major innovations, but also that organizations change their operations, products or business model to boost their performance on their most *material issues*. We therefore argue that major innovation is crucial in realizing shared value creation in an industry context.

The notions of major and incremental innovation can further on be related to organizational learning, where *exploration* includes searching for new options, experimentation, risk taking and large innovations, corresponding to the major innovation discussed in the previous paragraph, while *exploitation* involves refining existing procedures and efficiency improvements, corresponding to the incremental innovation discussed in the previous paragraph (March, 1991). Both exploration and exploitation are essential for organizations, however, they compete for finite resources, and trade-offs must be made between the two. March (1991) argues that firms are often tempted to prioritize exploitation as it involves shorter time horizons and more certain outcomes than exploration. Hence, companies' strive for short-term gains often results in an unbalanced resource allocation between the exploration of new alternatives and the exploitation of current practices, which potentially can be self-destructive. This can be seen as a barrier to shared value creation for many organizations, as only conducting incremental improvements of existing technology is not enough in order to shift the performance frontier, which requires high risk and longer time horizons (Eccles and Serafeim, 2013). The importance of long time horizons is further elaborated in the next section.

#### 4.2.4 SUMMARY OF INNOVATION

Porter and Kramer (2011) argue that innovation is an important means of realizing shared value creation, focusing on how it will help companies to discover new opportunities for differentiation and repositioning in traditional markets. However, to expand the notion of innovation to fit the industry context, other ways of realizing innovation must be implemented. As shown in the previous subsections two concepts that can achieve this expansion are open innovation (Chesbrough, 2003) and major innovation (Eccles and Serafeim, 2013), which we argue to be important tools needed to achieve shared value creation in an industry context.

### 4.3 LONG-TERM ORIENTATION

A longer time horizon amongst companies in an industry is further considered as a crucial aspect for creating shared value. Porter and Kramer (2011) frequently express their despair related to how business traditionally have tended to seek short-term financial gains to the expense of longer-term success. They are critical to the way "*companies keep viewing value creation narrowly, by optimizing short-term financial performance in a bubble while missing the most important customer needs and ignoring broader influences that determine their longer-time success*" (Porter and Kramer, 2011, p. 4). In the following subsections the importance of long-term orientation and how it can be realized in an industry context will be addressed.

#### 4.3.1 IMPORTANCE OF LONG-TERM ORIENTATION

Porter and Kramer (2011) argue that expectations of continuously delivering profits in the short-run lead managers to resort to waves of restructuring, personnel reductions and relocations to lower-cost regions. This result in commoditization, price competition, little true innovation, slow organic growth, and no clear competitive advantage, aspects that harm the ability of creating shared value (Porter and Kramer, 2011). This view is supported by Eccles

et al. (2014), who through their research of 180 U.S companies found that high sustainability companies are more likely to be more long-term oriented. This means that they often are owned by more long-term oriented investors, and they engage in long-term stakeholder relationships (Eccles et al., 2014). Several scholars agree that in order to maintain mutual respect, trust and cooperation with stakeholders, the adoption of a longer-term time horizon is necessary (Eccles et al., 2014; Jones, 1995). Thus, a longer time-orientation is regarded as crucial for creating shared value for the society.

The importance of adopting a longer time-horizon is also emphasized by Bansal and DesJardine (2014) who argue that the *short termism* of firms is the biggest threat to corporate sustainability. They argue that “*time should be at the center of organizational theorizing, in order to enhance both organizational and societal outcomes over the long term*” (p. 71). Firms must continuously choose between investing less for smaller profits sooner and investing more for greater profits later. These same principles apply to the trade-off between exploitation and exploration (March, 1991) discussed in subsection 4.1.3. According to Bansal and DesJardine (2014) this paradox is between profiting in a short-time horizon by marketing and selling current products and services, corresponding to exploitation, and profit in the future by investing in research and development, to secure a future pipeline of products and services, corresponding to exploration. It is thus a broad agreement amongst scholars that the short time orientation that characterizes the majority of the companies in society today is detrimental to creating shared value and to achieve increased sustainability.

This argument does also make sense when considering that sustainability changes are difficult to measure over a short time horizon. Porter et al. (2011) argue that effective shared value measurement must address the fact that business results and social results can have different time horizons, and that while companies can see results in just a year, improvements in societal patterns can take years to unfold. With a short time-horizon, several projects would have been terminated before their results were measurable, and would therefore be destructive for achieving shared value creation.

#### 4.3.2 FOCUS LESS ON COMPETITIVENESS

The way the concept of shared value creation emphasizes the longer time horizons of businesses is in line with the integrative view on corporate sustainability. However, it is evident that there exist tensions between the short-term needs of companies and the long-term needs of sustainability. The concept of shared value creation have been criticized of contradicting itself in its large focus on competitiveness, which often entail a short-term focus, while simultaneously claiming that shared value creation will require long-term orientation (Crane et al., 2014). We thus argue that in order to achieve shared value creation in an industry context, firms must reduce their emphasis on achieving a competitive advantage, and rather adapt a longer time-horizon when making strategic decisions.

#### 4.3.3 ADOPTING A PROACTIVE APPROACH TO SUSTAINABILITY ISSUES

The tensions between the short-term focus of companies and the long-term needs of the larger system represent tensions at both the level-dimension and the context-dimension in the

systematic framework for analyzing tensions explained in subsection 3.3.1 (Hahn et al., 2014). Temporal tensions represent a group of tensions that consider conflicts between long-term and short-term needs within the economic, social or environmental dimensions of corporate sustainability. Hahn et al. (2014) argue that the main temporal tension results from the fact that sustainable development requires a much longer time orientation than the typical time horizon of firms. As a consequence, long-term environmental performance is often less prioritized than short-term financial performance. This view is supported by Dyllick and Hockerts (2002) who argue that too many firms tend to overemphasize short-term gains by concentrating on quarterly results instead of the foundation for long-term success. Such an obsession with short-term profits contradicts to the spirit of sustainability, which requires the firm to meet the needs of its stakeholders in the future as well as today (WCED, 1987). Gao and Bansal (2013) argue that a long-term perspective is often needed in order to allow different sustainability issues to appear on a firm's radar, and give the organization time to find good solutions to future sustainability concerns. This represents a proactive approach to sustainability issues, where companies behave in a way that will enable future generations to meet their needs. Short-term orientations on the other hand results in companies taking reactive measures, in which sustainability issues are not handled before they bother the companies to a significant extent. We thus argue that a proactive approach to sustainability issues is crucial for successfully addressing larger sustainability challenges, and thus creating shared value in an industry context.

#### 4.3.4 SUMMARY OF LONG-TERM ORIENTATION

Porter and Kramer (2011) express their despair of companies seeking short-term financial gains to the expense of longer-term success, stressing the need for long-term strategies to realize shared value creation. We argue that in order to create shared value in an industry context, long-term strategies amongst the industry actors are crucial. To achieve this, it is important that firms reduce their emphasis on achieving a competitive advantage, and that they adopt a proactive approach to sustainability issues.

### 4.4 COOPERATION

The concept of shared value creation assumes that one can achieve more by working together than by behaving autonomously, and according to Porter and Kramer (2011), "*creating shared value will involve new and heightened forms of collaboration*" (p. 16). They further argue that even though some shared value opportunities are possible for a company to seize on its own, most will benefit from insights, skills and resources that cut across profit/non-profit and private/public boundaries. In the following subsections the importance of collaboration and how it can be realized in an industry context will be addressed.

#### 4.4.1 IMPORTANCE OF COOPERATION

Cooperation is seen to be required in all of the ways of creating shared value; reconceiving products and markets requires collaboration with the society in order to understand their needs, redefining the value chain requires collaboration with all links of the value chain, including suppliers, customers and regulatory authorities, and finally, the establishment of

successful local clusters involve collaboration within the private sector, as well as trade associations, government agencies, and NGOs (Porter and Kramer, 2011).

To achieve collaboration between relevant public and private corporations, enabling local cluster development is crucial. Clusters represent the interactions between firms, related businesses, suppliers, service providers, academic institutions and industry associations within a particular field in a geographic area, and is an important contribution to creating shared value (Porter and Kramer, 2011). While clusters are essential for innovation, collaboration with a variety of cluster actors is also an important determining factor for productivity, innovation and competitiveness. This is also emphasized by Nidumolu et al. (2009), who argue that innovations cannot be developed in today's world unless companies form alliances with other businesses, nongovernmental organizations, and governments. Hence, success often depends on executives' ability to create new, collaborative mechanisms for developing products, distributing them, and sharing revenues.

#### 4.4.2 FOCUS ON THE LARGEST CONSTRAINTS OF THE CLUSTER

Collaboration is, according to Porter and Kramer (2011), most cost-effective when focusing on the weaknesses of the cluster that represent the greatest constraints to the company's own productivity and growth. For instance, poor public education can impose productivity and remedial-training costs, as well as difficulty of recruiting skilled workers. Further, poverty limits the demand for products and leads to environmental degradation, unhealthy workers and high security costs, and poor transportation infrastructure driving up the costs of logistics. Further on, in order to best overcome the largest constraints of the cluster, collaboration within the private sector, as well as with trade associations, government agencies, and NGOs is crucial. Enlisting a variety of partners is further important in order to share the cost, win support, and assemble the right skills (Porter and Kramer, 2011). We thus argue that companies should focus on the largest constraints of the cluster when engaging in collaborative partnerships with different stakeholders.

#### 4.4.3 COOPERATE WITH VALUE-CHAIN STAKEHOLDERS

Collaboration with stakeholders within the value chain of the business is crucial in achieving shared value creation (Porter and Kramer, 2011). Strand and Freeman (2013) also share this view, stating that "*cooperation between companies and their stakeholders is necessary for social and environmental sustainability of the world*" (p. 66). The importance of collaboration with industry actors is supported by Jones (1995) who argues that firms that are able to develop relationships with its stakeholders based on mutual trust and cooperation, will gain a competitive advantage. He further argues that the level of mutual trust and cooperation between a firm and its suppliers can affect the firm's cost structure significantly. By increasing access to inputs, sharing technology and providing financing, companies can ensure high quality on their raw materials and help their suppliers become more productive and thus achieve lower prices. Such a cooperative partnership will be beneficial for both parties, and a similar relationship with customers will hence be advisable. Corporations have traditionally worked to push the prices down on goods and raw materials from suppliers by negotiating with several relevant suppliers simultaneously, which leaves their suppliers

marginalized and unable to remain productive or improve their quality (Porter and Kramer, 2011). Jones (1995) argues that corporations should rather focus on building long-term relationships with a relatively small number of suppliers, which will provide a better foundation for cooperative, mutually trusting relationships. A firm that keeps several suppliers "on line" competing for its business or that changes suppliers regularly is not indicating an interest in contracts built on mutual trust. Accordingly, its suppliers will not be able to achieve economies of scale in their operations and will not be willing to invest in assets specific to the production of the firm's needs (Jones, 1995). We thus argue that strong relationships with suppliers are needed for creating shared value in an industry context. The importance of mutual trust is further discussed in section 4.4.

When deciding which suppliers to select, Porter and Kramer (2011) are skeptical to the increased trend of outsourcing production to locations with the lowest labor costs. This is a typical failure of short-term oriented businesses, which will be inconvenient in the long run. They argue that by purchasing locally instead, firms can help their local suppliers enhance their operations, increase their profits and hire more people, aspects that will benefit the industry and society in the future, and contribute to creating shared value (Porter and Kramer, 2011). We thus argue that companies should use local suppliers in order to achieve shared value creation in an industry context.

The presented arguments of Jones (1995) and Porter and Kramer (2011) are largely linked to the social dimension of corporate sustainability. The environmental dimension of corporate sustainability is however also important to address, and by including environmental criteria when choosing suppliers the purchaser is given the opportunity to directly and indirectly improve the environmental performance in the society. This is called green supplier selection (Igarashi et al., 2015), and have become increasingly important during the last decade. It is however a complex process to choose suppliers based on environmental criteria, and Igarashi et al. (2015) have come up with four strategies for dealing with this complexity. The first strategy ignores the green dimension as an explicit criterion, the second strategy incorporates environmental performance under existing criteria and requirements, the third strategy sees environmental criteria as mandatory requirements, avoiding trade-offs, and the fourth strategy concerns trading off environmental performance for other criteria, such as price and quality. The strategy chosen will thus affect how the supplier choices will affect the environment dimension of corporate sustainability.

#### 4.4.4 COOPERATE WITH COMPETITORS

In addition to collaboration with suppliers and customers within its supply chain, Porter and Kramer (2011) argue that major competitors also should work together on precompetitive framework conditions. They state that successful collaborations are characterized by being data driven, clearly linked to defined outcomes, well connected to the goals of all stakeholders, and tracked with clear metrics.

Manufacturers within an industry are often more focused on the areas of competition, than potential areas of collaboration. However, they will recognize that they often have parallel

interests as well. Setting industry standards, lobbying the authorities, finding solutions to environmental problems, improving the image of the industry, investing in fundamental research and negotiating with the unions are just some important issues where cooperation can be fruitful (De Wit and Meyer, 2014). The importance of collaborations between competitors is also asserted by Strand and Freeman (2013) who elaborates that cooperation between companies is necessary for social and environmental sustainability of the world and shifts the focus from achieving competitive advantage to achieving *cooperative advantage*. Cooperative advantage is defined as “...when a company implements a value creating strategy based on cooperating with its stakeholders that results in superior value creation for the company and its stakeholders” (Strand and Freeman, 2013, p. 80). We thus argue that collaboration between competitors is crucial in achieving shared value creation in an industry context.

#### 4.4.5 BALANCE THE SHARED VALUE - PRIVATE VALUE TENSIONS

As already mentioned, the concept of shared value creation has been criticized for its high focus on achieving competitive advantage. Crane et al. (2014) argue that this focus may undermine cooperation and stakeholder trust, and lead to sustainability issues affecting a whole industry being overlooked. It is thus evident that in order to solve larger social and environmental problems that affect whole industries, a focus that go beyond the competitiveness of single companies is required.

The tensions between company interests and society’s interests is further on defined as private value - shared value tensions by Haffar and Searcy (2015). These tensions can represent an obstacle to shared value creation as they provide a poor basis for establishing fruitful collaborative relations in an industry. It is therefore important that companies are able to put aside its own intention of gaining competitiveness when collaborating with stakeholders if the cooperation is to result in innovative solutions that can enhance a whole industry. We therefore argue that companies need to see past its own competitiveness if shared value creation in an industry context is to be realized.

#### 4.4.6 SUMMARY OF COOPERATION

Porter and Kramer (2011) stress the need for collaboration if shared value creation is to be realized. We argue that for achieving shared value creation in an industry context, collaboration within clusters, between value chain actors and between competitors are crucial. Further, collaborative efforts are found to be most cost-effective when focusing on the largest constraints of the clusters (Porter and Kramer, 2011). The focus on achieving competitive advantage in the original concept of shared value creation by Porter and Kramer (2011) is however a potential pitfall, being an obstacle of collaborative efforts. We therefore argue that companies need to see past its own competitiveness if shared value creation in an industry context is to be realized.

## 4.5 STAKEHOLDER TRUST

The concept of shared value creation shares some of the ideas constituting the stakeholder value perspective discussed in subsection 3.3.2. This becomes evident by seeing that the aim of shared value creation is to “*create economic value for the company in a way that also creates value for society by addressing its needs and challenges*” (Porter and Kramer, 2011, p. 4). The society consists of several stakeholders, that affects, or are affected by, both directly and indirectly, a company’s operations. The process of establishing the collaborative partnerships emphasized in section 4.4 is argued to be highly dependent on mutual trust and respect between the company and its stakeholders in order to facilitate shared value creation. In the following subsections the importance of stakeholder trust and how it can be realized in an industry context will be addressed.

### 4.5.1 THE IMPORTANCE OF STAKEHOLDER TRUST

In order to create shared value for both the business and the society, close relationships to important stakeholders are crucial (Freeman et al., 2010; Jones, 1995; Porter and Kramer, 2011). Close relationships further depend on communication with different stakeholders in order to build mutual trust and to achieve a common understanding of the different stakeholder’s interests (Freeman et al., 2010).

To be able to benefit from cooperation, trust among stakeholders is essential (Eccles et al., 2014; Freeman et al., 2010; Jones, 1995). Eccles et al. (2014) propose that to build and maintain mutual respect, trust, and cooperation with stakeholders, the company must demonstrate a commitment to balancing these different stakeholders’ interests over time. They further state that trust is a crucial part of being socially responsible, and that it is important for trust to develop between the organization and its broader environment of buyers, governments, local communities and activist groups. According to Jones (1995), firms that contract with their stakeholders on the basis of mutual trust and cooperation will have a competitive advantage over firms that do not. This view is supported by Freeman et al. (2010) who states that trust is the bond in which a company need to build a network of partners that all gain from their joint strategy and behavior. Even though the engagement of several stakeholders have traditionally been associated with costs, it has been argued that if a corporation is able to credibly commit to contracting with its stakeholders on the basis of mutual trust and cooperation, and at the same time develop strategies with long-term horizons, it will experience reduced agency costs, transaction costs, and costs associated with team production (Eccles et al., 2014; Jones, 1995). This view is supported by Eccles and Serafeim (2013), who state that the key to being corporate sustainable is to increase shareholder value while at the same time improving the firm’s performance on environmental, social and governance dimensions. As these arguments imply trust can be seen as an important factor to develop close relationships, and in creating shared value.

### 4.5.2 IDENTIFY JOINT INTERESTS OF STAKEHOLDERS

Seeing that the concept of shared value creation has the objective of benefitting from win-win situations with stakeholders, shared value creation can be seen as an obvious restatement of



the *jointness of interests* tenet of stakeholder theory, which states that achieving a competitive advantage is about creating value by choosing strategies that both the firm and stakeholders will gain from (Strand and Freeman, 2013). Strand and Freeman (2013) further elaborate: “*increased value creation for more stakeholders is likely when the company and its managers focus on the jointness of interests between the firm and its stakeholders over the long-run*” (p. 72). This is supported by Eccles et al. (2014), arguing that high sustainability companies are characterized by such a distinct governance structure, reflecting the joint interests of all stakeholders of the corporation. Low sustainability companies on the other hand correspond to the traditional model of corporate profit maximization seen in the instrumental view (Eccles et al., 2014). We thus argue that the identification of joint interests of stakeholders is important to achieve shared value creation in an industry context.

#### 4.5.3 MANAGE TENSIONS BETWEEN STAKEHOLDER INTERESTS

As discussed in the previous subsection, the identification of joint interests is important in order to collaborate with stakeholders. It is however evident that the interests of different stakeholders are not always in harmony with each other, but rather often in conflict, especially in the short term, as emphasized in the integrative view on corporate sustainability. For example, one stakeholder group would like a company to build wind farms in an area to provide renewable energy for the society, while another group would oppose this as it would be destructive for the wild life of birds in the area. The concept of shared value creation is criticized for not providing guidance for situations like this where social and economic outcomes will not be aligned for all stakeholders (Crane et al., 2014; Haffar and Searcy, 2015). In such situations, we recommend businesses to employ Epstein et al.’s (2015) method where win-win situations are sought for in all situations, yet avoiding actions that would be really bad for sustainability. As explained in subsection 3.3.1, this is done by defining minimally acceptable irresponsible behavior, in which these conditions delineates “trade-off-free zones” in managerial decision making, where decisions are automatic in favor of sustainability. Such minimally responsible behavior can in the example above imply that you avoid actions that will compromise the safety of animals. We therefore argue that managing tensions between stakeholder interests is crucial in achieving shared value creation in an industry context.

#### 4.5.4 ADDRESS THE NEEDS OF ALL COMPANY’S STAKEHOLDERS

The concept of shared value creation is criticized for only considering win-win situations, which implies that it focuses on a limited number of selected stakeholders’ needs instead of adopting a systemic perspective (Crane et al., 2014). This is supported by Brown and Knudsen (2012) who argue that limiting the focus to primary stakeholders directly involved in the activities may result in omission of important needs of others.

It is furthermore important to emphasize that companies should not be responsible of addressing the needs of all individuals or groups of the society. However, the needs of all of the company’s stakeholders should be addressed (Freeman et al., 2010; Mitchell et al., 1997). This includes the unmet needs of “*any group or individual who can affect or is affected by the achievement of the firm’s objectives*” (Freeman, 1984, p. 46). Mitchell et al. (1997) propose a

more detailed model that distinguishes a company's stakeholders from its non-stakeholders. They argue that managers should pay attention only to groups or individuals who possess one or more of the attributes: (1) *power* to influence the firm, (2) *legitimacy* of the stakeholder's relationship with the firm, and (3) the *urgency* of the stakeholder's claim on the firm. The salience of the stakeholder is further determined by how many of these attributes it possesses. Stakeholders that possess all three attributes are most important to the firm, while stakeholders who possess only one of them should be given a lower priority by the management (Mitchell et al., 1997). We therefore argue that to achieve the needed level of stakeholder trust to achieve shared value creation in an industry context, companies must take into consideration the needs of all their stakeholders, where the stakeholders possessing power, legitimacy and urgency are most salient.

#### 4.5.5 TENSIONS BETWEEN SOCIAL AND ECONOMIC GOALS

As discussed in subsection 3.3.2, most industries inflict externalities to their societies, which are normally reduced by imposing penalties, taxes and regulation in order to incentivize the industry to internalize these externalities. The need of forcing corporations to act in a manner that are not damaging to society can however be seen as an evidence of lack of trust among society and businesses, as it implies that businesses do not voluntarily attempt to operate in a sustainable manner.

While Friedman (1970) argues that such externalities are beyond the company's responsibility, Eccles et al. (2014) argue that negative externalities to stakeholders typically occur due to an organization's short-term focus, and that superior stakeholder engagement is based on a company's ability to establish long-term relationships with all stakeholders affected by their operations. Porter and Kramer (2011) argue that externalities actually inflict internal cost on the firm, even in the absence of regulations, and see it as financially beneficial for firms to deal with their externalities. We however argue that the assumption of externalities always inflicting costs to the company is rather simplistic, as several externalities will affect animals or other groups that have no connection to the company, or power to confront their behavior. These externalities will not inflict any costs to the firm, and there are often no economic benefits for dealing with these kinds of externalities. An approach of only searching for win-win situations where externalities are considered only if it entails potential gains would thus let several externalities remain unaddressed. Hence, the way in which shared value creation ignores the tensions between social and economic goals can prevent shared value to be created in industries. We thus argue that tensions between social and economic goals exist, and must be taken into consideration in order to create shared value in an industry context, either by private companies or by governmental regulations.

#### 4.5.6 SUMMARY OF STAKEHOLDER TRUST

Porter and Kramer (2011) stress the need for stakeholder trust to achieve shared value creation, arguing that shared value can only be realized if the society's need and challenges are met. To achieve stakeholder trust in an industry context, we further argue that companies must identify joint interests with stakeholders, manage tensions between stakeholder interests, address the needs of all stakeholders and manage tensions between economic and social goals.

## 4.6 THE ROLE OF GOVERNMENTAL POLICIES

According to Crane et al. (2014), most of the CSR literature has been written with little attention to the roles and responsibilities of the government. Even though Porter and Kramer (2011) predominantly focus on how businesses can create shared value in their article, they take a step forward by suggesting guidelines for how also governments and nonprofit organizations can contribute in creating shared value. However, the concept of shared value creation is criticized for building on the assumption that compliance with legal and moral standards is given (Crane et al, 2014). Compliance with regulation and laws is hardly given for many corporations in many industries, and this assumption is thus regarded as both simple and erroneous. This framework will therefore consider this factor when proposing guidelines for how governmental regulations can facilitate shared value creation.

Seeing that industries as a whole are largely regulated and controlled by governmental policies, we argue that larger change processes of industries need to be founded in the regulatory frameworks of the industry. Furthermore, the ways in which regulations are designed and implemented determine whether they benefit society or work against it. Hence, governmental regulations have an important role in facilitating shared value creation in an industry.

According to Porter and Kramer (2011) regulations that enhance shared value creation set clear, measurable goals and stimulate innovation. Section 3.5 presents four characteristics of such regulations, before describing the type of regulations that discourage shared value creation. We agree to several of these characteristics, seeing that stimulating innovation and setting clear and measurable goals are important for facilitating shared value creation in an industry context. However, we argue that in order to address the large and comprehensive challenges related to the social and environmental dimensions of corporate sustainability, the governmental regulations have a larger responsibility than Porter and Kramer (2011) acknowledge. The following subsections provide more detailed guidelines for how governmental behavior and policies can facilitate shared value creation in an industry context.

### FACILITATE THE ESTABLISHMENT OF THE FOUR ASPECTS OF SHARED VALUE CREATION

We argue that the authorities determining the framework conditions of industries should implement policies that facilitate the process of establishing all the four aspects of shared value creation discussed in section 4.2 - 4.5 in the industry. This entails implementing a set of regulations that together facilitate innovation, long-term orientations, collaboration and trust among all stakeholders in an industry.

### CONSIDER THEMSELVES AS A STAKEHOLDER ON EQUAL TERMS AS OTHER INDUSTRY ACTORS

As mentioned in section 3.6, it is seen as naive by Porter and Kramer to assume compliance with legal and moral standards among organizations. It is likely that there exist conflicts of interest between the authorities and industry actors in many different industries, and especially in industries which are most dependent on creating shared value, namely industries currently experiencing a transition towards more sustainable business practices. We therefore argue that the authorities should consider themselves as a stakeholder on equal terms as other

actors in the industry, and facilitate more cooperation between themselves and other industry actors. By changing the relationship from top-down to circular, industry actors can better participate in developing the industry regulations, resulting in increased stakeholder trust and decreased conflicts of interests. This way the authorities can better facilitate shared value creation in the industry.

#### ENSURE A MINIMUM LEVEL OF SOCIAL AND ENVIRONMENTAL PERFORMANCE

Furthermore, we argue that the regulations should make sure that the business practices of the industry are in line with the social and environmental capacity of their systemic context. This entails making sure that the industry's operations do not reduce the sustainability of their surroundings by compromising the ability of future generations to meet their needs. In other words, the governmental regulations must ensure that the operations of industry actors are corporate sustainable. This can be done by following an approach inspired by Simon (1964), in which minimal requirements of accepted levels related to environmental and social performance are set, that in all occasions must be met by the companies of the industry in order to maintain their license to operate. This is done in order to ensure a certain environmental and social performance at any time.

Beyond these minimum criteria, the governmental regulations should function as guidance and facilitators rather than forcing compliance with particular practices. This is important because mandating a particular approach to meeting a standard will potentially block innovation and almost always inflicts costs on companies (Porter and Kramer, 2011).

#### FOCUS ON THE GREATEST CONSTRAINTS

We further argue that governmental policies should identify the environmental and social weaknesses that represent the greatest constraints to the industry's productivity and growth. This way, the industry stakeholders will achieve the largest aggregated value. This is emphasized by Porter and Kramer (2011) who argue that collaboration is most cost-effective when focusing on the weaknesses of the cluster that represent the greatest constraints to the company's own productivity and growth. Porter et al. (2011) support this by stating that one should identify and prioritize specific social issues that represent opportunities to increase revenue or reduce costs, by screening unmet social needs. Eccles and Serafeim (2013) similarly argue that in order to benefit financially from environmental and social performance, firms must focus strategically on the most material issues, which have the greatest impact on the firm's ability to create shareholder value. We therefore argue that the majority of the regulations chosen should be implemented in order to overcome these barriers to increased productivity and growth. This entails regulations that incentivize the industry in overcoming production barriers, solving environmental and social problems, and in enabling growth.

#### SET CLEAR AND MEASURABLE GOALS

Porter and Kramer (2011) emphasize the importance of setting clear and measurable goals and performance standards in order to facilitate shared value creation in an industry. We agree to this, and argue that unclear criteria can lead to confusion and differentiated interpretations of the regulations, which further can lead to conflicts and difficulties in complying with the

regulations that are set. The authorities should thus measurable criteria in order to easily determine whether the various industry actors are within accepted performance or not.

#### 4.7 SUMMARY OF ANALYTICAL FRAMEWORK

We argue that the original concept of shared value creation comes short in an industry context. In order to overcome the large challenges related to the environmental and social dimensions in an industry, one must see beyond the competitive advantage of single companies, and rather address the larger industry context.

The analytical framework presented in this chapter serves to adapt the concept of shared value creation introduced by Porter and Kramer (2011) into an industry context. Four aspects were found to be required in the process of creating shared value in industries. Firstly, innovation is seen as a result of, and a means for creating shared value in an industry. Further, a long-term orientation is needed in order to see beyond the needs of short-term profits, and to achieve a proactive approach to sustainability issues by attempting to avoid challenges that might occur in the future. Collaboration with stakeholders is further crucial for addressing larger environmental and social issues that are beyond the organizational context. Lastly, stakeholder trust is needed in order to create shared value with these stakeholders and to create collaborative partnerships with both suppliers, competitors, and the authorities. The framework is shown in figure 7.

Finally, the role of governmental regulations is elaborated upon. We argue that the assumption that companies comply with laws and regulations is simplistic and unrealistic, and therefore provide guidelines for how governmental regulations should facilitate the process of creating shared value. The authorities should thus facilitate the process of establishing the four aspects of shared value creation, consider themselves as a stakeholder on equal terms as other industry actors, ensure a minimum level of social and environmental performance, focus on the greatest constraints, and set clear and measurable goals.

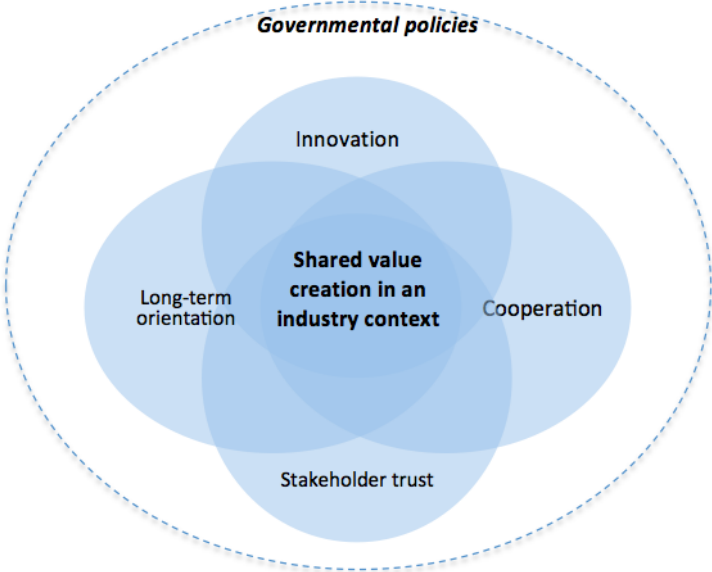


FIGURE 7: ANALYTICAL FRAMEWORK FOR ACHIEVING SHARED VALUE CREAITON IN AN INDUSTRY CONTEXT

## 5. CASE STUDY CONTEXT

This chapter serves to introduce the reader to the Norwegian aquaculture industry, the context of the case study. First, a general introduction to the industry is given, before the complexity of the authorities and the regulatory practices are addressed.

### 5.1 INTRODUCTION

Aquaculture is the world's fastest growing food production technology (FAO, 2014), and Norway is the world's largest producer and exporter of Atlantic salmon, with a production share of over 60% (Ministry of Trade, Industry and Fisheries, 2015a). In 2015 the Norwegian aquaculture industry employed just over 6 730 people, and produced 1.3 million tons of salmon at a value of 44.3 billion NOK (SSB, 2015).

As the human population is expected to reach 9.6 billion by 2050, food production needs to increase substantially, and according to "The State of World Fisheries and Aquaculture - Opportunities and challenges" (FAO, 2014), most of this increase is expected to come from the oceans. The oceans possess enormous potential and unutilized areas, and are expected to enable a much more sustainable food production than the land-based food production is able to deliver today. Production of fish is further on more resource efficient than land based livestock, based on fish not having to use energy on keeping a certain body temperature or consuming fresh water. Fish also have good feed utilization, and the production itself causes low CO<sub>2</sub> emissions (Meld. St. 22 (2012-2013)).

The goal of a substantial increase in Norwegian aquaculture production is communicated by the Norwegian government (Ministry of Trade, Industry and Fisheries, 2015a). There are however several environmental challenges in Norwegian aquaculture, and the Norwegian government states that the present most important environmental challenges are sea lice and genetic contamination of wild Atlantic salmon stock, due to escaped farmed salmon (Ministry of Trade, Industry and Fisheries, 2015a).

### 5.2 INDUSTRY CHALLENGES

As mentioned, the industry is currently characterized by several challenges that have resulted in the authorities not permitting any commercial licenses additional to those that already exist in the market. This section serves to introduce the most prominent sustainability challenges in the industry, and is based on documents provided by the authorities and research papers.

#### 5.2.1 SEA LICE

Infection by sea lice represents one of the two major environmental challenges of the aquaculture industry. The parasite produces large amounts of planktonic larvae that are spread via water currents and can infect migrating smolt (Taranger et al., 2014). The parasite affects the growth, swimming, reproduction and the immune system of salmon, and can lead to mortality if a fish is heavily infested.

The year-round high density of hosts in salmon farming areas provides the ideal conditions for sea lice. Due to strict regulations regarding the number of sea lice allowed in salmon-breeding facilities, sea lice do normally not threaten the health of farmed fish. However, sea lice threaten the survival of wild Atlantic salmon, as the high density of aquaculture in some areas represents sources of increased infection pressure on wild stocks (Ministry of Trade, Industry and Fisheries, 2015a). Research has furthermore found that the salmon-breeding industry has shown directly negative effects on reduced growth and mortality to local Atlantic salmon stocks, which over time can result in the loss of these stocks (Thorstad et al., 2014).

Due to the severe consequences of the presence of sea lice, the industry uses several tools in order to keep the levels of sea lice on their production facilities low. All salmon-breeding companies monitor the sea lice situation in their facilities continuously, and the use of medicines to keep the levels low is prevalent (Ministry of Trade, Industry and Fisheries, 2015a). The extensive use of medicines can however have a negative affect the surroundings close to the facilities, and potentially cause the sea lice to develop resistance against the chemicals (Ministry of Trade, Industry and Fisheries, 2015a).

#### 5.2.2 FISH ESCAPES

Escaped salmon represents another major environmental challenge of the aquaculture industry, as it can affect the ecological environment by breeding and competing with the wild Atlantic salmon. Genetic contamination of the wild stock of salmon might lead to a deterioration of the reproductive ability of the salmon population, and escaped salmon is thus considered a distinct sustainability challenge (Ministry of Trade, Industry and Fisheries, 2015a).

The main reasons for accidental releases of farmed salmon are winter storms, propeller damage, and wear and tear on equipment (Ministry of Trade, Industry and Fisheries, 2015a). In recent years better management of these problems has however ensured that the number of salmon escapees is relatively stable, but seeing that escapes of salmon can generate negative publicity and might lead to lawsuits, salmon farmers have incentives to under-report. It is thus likely that the real number of escapes have been much higher than what has been reported (Svåsand et al., 2015).

#### 5.2.3 OTHER SUSTAINABILITY CHALLENGES

Another sustainability challenge affecting the Norwegian aquaculture industry concerns the high amounts of fish feed demanded by the industry. Salmon represents a highly energy effective livestock, as 1.15 kg feed gives 1 kg salmon (Ministry of Trade, Industry and Fisheries, 2015a), but the large amount of fish meal and fish oils that are needed to produce feed to the Norwegian salmon production are scarce resources that probably have reached their maxima, at least with the fish species currently used (Asche, 2008). The pressure on wild fish stock has in recent years however been attempted limited by replacing fishmeal and fish oils in the feed with vegetable oils, and in 2015, the percentage of fishmeal and fish oil in the feed was reduced to about 30 %. There is however a downside of using vegetable oils, as it

reduces the content of omega-3 and increases the content of omega-6 in the farmed fish (Norges Miljøvernforbund, 2010).

Furthermore, a serious sustainability challenge that has affected the industry throughout most of the history of salmon farming has been the occurrence of diseases. The limited movement and high density of salmon in the cages induce stress that makes the fish more susceptible to infections. If one fish gets infected, rapidly contamination often causes all fish in the area to be infected, entailing slaughtering of vast amounts of fish (Asche, 2008).

As the frequency of diseases increased throughout the 1980s, antibiotics were mixed into the feed (Asche, 2008). By the late 1980s, the industry developed a serious problem as it became Norway's largest use of antibiotics, and questions were raised as to whether the fish were suitable for human consumption, as the increased ingestion of antibiotics might create antimicrobial resistance problems. The development of vaccines has however reduced the use of antibiotics to almost zero.

Even though sea lice and diseases are problems that are constantly monitored in fish farms today, they are, together with mechanical injuries and poor smolt quality, responsible for approximately 20 % of the fish to die before harvest (The Food Safety Authority, 2014). This entails large losses for the farmer, as well as being a severe animal health and welfare problem.

In addition to sea lice, escapes, and diseases, organic emissions represent another environmental concern in salmon farming and account for most of the pollution around fish farms (Ministry of Trade, Industry and Fisheries, 2015a). The organic waste, which primarily is caused by fish feces and feed waste, can build up on the seabed if the rate of composition is sufficiently low, thereby damaging the local fauna. In addition to harming the surrounding ecosystems, this organic waste can also reduce the availability of oxygen in the area, thus lowering the immune system of the farmed fish (Tveterås, 2002).

#### 5.2.4 CURRENT SUSTAINABILITY INDICATORS

As the industry's most important environmental challenges are related to escapes of farmed fish and proliferation of sea lice from the salmon-breeding facilities, the Ministry of Trade, Industry and Fisheries has prioritized the reduction of these impact factors (Meld. St. 22 (2012-2013)).

There is currently one sustainability indicator in the industry, which is the amount of sea lice. From 2009 the regulations require that the average number of sea lice on each salmon in a net pen shall not exceed 0.5 adult female sea lice per fish, and the amount of sea lice are reported to the Norwegian Food Safety Authority. Farmers are required to count sea lice on representative samples of fish every week (Kristoffersen et al., 2014).

According to the Ministry of Trade, Industry and Fisheries (2015a), using escaped salmon in a production area as a sustainability indicator is difficult as there are no effective methods to



measure the amount of escaped fish. It is thus not planned to implement an indicator related to escapes, requiring that escaped fish is managed by other means.

In addition to sea lice, the only sustainability indicator that currently is suitable is related to organic emissions of each locality. The Ministry of Trade, Industry and Fisheries have not yet developed a sustainability indicator for organic emissions, but admits that this is something that should be done in the near future (Ministry of Trade, Industry and Fisheries, 2015a).

#### 5.2.5 SUMMARY OF INDUSTRY CHALLENGES

The most important environmental challenges in the aquaculture industry are found to be sea lice and genetic contamination on wild Atlantic salmon stock due to escaped farmed salmon. Other sustainability issues include the shortage of feed, organic emissions, various diseases and a high mortality. Despite the fact that the industry struggles with several issues, only the amount of sea lice on the farmed fish is currently applied as a sustainability indicator.

### 5.3 INDUSTRY ACTORS

This section serves to provide an overview of the various industry actors found in Norwegian aquaculture.

A typical salmon-breeding value chain consists of several roles. There are suppliers of smolt, feed, installations, boats, equipment, medicine etc., which each have their own suppliers, leaving the upstream value chain long and with roots in both Norway and foreign countries. Furthermore, distributors and the final consumers form the downstream value chain of the salmon-breeding companies. Some salmon-breeding companies also have acquired some of their suppliers by vertical integration. This way they obtain more control of their value chain.

The salmon-breeding companies and their suppliers have further established various industry associations, who serve to communicate the interests of industry to the authorities, enhance the reputation of the industry and facilitate collaboration within the industry. There also exist several clusters that consist of industry actors that are located in the same area.

The three most known industry clusters are AkvARENA in Trøndelag, NCE Aquaculture in Bodø, and NCE Seafood Innovation Cluster in Bergen. They focus on technology development in the aquaculture industry, and the clusters consist of technology producers, research facilities, aquaculture companies, finance institutions, educational institutions and other organizations (akvARENA, 2015b). The goal is to promote further sustainable growth of the Norwegian aquaculture by strengthening the collaboration between business, research and development, and education, through strategic collaborative projects between the clusters' partners and external partners (NCE Seafood Innovation Cluster, 2015).

The most known salmon-breeding companies and their cooperation partners are shown in table 2 (akvARENA, 2015a; Directorate of Fisheries, 2015a).

<b>Salmon-breeding companies</b>	Cermaq, SalMar, Marine Harvest, Lerøy Seafood Group, Grieg Seafood
<b>Institutes</b>	NIVA, NINA, Nofima, SINTEF Fiskeri og Havbruk, Havforskningsinstituttet, Havbruksstasjonen i Tromsø, Veternærinstituttet
<b>Universities and colleges</b>	NTNU, UiB, UiS, Ui Nordland, UiTø, Høgskolen i Ålesund
<b>Suppliers</b>	Fish feed: Skretting, EWOS, Biomar. Genetic firms: AquaGen. Equipment firms: Aqualine, Akvagroup
<b>Industry associations</b>	Sjømat Norge, Royal Salmon
<b>Industry Clusters</b>	AkvARENA in Trøndelag, NCE Aquaculture in Bodø, and NCE Seafood Innovation Cluster in Bergen

TABLE 2: SALMON-BREEDING COMPANIES AND THEIR COOPERATION PARTNERS

Industry financed research is mainly performed through FHF where industry actors order and finance research within relevant research areas. FHF manages significant means for the aquaculture industry, which are invested in industry specific research and development to contribute to the profitability and growth of the industry (FHF, 2005).

#### 5.4 MANAGEMENT OF THE NORWEGIAN AQUACULTURE INDUSTRY

Ambitions of further growth in the Norwegian aquaculture industry have been frequently expressed by the industry itself, but also by shifting governments. The authorities have expressed that the industry should be given the opportunity to grow, as long as it occurs within environmentally sustainable boundaries (Meld. St. 22 (2012-2013)). However, due to the severe environmental challenges in the industry, the Norwegian government has implemented strict regulations and routines for monitoring of the industry.

The Norwegian regime governing the localization and management of aquaculture is highly complex. Numerous national acts are relevant, implemented by different departments and political institutions with differing scopes of power concerning decision-making in Norwegian aquaculture.

This section will elaborate on which departments are responsible for managing which aspects of the industry, how the industry is currently regulated, and how it has been regulated in the past.

##### 5.4.1 AUTHORITIES AND THE REGULATORY FRAMEWORK

The supervision responsibilities in the industry are divided between the Directorate of Fisheries, Food Safety Authority and the county governor's environmental department, as well as coastal administration and Norwegian Water Resources and Energy Directorate (Meld. St. 22 (2012-2013)). The different departments execute control on different areas, and the departments and their responsibilities are presented in this subsection.

The Ministry of Trade, Industry and Fisheries manages the Aquaculture Act, and is thus the primarily responsible authority for the aquaculture management (Nofima, 2015). The Directorate of Fisheries has the responsibility of processing applications of aquaculture production and permits of establishing or expanding localities, which they determine in collaboration with the county (Nofima, 2015). They are also the supervisory authority for aquaculture production, where they try to prevent cases of escaped salmon and have the responsibility of creating sanctions if it occurs. The Food Safety Authority is responsible for fish welfare, fish health and fighting diseases (Nofima, 2015), while the environmental authorities include the Directorate of the Environment on central level and the county governors on regional level. The Directorate of the Environment furthermore supervises the county governors (Nofima, 2015). The municipalities are the planning authority and manage the areas in the coast zone. They are further on responsible for setting aside area for aquaculture through preparation of land use plans. Lastly, The Norwegian Water Resources and Energy Directorate (NVE) is the authority of fresh water and waterways, and the coastal administration is the authority of ports and waterways (Nofima, 2015).

The regulatory framework of the industry consists of several acts and regulations, where The Aquaculture Act is the most comprehensive act of the industry, consisting of several regulations that govern the establishment and operation of aquaculture facilities. The aim of the act is to promote the profitability of the aquaculture industry, and competitiveness within the framework of sustainable development (The Aquaculture Act, 2005). The Food Act (2003) and the Animal Welfare Act (2009) aim to ensure adequate fish health, fish welfare and disease control, and are authorized by the Food Safety Authority. Other important acts that regulate the Norwegian aquaculture industry are the Pollution Control Act, the Harbor Act, and the Water Resources Act.

#### 5.4.2 REGULATORY TOOLS

A regulatory policy based on production licenses is the main regulatory tool limiting the production volumes within the industry. These licenses are issued by the Ministry of Industry and Fisheries through specific allocation rounds (The Aquaculture Act, 2005). Each license is bounded in maximum allowable biomass (MAB) at two levels. The MAB-regime was introduced in January 2005, and replaced a system based on feed quotas and appraisal of cage volumes. The MAB system implies that the license owner at any time must have a biomass less than the allowed MAB on firm level (Ministry of Trade, Industry and Fisheries, 2015a). In addition, the total biomass on a given locality cannot exceed the locality's fixed MAB. The size of a license is normally 780 tons, except in Troms and Finnmark, where each license has a size of 945 tons (The Aquaculture Act, 2005). While the magnitude of biomass a firm can obtain primarily is limited by the number of licenses the firm possesses, the limitations on the locality level depends on the environmental carrying capacity of the locality (Ministry of Trade, Industry and Fisheries, 2015a). Different types of licenses will be discussed in section 5.5.

#### 5.4.3 FORMER MANAGEMENT OF AQUACULTURE

The Norwegian salmon-breeding industry has in total been regulated by four authorization laws since 1973, when the first temporary license act was adopted. A number of regulations

have been associated to each of these acts, and both the acts and the regulations have been frequently changed since 1973. Briefly, regulations regarding licenses and increases in the production capacity have developed as shown in figure 8.

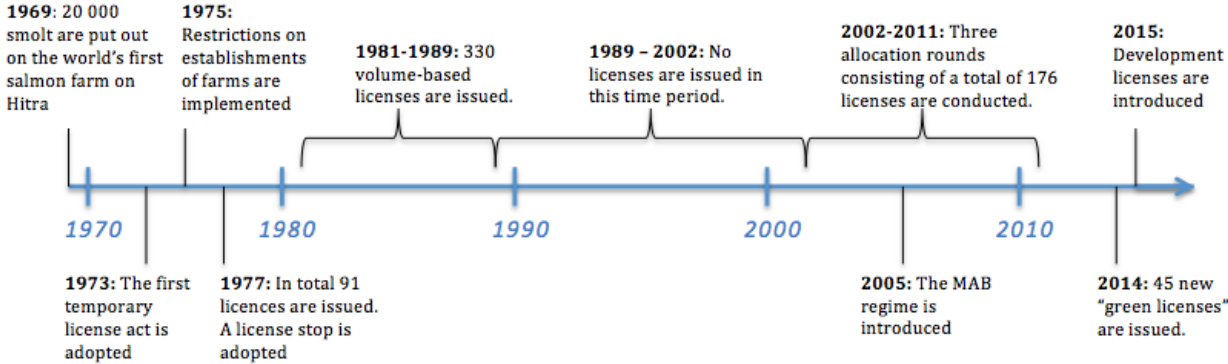


FIGURE 8: THE DEVELOPMENT OF AQUACULTURE REGULATIONS

Since 2011 no additional commercial licenses have been issued, resulting in a halted growth in the industry. The only way to increase production after 2011 is thus by being granted special licenses, which will be further elaborated upon in the next section.

5.5 CURRENT LICENSE POLICIES

Increased production can, according to the current regulations, occur in two ways; either through allocation of new licenses, or through increased MAB capacity on existing licenses (Nofima, 2015). New licenses for salmon are normally allocated in so-called allocation rounds. This means that a limited number of licenses are announced on certain criteria.

The current system for licenses consists of two categories; commercial licenses and special licenses (Laksetildelingsforskriften, 2004), as shown in table 3.

Commercial licenses	Special licenses
Salmon, trout and rainbow trout licenses	Brood fish licenses
Capture-based licenses	Research licenses
Seaweed and algae cultivation licenses	Educational licenses
Sea ranching licenses	Display licenses
Other licenses	Development licenses

TABLE 3: LICENSE SYSTEM

With no more commercial licenses being issued for breeding of salmon due to the sustainability challenges in the industry, special licenses are currently the only license form where new licenses are being issued. Furthermore, two types of special licenses facilitate development of innovative solutions to sustainability challenges, namely research licenses and development licenses. These will be further elaborated upon in the coming subsections.

5.5.1 RESEARCH LICENSES

The intention of the research licenses is to give room for important research projects, which can help the Norwegian aquaculture to prosper (Ministry of Trade, Industry and Fisheries,

2015b). Salmon production as a means for research shall contribute to the development of knowledge that will benefit the Norwegian aquaculture (The Aquaculture Act, 2005). The MAB on each license is to be determined after a consideration of the scientific need, but the main rule is that the Ministry of Trade, Industry and Fisheries issue licenses on 780 tons MAB (Ministry of Trade, Industry and Fisheries, 2015b). The time-horizons of the licenses are up till 15 years, and are determined after a consideration of the scale of the project (The Aquaculture Act, 2005).

The arrangement is primarily reserved for research institutions at university and college level, but in special cases private or public institutions can be granted licenses when the fish farming installation is a crucial and integrated part of the research project. It is however required that there exists a binding agreement with an external research facility at university or college level which takes on the academic responsibility of the research conducted in the project (Directorate of Fisheries, 2015a).

However, actors within the industry emphasizes that research licenses does not adequately facilitate research and development of new technology and operating methods which requires large investments and have uncertain outcomes. It is argued that research licenses are not sufficient because they primarily target research facilities and because of the time restrictions on the licenses that do not provide the security required to make big investment decisions (Ministry of Trade, Industry and Fisheries, 2015b). This underpins the importance of the newly issued development licenses.

#### 5.5.2 DEVELOPMENT LICENSES

It is evident that the aquaculture industry faces several challenges, and enhanced research and innovation are seen as a necessity in developing appropriate solutions to overcome these challenges. The Norwegian government has therefore, by 20.11.2015, issued a new type of licenses called *development licenses* to facilitate increased development activities in the industry.

The licenses are issued to ensure increased sustainability and value creation in Norwegian aquaculture (The Aquaculture Act, 2005). Companies can receive development licenses for projects that will contribute to the development of technology and that entail considerable innovation and considerable investments (Directorate of Fisheries, 2016a). According to the Ministry of Trade, Industry and Fisheries (2015b), licenses for means of development will contribute to increased research and development and thus affect both the salmon-breeding companies and the industry as a whole, including all its suppliers. The purpose is to facilitate development of new technology that can solve environmental or area issues in the aquaculture industry, by exploiting existing knowledge from research or practical experience (The Aquaculture Act, 2005). This can be accomplished by for instance developing prototypes and test facilities, industrial design, equipment installation and full-scale trial production (Directorate of fisheries, 2016a).

The development licenses are meant to supplement today's current arrangement with research licenses, and strict assessments must be met to receive them. The time restrictions on the licenses will be determined based on the time perspective of the project with an upper limit of 15 years (The Aquaculture Act, 2005), but the licenses can, as opposed to the research licenses, be converted to commercial licenses after the project is successfully conducted in return for compensation of 10 MNOK. Considering 10 MNOK being a fraction of what companies must pay for commercial licenses, development license stimulate aquaculture companies to think innovatively and invest in risky projects. The former Norwegian Minister of Fisheries, Elisabeth Aspaker, who was Minister of Fisheries when the development licenses was issued, explains that the fish breeding companies receiving development licenses must prove that they can bring the industry into the future, and further states that "*The projects shall possess a large amount of innovation, and considerable risk need to be involved*" (Langørgen, 2015, p. 18).

Even though one of the main purposes of the development licenses is to lead to increased sustainability of the industry, there exist no specific requirements related to this. The only thing that is required by the applicants is to provide a "*description of how the project may affect the environment and a description of how requirements for environmental and fish health shall be safeguarded, including a description of how the project will affect fish welfare and how this can be measured*" (Directorate of Fisheries, 2015b, p. 2). According to the "guidelines for the assessment of applications" provided by the Directorate of Fisheries (2015b), the applicants shall set target criteria in cooperation with the Directorate of Fisheries. Target criteria are not the same as success criteria and the project can be considered as completed although it has not been a success in terms of that it has contributed to solving some of the sustainability and area challenges that were described in their application for the development licenses. Thus, the development licenses can be converted into commercial licenses after the project is completed, regardless of whether it has solved any of the sustainability or area challenges or not. The projects will have to comply with the current sea lice restrictions described in subsection 5.2.4, but except those requirements, the environmental and social impacts of the projects such as organic emissions, fish welfare or mortality does not need to meet any requirements.

As the main idea of issuing development licenses is to facilitate development projects that over time will benefit the whole aquaculture industry, there is a requirement that the knowledge developed during a development project is to be shared with the entire industry (The Aquaculture Act, 2005). In the guidelines for the assessment of applications (Directorate of Fisheries, 2015b, p. 4), it is stated that "*Applicants must submit a detailed description of how they intend to deliver the knowledge and the experience gained during the project so that that this over time benefits the industry as a whole*". This does however not entail a narrowing of the patent rights as the applicants can apply for patents on whole or parts of the project. According to the Directorate of fisheries (2016b), "*the development projects must be possible to follow through for example fact sheets with key information, experience reports from the design and construction phase, as well as status reports during the production*".

Per 6th of May 2016, 23 companies in total have applied for development licenses. Amongst these, one applicant was granted eight licenses the 26th of February 2016, while another applicant was rejected the 15th of April 2016 (Directorate of Fisheries, 2016c). There are thus 21 remaining applications currently waiting to be assessed by the Directorate of Fisheries.

## 5.6 SUMMARY OF CASE STUDY CONTEXT

In this chapter the main sustainability challenges in Norwegian aquaculture have been discussed, and the current management structure and regulations of the industry have been reviewed. The most prominent sustainability issues affecting the Norwegian aquaculture industry are seen to be the impact of sea lice and escaped salmon on wild stocks of Atlantic salmon. These issues are so problematic that the Norwegian government has decided not to issue any new commercial licenses before these problems are sufficiently dealt with.

In regulating the industry the Norwegian government mainly uses production licenses. The last years no commercial licenses have been issued, except for some green licenses only given to companies complying with distinct sustainability and innovation requirements. In addition to the commercial licenses, the authorities issue special licenses, like research licenses and development licenses. The development licenses were implemented to facilitate development of new technology that can solve environmental or area issues in the aquaculture industry, and the applicants must have conducted substantial investments and innovation in order to be granted this type of license.

## 6. BARRIERS TO SHARED VALUE CREATION IN THE NORWEGIAN AQUACULTURE INDUSTRY

In this chapter an analysis of the empirical data from the case study will be conducted to answer the first research question of the thesis:

*RQ1: What are the current barriers to creating shared value in the Norwegian aquaculture industry?*

When addressing the first research question, the intention is to analyze the current level of corporate sustainability in the Norwegian aquaculture industry. Facilitating shared value creation is furthermore seen as a way to achieve corporate sustainability, and corporate sustainability will thus be assessed by considering the barriers to shared value creation in the industry. The aspects found in the analytical framework presented in chapter 4 will act as a foundation when identifying the barriers to shared value creation, and the presence of innovation, long-term orientation, cooperation and stakeholder trust will thus be thematically analyzed in the context of Norwegian aquaculture. The barriers to the current governmental regulations will also be addressed, as the government has an important role in achieving shared value creation in an industry context.

The data is collected from 12 semi-structured interviews that were thematically organized based on the analytical framework developed in chapter 4. It is however important to note that since this is a qualitative study consisting of semi-structured interviews, not all interviewees has taken a stand in all the following areas of discussion. All interviewees have talked about the main themes of innovation, long-term orientation, cooperation and stakeholder trust, but what areas of interests they brought up related to these themes differed. This entails that a systematic approach of stating the number of interviewees supporting the different standpoints and citations is not seen as beneficial. Instead citations will be used to ground different aspects of the analysis.

Firstly, the barriers to innovation in the industry will be assessed, followed by the barriers to long-term orientation, barriers to cooperation and stakeholder trust, and lastly the barriers to governmental regulations will be discussed.

### 6.1 BARRIERS TO INNOVATION

According to Porter and Kramer (2011) innovation is important in finding solutions that can benefit society as well as firms in the industry, and is seen as crucial for creating shared value with stakeholders. The potential barriers to innovation is thus important to assess if shared value creation in an industry context is to be realized, together with an assessment of how the governmental regulations manage to facilitate innovation in the industry.

#### 6.1.1 LACK OF MAJOR INNOVATION

When addressing the topics of innovation and risk taking in Norwegian aquaculture during the case-interviews, there was a consensus among the participants that there is a high level of



both in the industry. During the case study it became evident that the industry has been proficient in finding innovative solutions ever since the beginning, developing equipment and solutions to enable production growth. Now, when the industry is not allowed to grow, the innovative focus has shifted from developing technical improvements for increasing efficiency and productivity to finding solutions on sustainability challenges. This is concretized by the development of industry clusters and research programs that intends to solve the current sustainability challenges affecting the industry.

Even though innovation has always been present in the Norwegian aquaculture industry, it can be questioned whether these innovations have been sufficient for increasing corporate sustainability. Innovation can as discussed in subsection 4.2.3 be divided into exploration and exploitation (March, 1991), implying that innovation can either be done by taking several smaller, incremental steps that continuously improves the current solutions, or by taking major shifts which drastically changes the way things have been done. According to applicant 6 there has been a high level of exploitation, or incremental innovation, in the industry up until this point:

*It's clear that most of the innovation in Norwegian aquaculture has been incremental. Established, mature companies will be able to do quite bit of incremental innovation, but to be able to take larger innovative leaps you need measures to reduce the risk. - Applicant 6*

This concern was mentioned by several other interviewees as well, especially from the applicant group, stating that there is a need for larger innovations in the industry if the sustainability challenges are to be overcome. This is supported by both March (1991), emphasizing the importance of balancing the levels of exploitation and exploration, and by Eccles and Serafeim (2013), arguing that increased sustainability combined with economic success is only achievable when companies do major innovation. Hence, if shared value is to be achieved in the Norwegian aquaculture industry, we argue that more major innovation is required.

#### 6.1.2 EXPENSIVE LICENSES PREVENTING MAJOR INNOVATION

According to the analytical framework for achieving shared value creation in industries, the authorities have an essential role in stimulating innovation through their regulations. As mentioned in chapter 5, the regulative policies of the industry are based on production licenses that are needed in order to breed fish. During the interviews, the concern of large amounts of capital being tied up in expensive licenses affecting the level of innovation in the industry was raised:

*You get a large amount of capital tied up in these licenses, which leads to less funds being available for the staff, equipment and research needed to develop new solutions. - Applicant 4*

Hence, the regulations might historically have discouraged innovation due to the expensive licenses. The restricted number of licenses in the industry is also seen as a barrier to conducting large innovative projects. To be able to test prototypes and pilots, companies must make available their own commercial licenses that are normally used for regular production of salmon. Halting normal production over a certain time period will reduce revenues substantially, and especially long-term projects can significantly affect the bottom line of a moderate size company. We thus argue that the current regulations with expensive licenses are not enhancing innovation, at least not at a substantial size, which is needed in the industry in order to balance exploitation and exploration sufficiently.

6.1.3 SUMMARY OF BARRIERS TO INNOVATION

We argue that the industry’s lack of major innovation and expensive licenses are barriers to shared value creation in the Norwegian aquaculture industry. The current regulation system employed by the authorities is further not seen to facilitate major innovation in the industry.

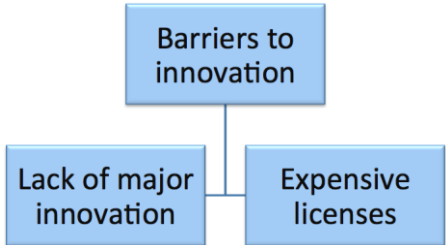


FIGURE 9: BARRIERS TO INNOVATION

6.2 BARRIERS TO LONG-TERM ORIENTATION

Long-term orientation in the industry was further emphasized as crucial for achieving shared value creation in the analytical framework. When bringing up the subject of time-horizon of strategies within the industry, several of the interviewees expressed concerns regarding the Norwegian aquaculture industry being characterized by a short-term focus. This contributes to a reactive culture in the industry, in which problems are not solved before they have direct negative impacts of the profits of companies (Dyllick and Hockerts, 2002). The barriers to long-term orientation will be presented in the upcoming subsections, together with an assessment of how the governmental regulations manage to facilitate long-term orientation in the industry.

6.2.1 INSTRUMENTAL VIEW ON CORPORATE SUSTAINABILITY

During the case study it became evident that salmon farmers have historically predominantly been concerned with environmental problems having a negative effect on the farm’s own production through reduced growth, increased mortality or reduced fish quality. This implies that sustainability issues that directly affect the company’s financial situation historically have been prioritized in the Norwegian aquaculture industry:

*Financial performance and sustainability are interconnected in my world.*  
 – Applicant 3

As this citation implies, aquaculture companies seem to be prioritizing win-win situations in which sustainable behavior can lead to financial gains. The argument of Norwegian aquaculture prioritizing the economic dimension in corporate sustainability is further supported by the literature regarding externalities. As mentioned in subsection 3.3.2, externalities arise when firms create social costs that they are not obligated to bear, and in order to make firms internalize these externalities, the society imposes taxes, regulations and penalties (Eccles et al., 2014). By realizing that the Norwegian aquaculture industry is strictly regulated to keep negative externalities induced by the industry, such as diseases, sea lice and escaped fish under control (Nofima, 2015), we assume that some sustainability issues are not handled voluntarily by the industry. Hence, the instrumentality of the industry is evident in the way the industry is regulated. This is supported by Eccles et al. (2014) who state that the government is often given the responsibility for forcing corporations to account for externalities in the social and environmental dimensions when companies are implementing a corporate sustainability strategy emphasizing profit maximization.

Following these arguments, it is evident that actors in Norwegian aquaculture have focused on solving issues that directly affect the profits of the firms, with emphasis on pleasing shareholders. Seeing that the instrumental view considers financial gains and shareholder value as the main objective of corporate sustainability, as shown in section 3.2, we argue that the Norwegian aquaculture industry has an instrumental approach to corporate sustainability. By further noting that the prioritizing of the financial dimension of corporate sustainability is undermining stakeholder trust by favoring shareholders, and that shared value creation is based on stakeholder engagement, we argue that the current approach to corporate sustainability in Norwegian aquaculture is a barrier to shared value creation.

The literature reviewed in this thesis agrees that the short-termism typical for an instrumental approach to corporate sustainability can be a barrier to shared value creation and increased corporate sustainability. The high emphasis on maximizing profits in the short term contradicts to the need of a longer time-horizon of sustainability (Bansal and DesJardine, 2014; Dyllick and Hockerts, 2002), and often contradicts to addressing the needs of all stakeholders, which is crucial for achieving shared value creation (Jones, 1995). The negative consequences of prioritizing financial gains on the time-horizons on strategies in the industry were also elaborated upon by the journalist:

*It has been so much money to make in producing farmed salmon that the industry mainly has had a short-term focus. The industry as a whole has not been able to come together and solve their issues. The main focus has been on next year's bottom line. – Journalist*

A long-term orientation is crucial in order to achieve success in the long-run (Eccles et al., 2014; Porter and Kramer, 2011), and the pursuit of short-term financial gains seen in the industry can be a distinct barrier for creating shared value. A longer time horizon is needed for establishing close relationships with stakeholders (Jones, 1995), and for building clusters

as a basis for collaboration and innovation within the industry (Eccles et al., 2014), which are aspects that has shown to be highly important for creating shared value.

The financial focus is thus an evident reason for the short-term orientation in Norwegian aquaculture. However, the interviewees did also bring up several other reasons for the short-term focus in the industry, which will be discussed in the upcoming subsections.

#### 6.2.2 EXPENSIVE LICENSES PREVENTING LONG-TERM STRATEGIES

As discussed in subsection 6.1.2, the limited number of production licenses in the industry has made it hard to develop major innovations. Major innovations require large investments and long payback periods (Eccles and Serafeim, 2013), which have not been achievable for many aquaculture companies due to the current regulation system. Among the applicant group, the expensive license system and its impact on the level of innovation in the industry are viewed as the main reasons for the short-term focus:

*It has been a short-term focus in the industry, which definitely is related to the regulation regime. It is all about how you can gather enough money to buy the next license. And this will again affect the level of innovation. Companies just can't afford to develop new innovative solutions. So the industry has been stuck in the mud for some years. – Applicant 5*

Hence, it seems like the licenses system might have affected the possibilities to obtain long-term strategies in the industry, which according to Eccles et al. (2014) is a crucial aspect of obtaining increased corporate sustainability. This means that the authorities can be seen to come short in facilitating long-term orientation in the industry, which is important for creating shared value in an industry context. We thus argue that expensive licenses are a barrier to shared value creation in the Norwegian aquaculture industry.

#### 6.2.3 REACTIVE STRATEGIES

However, not all interviewees from the applicant group agreed that the expensive licenses is the main reason for the short-term orientation in the industry, and stressed, alongside interviewees from the supplier- and the media group, that the short-term focus in the industry is deeply rooted in the industry culture:

*Every company should have sat down every day and focused on developing new solutions, but they don't. The salmon-breeding industry has been characterized by only solving problems when bumping into them. It has been a lack of long-term focus; what will be our next challenge? In this respect the industry has not been adequate. – Applicant 1*

It thus seems like the industry has been characterized by taking reactive measures instead of proactive measures. This claim is supported by noting that aquaculture companies continue to predominantly focus on the problems that currently mark the industry, while struggling to see how their behavior will be destructive in the future, which is typical for short-term oriented

companies. This represents the temporal tensions discussed in subsection 4.3.3 between short-term profits and long-term corporate sustainability (Hahn et al., 2014). Bansal and DesJardine (2014) further claim that short-termism is the biggest threat to sustainability. Hence, the industry should work against a more preventive attitude to their problem solving strategies, and understand how their actions today can affect their future possibilities. We thus argue that the culture of reactive strategies among the industry is a barrier to recognizing the long-term consequences of the way salmon is currently produced, and thus a barrier to shared value creation in the Norwegian aquaculture industry.

6.2.4 AUTHORITIES FACILITATING REACTIVE STRATEGIES

As discussed in section 4.6, the authorities have an important role in facilitating long-term orientations through their regulations. However, during the case study, the concern of the authorities mainly focusing on solving short-term sustainability problems, instead of employing long-term oriented strategies, was raised. Some of the applicants stated that the authorities fail to think long-term when assessing the sustainability challenges in the industry. This is particularly an issue concerning the strict lice-restrictions that results in the large usage of hydrogen peroxide, which has several severe environmental effects in the longer term:

*On one side you need to have in mind that yes, sea lice is a challenge in the industry today, but it is important to remember that in the future there could be other issues being more important. This way you don't get stuck to one aspect.*  
 - Applicant 4

If the authorities who set the requirements and the political framework in the industry are not able to facilitate long-term strategies, it can be questioned whether the basis for creating shared value is very fruitful, considering that long-term orientation is crucial in achieving shared value creation (Porter and Kramer, 2011), and in solving major sustainability challenges (Eccles et al., 2014). We thus argue that the short time-horizons of the authorities are a barrier to shared value creation in the Norwegian aquaculture industry.

6.2.5 SUMMARY OF BARRIERS TO LONG-TERM ORIENTATION

Summarized there are four main barriers to long-term orientation in the Norwegian aquaculture industry. The first barrier is related to the instrumental view on corporate sustainability in the industry, the second barrier concerns how expensive licenses prevent long-term major innovation, the third barrier is related to the culture of aquaculture companies having a reactive approach to sustainability issues, and the fourth and last barrier concerns how the authorities facilitate short-term strategies through their regulations.

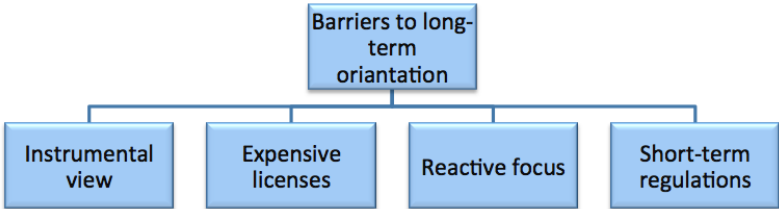


FIGURE 10: BARRIERS TO LONG-TERM ORIENTATION

### 6.3 BARRIERS TO COOPERATION AND STAKEHOLDER TRUST

As emphasized in the analytical framework, the salience of a stakeholder is highly dependent upon its power within the industry (Mitchell et al., 1997). During the case-interviews, it became clear that some stakeholders have more power than others in the industry, and the media, environmental organizations, the authorities and large salmon-breeding companies were most frequently mentioned. The importance of establishing relationships with salient stakeholders based on mutual trust and cooperation is stressed by several researchers (Eccles et al., 2014; Freeman et al., 2010; Jones, 1995). Porter and Kramer (2011), Jones (1995) and Nidumolu (2009), amongst others, further on emphasize the importance of collaboration with key stakeholders, both when developing innovative solutions and when solving larger sustainability problems, making collaboration and stakeholder trust essential aspects in realizing shared value creation in an industry context.

There exists several arenas for cooperation in the industry, especially through clusters like NCE aquaculture, and AkvArena, and through industry associations like Sjømat Norge and Norway Royal Salmon. The presence of such organizations can facilitate good collaboration, and is thus an important determining factor for productivity, innovation and competitiveness (Porter and Kramer, 2011). The level of cooperation and stakeholder trust among aquaculture companies and different stakeholders, namely the authorities, research facilities, suppliers, competing companies and the opposition movement will be assessed in this section. The barriers to cooperation and stakeholder trust will be presented, together with an assessment of how the governmental regulations manage to facilitate cooperation and stakeholder trust in the industry.

#### 6.3.1 RELATIONSHIP WITH THE AUTHORITIES

This subsection will elaborate upon the collaboration and stakeholder trust among aquaculture companies and the authorities in the Norwegian aquaculture industry.

The authorities represent a group of salient stakeholders of the Norwegian salmon breeding industry, which is perceived as having much power by the industry actors, as well as exhibiting legitimacy. Hence, the authorities can be categorized as a dominant stakeholder, as it has a number of formal mechanisms in place that acknowledges the importance of their relationship with the firms within the industry (Mitchell et al., 1997). When the authorities' claims are urgent, they go into the group of the most salient stakeholders, possessing all three attributes; power, legitimacy and urgency. Managers of aquaculture companies will then have a clear and immediate mandate to attend to and give priority to the authority's claims. Such claims can be regulatory policies, sanctions for large escapes, or strict environmental requirements that need to be followed.

As the authorities represent an important group of stakeholders to aquaculture companies, building long-term, collaborative relationships with them is essential (Eccles et al., 2014; Jones, 1995; Strand and Freeman, 2013). Several of the interviewees mentioning that there is an apparent and clearly defined relationship between the aquaculture industry and the

authorities, stated that they often meet with representatives from the authorities and that the communication is good. There have been efforts to identify common interests between the aquaculture companies and the authorities, both when it comes to strengthening the industry, protecting the wild Atlantic salmon, and finding solutions to environmental problems:

*Even though we don't always agree about the wild salmon interests, or the environmental interests, we are able to sit round a table and discuss the situation. About 15 days ago we met with the Minister of Fisheries, together with salmon fishers, and communicated a common message to the Minister regarding the issue of escaped farmed salmon. Really exciting don't you think!*

- Representative from an industry association

Searching for joint interests with stakeholders are considered as an important step towards creating shared value (Porter and Kramer, 2011; Strand and Freeman, 2013), as it focuses on strategies that both the salmon breeding companies and the authorities will gain from. Meeting to communicate own interests with different stakeholders is seen as important in building relationships and trust with stakeholders (Freeman et al., 2010), and many of the interviewees mentioned that the communication with the authorities is present. There was however divided opinions regarding how beneficial this communication really is. While some of the interviewees shared the view of the representative from an industry association, others questioned how useful the relationship really is:

*The authorities are available to discuss things, but have a hard time finding good, sustainable solutions... In the salmon-breeding industry I find that the authorities read paragraphs and are not so interested in finding solutions that will contribute in developing the industry. – Applicant 3*

It is thus evident that there are contradicting opinions to whether the relationships between the industry actors and the authorities are fruitful. The reasons for why the relationships were found as poor was related to disagreements regarding regulations and criteria that are set by the authorities, which were argued to not be sufficiently grounded in the industry, and not based on adequate academic knowledge. The disagreement regarding the regulations will be further discussed in section 6.4.

Summarized we argue that there is one main barrier to shared value creation related to cooperation and stakeholder trust among the authorities and aquaculture companies in the Norwegian aquaculture industry, namely that the collaboration between aquaculture companies and the authority is seen to be poor on some areas, especially in terms of determining the sustainability indicators.

### 6.3.2 RELATIONSHIP WITH RESEARCH FACILITIES

This subsection will elaborate upon the collaboration and stakeholder trust among aquaculture companies and research facilities in the Norwegian aquaculture industry.

In addition to clusters, research projects associated with research licenses is another important arena for cooperation between research facilities and aquaculture companies. As mentioned in chapter 5, these licenses are implemented to give room for important research projects which can help the Norwegian aquaculture to prosper (Ministry of Trade, Industry and Fisheries, 2015b). The licenses are given to various research projects in the industry, and require involvement of a research facility. Several of the applicants were however critical to the usefulness of the licenses, arguing that there is often a conflict of interest between aquaculture companies and the research facilities:

*On most projects we have done there has been conflicts of interest between the research facilities, who wants to spend as much time as possible on the project to get maximal financial support, and us, wanting to develop technology in as short time as possible. – Applicant 5*

It is thus evident that even though the authorities facilitate cooperation between different segments of the industry through the issuance of research licenses, the self-interest of each actor often surpasses the aim of achieving shared gains from the partnership. This is a good example of the private value - shared value tensions explained by Haffar and Searcy (2015), where both private and shared value cannot be maximized, and a trade-off must be made. The fact that private company value is seen to be more important to the actors than the potential shared value that could be achieved in such collaborative partnerships is thus not regarded as very fruitful for collaborative partnerships and an obstacle to open innovation in the industry.

Summarized we argue that the main barrier to cooperation and trust among aquaculture companies and research facilities is that private company value is seen to be more important to the actors than the potential shared value that could be achieved in collaborative partnerships.

### 6.3.3 RELATIONSHIP WITH SUPPLIERS

This subsection will elaborate upon the collaboration and stakeholder trust among aquaculture companies and their suppliers in the Norwegian aquaculture industry.

In addition to cooperation with research institutions and academic institutions for research and development matters, collaboration with suppliers is an important aspect of shared value creation (Porter and Kramer, 2011), and can potentially facilitate cost reductions and productivity for both parties (Jones, 1995). Both suppliers and salmon-breeding companies agreed that the supplier-customer relationship in the industry is good and that technical solutions are developed in collaboration between the two parts.

Several researchers argue that when negotiating with several suppliers to push the prices down, the suppliers are left marginalized and unable to remain productive or a high level of quality, which is neither beneficial for the suppliers nor the clients (Jones, 1995; Porter and Kramer, 2011). The aquaculture industry consists of a few large Norwegian suppliers, and several smaller ones. There is however evident that some aquaculture companies are very



price focused when choosing suppliers, resulting in a trend of outsourcing to low-wage countries. This is highly contrary to what is recommend for creating shared value in the analytical framework, as investing in the local community by strengthening local suppliers is an important aspect for creating shared value in the long run (Porter and Kramer, 2011). According to supplier 2 this trend is a shame:

*We used to have a government that understood what was most valuable to the society; the human capital. But now they are not able to continue these values. They have chosen a rate of expansion in the North Sea that the human capital in Norway was not able to follow, and thus needed to start a technology transfer project with Asia. They pulled out their investments in Norwegian human capital and reinvested it in Asia for them to build up a competing human capital. In a socioeconomically perspective, it is an insane thing to do. – Supplier 2*

On the contrary, it seems like the aquaculture companies themselves sees this kind of outsourcing as a necessity:

*The Chinese have an infrastructure that is totally different from what we have here in Norway. They manage to do it much more efficient, and to a completely different cost. – Applicant 1*

A strong disagreement regarding the outsourcing of equipment production is thus evident. The way some of the aquaculture companies take easy on outsourcing their production does however indicate a price-focused procurement practice that leaves a poor basis of creating shared value with local communities.

Summarized we argue that the main barrier to cooperation and stakeholder trust among aquaculture companies and their suppliers is connected to the trend of aquaculture companies outsourcing their production.

#### 6.3.4 RELATIONSHIP WITH COMPETING COMPANIES

In addition to having close relationships to firms within its own supply chain, collaboration with competing companies in the industry is important in order to reach out to the authorities and to find solutions to the sustainability problems that the industry faces (De Wit and Meyer, 2014; Porter and Kramer, 2011; Strand and Freeman, 2013). The relationships between competing aquaculture companies was the relationships with the most divided opinions among the interviewees, in which some stated that the level of cooperation is high, while others felt it was non-existing. During the case study, the need for collaboration between aquaculture companies were emphasized, as some features of the industry make the industry actors being more dependent on cooperation with each other than what is seen in other sectors. This is explained the representative from an industry association, arguing that since all industry actors are being dependent on the same ocean-areas, the need for cooperation is extra high. Applicant 3 also sees this importance:

*When you have biological production where you almost can look over to the next plant it doesn't help how well you do if your neighbor is doing poorly (...) The industry is built on sharing of knowledge. It has been a fantastic industry in that regard. If I see the need of calling a competitor to discuss things, that's not a problem. You can even come and take a look at the production and all. So I view the industry so far as a very open industry. – Applicant 3*

Hence, some industry actors experience the level of cooperation between competitors to be sufficient. The case-interviews did however also indicate that competition is in focus when developing new solutions. Both salmon-breeding companies and suppliers tend to keep their cards close to chest when working on innovation projects:

*We do cooperate with our competitors when it comes to influencing our surroundings, but we don't cooperate when it comes to the products we develop. We cooperate where we can and fight where we have to. – Supplier 1*

It can thus seem like there exists some barriers towards entering into collaborative engagements with competitors with the intention of developing innovative solutions. Cooperation between competing companies is nevertheless necessary to find solutions to the major sustainability problems that hamper the aquaculture industry today. De Wit and Meyer (2014) argue that competitors should be more concerned with cooperation than competition, considering that collaborative efforts often can be fruitful. The sea lice challenges that the industry faces today impose large costs to all salmon-breeding companies, and the efforts needed to eliminate the problem is seen as too large for single actors to conduct alone. This responsibility is rather regarded as collective, and forces must be joined in order to finance the research and development projects that are required.

When discussing the relationships between competitors there were also a tendency among the interviewees to use expressions like *us* and *them*, especially when reviewing the question of whether the industry can be considered as sustainable. With notions like *good guys* and *bad guys* in the industry, aquaculture companies are dissociating themselves from certain other companies, implicitly blaming their competitors for the current sustainability issues in the industry. This implies a low level of trust among competitors, and as already discussed, lack of trust is detrimental to collaborative relationships (Eccles et al., 2014; Jones, 1995) and represents a distinct barrier to shared value creation.

Industry associations furthermore represent arenas in which aquaculture companies can collaborate towards meeting common goals. Such arrangements are important means for building relationships and working towards common objectives within the industry. They also represent arenas for development and innovation, and are thus crucial for shared value creation in an industry (Chesbrough, 2003; Porter and Kramer, 2011). In Norwegian aquaculture these organizations have worked as a means to improve the image of the industry, and to protect its reputation, simultaneously as they have served as platforms for communicating their members' opinions on the regulative policies to the authorities.

However, there exist several different industry associations for aquaculture companies, representing different types of companies. The interests of the different groups of aquaculture companies have furthermore proven to be quite fragmented, and often in conflict with each other:

*In Norwegian aquaculture you have a very fragmented organizational culture. There are many industry actors with different opinions, communicating their opinions to different industry associations. This leads to a differentiation of industry associations and many different views being brought up to the authorities. If you look at this from the authorities' point of view I can imagine it is not easy to figure out what the industry really wants. – Applicant 4*

This statement implies that there are several different opinions amongst the different aquaculture companies. This is not a large problem in itself, but rather expected in an environment with high competition. However, there is an impression that actors are more interested in creating private value than in creating shared value together; similar to what was seen when collaborating with research facilities. Maximizing own gains at the expense of shared gains will not provide good basis for collaboration, and creating shared value is considered as hard in such circumstances.

Summarized we argue that the main barriers to cooperation and stakeholder trust among aquaculture companies and their competitors are firstly related to the lack of trust among competing aquaculture companies, where there is a lot of pointing fingers and blaming competitors for the sustainability issues in the industry, and secondly concerning the conflict of interests among different groups of aquaculture companies, resulting in a lot of fragmented lobbying towards the authorities.

#### 6.3.5 RELATIONSHIP WITH THE MEDIA AND THE OPPOSITION MOVEMENT

Another stakeholder with substantial salience is the media. There are several media-channels covering the industry, some possessing more legitimacy than others. However, common for the media is that they often manage to acquire urgency to their claims, which will capture the attention of other powerful stakeholders, such as the authorities (Mitchell et al., 1997). This makes them impossible to ignore by the aquaculture companies and there are several cases where accidents and discrepancies from accepted operation have been drawn attention to by the media.

The opposition movement is here used as a generic term to cover environmental organizations, NGOs, wild-salmon fishers and other groups of people that are negative to aspects of the industry or to the industry as a whole. They often possess strong opinions and desires of change, but do normally not have the power or urgency to receive the managers' attention by themselves. However, when joining their forces, the media and the opposition movement have substantial influence, and there are several cases where they have forced through changes and requirements together.

A substantial amount of this stakeholder group regards Norwegian aquaculture as an unsustainable industry that does not care about the environment. Especially the focus on how farmed salmon negatively affects the wild Atlantic salmon has dominated the media's attention, and many media channels and environmental organizations blame the industry for trying to avoid their responsibilities:

*Not long ago Norsk Sjømatbedrifters Landsforening engaged a lawyer who now calls for more details regarding the research from Havforskningsinstituttet on sea lice with the intention of creating doubt regarding a subject there is little doubt about; that sea lice has the potential to do great damage on wild Atlantic salmon. So instead of coming up with alternative research, which could disprove the research, the industry uses a lawyer who sends out a report of concern to the Minister of Fisheries. - Journalist*

The journalist continues to describe several occasions where the dishonesty and lack of trust in the industry is evident. Related to the treatment against sea lice, there have been several situations where salmon-breeders have combined several different chemicals, which are illegal, in an attempt to delouse the fish. There have also been highlighted in the media when salmon-breeding companies are caught reporting incorrect numbers of sea lice and escapes. The salmon-breeding companies are thus accused to not be honest around such situations before they are busted.

On the contrary, representatives from the industry sees some of these media organizations as less solution oriented, and rather determined to continue the conflict:

*Some environmental organizations, like Bellona, are very solution oriented and acknowledge that we need to produce food in the sea, and focuses on how to do it in the best way. This I think is a very constructive approach. But you also have others that seem to live of the conflict and who has a conviction of the industry only being a burden to the society. They make a lot of noise and influence the authorities, the man in the street, and the politicians, and definitely contribute to how the industry is viewed. - Representative from an industry association*

As these statements imply, there are distinct tensions between the industry and the opposition movement, and it is not an overstatement to say that the relationship is characterized by a lack of trust. As the latter interviewee stated, there exists cases where collaboration and objective discussions have occurred, but fruitful collaboration between the industry and the opposition is rather seldom.

Summarized we argue that there is one main barrier to shared value creation related to cooperation and stakeholder trust among aquaculture companies and the opposition movement in the Norwegian aquaculture industry, which is the barrier related to a distinct lack of trust among the two parts, which has resulted in little cooperation.

### 6.3.6 DIVIDED OPINIONS AMONG INDUSTRY ACTORS

During the case-interviews, it became evident that there are divided opinions among industry actors to whether they consider the Norwegian aquaculture industry as sustainable. The answers to all participants are presented in table 4.

<b>Participant</b>	<b>Is the industry currently sustainable?</b>
Representative from an industry association	Yes
Journalist	No
Biologist	Yes
Advisor 1	No clear answer
Advisor 2	No clear answer
Applicant 1	Not really. Only in certain areas
Applicant 2	It is complex. Some actors are sustainable
Applicant 3	Depends on what you compare with
Applicant 4	No clear answer
Applicant 5	Yes
Applicant 6	No
Supplier 1	No
Supplier 2	No

TABLE 4: ANSWERS TO WHETHER THE INDUSTRY ACTORS CONSIDER THE CURRENT INDUSTRY AS SUSTAINABLE

As you can see in table 4, there is no unanimously answer among the industry actors to whether the Norwegian aquaculture industry currently is sustainable. With four no-answers, three yes-answers, and six unclear answers it is evident that there are diverse opinions of the matter in the industry.

The main criteria of sustainability brought up by the interviewees when asked whether they think the current industry is sustainable, was the three pillars of sustainability; the economic, the environmental and the social, and that following generations are given the same opportunities that we have today. This is in line with both the well-known WCED definition coined by Gro Harlem Brundtland in *Our common future* (WCED, 1987), and the triple bottom line approach introduced by Elkington (1997). Supplier 1 explained his understanding of the sustainability concept as:

*Sustainability is for me that I through my actions, and everybody else through their actions, deliver from us a world that is at least as great as when we entered it. – Supplier 1*

Another term that recurred in many of the interviews was *footprint*. Seeing that salmon breeding is a biological production taking place in nature, the organic footprint of the production is viewed as an important aspect of sustainability by several industry actors:

*It is evident that all biological production has a footprint, that you can't avoid, but the size of this footprint needs to be within the acceptable range.*

– Applicant 4

An interesting aspect of the study were that the interviewees viewing the industry as sustainable seemed to focus on the social pillar of sustainability, being more concerned about producing feed-efficient food to a growing world population. On the other hand, the interviewees viewing the industry as unsustainable focused more on the environmental pillar of sustainability, seeing the current sustainability challenges affecting the environment and the wild Atlantic salmon as important obstacles to becoming sustainable.

In the third group of interviewees, not giving a clear answer, many emphasized that there is no straightforward answer to the question because the industry is so complex:

*In certain areas the industry is surely sustainable. But I think the industry currently is struggling with too many things to be called sustainable. It is definitely not sustainable in the term of growing. There are also big differences within the industry. You will find the ones that are far out on the wrong side and you will find the good ones. However, with all the chemical treatments today it is difficult to say that the industry is sustainable. It is just not good enough.*

- Applicant 1

The divided opinions to whether the Norwegian aquaculture industry can be viewed as sustainable might result in a lack of understanding and trust among industry actors. When actors have different opinions to what the goals and challenges of the industry are, it can result in disagreement and conflict of interests, which are not seen as beneficial for cooperation and stakeholder trust. Seeing that cooperation and stakeholder trust is essential for achieving shared value creation (Eccles et al., 2014; Nidumolu et al., 2009; Porter and Kramer, 2011), the conflicts of interest between industry actors can undermine shared value creation in an industry context.

Summarized we argue that the divided opinions among industry actors to whether the Norwegian aquaculture industry can be viewed as sustainable is seen as a barrier of cooperation and stakeholder trust in the industry.

### 6.3.7 SUMMARY OF BARRIERS TO COOPERATION AND STAKEHOLDER TRUST

As shown in figure 11 seven barriers to cooperation and stakeholder trust have been identified in the previous subsections. These barriers must be overcome if shared value creation is to be realized in the Norwegian aquaculture industry.

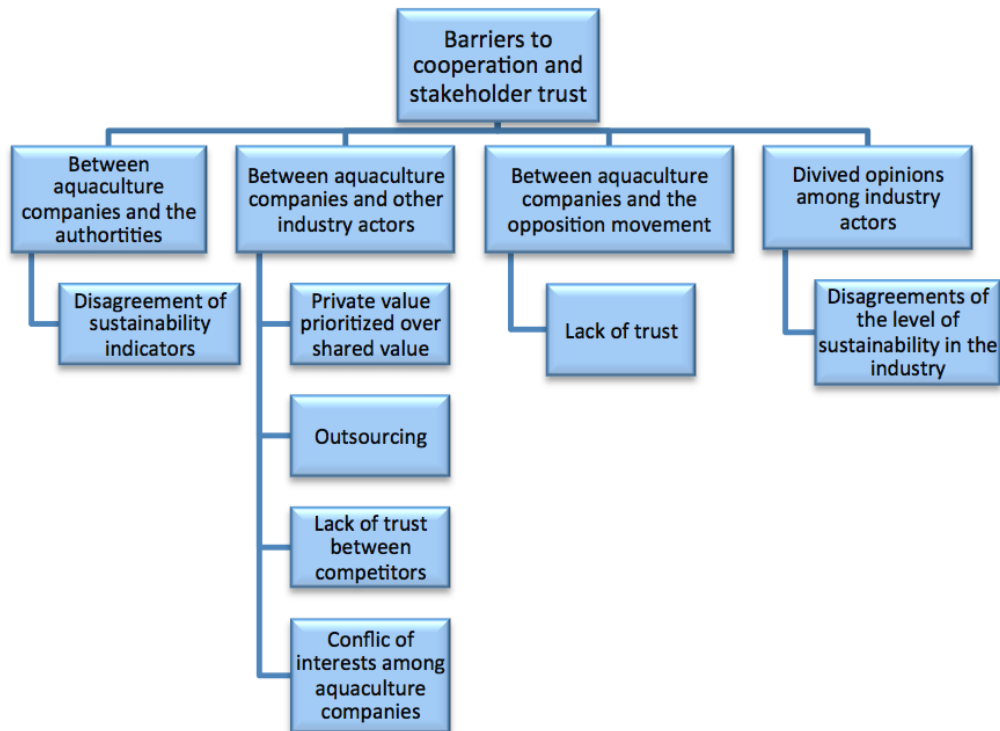


FIGURE 11: BARRIERS TO COOPERATION AND STAKEHOLDER TRUST

## 6.4 BARRIERS RELATED TO THE GOVERNANCE OF THE INDUSTRY

As discussed in section 4.6, governmental authorities have a large responsibility in facilitating shared value creation in industries. The barriers related to the governance of the industry will be presented in the upcoming subsections, together with an assessment of how the governmental regulations manage to facilitate long-term orientation in the industry.

### 6.4.1 FRAGMENTED AUTHORITIES

In subsection 4.6.2 it was emphasized that the authorities of an industry should consider themselves as a stakeholder on equal terms as other industry actors, and cooperation and stakeholder trust within the authorities are seen as equally important as between other stakeholders of the industry. When considering the Norwegian aquaculture, there was particularly one aspect of the industry that was perceived as a major obstacle to shared value creation, namely the fragmented management of Norwegian aquaculture. This was the one topic with the highest degree of consensus among the interviewees, and both representatives from the industry, industry associations, the media and the directorate of Fisheries agreed in this respect, raising concerns on how such a fragmented authority affects the industry.

With many different authorities sitting with a substantial amount of power, there is always the possibility of conflicts of interests occurring. One relationship characterized with such

conflicting interests is the relationship between the Directorate of Fisheries and the Directorate of the Environment:

*The directorate of Fisheries has an objective of both promoting industry growth and facilitating a sustainable industry. You can say we are caught in the middle when it comes to sustainable development and financial development, while other parties, like the Directorate of the Environment, might lean more against the one side, mainly focusing on the industry being environmental friendly and sustainable. This can lead to conflicts where you don't even use necessary knowledge when you discuss. – Advisor 2*

The statement implies that there exists tensions between making financial gains and being environmentally sustainable in Norwegian aquaculture, and that achieving both is not always plausible. These situations refer to tensions at the change-level in the framework for analyzing tensions by Hahn et al. (2014), where conflicts between the environmental and the economic dimension of sustainability requires trade-offs to be made. When the authorities have contradictory opinions to how the regulations should be designed, the process of implementing regulatory policies that facilitate shared value creation might not always be successful.

This type of conflict is typical in many industries where sustainability is a rising matter of interest, and can be linked to the dilemma between the two main approaches to corporate sustainability, namely the integrative approach and the instrumental approach. It seems like while some parts of the authorities attempts to follow an integrative approach to sustainability, by accepting trade-offs between different sustainability dimensions, most of the authorities are seen to be characterized by instrumental attitudes, just like the industry actors, as discussed in subsection 5.2.1. When considering that the instrumental and the integrative approach to sustainability is fundamentally contradicting each other, where the first only seeks for win-win situations, and the latter accepts that trade-offs must be made, it is no surprise that the authorities struggle to agree to fundamental sustainability questions.

Another reason for the management being perceived as fragmented is that there is no authority having the overall responsibility and order, but instead there are several different departments pulling in different directions:

*I think the problem is that no one has the full and complete overview of all the aspects of the salmon-breeding industry. You have many separate areas of the industry being controlled, but the holistic view is missing. – Journalist*

When reviewing how a fragmented management in Norwegian aquaculture will affect the potential of creating shared value in the industry, the element of cooperation stands out. According to Porter and Kramer (2011), cooperation is an essential part of shared value creation, and conflicting interests dominating the relationships between the industry and the authorities can be a barrier to shared value creation in the industry. This is also emphasized by



advisor 2 from the Directorate of Fisheries, who sees the poor collaboration within the authorities as a substantial threat to corporate sustainability:

*The authorities are so fragmented that nobody knows who is really responsible for what, which represents a substantial threat to corporate sustainability in the industry. – Advisor 2*

As the analytical framework emphasizes, cooperation and stakeholder trust among all stakeholders is crucial to achieve shared value creation. The authorities represent several stakeholders to the aquaculture industry that are highly important as they are responsible for designing the regulatory framework of the industry. If the relationships between these stakeholders are characterized by poor collaboration and a lack of trust, this provides a poor basis for creating a framework that will succeed to facilitate the industry in achieving shared value creation and sustainable growth. The fragmented authorities are therefore seen as a barrier to achieving shared value creation.

It is however not only within the management there are divided opinions. As discussed in subsection 6.3.4, there are different views within industry organizations on how the industry should be regulated, creating a complex industry for the authorities to govern. With all the diverse interests flourishing within the different industry associations, it is difficult for the authorities to achieve a comprehensive understanding of the common opinions of the industry. This can therefore be one of the reasons why the industry authorities struggle to communicate clear messages to the industry actors. We thus argue that the fragmented authorities result in lack of cooperation and trust, both within the management and within industry associations, which is seen as a barrier to shared value creation in the Norwegian aquaculture industry.

#### 6.4.2 INSUFFICIENT SUSTAINABILITY CRITERIA

One of the guidelines for the authorities provided in section 4.6 is that the regulations need to ensure that business practices are in line with the social and environmental capacity of their systemic context. The way the current regulations are designed was highly debated throughout the interviews, and several participants questioned how these regulations were supposed to ensure adequate environmental sustainability. This subsection will discuss to what extent the current regulations ensure a minimum level of social and environmental performance by setting minimum standards, focus on the greatest constraints of the industry, and set clear and measurable goals.

When conducting the interviews, especially the use of sea lice as a sustainability indicator was highly debated. This sustainability indicator imply that salmon-breeding companies are required to stay under a certain number of allowed sea lice per farmed fish to be allowed to continue to operate. Even though this requirement is clear and measurable, which is an important criterion for authorities to facilitate shared value creation (Porter and Kramer, 2011), it has resulted in a large fuss in the industry, as the goal is very hard to comply with without using a substantial amount of chemicals that can harm both the fish and the local

environment. Several interviewees from the applicant group was further on concerned that these regulative policies currently applied are not based on a sufficient level of knowledge, and questioned whether the number of sea lice on farmed salmon is the most beneficial sustainability indicator. They feel there is a lack of academic basis for the strict regulations of sea lice, and calls out for more fact-based information:

*It is a shame that the governmental sea lice restrictions came, which I think was not well thought through. They should've had reasoning to say anything about the wild Atlantic salmon first. Today the industry is using 4-5 billion NOK to tackle these sea lice restrictions, and it is argued that if we used 10% of this amount directly in the salmon rivers in Norway we would have achieved much more. - Applicant 2*

Seeing that there is a large disagreement regarding the sustainability indicator currently applied and whether it really enhances the environment, it is questionable whether the current regulations actually facilitate shared value creation. Only measuring one aspect of a highly complex industry having several impacts on the environment other than sea lice, seems poorly conceived, and it can be argued that other measures should be taken in order to ensure an adequate level of sustainability in the industry.

Supplier 2 pointed to another weakness of the current sustainability indicator; in the way it potentially can cause additional sustainability challenges that are more severe than sea lice. This is related to the extensive use of hydrogen peroxide, which is used in large doses in order to treat the sea lice:

*People keep arguing that the sea lice won't become resistant to hydrogen peroxide. Well, everything will be resistant if you keep exposing them for it, and when the therapeutic window for the medicament disappears, the sea lice are resistant. – Supplier 2*

It thus seems like the current regulations are not sufficient, as they lead to reactive measures in treating the sea lice. Hence, we argue that the regulations do not ensure an overall sustainability level in the social, environmental and the economic dimensions of the industry.

The interviewees raising concerns regarding the sustainability indicators came with suggestions on other sustainability indicators that could be more beneficial. Some suggestions were: restrictions on how many times it should be allowed to medically treat farmed salmon, restrictions on allowable amounts of nutritional salts at the production areas, greater consequences when farmed salmon escapes, and linking allowable amount of production to the carrying capacity of different localities.

The concern raised by interviewees from the applicant and supplier groups of whether the current regulations are the most beneficial for the industry and for the society, is further an evident sign of lack of trust to the authorities. Trust is essential for the establishment of long-

term collaborative relationships (Eccles et al., 2014; Jones, 1995) and the lack of trust that is seen between the industry and the authorities can thus represent a distinct barrier to shared value creation. The regulations are further not able to facilitate long-term orientation in the industry, as it seems like the authorities themselves have a too short time-horizon to facilitate increased corporate sustainability in the long term.

The lack of understanding to why salmon-breeding companies must oblige to the government’s regulations is evident, and clearly creates a tension in the industry that has a negative effect on the relationship between the government and the industry. It seems like there is little or no cooperation between the two parts when it comes to developing the sustainability indicators that determines if and to what extent the industry will be allowed to grow. With a government placing themselves in a position where they determine the rules the industry must follow, no questions asked, they end up creating tensions and a low level of trust.

The regulations currently applied in the industry are therefore not seen as fostering shared value creation, as they are not able to address all of the most relevant aspects of the industry, and they do not ensure an adequate performance in the social and environmental dimensions of sustainability. The one criterion that exists is however seen as clear and measurable, and the fact that the authorities do not provide directions on how the performance standards should be met is seen as positive, as it leaves the industry free to experiment and innovate on operation practices, which in section 4.6 is seen as important.

6.4.3 SUMMARY OF BARRIERS RELATED TO THE GOVERNANCE OF THE INDUSTRY

Summarized we argue that there are two main barriers to shared value creation related to the governmental regulation in Norwegian aquaculture. Firstly, the barrier of fragmented authorities concerns how the level of cooperation within the authority is affected by conflicting interests. Secondly, the barrier of insufficient sustainability criteria is related to large disagreements to whether the sustainability indicators currently applied are sufficient in determining the overall sustainability of the industry.

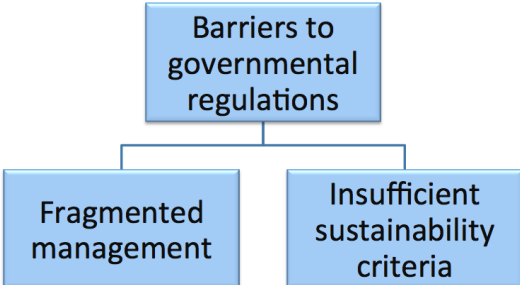


FIGURE 12: BARRIERS TO GOVERNMENTAL REGULATIONS

### 6.5 ANSWER TO THE FIRST RESEARCH QUESTION

When assessing the first research question, the four aspects necessary to create shared value in an industry context, presented in the analytical framework, was the basis for the analysis, pointing out the areas lacking one or more of these aspects. The found barriers are shown in figure 13.

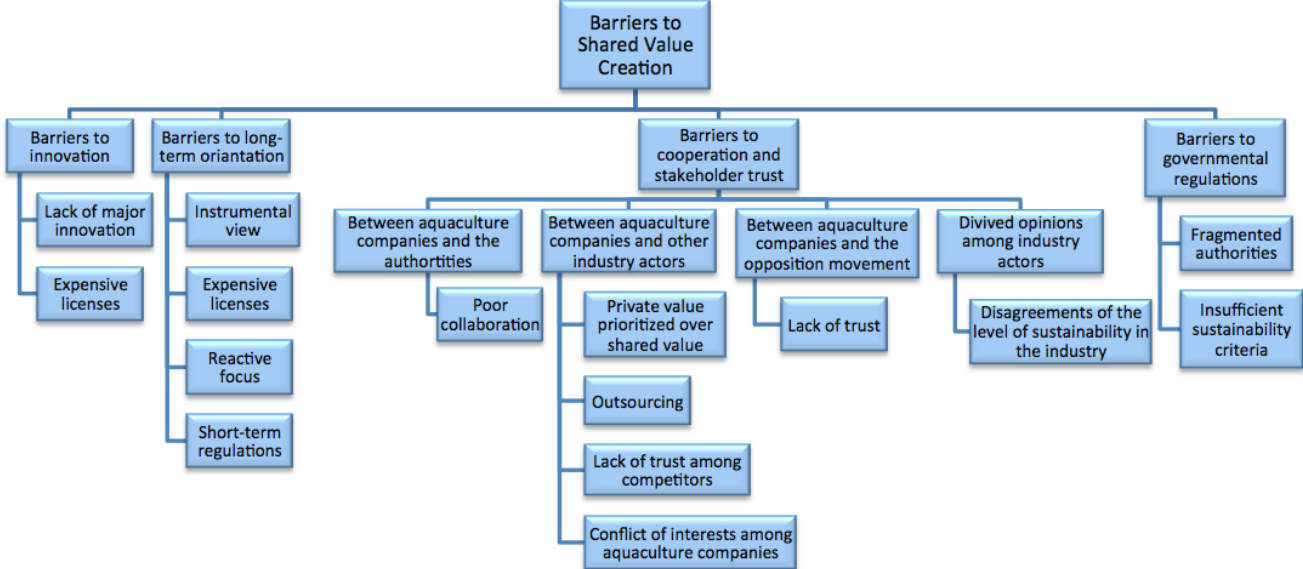


FIGURE 13: BARRIERS TO SHARED VALUE CREATION IN THE NORWEGIAN AQUACULTURE INDUSTRY

## 7. HOW GOVERNMENTAL POLICIES CAN OVERCOME THE CURRENT BARRIERS TO SHARED VALUE CREATION IN THE NORWEGIAN AQUACULTURE INDUSTRY

In this chapter an analysis of the empirical data from the case study will be conducted to answer the second research question of the thesis:

*RQ 2: How can governmental policies overcome the current barriers to shared value creation in the Norwegian aquaculture industry?*

To be able to analyze how governmental policies can facilitate shared value creation in Norwegian aquaculture, it is necessary to analyze how governmental policies can overcome the barriers to shared value creation in the Norwegian aquaculture industry identified in chapter 6. To address this subject, a case study of the newly issued development licenses is conducted, as it is a governmental policy attempting to facilitate shared value creation. The second research question will thus be analyzed by considering whether the development licenses are able to facilitate shared value creation in the industry.

In order to consider how the development licenses will affect the current barriers to shared value creation in the Norwegian aquaculture industry, and distinguish what potential weaknesses the policy has, the barriers will be assessed thematically in accordance with the four aspects of the analytical framework presented in chapter 4, in addition to the barriers related to how the governmental regulations are designed. The second research question will be answered in section 7.5, by a number of propositions on how the Norwegian authorities can facilitate shared value creation in Norwegian aquaculture by implementing governmental policies will be presented.

### 7.1 INNOVATION

In this section the impact of development licenses on the level of innovation in Norwegian aquaculture will be assessed. This assessment will be conducted by considering whether the development licenses will help the industry overcome the barriers to innovation found in chapter 6.

As seen in section 6.1, the barriers to shared value creation related to innovation is that the industry currently is characterized by a predominance of incremental innovations, or exploitation, and thus lacking the needed level of major innovation, and that expensive licenses prevent major innovations. A larger portion of major innovation, or exploration, is needed to facilitate increased corporate sustainability in a profitable manner (Eccles and Serafeim, 2013, March, 1991), and the potential of the development licenses to facilitate major innovation will thus be analyzed in this part.

To understand how major innovation is to be realized in the industry by the issuance of development licenses, a discussion of how growth can be used as an incentive for innovation will firstly be conducted, before the potential of major innovation will be assessed.

#### 7.1.1 GROWTH AS AN INCENTIVE FOR INNOVATION

Growth was found to be one of the main motivations for companies in the aquaculture industry when applying for development licenses, as being granted development licenses currently is the only way to distinctly increase a company's production. However, supplier 2 stressed the importance of growth for other reasons than just benefiting financially, arguing that growth is necessary to foster innovation in the industry, and that without it companies cannot survive in the long run:

*Either you grow, or you die. – Supplier 2*

Supplier 2 further on explains how growth is needed in order to develop the industry, considering that growth triggers production challenges, which again triggers innovation. He argues that since the development licenses provide growth, which eventually will trigger production challenges and thus innovation, the licenses will facilitate innovation through growth, not only through risk reduction. Hence, innovation and growth are regarded as interlinked; innovation is needed to find solutions to the sustainability problems currently preventing industry growth, at the same time as growth is needed to develop the sustainability challenges that needs innovative solutions. This is in line with the findings in chapter 4, where innovation is found to be crucial for creating shared value in the society (Freeman et al., 2010; Nidumolu et al., 2009), simultaneously as shared value creation is argued to drive the next wave of innovation in the global economy (Porter and Kramer, 2011).

Until 2011, when the industry growth in Norwegian aquaculture flattened, the industry was characterized by growth developing sustainability challenges requiring innovative solutions to be overcome, while after 2011, the industry has been characterized by innovative solutions being required to overcome the sustainability challenges in order to grow. The growth restriction implemented by the authorities in 2011 is based on the salmon-production causing so severe externalities on the wild Atlantic salmon that innovative solutions to overcome the sustainability challenges are needed.

However, since the level of innovations needed to facilitate industry growth has not yet been realized despite these strict regulations, the authorities have decided to issue development licenses to facilitate the needed innovations by reducing the risk of larger innovative projects. This can be viewed as using growth as a bait to speed up the innovation process in the industry, which again is a clear indication of the industry being characterized by an instrumental approach to corporate sustainability, where financial benefits are prerequisites for addressing sustainability issues.

One critical aspect in the discussion of growth's importance related to innovation is the opportunity for growth in the industry. With the restriction of only innovative solutions that

require substantial investments being granted licenses, large companies has an advantage over the smaller ones. One of the representatives from the Directorate of Fisheries acknowledges that this requirement has led to varied response among industry actors:

*I experience that some of them who do not have the opportunity or means to be a part of the wave of innovation the development licenses creates are not very positive to the licenses. On the other hand, those who both have the means and an innovative idea are super positive.* – Advisor 1

The development license policy might thus result in larger differentiation between small and large companies, which could speed up the trend of acquisitions in the industry. This differentiation is not seen as fortune for the industry, as it will contribute to making the large companies even stronger, and decrease the power of small companies. On the other side, the development licenses have the potential of facilitating collaboration between smaller actors who are not able to make large enough investments by their own and thus facilitate shared value creation. How the development licenses facilitate collaboration between competitors will be further discussed in subsection 7.3.4.

However, in order to facilitate the needed major innovations to realize shared value creation, large companies with many resources are an advantage. In this respect, the emergence of large companies in the industry is beneficial:

*If there is going to be technological development you need resources, and in this respect the size of companies is crucial to obtain a certain level of implementation force.* – Applicant 3

#### 7.1.2 MAJOR INNOVATION

The analysis in chapter 6 discovered that the industry historically have conducted several incremental innovations, but few major innovative leaps, meaning that there have been an inappropriate balance between exploitation and exploration in the industry. As mentioned in chapter 4 there is a need for major innovation in order to become combine increased corporate sustainability with financial gains (Eccles and Serafeim, 2013), and thus for creating shared value. Major innovations are by Eccles and Serafeim (2013) defined as innovations requiring investments that will take 5 years or more to earn back.

As seen in the analytic framework, the authorities have an important role in facilitating shared value creation in the society, for instance by stimulating innovation. Chapter 6 revealed that the authorities have until this point failed to stimulate larger innovations in the industry through the current regulatory practices. However, the development licenses change this aspect, by reducing the risk that needs to be made in order to build and test prototypes and innovative solutions. As explained in chapter 5, when receiving development licenses, companies can be able to maintain normal production simultaneously as they test out new innovations, making it less financially risky to conduct such projects. The fact that the

development licenses can be converted into commercial licenses after the project is completed represents another driver for making substantial investments:

*The issuance of development licenses gives room for making larger investments, so that full-scale projects can be conducted. It reduces the risk, so that the necessary investments can be made despite the large capital tie that the license regulations entail. – Applicant 4*

Hence, this new regulatory practice is seen to stimulate innovation in the industry, which is in line with the analytical framework and Porter and Kramer's (2011) description of regulations facilitating shared value creation. However, to see whether the innovations facilitated by the development licenses can be classified as major innovations some estimated costs must be considered.

One of the criteria that need to be met if being granted development licenses is that a substantial amount of money must be invested in research and development associated with the innovative solution. From the case-interviews, it was found that most of the projects that have applied for development licenses will end up at a cost between 400 to 600 MNOK when completed, and the payback period will be several years:

*Our solution will cost approximately 500 MNOK to produce and it will be able to produce 10 000 tons salmon each year. If we assume that we can produce this salmon for 28 NOK per kilo and sell it for 38 NOK per kilo it gives us a margin of 10 NOK per kilo, which implies a 100 MNOK profits a year. If you then do a cash-flow analysis you can see that it will take 5 years to earn back the initial 500 MNOK investment. – Applicant 2*

Even though it is impossible to know exactly how long it will take to earn back the investments at this point in time, it is safe to assume that it will be at least 5 years for most of the applicants. According to the classification of long-term investments that are needed for achieving major innovations (Eccles and Serafeim, 2013), most of the projects being granted development licenses can therefore be classified as major innovations.

Another interesting phenomenon occurring due to the development licenses is the revitalizing of existing technology projects:

*The project that we are applying for has been under development for 1.5 years and is a continuance of technology we have been working on for a long time, but it is first now we are able to take the big leap. The level of innovation on what we are doing now, and the speed in which we are doing it, is spurred by the possibility of being granted development licenses. – Applicant 6*



It is thus evident that the development licenses have succeeded in incentivizing the industry in conducting more major innovations. When reviewing the case-interviews the need for larger innovations in the industry was a recurring subject among the industry actors. The biologist argued that the way salmon is produced today is similar to the original way of breeding fish, and an increasing amount of sustainability problems are related to this production method with open cages in Norwegian fjords and coastlines. The way salmon currently is being produced has not been adequately challenged by other new innovative solutions that potentially could revamp the salmon-breeding industry. An incentive such as the development licenses are therefore warmly welcomed in the industry:

*Historically there have predominantly been further developments of the traditional cage. Of course a lot of innovations have been done in this regard, but not the big leaps. Today companies in the industry are eager to make changes, and by being granted development licenses they can do technological innovations instead of paying the authorities for licenses. This will definitely stimulate the technological development, and it has already exploded within the industry.* - Biologist

One potential reason for the lack of major innovation was in chapter 6 found to be the lack of open innovation in the industry due to poor collaborative relationships between industry actors. The level of open innovation in the industry is seen to be enhanced by the implementation of the development licenses. By being granted licenses, aquaculture companies are required to share their knowledge and experiences during the project with the rest of the industry. However, as will be further discussed in subsection 7.3.4, it is uncertain to which degree the knowledge sharing will be as fruitful as the authorities intended. Further on, the collaboration with industry actors is still seen to be problematic, but the size of the innovations require inclusion of research facilities and other collaborative partnerships, which implies taking a step towards more open innovation in the industry.

We thus argue that the development license policy will be able to facilitate a higher level of major innovations, simultaneously as revitalizing existing technology projects and potentially increasing the level of open innovation. The barrier related to the lack of major innovation is therefore seen to be overcome.

### 7.1.3 SUMMARY OF INNOVATION

As shown in figure 9 in subsection 6.1.3 there are currently two barriers to innovation in the Norwegian aquaculture industry, namely lack of major innovation and expensive licenses, in which the first has been analyzed in this section in the context of the newly issued development licenses. When considering the second barrier, namely expensive licenses, this was also found to be a barrier of long-term orientation in subsection 6.2.2, and how the implementation of development licenses will affect this barrier will thus be addressed in the next section.

As seen in this section growth is both an important factor in developing the aquaculture industry, and an important incentive to facilitate innovation. Growth develops the industry by forcing industry actors to meet the challenges they face during expansion, and this way sustainable solutions will eventually be realized. Growth also incentivizes major innovation, currently through the arrangement of development licenses, which is a crucial part of achieving shared value creation.

As mentioned in chapter 6 there is a need for risk reduction if major innovation is going to be realized. Seeing that the development licenses provide an adequate risk reduction to facilitate major innovation in the industry, and realizing that major innovation has the potential of facilitating shared value creation, the newly issued development licenses have the potential to increase the level of corporate sustainability in Norwegian aquaculture by overcoming the barrier of lack of major innovation.

We thus argue that the barriers to innovation are overall seen to be overcome by the implementation of development licenses.

## 7.2 LONG-TERM ORIENTATION

In this section the impact the development licenses have on the level of long-term orientation in Norwegian aquaculture will be assessed. This assessment will be conducted by considering whether the development licenses will help the industry overcome the barriers to long-term orientation found in section 6.2.

As seen in section 6.2 there are several possible reasons for the short-term focus in the Norwegian aquaculture industry. The main explanations brought up by the interviewees were the financial focus in the industry, the negative effects of the expensive licenses on the level of innovation, a culture of companies having a reactive approach to sustainability issues, facing them as they show up, and the authorities facilitating short-term strategies through their regulations. As emphasized in the analytical framework, a long-term orientation is needed in order to create shared value (Eccles et al., 2014; Porter and Kramer, 2011), and for being able to increase corporate sustainability of the industry (Bansal and DesJardine, 2014).

### 7.2.1 PARADOX OF LONG-TERM GROWTH AND LONG-TERM SUSTAINABILITY

In subsection 6.2.1, the instrumental focus of aquaculture companies, prioritizing the economic dimension of corporate sustainability, was found to be a barrier to shared value creation in the Norwegian aquaculture industry.

Production growth is a distinct incentive when applying for development licenses. By giving salmon-breeding companies the opportunity to grow and increase their production when developing sustainable solutions, the authorities support the instrumental approach to corporate sustainability that currently is characterizing the industry. The financial focus in the industry is therefore not likely to change by implementing development licenses. Prioritizing financial gains over the other pillars of sustainability is however not unambiguously with decreased corporate sustainability. The concept of shared value creation, which falls under the

instrumental approach to corporate sustainability, can still be realized as long as long-term sustainable strategies also are realized.

When addressing this topic of how development licenses will affect the level of long-term sustainability in the industry the interviewees had split opinions. One of the interviewees being concerned that some companies will misuse the development licenses was applicant 4:

*It is in this industry as in many other industries, there is a high level of creativity when trying to sneak around the regulations. Many are thinking that the development licenses give a golden opportunity to get licenses cheap, giving dollar signs in their eyes. So there is definitely a concern that the sustainability intention is misused. – Applicant 4*

These statements imply that there is a somewhat paradox between long-term growth and long-term sustainability in the industry. This assumption is supported when considering the diverse opinions among the case-interviewees to whether growth or sustainability is the main objective with the development licenses. According to the Ministry of Trade, Industry, and Fisheries (2015b), increased sustainability and increased industry growth are the two main objectives of the aquaculture industry, but an interesting question is whether they are equally important or if one is prioritized over the other. When asking the interviewees what they think is the main intention, most answered both, while equally many stated either *growth* or *sustainability*, which implies that both intentions are seen as important by industry actors. One of the interviewees that answered *both* stated:

*No one would apply for the development licenses if there was not a motive of growth. Of course they want this extra biomass, which is the driving force and gives financial benefits, but they also want the industry to become more sustainable than it is today. - Supplier 1*

There is a recognized concern among the interviewees that aquaculture companies might try to sneak around the sustainability requirements of the licenses, but is long-term sustainability really a big concern for the authorities who has issued the development license? According to the authorities themselves the development licenses intend to facilitate sustainable growth, but there are doubts regarding how authentically this intention really is:

*It's basically same shit, new wrapping. The development licenses are just a wrapping used in order to create edible growth. - Supplier 2*

The critical interviewees argued that the authorities are using the development licenses mainly to ensure industry growth, and if the development licenses are dropped in two years, other license systems that will provide growth in other ways will take over:

*That being granted development licenses is the only way to get a hold of licenses is just temporary. I think the industry will be able to grow in the future as well, with new excuses. Because when the ministers say no more licenses before the sea lice problem is under control, that is just temporary. It has always been this way. - Biologist*

On the other hand quite many interviewees believed that the licenses will facilitate long-term sustainable strategies in the industry by promoting large innovations that is dependent on considerable investments, and that the long-term growth is a precondition and not an obstacle for achieving long-term sustainability. We thus argue that even though the industry will continue to have an instrumental to corporate sustainability, the development licenses can potentially facilitate longer time-horizons in the industry by incentivizing the industry to solve larger sustainability problems.

#### 7.2.2 IMPACT ON THE BARRIER RELATED TO THE EXPENSIVE LICENSE SYSTEM

The effect of expensive licenses on the level of innovation in the industry was one of the barriers to long-term orientation discussed in subsection 6.2.2, as it were found to cause short-term horizons in the industry. This barrier will however not be relevant when assessing the issuance of development licenses. This conclusion is made by realizing that a development license will cost 10 MNOK to convert to a commercial license, which is a fraction compared to the current market price on a commercial license, which lies between 40-60 MNOK. The prices of other commercial licenses that already exist are further assumed to not be affected by the development licenses. We thus argue that the barrier of expensive licenses is overcome by the issuing of the development license policy.

#### 7.2.3 IMPACT ON THE BARRIER RELATED TO THE REACTIVE STRATEGIES

Another barrier found in section 6.2 was the culture of taking reactive measures amongst aquaculture companies due to their short time horizons. Several researchers (Bansal and DesJardine, 2014; Eccles et al., 2014; Gao and Bansal, 2013) agree that adopting a longer time horizon is important in order to achieve sustainable development, and as discussed in the analytical framework, a more proactive approach to handling sustainability issues are needed in order to prevent the large sustainability problems to restrain the industry in the future. As discussed in subsection 4.3.3, there often exist tensions between short-term profits and long-term performance in sustainability, which have been found in subsection 6.2.1 to have characterized the industry in several years. The barrier of short-termism among aquaculture companies is however not seen to be distinctively reduced by the issuing of development licenses. The development licenses will however incentivize the industry to address larger sustainability problems, and have the potential to start a change process within the industry. Additionally, the development licenses can possibly reduce the temporal tensions between short-term profits and long-term sustainability by making companies realize the financial benefit they can obtain in the future by meeting future sustainability challenges.

#### 7.2.4 SUMMARY OF LONG-TERM ORIENTATION

As shown in figure 10 in subsection 6.2.5, there are four barriers to long-term orientation in the Norwegian aquaculture industry, in which all have been analyzed in the previous subsections in the context of the newly issued development licenses.

Three of the barriers that have resulted in a short-term orientation in Norwegian aquaculture today can potentially be overcome by implementing development licenses, namely the barriers to instrumental focus in the industry, the authorities facilitating short-term strategies through their regulations, and the negative effect on expensive licenses on the level of innovation.

Instrumental focus is not considered as a barrier to long-term sustainable strategies as long as win-win situations where both financial gain and increased sustainability are achieved simultaneously are realized. This is furthermore seen to be achieved by the issuance of development licenses as long-term sustainability strategies are facilitated. The barrier of short-term policies is also seen to be reduced by the implementation of development licenses, considering the licenses is found to facilitate long-term innovative solutions. The barrier of expensive licenses will lastly also be reduced, related to the low price on development licenses compared to commercial licenses.

However, there is thus still seen to be barriers to long-term orientation in the Norwegian aquaculture industry, especially associated with the culture of taking reactive measures in the industry. However, the development licenses are considered as a catalyzer which can incentivize the industry to think more long-term. We thus argue that the barriers to long-term orientations are overall seen to be reduced by the implementation of development licenses.

### 7.3 COOPERATION AND STAKEHOLDER TRUST

In this section the impact the development licenses have on the level of cooperation and stakeholder trust in Norwegian aquaculture will be assessed. This assessment will be conducted by considering whether the development licenses will help the industry overcome the barriers to cooperation and stakeholder trust found in section 6.3.

As seen in section 6.3 there are several relationships in the Norwegian aquaculture industry lacking the adequate level of cooperation and trust required to create shared value in the industry. Proponents of shared value creation highly emphasize the importance of stakeholder trust and cooperative relationships in order to achieve corporate sustainability (Eccles et al., 2014; Jones, 1995; Porter and Kramer, 2011), making relations within the industry an important aspect to address.

#### 7.3.1 RELATIONSHIP WITH THE AUTHORITIES

The main objective of this subsection is to assess the barrier of cooperation and stakeholder trust among aquaculture companies and the authorities found in subsection 6.3.1 in the context of the newly issued development licenses. The barriers that will be addressed are thus

poor collaboration between aquaculture companies and the authorities, and disagreement concerning sea lice as the main sustainability indicator.

The authorities was in subsection 6.3.1 found to be one of the most important stakeholders of the industry, and the establishment of good relationships with stakeholders based on mutual trust and cooperation is seen as crucial for achieving shared value creation (Eccles et al., 2014; Jones, 1995). As discovered in chapter 6, the current relationship between the authorities and the industry is however not considered beneficial for the development of a sustainable industry. The reasons for why the relationships were found as poor was related to disagreements regarding regulations and criteria that are set by the authorities, which were argued to not be sufficiently grounded in the industry and not based on adequate academic knowledge. As one of the applicants describe the current situation:

*I feel that the political authorities don't have enough knowledge about this industry. It seems like they want the industry to obtain sustainable growth, but then they create a regulatory framework that does not allow this to happen.*

- Applicant 3

This statement implies that the authorities and the industry are currently having some conflicts of interests. This sense of being on opposing sides, working against each other, can however be reduced when issuing development licenses, considering that the policy has the potential to create a common objective of industry growth among aquaculture companies and the authorities. This can be seen when considering that the industry has been eager to increase production in many years, while the authorities have chosen not to issue any more licenses. However, when deciding to implement the development licenses, the industry and the authorities meet on the middle, by realizing industry growth if the industry attempts to solve the sustainability challenges. This means that the industry and the authorities no longer stand on opposite sides, but actually stands together to reach a goal. The positivity among the industry was evident when interviewing the participants who had applied for the development licenses, and all interviewees except the journalist and one supplier were positive to the development licenses and their potential in facilitating increased sustainability. This indicates that the lack of trust among aquaculture companies and the authorities are reduced due to the implementation of the development licenses.

The development licenses are also seen to have a positive effect on cooperation between the industry and the authorities in the development phase of the development licenses. The policies were implemented due to a desire from the industry actors, who argued that there were no regulations that supported the development of larger, innovative solutions that had the potential of fundamentally change the way in which fish is produced, as the research licenses typically were granted to pure research projects where research facilities were in the lead. The implementation of the development licenses was thus made in partnership with industry actors, where they worked towards a common goal. This entails that the cooperation between the industry and the authorities is increased, and gives an impression that the development licenses have led to increased trust among the industry and the authorities.

We thus argue that the development licenses will overcome the barrier related to lack of trust and poor collaboration between aquaculture companies and the authorities, by creating a common goal of industry growth.

It does however still seem as there are a disagreement when it comes to sea lice as a sustainability indicator. This aspect will be further discussed in section 7.4, where the features of the development licenses will be assessed.

### 7.3.2 RELATIONSHIP WITH RESEARCH FACILITIES

The main objective of this subsection is to assess whether the issuance of development licenses will overcome the barrier of cooperation and stakeholder trust among aquaculture companies and research facilities found in subsection 6.3.2. The barrier that will be addressed is that private company value is seen to be more important to the industry actors than the potential shared value that could be achieved in collaborative partnerships.

#### CLUSTER DEVELOPMENT AND RESEARCH PROGRAMS FACILITATING PRIVATE VALUE

Research facilities are seen to have an important and well-functioning role in Norwegian aquaculture, and are involved in most research projects in the sector. As mentioned in subsection 6.3.2 there are however some conflicts of interest between aquaculture companies and research facilities when conducting projects requiring research licenses, as aquaculture companies are eager to develop technology in as short time as possible, while the research facilities often wants to spend as long time as possible on the project to receive maximal financial support.

By issuing development licenses, several of the applicants think the relationship between research facilities and aquaculture companies will improve and that the cooperation will be more beneficial for both parts. The enhancement of the relationship is based on it being no obligation to cooperate with a research facility when being granted development licenses. Hence, if cooperative partnerships are established, the collaboration will be more beneficial for the development of the innovative ideas aquaculture companies come up with:

*I think most companies will cooperate with research facilities anyway. But I think there is an advantage in not being obliged to...We are still dependent on research facilities like SINTEF, but now we can use them where we need them, instead of it being a straw into the national treasury to get the research money.  
Spoken bluntly. - Applicant 5*

However, by granting aquaculture companies more power in research cooperation programs, the focus on creating private value can be seen to increase. The research will in these situations be conducted on the salmon-breeder's premises, where the research facilities will be hired in by the developers. This will provide a further skewed balance of power, which might weaken the relationship between the actors.

Even though the issuing of development licenses might better the relationship between research facilities and aquaculture companies, we argue that the barrier of private value being

prioritized over shared value is not overcome, as it can result in a skewed balance of power when doing research projects.

### 7.3.3 RELATIONSHIP WITH SUPPLIERS

The main objective of this subsection is to assess the barrier of cooperation and stakeholder trust among aquaculture companies and suppliers found in subsection 6.3.3 in the context of the newly issued development licenses. The barrier that will be addressed is thus the trend of aquaculture companies outsourcing their production.

#### INCREASED OUTSOURCING

When addressing how the relationship between aquaculture companies and their suppliers will be affected by the issuance of development licenses, some of the applicants argued that an increase in outsourcing is a necessity in order to realize major innovations. As mentioned in subsection 6.3.3, the use of outsourcing is not unknown in Norwegian aquaculture and can be viewed as a barrier to shared value creation by having a negative effect on the Norwegian technology basis and the local society. This is also emphasized by Porter and Kramer (2011), who argue that by purchasing locally instead, firms can help their local suppliers enhance their operations, increase their profits and hire more people, aspects that will benefit the industry and society in the future, and contribute to creating shared value. The concern regarding the increased outsourcing in the industry is elaborated upon by supplier 2:

*My concern is that some of these major innovations applying for development licenses use foreign suppliers to build their installations. This outsourcing breaks up the Norwegian supplier structure and is not beneficial for the accumulated knowledge in the society. - Supplier 2*

The use of suppliers from low wage countries will have direct impacts on the bottom line of the projects, and the instrumental attitudes that were verified in section 6.2 thus explains the desire to outsource production to these countries. The question is rather whether the financial benefit of outsourcing outweighs the effect on the social dimension of corporate sustainability. Seeing that the development licenses will reduce the risk of innovation and create a possible financial gain for the applicants, it can be argued that this makes outsourcing less necessary, as long as the required knowledge exists in Norwegian suppliers. This view is supported by the journalist:

*Since the authorities let the industry use the fjords for free, they should have a prerequisite of building the installations in Norway to ensure the competency stays here. Norwegian industry is world leading when it comes to large installations at sea, so it is not short on competency. It's all about the economy.*  
– Journalist

The argument of using Norwegian suppliers when building the installations is further supported by applicant 2, who states that the risk reduction by the development licenses makes it possible to speed up the innovation process and avoid outsourcing.



Summarized we argue that the development licenses have the potential to be positive for the Norwegian work force and incentivize more cooperation between Norwegian aquaculture companies and suppliers. However, there is a danger that this opportunity will pass by if the financial focus amongst the companies being granted licenses is worth more to them than the potential social benefits of using more local suppliers. It is therefore seen as likely that the instrumentality of some industry actors will result in a certain level of outsourcing as they are concerned with developing the solutions at the lowest cost possible.

#### 7.3.4 RELATIONSHIP WITH COMPETING COMPANIES

The main objective of this subsection is to address the barriers to cooperation and stakeholder trust among aquaculture companies and their competitors found in subsection 6.3.4 in the context of the newly issued development licenses. The barriers that will be addressed are thus lack of trust among competing aquaculture companies, and conflict of interests among different groups of aquaculture companies.

##### INCREASED COMPETITION AND DECREASED TRUST

Competing companies represent another group of industry actors aquaculture companies must relate to, and the relationship between competitors was in subsection 6.3.4 seen as beneficial in certain areas, but also difficult based on the high level of competitiveness in the industry. When assessing how the development licenses will affect the relationship between competing companies, one factor stands out, namely the knowledge sharing required if being granted development licenses.

According to almost all the applicants, the requirement of knowledge sharing will be a challenge to comply with. Some tried to undermine this criteria, arguing that nobody would be able to pull something useful out of a report anyway, while others argued that the knowledge that was developed would lie with their suppliers, who can use these capabilities in future partnerships with other industry actors. Most applicants were thus not positive about sharing their developments with the rest of the industry:

*If you are going to succeed with a large innovation you need to have an enormous ownership to the project and a loyalty in completing it. If you know that everything you develop will be shared with others I think it's going to make it difficult. - Applicant 3*

The knowledge sharing criteria is intended to facilitate more cooperation between competitors (Laksetildelingsforskriften, 2004, §23b), but there are no specific requirements to the companies that are granted licenses. As a result, there are different opinions within the industry on how this knowledge sharing will be realized. Several interviewees from the applicant group pointed out that there is a great focus on acquiring patents on innovations in the industry, and that they themselves will comply with the knowledge sharing requirement by letting others buy the right to use that patent afterwards. This implies that there will be as little cooperation and knowledge transfer as possible before the patent is secured, and that any knowledge sharing after the patents are acquired will have to be purchased.

Seeing that the development licenses will facilitate major innovations that require substantial investments, and acknowledging that companies might compete for the same concepts, aquaculture companies are likely to hold their cards even closer to the chest when conducting research and development now than before the licenses came. Thus, a culture of less cooperation between competing companies is likely to develop:

*The will to cooperate with competitors is not going to be very great as long as there is an open license round these next two years. - Applicant 2*

As the argument implies, there will be a high level of competition for development licenses between aquaculture companies during the test period. Whether the level of cooperation will increase after the two years is difficult to anticipate, but the decrease in cooperation for the next two years is definitely a barrier to shared value creation. Cooperation is necessary for increased corporate sustainability, and especially in solving larger environmental problems (De Wit and Meyer, 2014). As the very purpose of implementing these development licenses was to overcome some of the largest sustainability challenges of the industry, the fact that they tend to prevent competitive companies to collaborate is not beneficial, and creating shared value in the industry will thus be difficult. We thus argue that the barrier of poor collaboration and stakeholder trust among competitors will not be overcome by issuing development licenses.

This lack of knowledge sharing and collaboration between competitors will further cause a poor basis for open innovation in the Norwegian aquaculture industry, as these aspects are considered as essential for achieving open innovation in industries (Chesbrough, 2003). In the analytical framework, cluster development and open innovation were found to be important determinants for successful innovation in an industry (Chesbrough, 2003; Porter and Kramer, 2011), but even though there exist several clusters in the Norwegian aquaculture industry, which intends to serve as platforms for collaboration between industry actors, the lack of collaboration and trust among aquaculture companies is substantial. Hence, the open innovation of the industry is not considered as adequate, as open innovation relies on positive interactions amongst several industry actors.

#### INCREASED CONFLICTS OF INTERESTS AMONG DIFFERENT GROUPS OF AQUACULTURE COMPANIES

The issue of various industry associations lobbying different wants to the authorities was seen as a barrier to shared value creation in subsection 6.4.1 and was also found to be related to the variety of sizes on Norwegian aquaculture companies.

When considering the barrier of conflict of interests among different groups of aquaculture companies, this barrier is not seen to be reduced by the issuing of development licenses. This conclusion is made by considering that the development licenses can result in an even larger differentiation between small and large companies in the industry, due to the requirements of substantial investments, as shown in subsection 7.1.1. This can lead to increased conflicts of interests between industry organizations, which again can lead to more conflicts within the

authorities of the industry. The development of several new, increasingly different production methods will further result in different interests among aquaculture companies, and thus an even more fragmented group of industry associations.

Summarized we argue that neither the barrier of lack of trust among competing aquaculture companies nor the barrier of conflicting interests among different groups of aquaculture companies are seen to be reduced by the issuance of development licenses.

### 7.3.5 RELATIONSHIP WITH THE MEDIA AND THE OPPOSITION MOVEMENT

The main objective of this subsection is to assess the barrier of cooperation and stakeholder trust among aquaculture companies and the opposition movement found in subsection 6.3.5 in the context of the newly issued development licenses.

#### THE LACK OF TRUST AND COOPERATION REMAIN

The analysis in subsection 6.3.5 showed that the relationship between the industry and the opposition movement was lacking trust and collaboration. The issuance of development licenses has not surprisingly been thoroughly covered by the media, and there are several areas in which journalists and other individuals are critical to this regulatory policy. When asking the journalist of whether the development licenses had positive contributions to the industry, she answered the following:

*Well, the industry is ready for it, but there are some who see this as an opportunity to sneak in increasing of production, and this happens in a period where the authorities have said that growth shouldn't be allowed before the sustainability problems related to sea lice and escapes are under control.*

- Journalist

Thus, the mistrust to both the industry and to the authorities can be seen to still be present. Even though there is only one company that until now have been granted licenses, the articles in newspapers and magazines have not been long in coming. The 13th of April, a two-sided article in Adresseavisen emphasized the concerns of salmon-fishers that one of the constructions built in conjunction with the development licenses were planned to be placed in the assumed emigration route of the wild Atlantic salmon in Trøndelag (Holstad, 2016). The organization "Norske Lakseelver" is concerned that the construction will lead to the resurgence of sea lice that will affect the smolt in a severe manner, which is also supported by the journalist.

Summarized the opposition movement seem to be just as negative to the industry as it has previously been, if not more. It can seem like they see the development licenses as a means to achieve growth that is not sustainable responsible. We therefore argue that the barrier of lack of trust among the industry and the opposition movement is not overcome.

### 7.3.6 DIVIDED OPINIONS AMONG INDUSTRY ACTORS

The main objective of this subsection is to assess the barrier of cooperation and stakeholder trust among industry actors found in subsection 6.3.6 in the context of the newly issued development licenses. The barrier that will be addressed is thus the divided opinions among industry actors to whether the Norwegian aquaculture industry is viewed as sustainable.

#### DEVELOPMENT LICENSES FACILITATING COMMON GROUNDS

When assessing the barrier related to the divided opinions among industry actors regarding whether the Norwegian aquaculture industry currently can be viewed as sustainable, and seeing it in the context of the development licenses, the interesting question is whether industry actors think the development licenses will increase the level of sustainability in the industry. The answer to this question is shown in table 5:

<b>Participant</b>	<b>Will the development licenses lead to increased sustainability in the industry?</b>
Representative from an industry association	Yes
Journalist	No
Biologist	No clear answer
Advisor 1	Yes
Advisor 2	Yes
Applicant 1	No clear answer
Applicant 2	Yes
Applicant 3	Yes
Applicant 4	No clear answer
Applicant 5	Yes
Applicant 6	Yes
Supplier 1	Yes
Supplier 2	Yes

**TABLE 5: ANSWERS TO WHETHER THE INDUSTRY ACTORS THINK THE DEVELOPMENT LICENSES WILL INCREASE THE LEVEL OF SUSTAINABILITY IN THE INDUSTRY**

As seen in table 5, almost all of the interviewees think that the development licenses will facilitate increased sustainability in the industry. There were some unclear answers and one clear no-answer, but the overall response was positive. As explained by applicant 6:

*The development licenses will influence the industry by facilitating the development of new operating concepts. These concepts, in addition to the other activity in the industry, will further develop the industry into a new phase where it's more sustainable and thus will be able to solve the sustainability challenges that currently prevents growth. - Applicant 6*

When comparing the answers in table 5 with the answers in table 4 shown in subsection 6.3.6, several of the interviewees saying no or giving an unclear answer to whether the current industry can be viewed as sustainable, believes that the development licenses will increase the level of sustainability in the industry. When further considering that most of the interviewees saying yes in table 4 also says yes in table 5, a more common ground among industry actors concerning sustainability in the industry can be seen to emerge.

According to Strand and Freeman (2013), increased value creation for stakeholders is more likely when there are common interests between the firms and their stakeholders. Seeing that the development licenses serve to eliminate some of the fundamental disagreements of the industry, they are expected to facilitate stronger relationships and more cooperation between the industry actors. Less conflict of interests and more consensus regarding sustainability measures in the industry can further increase the level of cooperation in the industry, by industry actors working together towards the same goal of increased sustainability and growth. Cooperation will further on facilitate increased stakeholder trust (Eccles et al., 2014; Freeman et al., 2010).

Close to consensus regarding whether the development licenses will facilitate increased sustainability in the industry is however not the same as all industry actors agreeing about the level of sustainability in the industry. There are most likely still different opinions to the level of sustainability in the industry, even though most of the interviewees believe that it will be enhanced by implementing the development licenses.

Summarized we argue that the barrier of divided opinions among industry actors regarding whether the Norwegian aquaculture industry is viewed as sustainable is seen to be partly overcome by the issuing of development licenses. Close to consensus regarding whether the development licenses will facilitate increased sustainability in the industry is not the same as if all industry actors agree on the level of sustainability in the industry, but it implies a trend of collective thinking, which potentially can facilitate increased levels of joint interests, which is beneficial for establishing collaborative partnerships.

#### 7.3.7 SUMMARY OF COOPERATION AND STAKEHOLDER TRUST

As shown in figure 11 in subsection 6.3.7 there are seven barriers to cooperation and stakeholder trust in the Norwegian aquaculture industry, in which all have been analyzed in the previous subsections in the context of the newly issued development licenses.

When analyzing the development licenses' effect on the relationship between aquaculture companies and the authorities, the issuance of development licenses is seen to have developed an agreement between the authorities and the industry concerning long-term industry growth, which potentially will increase the level of cooperation between the two parts and overcome the barrier of poor collaboration.

When considering the barriers to cooperation and stakeholder trust among aquaculture companies and other industry actors, the barrier of private value being prioritized over shared

value when aquaculture companies and research facilities cooperate is seen to worsen, the barrier of outsourcing suppliers can potentially be overcome if the financial focus amongst the companies being granted licenses is not larger than the social responsibility of using more local suppliers, and the barriers to lack of trust among competing aquaculture companies and conflicting interests among different groups of aquaculture companies are not seen to be reduced. Furthermore the barrier of lack of trust among aquaculture companies and the opposition movement is still seen to be present, and the barrier of divided opinions among industry actors regarding whether the Norwegian aquaculture industry can be viewed as sustainable is seen to be partly overcome by the issuing of development licenses.

We thus argue that the barriers to cooperation and stakeholder trust are overall seen to not be overcome by the implementation of development licenses.

## 7.4 GOVERNANCE OF THE INDUSTRY

This section serves to assess whether the regulation of the development licenses will facilitate shared value creation in the Norwegian aquaculture industry. This assessment will be conducted by first assessing the barriers to governance presented in section 6.4 in context of the newly issued development licenses, and secondly by considering whether the development licenses are in line with the guidelines provided in section 4.6.

The guidelines for governmental policies that create shared value provided in the analytical framework state that regulations must 1) facilitate the process of establishing the four aspects of shared value creation in the industry, 2) consider themselves as a stakeholder on equal terms as other industry actors, 3) ensure a minimum level of social and environmental performance, 4) identify and focus on the greatest constraints of the industry, and 5) set clear and measurable goals.

As the two first guidelines already have been elaborated upon in sections 7.1-7.3, this section will consider the three latter guidelines of the framework.

### 7.4.1 IMPACT ON THE FRAGMENTED AUTHORITIES

The fragmented authorities in Norwegian aquaculture were found to be a barrier to shared value creation. As seen in subsection 5.4.1, the authorities consist of several different departments, who all represent important stakeholders to the industry. Together these stakeholders set the regulative framework for the industry, and it is therefore important that they manage to collaborate towards creating well functional framework conditions for the industry. Relationships based on mutual trust and collaboration between the departments within the authorities can therefore be seen as particularly important.

The challenge of various industry organizations lobbying different wants to the authorities was seen as a barrier to shared value creation in subsection 6.3.4 and was also found to be related to the variety of sizes on Norwegian aquaculture companies. Further, as mentioned in subsection 7.1.1, the development license policy can in the long term result in an even larger differentiation between small and large companies in the industry. This can further lead to

increased conflicts of interests between industry associations, which again can cause more conflicts within the authorities of the industry.

Another relation within the authorities that the issuing of development licenses can be seen to affect in a negative manner is the relationship between politicians and the Directorate of Fisheries. The politicians have been very visible in the media lately, promoting the issuance of many development licenses, while the Directorate of Fisheries is more concerned about the applicants meeting the criteria set in order to be granted licenses:

*I think it is a bit unfortunate that many politicians are going out these days, creating expectations about the Directorate of Fisheries hurrying to approve these applications so the projects can get started. It is important to remember that there is a professional group in the Directorate of Fisheries that are going to evaluate the applications, and that it's not up to the politicians to push the Directorate to approve all of the applications. - Applicant 4*

Hence, while some departments seem to view the issuance of development licenses as an opportunity to finally achieve increased growth in the industry, others seem to be more concerned about the process of evaluating the applications being conducted in a responsible manner.

Seeing that the development licenses can facilitate increased conflicts of interest between industry associations and within the authorities, we argue that the issuance of development licenses potentially will decrease stakeholder trust and cooperation within the authorities, and thus increase the barrier of a fragmented authority.

#### 7.4.2 IMPACT ON INSUFFICIENT SUSTAINABILITY CRITERIA

In subsection 6.4.2, the insufficient sustainability criteria of the industry were found to be a barrier to shared value creation in the Norwegian aquaculture industry. This barrier was related to strict sea lice restrictions in the industry being the main sustainability indicator, and this barrier is not seen to change when implementing the development licenses. Thus, we argue that the insufficient sustainability criteria regarding the sea lice restrictions will still be a barrier to shared value creation after the implementation of the development licenses.

It is however relevant to assess whether the licenses have criteria that potentially will increase the all over level of sustainability in the industry. One way of doing this is by assessing the criteria used during the project selection process and see whether the chosen projects are likely to facilitate increased sustainability.

If you define the authorities as a purchaser and the applicants of development licenses as suppliers of innovative solutions in which the authorities may choose from, the criteria in *Laksetildelingsforskriften* can be viewed as the criteria the purchaser use to decide which suppliers to choose. This can be seen as similar to the case of green supplier selection (GSS), where environmental criteria are used to determine which suppliers to choose (Igarashi et al., 2015).

When further seeing that the requirement of being granted development licenses is to show how both increased sustainability and increased innovation will be achieved simultaneously, it can be argued that the strategy used by the authorities when deciding who will be granted licenses is the third strategy of dealing with increased complexity of GSS in Igarashi et al., (2015). This strategy is based on environmental criteria being a mandatory requirement that needs to be fulfilled without trading it off for other criteria, which implies that trade-offs are avoided. By using the current criteria prioritizing both growth and sustainability, they avoid trade-offs between the financial gain of growth and increased sustainability, and thus seem to fit the abovementioned strategy. The problem occurs when the industry faces sustainability challenges that cannot be solved simultaneously as industry growth is realized, but demand trade-offs to be made. We thus argue that the criteria in *Laksetildelingsforskriften* are not seen to help the industry solve sustainability challenges requiring trade-offs, which is a crucial part of realizing increased corporate sustainability.

#### 7.4.3 IMPACT ON THE SUSTAINABILITY DIMENSIONS

As found in section 4.6, one of the important roles of governmental policies is to make sure that the business practices of the industry are in line with the social and environmental capacity of their systemic context. This is important in order to ensure that today's operation won't reduce the opportunities to future generations (WCED, 1987), and it is argued to be crucial for achieving shared value creation (Eccles and Serafeim, 2013). This subsection thus serves to evaluate whether the development licenses fulfill this requirement, by investigating how the licenses will facilitate economic, social and environmental performance in the industry.

##### ECONOMIC PERFORMANCE

When considering the economic dimension, the financial situation of the industry will be strengthened by the issuance of development licenses. As mentioned in chapter 6, a commercial license currently costs between 40 and 60 MNOK. In comparison, the price to convert a development license into a commercial license if the project is successful is 10 MNOK. This implies that the issuance of development licenses will facilitate financial gains for the industry and reduces the financial risks associated with innovation:

*Even though we represent a good firm today, my company couldn't, without the development licenses, manage to use a half a billion NOK on research and development. - Applicant 2*

The process of preparing and submitting the application for development licenses does however often cost at least as much as buying a commercial license, so a real financial gain will only be achieved if the project is completed, and converted into commercial licenses, meaning that the target criteria must be accomplished. The economic benefits of converting the development licenses into commercial licenses are nevertheless substantial, as it entails an increased production capacity as long as the regulations remain the same.



#### SOCIAL PERFORMANCE

The effects on the social dimension are more uncertain. On the one hand, the development licenses will facilitate growth, which is beneficial for the employment in the industry and the rest of the society. On the other hand, the abovementioned trend of acquisitions can have unfortunate consequences for smaller companies and their employees. A situation where few large companies have monopoly in an industry makes it difficult for start-up companies, and is often negative for the employment in the society. However, it is argued that the investment criterion is important in order to realize major innovations:

*I personally think it makes sense that you need to invest 50 MNOK to get a license that has a value of 50 MNOK. - Applicant 1*

The argument made by the applicant is valid, but nonetheless makes it difficult for small companies to be granted development licenses. When being confronted with this issue, a couple of the applicants stated that smaller companies should go together and cooperate to develop innovative solutions. Cooperation between competitors is however not very common in the salmon-breeding industry, as shown in subsection 6.3.4, and the level of competitiveness in the industry was seen to increase by the issuance of development licenses, making collaboration between competitors less likely than before.

#### ENVIRONMENTAL PERFORMANCE

Lastly there is the environmental dimension, which is highly debated in the Norwegian aquaculture industry. As previously described, one of the main objectives of issuing development licenses is to increase the level of environmental sustainability in the industry. However, the solutions do not need to reduce the environmental problems in a measurable way in order to be considered successful. To receive development licenses, corporations only need to describe how their solution is supposed to contribute to a more sustainable industry, but there exist no clear goals or performance standards that must be followed in order to get the opportunity to convert the development licenses into commercial licenses after the project is terminated. The requirement is only that they throughout the project are able to measure certain target criteria in order to be successful and thereby be allowed to convert the development licenses into commercial licenses. Thus, the solutions provided do not have to solve or improve any of the challenges of the industry.

Hence, there is no guarantee that the development licenses will improve the environment at all, and the licensing system can at worst be exploited by actors who see this only as an opportunity to produce more fish. It is therefore difficult to predict the impact development licenses will have on the environment at this stage in the implementation process.

Summarized, we argue that the development licenses probably will affect the economic dimensions of the industry in a positive manner. Further, they will have both positive and negative influences to the social dimension, while the effect on the environmental dimension is hard to predict.

#### 7.4.4 ADDRESSING THE LARGEST INDUSTRY CONSTRAINTS

Section 4.6 emphasizes the importance of designing regulations that serve to address the greatest constraints of the industry, where the potential aggregated value of overcoming the challenges is highest. As discussed in subsection 5.5.2, one of the main purposes of the development licenses is to facilitate the development of technology that can contribute to solving one or more of the sustainability or area challenges in the industry. When considering that the sustainability problems and the lack of good localities for salmon-breeding are seen as the limiting factors when it comes to industry growth, the regulations are seen to be in line with the guidelines provided in section 4.6.

#### 7.4.5 SETTING UNCLEAR CRITERIA

According to the guidelines of the analytical framework provided in section 4.6, the regulations should set clear, measurable goals in order to facilitating shared value creation in an industry.

Unfortunately, the criteria of the development licenses are not found to be neither specific nor clear. One of the criteria to be granted development licenses is that the project entails substantial innovation and substantial investments. What this entails is not further specified, but it seems like this criteria has led to uncertainty amongst industry actors. When interviewing representatives from firms that have applied for development licenses, it became clear that there is no common understanding of the criteria. It especially seemed to be uncertainty regarding whether the investments need to be large relative to company size, or large in terms of absolute size. If the criteria relates to absolute sizes of investments, this will give the large companies in the industry a substantial advantage, while many smaller companies will not have the opportunity to be granted licenses.

Another criterion that is regarded as unclear is the requirement of knowledge sharing throughout the project and after the project is completed. There exist no clear requirements related to this criterion, except that the applicants need to “*describe how they intend to convey the knowledge and experience acquired during the project*” (Directorate of Fisheries, 2015b, p. 2). Throughout the case study, it became evident that there exists various interpretations of this requirement, and some of them neglect the usefulness of the reports that are supposed to transfer the knowledge. Thus, what the obligatory process of knowledge-sharing entails is too vague and unclear, which will probably lead to dispersed results when it comes to the usefulness of this knowledge sharing process.

In addition to these criteria, a number of target criteria are to be developed and met in order to be allowed to convert the development licenses into commercial licenses after the project is completed. There are, as discussed in subsection 7.4.3, however no common criteria for all applicants, and the target criteria are individually developed in collaboration with the Directorate of Fisheries. According to the Directorate of Fisheries, target criteria are not the same as success criteria, and the project can be seen as completed, and the licenses can be converted to commercial licenses, regardless of whether it gives the results as intended or not. Applicant 1 expressed his confusion associated with the lack of fixed terms and conditions:

*It has been a challenge for the directorate... terms and conditions. They call them target criteria, but if you manage to explain to me what a target criteria is, then you are good. - Applicant 1*

According to the guidelines in section 4.6, there should be developed minimum criteria for the aquaculture companies to follow, in order to ensure that the social and environmental systems of their surroundings remain sustainable in the future. This would help the industry to acquire a systemic view of the industry and its community, and contribute to enhancing the overall sustainability of the industry. Clearer and stricter sustainability requirements are also important in order to avoid the development licenses to become a loophole, and an easy way of increasing the salmon production:

*I think it is important that the criteria and requirements are strict and are handled strictly, if not it will have the opposite effect; a smart way to get free licenses. - Applicant 1*

Hence, a risk of having unclear and unmeasurable criteria is that one or more applicants might put less priority to the sustainability objective of the licenses when developing their solutions, and several interviewees from the applicant group questioned how a critical distribution of the licenses were to work out. With no clear requirements regarding the size of the investments, the size of the innovation, or the degree in which the solution intends to improve the sustainability of the industry, there were concerns of how the Directorate will be able to evaluate which applications are “good enough”:

*Clearly, if you get butterfingered with the issuing of development licenses and you grant licenses to projects that would have been realized anyhow, or projects that are not well enough though through, it can result in many catastrophes all around. And then you will get the opposite effect on what was intended. The last thing we need is new catastrophes. - Applicant 5*

Hence, the vague and unclear criteria can make the process of evaluating the applications more complicated, which can be a potential barrier to shared value creation, considering that an uncritical issuing of development licenses might result in unsustainable projects being granted licenses.

There are however some benefits of having looser frameworks with less clear criteria. It will be substantially more risky for aquaculture companies to invest in such a project if they are not allowed to convert the development licenses into commercial licenses if the solution does not give the results as intended. As emphasized by applicant 4, you don’t know what impacts the innovative solutions will have on the current sustainability challenges before testing it. The aquaculture companies can do hours of research and lab testing, but they do not know how it will turn out before they get out there and test it. Through the development licenses, aquaculture companies have the opportunity to run full-scale and test things over time, which

will give a lot of answers. Without this kind of risk sharing, fewer companies would potentially be willing to apply.

Summarized, we argue that the criteria of the development licenses are too unclear and vague, which might lead to confusions, differing interpretations, and conflicts amongst the applicants that can potentially cause a weakened relationship between the industry and the authorities. Unclear criteria can also reduce the development licenses' potential to have the intended effects on the sustainability of the industry, and might serve only as a means to produce more fish. This is however highly dependent on whether the authorities are able to distinguish the applicants that genuinely attempt to solve the sustainability problems, and the ones who is looking for an easy way of increasing their production.

#### 7.4.6 SUMMARY OF GOVERNANCE OF THE INDUSTRY

As shown in figure 12 in subsection 6.4.3, there are two barriers related to the governance of the industry in the Norwegian aquaculture industry, in which both have been analyzed in the previous subsections in the context of the newly issued development licenses. Additionally, this section has evaluated to which degree the development licenses are in line with the regulation-guidelines provided in the analytical framework.

When considering the barrier of a fragmented authority, conflicting interests is seen to increase by the issuance of development licenses. Also, an even larger differentiation between small and large companies in the industry might lead to increased conflicts of interests between industry associations, which again will lead to more conflicts within the authorities of the industry. The barrier is thus not seen to be overcome by issuing the new policy.

When considering the barrier of insufficient sustainability criteria, the policy is not seen to reduce the disagreement concerning sea lice as a sustainability indicator. Furthermore, by assessing how the project selection process will affect the level of sustainability in the industry, trade-off aversion between sustainability and growth is seen to undermine the prioritization of sustainability.

An assessment of whether the development licenses comply with the three last guidelines presented in section 4.6 was also conducted. When investigating whether the development licenses would ensure an adequate performance in all sustainability dimensions, the economic dimensions is expected to improve. Further, the development licenses will have both positive and negative influences to the social dimension, while their effect on the environmental dimension is hard to predict. The regulations of the development licenses were further found to sufficiently focus on the largest constraints to the industry, being the large environmental problems and the area challenges. Finally, the criteria of the policy were found to be both unclear and unmeasurable, which can further lead to an uncritical assessment of the applications.

7.5 ANSWER TO THE SECOND RESEARCH QUESTION

To be able to assess the second research question, the barriers to shared value creation in the Norwegian aquaculture industry found in chapter 6 was analyzed by considering how development licenses will affect these barriers. Additionally, to what extent the regulations were in line with the guidelines in section 4.6 of the analytical framework were assessed in order to determine how the development licenses succeed in creating shared value in the industry. As shown in figure 14 most of the current barriers preventing major innovation and long-term orientation are seen to be reduced by implementing the development licenses, while many of the barriers to cooperation and stakeholder trust, and governmental regulations are still seen as highly present. Thus, considering that the industry will continue to have several barriers that are not overcome by the issuing of development licenses, the policy is not able to facilitate shared value creation in the Norwegian aquaculture industry.

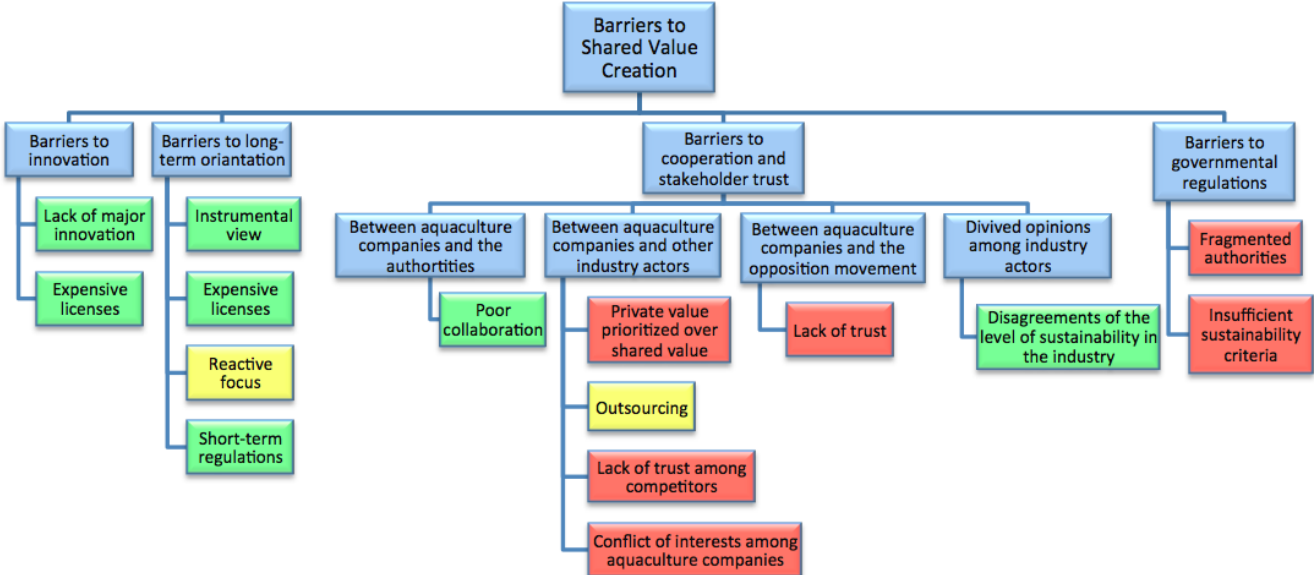


FIGURE 14: BARRIERS TO SHARED VALUE CREATION AFTER THE ISSUANCE OF DEVELOPMENT LICENSES. THE GREEN BOXES REPRESENT THE BARRIERS THAT ARE OVERCOME, THE ORANGE BOXES THE BARRIERS THAT ARE PARTLY OVERCOME, AND THE RED BOXED THE BARRIERS THAT ARE NOT OVERCOME

The policy of the development licenses does however have the potential to improve the level of corporate sustainability in the industry, considering it already is seen to have overcome some barriers. The policy is thus seen to have a positive effect on the industry in terms of increased corporate sustainability. What adjustments that needs to be made by the authorities in order to implement governmental policies that realize shared value creation in the industry will further on be discussed in this section.

By addressing the barriers to shared value creation that were not found to be overcome by issuing development licenses, propositions on how governmental policies can help the industry overcome the remaining barriers and thus facilitate shared value creation will be presented in this section.

However, not all the barriers can be overcome by governmental regulations alone. Some barriers, such as conflicts of interests among aquaculture companies, reactive focus, lack of trust among competing companies, and lack of trust among aquaculture companies and the opposition movement, must be addressed by aquaculture companies themselves. How aquaculture companies can overcome these barriers will be discussed in “implications for aquaculture companies” in chapter 9.

#### 7.5.1 OVERCOME THE BARRIERS TO COOPERATION AND STAKEHOLDER TRUST

This subsection serves to provide propositions on how the Norwegian aquaculture authorities can develop governmental policies that can facilitate shared value creation in the Norwegian aquaculture industry by overcoming the remaining barriers to cooperation and stakeholder trust after the implementation of the development licenses.

##### INCENTIVIZING THE INDUSTRY TO USE LOCAL SUPPLIERS

The analysis found that there is an increasing trend of using suppliers from low-wage countries when building constructions and equipment to the salmon-breeding facilities, which is considered as a barrier to shared value creation. During the case study it became evident that several industry actors are skeptical to this trend of outsourcing, as it entails a press to local suppliers. This is also supported by Porter and Kramer (2011), arguing that strengthening local suppliers are crucial for creating shared value. It is therefore suggested that the authorities initiates incentives for aquaculture companies to use Norwegian suppliers when building constructions and equipment, as far as the service is provided in Norway. This can be done by offering a tax relief or other economic support when using Norwegian suppliers, which again will make Norwegian suppliers able to continue being world leaders on aquaculture technologies and create an international advantage. It will further on also provide employment and value creation to the society.

##### FACILITATE SHARED VALUE OVER PRIVATE VALUE WHEN AQUACULTURE COMPANIES AND RESEARCH FACILITIES COLLABORATE

As seen in the analysis, the prioritization of private value over shared value when aquaculture companies collaborate with research facilities is considered as a barrier to shared value creation. Letting aquaculture companies have total ownership of projects that intends to facilitate increased sustainability, and let them choose whoever they want as collaborators, might easily result in the prioritization of private value over shared value. It is therefore proposed that the authorities have some requirements of balancing the power between aquaculture companies and research facilities when implementing governmental policies that are going to realize shared value creation, to ensure that the need of both parts are prioritized.

#### 7.5.2 OVERCOME THE BARRIERS RELATED TO THE GOVERNANCE OF THE INDUSTRY

This subsection serves to provide propositions on how the Norwegian aquaculture authorities can develop governmental policies that can facilitate shared value creation in the Norwegian aquaculture industry by overcoming the remaining barriers to governmental regulations after the implementation of the development licenses.

#### IMPROVE COOPERATION WITHIN THE AUTHORITIES

One barrier that was found to be highly limiting and unfortunate for the whole Norwegian aquaculture industry was that the authorities providing the regulatory framework of the industry are considered as fragmented, and are characterized by a low level of cooperation between the different departments within the authorities. To facilitate shared value, the authorities should be more coordinated and harmonized, and establish relationships based on trust and mutual respect. This can be achieved by improving the communication and cooperation between the different departments within the authorities, and by creating platforms in which disagreements and confusions can be solved. A suggestion is to arrange regular meetings or seminars in which representatives from each of the departments, in addition to politicians, can meet and plan future actions and regulations that are rooted in all the departments within the authorities. This way, the joint interests of the different departments can be made clear, and areas of conflict can be discussed. This will also make it easier for the authorities to both deliver clear messages to the aquaculture industry, and in a better way take the industry's view into consideration when making decisions.

#### HAVING CLEAR AND MEASURABLE GOALS

The barrier of insufficient sustainability criteria can be overcome if the authorities manage to have more clear and measurable goals of sustainability when implementing governmental policies that intend to facilitate shared value creation.

In order to better ensure that aquaculture companies do not use governmental policies that intend to both facilitate increased sustainability and increased growth as a means to only produce more fish without concerning environmental problems, there should be specific environmental criteria provided by the Directorate of Fisheries that are common to all companies. Generally, it should be certain minimum criteria regarding fish health, sea lice, escapes and mortality. This way, the authorities can better ensure an adequate health of the environmental systemic context, and thus reduce the externalities of the industry. Further, there should be financial benefits for the companies that actually increase the level of sustainability in the industry.

#### PROVIDE FINANCIAL RISK RELIEF FOR SUPPLIERS

The barrier of insufficient sustainability criteria was not found to be overcome by issuing development licenses based on, among other things, the fact that the regulations do not consider trade-offs between sustainability and growth. If the industry is going to increase the level of corporate sustainability, the authorities must therefore facilitate strategies where the environmental criteria can be prioritized over other criteria, if win-win situations are not achievable. This can be realized if the authorities use the fourth strategy of dealing with increased complexity of GSS in Igarashi et al. (2015), where environmental criteria can be traded off for other criteria. In the case of development licenses, or any other policy that intends to facilitate both sustainability and industry growth, environmental criteria should thus be traded off for growth if needed. For example if an aquaculture supplier, who does not produce salmon, comes up with an innovative idea that has the potential to increase the level of corporate sustainability in the industry, this company should be granted financial risk

relief, even though the company cannot directly affect the growth in the industry. The supplying companies in Norwegian aquaculture have a lot of knowledge that can develop sustainable solutions, but they also need direct financial risk relief, like the salmon-breeding companies, to develop major sustainable innovation. Without it they are forced to partner with salmon-breeding companies to reduce the financial risk. It is therefore recommended that financial risk relief is given direct to suppliers in the form of financial support.

7.5.3 SUMMARY

Table 6 summarizes how governmental policies can overcome some of the remaining barriers to shared value creation in the Norwegian aquaculture industry.

	<b>Barrier</b>	<b>How to overcome the barrier</b>
<b>Cooperation and stakeholder trust</b>	Increased trend of outsourcing	Incentivize the industry to use local suppliers
	Private value is prioritized over shared value	Set requirements for balancing the power between research facilities and aquaculture companies
<b>Governmental regulations</b>	Fragmented authorities	Improve cooperation within the authorities
	Insufficient sustainability criteria	Setting clear and measurable goals
		Provide financial risk relief for suppliers

**TABLE 6: HOW GOVERNMENTAL POLICIES CAN OVERCOME THE REMAINING BARRIERS TO SHARED VALUE CREATION IN THE NORWEGIAN AQUACULTURE INDUSTRY**



## 8. CRITICAL ASSESSMENT OF THE ANALYTICAL FRAMEWORK

In this chapter the validity of the analytical framework will be discussed by assessing the empirical data in the analysis. By using the Norwegian aquaculture industry as a case, the presumptions of the analytical framework on how shared value creation can be achieved in an industry context will thus either be strengthened or weakened.

To conduct this analysis of the analytical framework, we will firstly analyze whether the critique of the shared value creation concept presented in section 3.6 is applicable in the context of the Norwegian aquaculture industry. Assessing the critique is seen as important as this critique provides the presumptions made when further developing the concept of shared value creation into the analytical framework for achieving shared value creation in an industry context in chapter 4. The critique concerns several aspects of Porter and Kramer's (2011) concept of shared value creation, and the critique regarding the assumptions made by Porter and Kramer will be further assessed in the Norwegian aquaculture industry in this chapter. If the critique is seen to be applicable in the Norwegian aquaculture industry, the presumptions of the analytical framework presented are seen to be strengthened, and if not, weakened.

Secondly the empirical data presented in the analysis in chapter 6 and 7 will be assessed to determine whether it conforms with the propositions made when developing the analytical framework, related to innovation, long-term orientation, cooperation, stakeholder trust and the guidelines for governmental policies. Section 8.2 will thus assess the applicability of the analytical framework in the context of the Norwegian aquaculture industry by considering whether the findings strengthens or weakens the propositions presented in the analytical framework.

Thirdly an assessment of additional shortcomings of the analytical framework will be presented in section 8.3, before the conclusions from section 8.1, 8.2, and 8.3 will be discussed in section 8.4 to see whether the findings are found to strengthen or weaken the applicability of the analytical framework in the Norwegian aquaculture industry.

### 8.1 CRITIQUE OF SHARED VALUE CREATION IN THE CONTEXT OF NORWEGIAN AQUACULTURE

As seen in section 3.6 there are several aspects of the shared value creation concept introduced by Porter and Kramer (2011) that have been criticized by other scholars (Crane et al., 2014; Dembek et al., 2015). When developing the analytical framework for how shared value creation can be achieved in an industry context, this criticism was accounted for to make the analytical framework more applicable to real world business environments.

The aim of this section is to assess whether some of this criticism, mainly the critique related to the assumptions Porter and Kramer (2011) made when developing their concept, is applicable in the context of the Norwegian aquaculture industry. By investigating whether the empirical data collected throughout the case study can confirm or disprove with this critique, the presumptions of the analytical framework is seen as strengthened or weakened.

#### ASSUMES THAT PRIVATE VALUE AND SHARED VALUE CAN BE OBTAINED SIMULTANEOUSLY

Shared value creation assumes that companies can achieve competitive advantage simultaneously as realizing shared value with stakeholders (Crane et al., 2014). This assumption is seen as problematic in the Norwegian aquaculture industry, where the focus on self-interests and competitive advantage makes cooperation and value creation with some stakeholders difficult.

As shown in subsection 6.3.4, the level of cooperation and stakeholder trust among aquaculture companies and their competitors are seen as poor in the Norwegian aquaculture industry, based on the high level of competitiveness in the industry. There is a “patent-war” in the industry, resulting in little knowledge sharing and trust among the two parts. This implies that private value is prioritized over shared value.

Furthermore it is seen in the analysis that when aquaculture companies and research facilities cooperate on research projects, a focus on private value among both parts has characterized the cooperation, resulting in few projects being a success. This entails that the shared value of research projects can be difficult to realize simultaneously as both parties attempt to maximize their own competitiveness.

This discussion can further be related to the tensions between social and economic goals (Crane et al., 2014; Dembek et al., 2015; Vogel, 2005). As shown in subsection 6.2.1, the Norwegian aquaculture is currently having an instrumental approach to corporate sustainability, with the industry mainly being concerned about realizing win-win situations and avoiding trade-offs. According to Dembek et al. (2015) this can lead to only corporate “win”, where many sustainability problems are overlooked because solving them will not result in financial gain. This implies that private value often is prioritized in the industry, making the private value - shared value tensions substantial, and shared value creation can be undermined if private value cannot be maximized. This entails that many sustainable solutions that cannot be made profitable will be ignored.

#### ASSUMES THAT COMPLIANCE WITH LEGAL AND MORAL STANDARDS ARE GIVEN

Another criticism is related to the fact that the concept of shared value creation is built on the assumption that compliance with legal and moral standards is given (Crane et al., 2014). This assumption is found to be unjustified in the context of the Norwegian aquaculture industry. Data collected during the interviews revealed that there have been several situations in which the number of sea lice or escapes have been falsely reported, and where aquaculture companies have tried to sneak around the regulations. It is therefore seen as naive by Porter and Kramer to assume this compliance.

#### ASSUMES THAT FOCUSING ON A LIMITING NUMBER OF STAKEHOLDERS IS SUFFICIENT

The concept of shared value creation is further criticized for only focusing on a limiting number of stakeholders (Dembek et al., 2015), and one can question who really benefits. Focusing on the stakeholders that are directly involved in the companies’ activities may result in omission of important needs of others (Brown and Knudsen, 2012). When assessing this

criticism towards the empirical data from the Norwegian aquaculture industry, it is evident that only addressing the needs of the stakeholders that are directly involved in the companies' activities will cause an ignoring of important needs that must be addressed if the industry is to achieve increased corporate sustainability. This includes the needs of the biodiversity of the Atlantic salmon, needs of the fishermen, and the needs of the people living along the coast amongst others.

## 8.2 APPLICABILITY OF THE ANALYTICAL FRAMEWORK IN THE CONTEXT OF NORWEGIAN AQUACULTURE

This section serves to discuss whether the case study of this thesis confirms the analytical framework developed in chapter 4. The presumptions made when developing the four aspects of the framework will be discussed towards the findings of the analysis in chapter 6 and 7 in order to reveal aspects that confirms or disproves the framework.

### 8.2.1 INNOVATION

In this subsection, the aspect of innovation in the analytical framework will be assessed by investigating whether the empirical data collected throughout the case study confirms the presumptions made for developing this aspect.

#### INNOVATION AND SHARED VALUE CREATION ARE INTERCONNECTED

Shared value creation and innovation is assumed to be interconnected in the analytical framework, implying that innovation is necessary for creating shared value (Freeman et al., 2010; Nidumolu et al., 2009), at the same time as the achievement of shared value creation will drive additional innovations (Porter and Kramer, 2011). In the Norwegian aquaculture industry, this interconnection is evident when realizing that the development licenses are implemented in order to facilitate increased sustainability, by incentivizing aquaculture companies to develop highly innovative solutions. Thus, the authorities have recognized the need for innovation to create shared value. Simultaneously, the lack of growth in the industry is seen as the reason for the missing innovation, implying that if the industry managed to create shared value, it would get the opportunity to grow, which would further result in future production challenges that require innovation to be solved. The presumption of innovation and shared value creation being interconnected is thus confirmed in the Norwegian aquaculture industry.

#### OPEN INNOVATION IS NEEDED FOR CREATING SHARED VALUE

The importance of open innovation for creating shared value is further emphasized in the analytical framework. In the analysis in chapter 7, the industry was found to lack a sufficient level of open innovation. However, the barrier of major innovation is seen to be eliminated through the implementation of development licenses, even though the industry is not seen to achieve a high level of open innovation. This implies that the analysis of the Norwegian aquaculture industry do not confirm that open innovation is crucial for achieving major innovations, which is assumed in the analytical framework. Thus, open innovation can be seen as a driver of major innovations, but not as a necessity.

#### MAJOR INNOVATION IS CRUCIAL FOR COMBINING SUSTAINABILITY AND PROFITABILITY

The Norwegian aquaculture industry was found to be characterized by conducting several smaller steps of incremental innovation, while lacking the major innovations. The analytical framework emphasized the importance of major innovation if sustainability and profitability is to be combined (Eccles and Serafeim, 2013). Seeing that shared value creation has not been achieved through several years of incremental innovation, and that the authorities actively promote more major innovation through governmental policies, the need for major innovation for creating shared value is evident in the Norwegian aquaculture industry. The presumption of major innovation being crucial for combining sustainability and profitability is thus confirmed in the Norwegian aquaculture industry.

#### 8.2.2 LONG-TERM ORIENTATION

In this subsection, the aspect of long-term orientation in the analytical framework will be assessed by investigating whether the empirical data collected throughout the case study confirms the presumptions made for developing this aspect.

#### SUSTAINABLE COMPANIES ARE CHARACTERIZED BY HAVING LONG TIME HORIZONS

The analytical framework introduced the aspect of long-term orientation by arguing that long-term orientations are typical for sustainable companies, and that focusing on short time profits are detrimental to creating shared value and to achieve increased sustainability. This argument is found to be valid in the context of Norwegian aquaculture, as the instrumentality and short-term orientations of the aquaculture companies are evident simultaneously as the industry is currently seen to have several barriers to shared value creation that prevents it becoming corporate sustainable. The presumption of long-term horizons being crucial for being sustainable is thus confirmed in the Norwegian aquaculture industry.

#### THERE EXIST TEMPORAL TENSIONS BETWEEN COMPANIES AND SUSTAINABILITY

The analytical framework further assumes that there exist tensions between the short-term needs of companies and the long-term needs of sustainability. Such temporal tensions are evident in the Norwegian aquaculture industry, in which long-term environmental performance is less prioritized than short-term financial performance. The short-term orientations of the aquaculture companies have caused several large sustainability problems not been taken care of yet, and taking reactive measures has become common because aquaculture companies seem to struggle to see how their behaviors of today affects their next generations' abilities. The presumption that there exist tensions between the short-term needs of companies and the long-term needs of sustainability is thus confirmed in the Norwegian aquaculture industry.

#### 8.2.3 COOPERATION

In this subsection, the aspect of cooperation in the analytical framework will be assessed by investigating whether the empirical data collected throughout the case study confirms the presumptions made for developing this aspect.

#### COLLABORATION IS CRUCIAL FOR CREATING SHARED VALUE

The analytical framework in chapter 4 emphasized the importance of collaboration between aquaculture companies and clusters, value-chain stakeholders and competitors. The analysis revealed that collaboration between aquaculture companies and their suppliers were adequate, despite an increased trend of outsourcing equipment production to low-wage countries, while cooperation between aquaculture companies and research facilities, the authorities, and competitors were found to be poor. The lack of collaboration between industry actors were found to be negative for the potential of creating shared value in the industry, which confirms the presumption of collaboration being crucial for creating shared value.

#### THE PRESENCE OF PRIVATE VALUE - SHARED VALUE TENSIONS PREVENTING SHARED VALUE

The analytical framework further present the tensions between private company value and shared value that are argued to prevent shared value creation as many companies are more concerned of own benefits than collective benefits (Haffar and Searcy, 2015). Private value - shared value tensions were found to be present in collaborative partnerships between aquaculture companies and research facilities through the case study, where both parties were concerned of achieving most benefit themselves, while the outcomes of the cooperation was less important. This was further seen to prevent shared value to be created, and the assumption of the existence of private value - shared value is confirmed in the context of Norwegian aquaculture.

#### HIGH FOCUS ON COMPETITIVENESS IS DETRIMENTAL TO SHARED VALUE CREATION

The entire analytical framework is developed due to the assumption that the high focus on competitiveness in the original concept of shared value creation provided by Porter and Kramer (2011) is not regarded as applicable in an industry context. The concept of shared value creation is created to guidance single companies to achieve increased competitiveness, and is thus seen as a concept mainly applicable at the lower organizational level, while addressing larger sustainability problems rely on companies adapting a larger systemic perspective. The framework assumes that in order to solve larger social and environmental problems that affect whole industries, a focus that go beyond the competitiveness of single companies is required. In the analysis of the thesis, the competitiveness in the industry was found to be extremely high. This competitiveness was further found to prevent collaborative partnerships among competitors and the level of open innovation in the industry, and has resulted in short time horizons among aquaculture companies. These aspects are all seen to prevent the industry from creating shared value, and the presumption that high competitiveness is detrimental for shared value creation is valid in the context of Norwegian aquaculture.

#### 8.2.4 STAKEHOLDER TRUST

In this subsection, the aspect of stakeholder trust in the analytical framework will be assessed by investigating whether the empirical data collected throughout the case study confirms the presumptions made for developing this aspect.

#### THE IMPORTANCE OF MANAGING TENSIONS BETWEEN STAKEHOLDER INTERESTS

Managing tensions between stakeholder interests is proposed in the framework to ensure a high level of corporate sustainability in an industry. It is further recommended to employ Epstein et al.'s (2015) method where win-win situations are sought for in all situations, yet avoiding actions that would be really bad for sustainability, to decrease some of this tension. As shown in the analysis there are distinct tensions between aquaculture companies and the opposition movement, based on a conflict of interests and lack of trust. The conflict revolves around the effect of salmon-breeding on the wild Atlantic salmon. This tension is very strong, and the media channels are much used as an arena of discussion. It is therefore is a distinct need for managing tensions between stakeholder interests in Norwegian aquaculture and the presumption of the importance of managing tensions between stakeholder interests is thus confirmed in the Norwegian aquaculture industry.

#### THE NEEDS OF THE MOST SALIENT STAKEHOLDERS ARE MOST IMPORTANT

The analytical framework further emphasizes the importance of addressing the needs of all stakeholders, but that the stakeholders having power, legitimacy and urgency are most important for creating shared value (Mitchell et al., 1997). In the Norwegian aquaculture industry, however, the needs of the stakeholders that have less power are seen to be at least as important as the needs of the most powerful stakeholders. The problems that are most critical to the sustainability of the industry are the problems that affect the wild Atlantic salmon, which are predominantly sea lice and escapes. The wild salmon have no power at all, which has led to other organizations being created to communicate the salmon's needs, such as "Norske lakseelver". This organization do however not have any substantial power either, and needs the support of the media, or even the authorities in order to reach the management of aquaculture companies. Hence, it can be argued that the analytical framework possess a weakness when presuming that the needs of stakeholders having power, legitimacy and urgency are most important to address. The presumption that addressing the needs of the most salient stakeholders is most important is thus not confirmed in the Norwegian aquaculture industry.

#### TRUST IS IMPORTANT IN ESTABLISHING CLOSE RELATIONSHIPS

In the analytical framework, trust was found to be important in order to establish close relationships. During the case study several barriers to cooperation and stakeholder trust was found in the Norwegian aquaculture industry, affecting the level of cooperation between various industry actors. Examples are lack of trust among competitors and between aquaculture companies and the opposition movement, where shared value creation was seen as hard to accomplish without increased cooperation. To be able to benefit from cooperation, trust among stakeholders is essential (Eccles et al., 2014; Freeman et al., 2010; Jones, 1995), and there is no doubt that the aquaculture industry can benefit from increased trust among industry actors. The presumption of trust being important in establishing close relationships is thus confirmed in the Norwegian aquaculture industry.

#### EXTERNALITIES DOES NOT NECESSARILY INFLICT COSTS TO THE FIRM

The analytical framework further accepts the existence of tensions between social and economic goals. While Porter and Kramer (2011) argue that externalities inflict internal cost on the firm, even in the absence of regulations, and see it as financially beneficial for firms to deal with their externalities, this assumption is argued to be simplistic in the analytical framework. An example of externalities in the Norwegian aquaculture industry is the negative effects that salmon-breeding has on the wild Atlantic salmon. These externalities are not seen to inflict any costs to the aquaculture companies as they only affect a stakeholder group that does not affect the operations of the business, and they cannot stand up for themselves against the industry. The presumption in the analytical framework regarding that externalities not necessarily inflict costs to the business, and that tensions between social and economic goals exists is confirmed in the context of Norwegian aquaculture.

#### STRICT REGULATIONS IS A SIGN OF LACK OF TRUST

The assumption that the authorities need to force companies to address their externalities through strict regulations are a sign of lack of trust among business and society can also be confirmed when considering the Norwegian aquaculture industry. The aquaculture industry is characterized by having several strict regulations in order to ensure that the environment and social systems are taken care of, simultaneously as the industry is frequently accused by the media to be detrimental to the environment. Hence, the lack of trust among society and the industry is evident, and the assumption made in the analytical framework can be confirmed in the context of the Norwegian aquaculture industry. The presumption of strict regulations being a symptom of poor trust is thus confirmed in the Norwegian aquaculture industry.

#### 8.2.5 THE ROLE OF GOVERNMENTAL POLICIES

In this subsection, the guidelines for governmental policies presented in the analytical framework will be assessed by investigating whether the empirical data collected throughout the case study confirms the importance of these guidelines

#### FACILITATE THE PROCESS OF ESTABLISHING THE FOUR ASPECTS OF SHARED VALUE CREATION

The analytical framework emphasizes the importance of implementing governmental policies that facilitate the development of the four aspects required for achieving shared value creation. Through the case study, the governmental policies that were implemented were found to help the industry overcome several of the barriers that currently prevents shared value creation in the industry. Hence, the facilitation of innovation, long-term orientation, cooperation and stakeholder trust by the governmental policies is seen as important for achieving shared value creation in the Norwegian aquaculture industry, and the assumption that governmental policies has an important role in facilitating the development of these aspects are valid in the context of the Norwegian aquaculture industry.

#### CONSIDER THEMSELVES AS A STAKEHOLDER ON EQUAL TERMS AS OTHER INDUSTRY ACTORS

In the proposed analytical framework the importance of including the authority as a stakeholder on equal terms as other industry actors is stressed to ensure that industry actors can participate in developing the industry regulations, and that the cooperation and trust

within the authorities and between the authorities and the industry is sufficient for facilitating shared value creation. The nature of this proposition is further on seen as very applicable in the Norwegian aquaculture industry, considering the disagreement concerning which sustainability indicators that should determine the regulations of the industry. There is definitely a need for improving the level of cooperation between the authorities and industry actors in the industry, and a more circular way of communication instead of top-down is recommended. Thus, in this respect the analysis is shown to strengthen the analytical framework.

#### ENSURE A MINIMUM LEVEL OF SOCIAL AND ENVIRONMENTAL PERFORMANCE

Ensuring a minimum level of social and environmental performance is proposed in the framework to ensure a high level of corporate sustainability in an industry. This can be done by following Simon's (1964) approach, by setting minimum requirements of accepted levels related to environmental and social performance that in all occasions must be met by the companies in the industry in order to maintain the license to operate. As seen in the analysis, the current regulation policy of development licenses, intending to facilitate shared value creation, uses a strategy of the environmental criteria being a requirement that needs to be fulfilled without trading it off for other criteria (Igarashi et al., 2015), which implies that other criteria like cost and efficiency is prioritized over sustainability. The Norwegian aquaculture industry can thus be viewed as having an instrumental approach to corporate sustainability, which is seen to be a barrier to shared value creation, and will thus benefit from ensuring a minimum level of social and environmental performance. This proposition is in this respect seen to be strengthened by considering the empirical data from the case study.

#### FOCUS ON THE GREATEST CONSTRAINTS

The importance of focusing on the greatest constraints in order to address the issues that can reveal the largest potential value is further emphasized by the analytical framework. In Norwegian aquaculture, the largest constraints currently represent the problems related to the sea lice, as it is these issues that prevent the industry to grow further. Hence, it is considered as reasonable that the majority of the regulations that are implemented with the objective of enhancing the sustainability of the industry concern this issue. By realizing that one of the main goals of the development licenses is to find solutions to the sea lice problem, and that the only sustainability indicator of the industry concerns the number of sea lice allowed on each fish, the current regulations are found to concern the greatest constraints of the industry, which are in line with the analytical framework. However, we do not have the required knowledge to determine whether this focus on sea lice actually will facilitate shared value creation in the industry. This part of the analytical framework can thus neither be confirmed nor disproved.

#### SETTING CLEAR AND MEASURABLE GOALS

Setting clear and measurable goals is another proposition of the analytical framework. Porter and Kramer (2011) emphasize the importance of setting clear and measurable goals and performance standards in order to facilitate shared value creation in an industry, and the lack of it is a distinct barrier to increased corporate sustainability. As seen in the analysis there are currently only one sustainability indicator with measurable goals regulating the Norwegian



aquaculture industry, namely number of sea lice on farmed salmon. This indicator is however very controversial and lacks support from many industry actors, who argues that there is not enough knowledge about the effect of farmed salmon on the level of sea lice. The analysis has thus not provided basis to confirm or discard this proposition of the analytical framework, as there is currently only one clear and measurable criterion to ensure an adequate sustainability level of the industry.

The development licenses do however have a number of criteria that needs to be fulfilled in order to be granted licenses. These criteria were found to be neither measurable nor clear, which has already resulted in confusion and different interpretations in the industry. The need for several clear and measurable goals is thus clearly supported by the industry, as it is believed to make it easier to ensure an adequate sustainability in the industry. Thus, in this respect the analysis is shown to strengthen the analytical framework.

### 8.3 SHORTCOMINGS OF THE ANALYTICAL FRAMEWORK

The analysis of this thesis has revealed some weaknesses of the analytical framework developed in chapter 4, based on empirical data that doubts the way in which the framework is designed, and which aspects that are considered as important.

The four aspects that were argued to be required for achieving shared value creation in an industry context were chosen based on the features of the original concept of shared value creation provided by Porter and Kramer (2011). These four aspects were further developed and elaborated upon through the review of several theoretical concepts that concerned these four aspects. Further on, the original concept of shared value creation was argued to leave too little responsibility to the authorities in facilitating shared value creation. Hence, five guidelines on how governmental regulations should be designed in order to facilitate shared value creation in an industry context were provided, based on our own opinions and supported by literature previously discussed in the conceptual background of corporate sustainability.

The empirical data collected throughout the case study did however reveal one issue that the analytical framework has not taken into consideration. This issue concerned the importance of knowledge for creating shared value in an industry context. The lack of knowledge was by the interviewees recognized as an obstacle for establishing long-term strategies of companies, for developing sufficient sustainability indicators, for identifying common interests between stakeholders, and for having reasonable discussions and avoiding conflicts occurring due to lack of knowledge. The concern regarding lack of knowledge was shared by both industry actors and the authorities.

The lack of knowledge mentioned during the interviews was amongst others the lack of knowledge related to the sustainability challenges such as sea lice and escapes. Several interviewees mentioned that a reason why these problems was not solved yet, was that there does not exist enough knowledge about the sea lice, both in terms of reproduction, and where they flourish. Further on it was emphasized that the different departments of the authorities

possess quite different knowledge, and that this knowledge often fails to be distributed within the authorities.

The analytical framework is therefore argued to have the potential of being further strengthened by including a fifth aspect, the aspect of knowledge, as increased knowledge is assumed to be necessary to enhance the shared value creation in the Norwegian aquaculture industry, and hence, to achieve increased corporate sustainability.

#### 8.4 ASSESSMENT OF THE ANALYTICAL FRAMEWORK

The discussion of this chapter consists of three parts that together determine whether the analytical framework developed in chapter 4 is found to be applicable in the Norwegian aquaculture industry. This assessment is made in order to reveal weaknesses and shortcomings of the framework that was discovered when reviewing the empirical data collected throughout the case study of the thesis.

##### REVIEWING THE CRITICISM

Firstly, section 8.1 tested whether the criticism to the original concept of shared value creation, presented in section 3.6, could be confirmed or strengthened by the empirical data. This was done in order to verify whether the assumptions made when developing the framework was reasonable when considering a real world industry context.

When seeing that all the critique regarding the assumptions Porter and Kramer (2011) made when developing the concept of shared value creation is applicable in the context of the Norwegian aquaculture industry, the reasoning of further developing the concept into an analytical framework to fit the industry context is seen as strengthened.

##### REVIEWING THE ASSUMPTIONS OF THE ANALYTICAL FRAMEWORK

Thereafter, all aspects of the analytical framework was in section 8.2 investigated to determine whether the empirical data of the case study could verify the validity of the presumptions and arguments made when developing the framework. This was done in order to determine whether the presumptions could be defended or contradicted by the empirical data from the case study.

The discussions in section 8.2 found that most of the presumptions made when developing the framework could be verified by the empirical data collected in the case study. However, some of the presumptions and arguments could be neither verified nor disproved due to lack of empirical data on certain areas. Further on, a few assumptions made when developing the analytical framework contradict to the empirical findings of the study, namely that open innovation is crucial for achieving shared value creation, and that the needs of the most salient stakeholders are most important to address.

First, an adequate level of open innovation was assumed to be needed in order to achieve major innovation in the analytical framework, but was not found to be a necessity for achieving shared value creation in the context of Norwegian aquaculture. Open innovation

could rather be considered as a driver for developing major innovations. Secondly, the analytical framework assumed that the needs of stakeholders having power, legitimacy and urgency are most important to address by the management. The analysis of the Norwegian aquaculture did however reveal that there exists stakeholders to the industry that have low amounts of power, but their needs are still seen as crucial to address in order to increase corporate sustainability of the industry.

Hence, the analytical framework was found to have two shortcomings when reviewing the presumptions made when developing the framework. Additionally, some assumptions could not be neither verified nor disproved due to lack of empirical data on certain areas.

#### REVEALING SHORTCOMINGS OF THE ANALYTICAL FRAMEWORK

Finally, the empirical data from the analysis was reviewed in order to reveal areas or aspects that were emphasized by the interviewees in which the analytical framework has failed to take into consideration. This is important in order to determine whether the analytical framework has included the most important factors that are broadly viewed as needed in order to create shared value and to increase corporate sustainability in an industry.

When reviewing the empirical data, one issue that was not implemented in the analytical framework was frequently brought up during the interviews. This issue concerned the importance of knowledge for creating shared value in an industry context. The lack of knowledge was by the interviewees recognized as an obstacle for increased corporate sustainability and for achieving innovation, long-term orientation, cooperation and stakeholder trust. Hence, it can be argued that shared value creation cannot be achieved with a poor level of knowledge within the industry. The analytical framework is thus argued to have the potential of being strengthened by including a fifth aspect, the aspect of knowledge.

#### FINAL ASSESSMENT OF THE ANALYTICAL FRAMEWORK

Overall the analytical framework is found to be applicable in an industry context based on the empirical findings in this thesis. The framework can however potentially be further strengthened by making some adjustments to the two areas where the empirical findings were found to contradict the assumptions made when developing the framework. These areas concerns the necessity of open innovation and which stakeholders that are regarded as important. A further development of the framework by including a fifth aspect that are considered as crucial for creating shared value in an industry, namely knowledge, is assumed to further strengthened the framework.

## 9. IMPLICATIONS

In this chapter implications for the analytical framework will be presented, followed by implications for Norwegian aquaculture companies, before lastly implications for future research will be addressed.

### 9.1 IMPLICATIONS FOR THE ANALYTICAL FRAMEWORK

As found in the discussion in chapter 8, the analytical framework is found to be applicable in an industry context based on the empirical findings in this thesis. The framework can however potentially be further strengthened by making some adjustments.

#### ADJUST THE IMPORTANCE OF OPEN INNOVATION

The presence of open innovation was in the analytical framework assumed to be important for achieving innovation, and thus shared value creation in an industry context. However, the analysis of the Norwegian aquaculture industry revealed that major innovation could be achieved despite a poor level of open innovation. Thus, this area of the analytical framework is recommended to be adjusted, so that open innovation is considered as an important driver for achieving shared value creation, but not a necessity.

#### REEVALUATE WHICH STAKEHOLDER NEEDS TO ADDRESS

Further on, when determining which stakeholder needs that are most important to address, the analytical framework was based on the approach of Mitchell et al. (1997). This approach assume that the stakeholders that possess all of the three attributes power, legitimacy, and urgency are most salient, while the ones possessing only one or two of these are less important. The empirical findings of the study did however reveal that addressing the needs of stakeholders not possessing all these attributes is crucial for increasing the sustainability of the industry. Thus, another method of identifying the most important stakeholder needs to address should be applied in order to further strengthen the analytical framework.

#### ADD KNOWLEDGE AS A FIFTH ASPECT

Finally, the empirical data collected revealed a shortcoming of the content of the framework. One issue that was not discussed in the analytical framework was frequently brought up during the interviews. This issue concerned the importance of knowledge for creating shared value in an industry context. The lack of knowledge was by the interviewees recognized as an obstacle for increased corporate sustainability and for achieving innovation, long-term orientation, cooperation and stakeholder trust. A new version of the analytical framework should therefore include a fifth aspect, the aspect of knowledge, as increased knowledge is found to be necessary to achieve shared value creation in the Norwegian aquaculture industry.

### 9.2 IMPLICATIONS FOR AQUACULTURE COMPANIES

In this section implications for aquaculture companies are presented. As mentioned in section 7.5 some of the barriers to shared value creation that was not overcome by the implementation of the development licenses require measures to be made by aquaculture companies to be dealt with. These barriers were found to be; conflicts of interests among aquaculture companies, reactive focus amongst industry actors, lack of trust among competing companies,

and lack of trust among aquaculture companies and the opposition movement. Implications for how aquaculture companies can contribute to overcoming these barriers will thus be addressed in this section, in addition to other areas where aquaculture companies can facilitate increased shared value creation.

#### BETTER COOPERATION AND KNOWLEDGE SHARING BETWEEN COMPETITORS

To overcome the barrier of lack of trust among competing aquaculture companies the level of cooperation and knowledge sharing between the parts must increase. Facilitating knowledge sharing is seen to be essential to create shared value in Norwegian aquaculture. Even though more detailed criteria from the authorities are necessary, aquaculture companies must also do their part. The whole point of sharing knowledge is that companies share information that will be beneficial for the industry, and the current mindset of keeping all information close to chest in order to achieve a competitive advantage will not help the industry grow in a sustainable way. Aquaculture companies must thus cooperate and trust each other with information related to research and development to facilitate shared value creation in the industry. The recommendation is that companies should share experience and knowledge that will prevent the same mistakes from happening again and give competing companies suggestions on how to improve their production to make it more sustainable.

#### INTEGRATING SOCIAL AND ENVIRONMENTAL ISSUES INTO COMPANY STRATEGIES

When considering the literature on shared value creation in the light of the analysis in chapter 6 and 7, the industry needs to make some changes in how they approach sustainability if the barrier of reactive focus in the industry is going to be dealt with. Firstly, it is important that aquaculture companies stop viewing environmental and social improvements as financial costs, but sees it as investments in the future. Working towards a more sustainable industry should be an integrated part of the business' strategies, and in order to see the positive synergies created by social and environmental engagement, aquaculture companies are recommended to conduct integrated reporting. Integrated reporting can help both companies and other stakeholders to see the social, environmental and economic benefits of the company's initiatives to improved sustainability, and is according to Eccles and Serafeim (2013) a crucial step to creating a more sustainable society, as it serves as a key platform for stakeholder engagement.

#### ADOPT A PREVENTIVE APPROACH TO SUSTAINABILITY

The barrier of reactive measures to sustainability issues is also a barrier to shared value creation that is not seen to be overcome by the implementation of development licenses. There is a distinct need for adopting a longer time orientation on strategies in the industry if increased corporate sustainability is to be realized. By trying to predict what the sustainability challenges will be in the future, it will be easier to avoid the reactive measures that characterize the industry today. It is further on important for aquaculture companies to adopt a preventive approach to avoid sustainability problems to arise in the future due to an irresponsible or short-term behavior today.

#### USING LOCAL SUPPLIERS AND COLLABORATE WITH SMALLER AQUACULTURE COMPANIES

Further on, as shown in subsection 7.4.3, the development licenses were found to increase the economic dimension of corporate sustainability, while adequate performance in the social and the environmental dimensions were not seen to be sufficiently ensured by the policy.

To increase the social dimension of corporate sustainability there are some measures companies can take. Firstly they should use local Norwegian suppliers as much as possible instead of outsourcing. The supporting and strengthening of local suppliers is a crucial part of creating shared value with the society, and the trend of outsourcing production to low-wage countries in order to save costs is found to be harmful to the Norwegian aquaculture suppliers. The increased trend of outsourcing can also potentially damage the technology competence that has been build up in Norway during the last decades.

Secondly companies should try to include smaller companies in large research projects. This is to prevent that small aquaculture companies miss the chance to grow based on not having enough resources to realize large innovations individually, seeing that growth is important if companies are to survive in the long run. The risk of increased differentiation in the industry can also be reduced by including smaller companies. When all companies have equal opportunities there will be fewer conflicts of interests and thus the barrier of conflict of interests among aquaculture companies can be reduced.

#### ENHANCE RELATIONSHIP WITH THE OPPOSITION MOVEMENT

Another important barrier to address is the barrier of lack of trust among aquaculture companies and the opposition movement, revolving around the challenge of how sea lice and salmon escapes affect the wild Atlantic salmon. The conflicts between the parts are currently characterized by the lack of a common knowledge base. Several misunderstandings and unreasonable discussions that create hostility could have been avoided if knowledge and facts were communicated better, and common understandings and potentially cooperation could be possible if these two groups could achieve mutual trust and respect. Both sides are holding important information about the industry and how it affects the environment, and by cooperating towards solving the challenges in the industry, the relationship can be far more beneficial than it is today.

SUMMARY

Table 7 shows how aquaculture companies can overcome the remaining barriers to shared value creation in the Norwegian aquaculture industry.

	<b>Barrier</b>	<b>How to overcome the barrier</b>
<b>Cooperation and stakeholder trust</b>	Lack of trust between competing companies	Better cooperation and knowledge sharing between competitors
	Conflicts of interests among aquaculture companies	
	Lack of trust between aquaculture companies and the opposition movement	Enhance relationship with the opposition movement
	Increased trend of outsourcing	Using local suppliers and collaborate with smaller aquaculture companies
<b>Long-term orientation</b>	Reactive focus in the industry	Adopt a preventive approach to sustainability
		Integrating social and environmental issues into company strategies

**TABLE 7: HOW AQUACULTURE COMPANIES CAN OVERCOME THE REMAINING BARRIERS TO SHARED VALUE CREATION IN THE NORWEGIAN AQUACULTURE INDUSTRY**

### 9.3 IMPLICATIONS FOR FUTURE RESEARCH

This section will discuss the areas that are seen to benefit from further research, and provide implications on how future research can strengthen the existing knowledge on these areas.

#### EXPAND THE RESEARCH ON SHARED VALUE CREATION IN THE NORWEGIAN AQUACULTURE INDUSTRY.

In this master’s thesis the objective was to further develop the concept of shared value creation to be applicable in an industry context, enabling increased corporate sustainability. As a result of the industry focus, only the third way of creating shared value, namely by enabling local cluster development, was considered in the thesis. During the case study, concerns related to the product in itself and the value chain was however also addressed, implying that the two other ways of achieving shared value creation, namely by reconceiving product and market, and redefining productivity in the value chain, also have relevance in the Norwegian aquaculture industry.

Concerns regarding the value chain operations for salmon production were raised by the journalist. Until current date the salmon production has likely affected the ecology and environment in the coastal zones in negative manner, and it seems like a production with no externalities on the environment is difficult to achieve. A large sustainability concern is also related to the feed production in the industry, where fish meal and fish oils from areas that are overfished represent a distinct portion of the feed used in Norwegian aquaculture. Further on, the salmon is known to be transported large distances around the world, resulting in emissions that are damaging to the environment. The sustainability of the packaging should also be reviewed, as the salmon often is packaged in portion-sizes. Further research on whether the

production and distribution of farmed salmon really can be considered as sustainable is therefore suggested.

Concerns regarding the product itself can also be an interesting area of future research. The media and other actors have questioned to what degree the farmed salmon is as healthy as the wild Atlantic salmon due to the increasing amount of vegetable ingredients in the feed, which have resulted in a substantial decrease of the contents of omega-3. Further on, there have been raised concerns of whether the genetic development of the salmon is ethically justifiable as it entails experimenting with the natural genetic material in order to find the combinations that are most desirable to achieve the highest feed utilization and a distinct color to the meat. The development of sterile salmon is another questionable aspect concerning the product of salmon. This is a method for preventing escaped salmon to reproduce with wild Atlantic salmon and weaken the biodiversity amongst the wild fish. It is however raised questions to whether this development is ethically responsible. Also, the substantial amount of chemicals used to treat the salmon for various diseases can potentially have a negative effect on the product and the environment. Research on how the products in Norwegian aquaculture can be reconceived to enhance shared value creation can thus also be interesting.

#### DO A POST IMPLEMENTATION REVIEW OF THE DEVELOPMENT LICENSE POLICY

Considering that this case study of the development licenses is conducted at a very early implementation stage of the policy, research at a later stage is recommended to give additional data on the success of the policy. By conducting another research project in 2-5 years, the effects of the development licenses would be more evident than they are today, and the development licenses' contributions to shared value creation in the Norwegian aquaculture industry would be easier to evaluate. Examples of areas where future research could give interesting answers are; the realized innovation level in the industry, the actual level of knowledge sharing obtained, and most importantly to what extent the level of sustainability in the Norwegian aquaculture industry has been affected by the policy.

#### CONSIDER OTHER INDUSTRIES

Another interesting area of future research is to conduct case-studies of other industries to see whether the proposed analytical framework is applicable in other industry contexts. There are two reasons for this. Firstly, as shown in section 8.2, some areas of the framework was confirmed by analyzing the Norwegian aquaculture industry, while other were not analyzed based on lack of relevant empirical data. The areas that were not verified due to the lack of data are thus seen as highly relevant to consider by doing case-studies of other industries, or by doing a more comprehensive analysis of the Norwegian aquaculture industry. Secondly, the conclusion of the framework being strengthened by assessing it in the context of Norwegian aquaculture should be challenged by considering other industries, to see whether the framework is applicable. This can give answers to whether the analytical framework has the potential to provide guidelines for achieving shared value creation in a larger set of industries, and thus strengthen the validity of the framework. If the analytical framework is found to be applicable in several other industries, it can potentially serve as a general framework for achieving shared value creation in an industry context.



## 10. CONCLUSION

This study investigates how shared value creation can be achieved in an industry context in order to realize increased corporate sustainability. We argue that in order to overcome the challenges related to the environmental and social dimensions in an industry, one must see beyond the competitive advantage of single companies, and rather address the larger industry context. An analytical framework is thus developed, providing propositions on how industries can realize shared value creation. The four aspects of innovation, long-term orientation, cooperation and stakeholder trust emerge as essential, where both the authorities and industry actors have essential roles in reaching the needed levels of the aspects.

Through an analysis of the Norwegian aquaculture industry, we identify several barriers to innovation, long-term orientation, cooperation, and stakeholder trust that prevent shared value creation in the industry. The development licenses are further on shown to stimulate major innovations and longer time horizons in the industry, but cooperation and stakeholder trust is not seen to be sufficiently improved by implementing the policy. By presenting propositions on how the authorities and aquaculture companies can overcome the remaining barriers to shared value creation in Norwegian aquaculture, this thesis serves to guide the industry towards increased corporate sustainability.

Furthermore, in the quest of generalizing the analytical framework to be applicable in all industries, the validity is tested up against the Norwegian aquaculture industry. As the empirical data conform to the presumptions made when developing the analytical framework, the framework is considered strengthened.

The concluding statement of this study is that both innovation, long-term orientation, cooperation and stakeholder trust is essential in achieving increased corporate sustainability in an industry context, and that both aquaculture companies and the authorities must take measures in order to increase cooperation and trust between industry stakeholders if shared value creation is to be realized in the Norwegian aquaculture industry.

## APPENDIX

### A. CODES

<b>Node</b>	<b>Sub-node</b>
<b>Sustainability</b>	Economic sustainability
	Social sustainability
	Environmental sustainability
	Durability
	Food production
	Sustainability of localities
<b>Innovation</b>	Taking risk
	New technological developments
	Revolutionary developments
	Paradigm shift
<b>Time orientations</b>	Long-term orientation
	Short-term orientation
<b>Collaboration</b>	Relationship between industry and authorities
	Communication
	Conflicts of interests
	Using knowledge from other industries
	Using knowledge from the petroleum industry
<b>Stakeholders</b>	Technology and service suppliers
	Salmon-breeding companies
	Competitors
	Academic institutions
	Authorities
	Environmental organizations
	Media
	Research Facilities
	Customers
	Industry associations
	Politicians
	The Ministry of Trade, Industry and Fisheries
	The Directorate of Fisheries
	The Food Safety Authority
	The municipalities
	The counties
	Power
<b>The environment</b>	Fish health
	Organic Emissions
	Chemicals
	Sustainability indicators
<b>Governmental regulations</b>	Current regulative policies
	Fragmented authorities
	Localities
	The license system
<b>The development licenses</b>	Criteria

	Purpose
	Knowledge sharing
	Competition
	Weaknesses
	Taking advantage of the policy
	Localities
<b>Growth</b>	-

## B. ABBREVIATIONS

<b>Abbreviation</b>	<b>Institution</b>
FAO	Food and Agriculture Organization of the United Nations
FHF	The Norwegian Seafood Research Fund
FHL	Fiskeri-og havbruksnæringens landsforening Today: Norwegian Seafood Federation (Sjømat Norge)
NCE	Norwegian Centres of Expertise
SSB	Statistics Norway
WCED	World Commission on Environment and Development

## C. INTERVIEW GUIDES

<b>Interview guide for applicants</b>	
<b>In general</b>	<ol style="list-style-type: none"> <li>1. Can you briefly explain what you do for a living?</li> <li>2. How do you personally define sustainability?</li> <li>3. What do you think are the main challenges in the industry today?</li> <li>4. What do you think of the newly issued development licenses?               <ol style="list-style-type: none"> <li>a) Is there a need for them?</li> <li>b) How do you think they will affect the industry?</li> <li>c) Do you see any weaknesses with this type of licenses?</li> </ol> </li> </ol>
<b>About the application</b>	<ol style="list-style-type: none"> <li>5. Can you briefly explain why you have applied for development licenses?</li> <li>6. What target criteria have you developed for your project, and why?</li> <li>7. How will your solution contribute to solve any of the area or sustainability challenges of the industry?</li> </ol>
<b>The Environment</b>	<ol style="list-style-type: none"> <li>8. Do you think the industry is currently sustainable?               <ol style="list-style-type: none"> <li>a) Why/why not?</li> </ol> </li> <li>9. There is a requirement of describing how the environment and fish health will be cared for in the application. How is this described in your application?               <ol style="list-style-type: none"> <li>a) How will this be measured?</li> </ol> </li> <li>10. The purpose of the development licenses is to develop technology that could help solve one or more environmental and area challenges that the aquaculture industry is facing. Do you think the development licenses will help reduce the challenges related to sea lice and escapes?</li> </ol>
<b>Innovation</b>	<ol style="list-style-type: none"> <li>11. How will you describe the will to take risk in the industry?</li> <li>12. How have you adapted to the innovative solutions that are currently being developed?</li> <li>13. How do you think the development licenses will affect the level of innovation in the industry?</li> <li>14. To what extent does the industry collaborate with other industries when it comes to developing new solutions?</li> <li>15. Do you think the current regulations, with expensive licenses, have affected the level of innovation in the industry?</li> <li>16. Did your idea exist before the issuing of development licenses?               <ol style="list-style-type: none"> <li>a) What factors made you decide on your solution?</li> </ol> </li> </ol>
<b>Stakeholders</b>	<ol style="list-style-type: none"> <li>17. Which stakeholders do you think have most power in the industry?</li> <li>18. How is your relationship with the authorities?</li> </ol>
<b>Cooperation</b>	<ol style="list-style-type: none"> <li>19. In the guidelines it is stated that « knowledge should be shared so that it can benefit the whole industry». How do you concrete plan to do this?               <ol style="list-style-type: none"> <li>a) Do you intend to share knowledge during or after the development of the project?</li> <li>b) What challenges do you think this knowledge sharing can result in?</li> <li>c) How will patents affect the knowledge sharing?</li> </ol> </li> <li>20. It is not a required that the aquaculture companies' being granted licenses binding agreement with a research facilities. How do you</li> </ol>

	<p>think this will affect the quality on the new solutions?</p> <p>21. How has cooperation affected the process of developing you solution you have applied for?</p> <p>a) Who have you collaborated with?</p> <p>b) How is the collaboration with other industry actors conducted when developing innovative solutions?</p> <p>c) How do you meet with other industry actors?</p>
<b>Long-term orientation</b>	<p>22. Are you under the impression that the development licenses are a long-term phenomenon?</p> <p>23. How has the development licenses affected the company's strategy?</p> <p>24. If you are granted licenses and can realize your project, how long do you estimate it will take before you earn back your investment?</p>
<b>Closure</b>	<p>25. To be granted development licenses is currently the only way to achieve long-term company growth. Do you think some industry actors will take advantage of this arrangement, and use it only to increase their production?</p> <p>26. There are no requirements of a measurable improvement of sustainability after realized project. Do you think some industry actors thus not will emphasize sustainability to the extent the authorities hope?</p> <p>27. Do you think the development licenses will facilitate increased sustainability in the industry?</p> <p>28. Do you think the development licenses will facilitate long-term growth in the industry?</p>

<b>Interview guide for suppliers</b>	
<b>In general</b>	<ol style="list-style-type: none"> <li>1. Can you briefly explain what you do for a living?</li> <li>2. How do you personally define sustainability?</li> <li>3. What do you think are the main challenges in the industry today?</li> <li>4. What do you think of the newly issued development licenses?               <ol style="list-style-type: none"> <li>a) Is there a need for them?</li> <li>b) How do you think they will affect the industry?</li> <li>c) Do you see any weaknesses with this type of licenses?</li> </ol> </li> <li>5. Do you have any customers that have applied for development licenses? If yes, are you involved in the projects?</li> <li>6. How will you be affected by the newly issued development licenses?</li> </ol>
<b>The Environment</b>	<ol style="list-style-type: none"> <li>7. Do you think the industry currently is sustainable?               <ol style="list-style-type: none"> <li>a) Why/why not?</li> </ol> </li> <li>8. In the application there is a requirement of describing how the environment and fish health will be cared for, but there are no specific requirements of how this will be achieved. Do you think the environment and fish health will adequately cared for in many of these innovative solutions?</li> <li>9. It is also stated in the regulation that the purpose is to develop technology that could help solve one or more environmental and area challenges that the aquaculture industry is facing. Do you think the development licenses will help reduce the challenges related to sea lice and escapes?</li> </ol>
<b>Innovation</b>	<ol style="list-style-type: none"> <li>10. How will you describe the will to take risk in the industry?</li> <li>11. How have you adapted to the innovative solutions that are currently being developed?</li> <li>12. How do you think the development licenses will affect the level of innovation in the industry?</li> <li>13. To what extent does the industry collaborate with other industries when it comes to develop new solutions?               <ol style="list-style-type: none"> <li>a) Do you think the current regulation, with expensive licenses, has affected the level of sustainability in the industry?</li> </ol> </li> </ol>
<b>Stakeholders</b>	<ol style="list-style-type: none"> <li>14. Which stakeholders do you think have most power in the industry?</li> <li>15. Which stakeholders are most important for you?</li> <li>16. How is your relationship with the authorities?</li> <li>17. Are you under the impression that there exist tensions between the owner of companies and the companies' managers in terms of long-term strategies?</li> <li>18. Do you adapt your products to each customer, or do you develop your products before you sell them?</li> <li>19. How do you communicate with your customers?</li> </ol>
<b>Cooperation</b>	<ol style="list-style-type: none"> <li>20. In the guidelines it is stated that « knowledge should be shared so that it can benefit the whole industry». What challenges do you think this knowledge sharing can result in?</li> <li>21. It is not a required that the aquaculture companies' being granted licenses binding agreement with a research facilities. How do you think this will affect the quality on the new solutions?</li> <li>22. How involved are you in your customers R&amp;D?</li> </ol>
<b>Long-term orientation</b>	<ol style="list-style-type: none"> <li>23. Are you under the impression that the development licenses are a long-term phenomenon?</li> </ol>

	<p>24. Do you think the development licenses will facilitate long-term strategies in the industry?  a) Why/why not?</p>
<b>Closure</b>	<p>25. To be granted development licenses is currently the only way to achieve long-term company growth. Do you think some industry actors will take advantage of this arrangement, and use it only to increase their production?</p> <p>26. There are no requirements of a measurable improvement of sustainability after realized project. Do you think some industry actors thus not will emphasize sustainability to the extent the authorities hope?</p> <p>27. Do you think the development licenses will facilitate increased sustainability in the industry?</p> <p>28. Do you think the development licenses will facilitate long-term growth in the industry?</p>

<b>Interview guide for authorities</b>	
<b>In general</b>	<ol style="list-style-type: none"> <li>1. Can you briefly explain what you do for a living?</li> <li>2. How do you personally define sustainability?</li> <li>3. What do you think are the main challenges in the industry today?</li> <li>4. What is the main reason for issuing development licenses?</li> <li>5. How did you come up with this kind of license? Is anything similar done in other countries?</li> <li>6. How many has so far applied for development licenses?</li> <li>7. Is there a limitation of how many licenses that will be issued?</li> </ol>
<b>Regarding the development license policy</b>	<ol style="list-style-type: none"> <li>8. Who are a part of the expert group determining which applications that are approved and not?</li> <li>9. How quickly do you see that this process will go?</li> <li>10. It is stated in the guidelines that “it might become necessary for the Directorate of Fisheries to obtain professional expert assistance related to the proceedings of the applications”. What type of assistance is this?</li> <li>11. It is stated in the guidelines that target criteria is not the same as success criteria. The project can thus be seen as accomplished without it being a “success”. Does this mean that projects not resulting in increased sustainability still are allowed to convert their development licenses into commercial licenses? <ol style="list-style-type: none"> <li>a) Could this be a loophole?</li> </ol> </li> <li>12. In the guidelines it is stated that « knowledge should be shared so that it can benefit the whole industry». How is this planned? <ol style="list-style-type: none"> <li>a) We understand that a final report must be submitted and shared with the industry. What must this final report contain?</li> <li>b) Is it adequate that the applicant’s suppliers are left with the knowledge in which new customers "buy"?</li> <li>c) How is this thought related to patents?</li> <li>d) What challenges might this knowledge sharing result in?</li> </ol> </li> <li>13. Do you see any weaknesses with this type of license?</li> </ol>
<b>The Environment</b>	<ol style="list-style-type: none"> <li>14. Do you think the current industry is sustainable? <ol style="list-style-type: none"> <li>a) Why/why not?</li> </ol> </li> <li>15. In the guidelines there is a requirement of describing how the environment and fish health will be cared for. Can you explain how this will be ensured? <ol style="list-style-type: none"> <li>a) There are no specific requirements of how this will be achieved. Do you think the environment and fish health will adequately cared for in many of these innovative solutions?</li> </ol> </li> <li>16. It is also stated in the regulation that the purpose is to develop technology that could help solve one or more environmental and area challenges that the aquaculture industry is facing. Do you think the development licenses will help reduce the challenges related to sea lice and escapes?</li> </ol>
<b>Innovation</b>	<ol style="list-style-type: none"> <li>17. How do you think the development licenses will affect the level of innovation in the industry?</li> <li>18. Do you think the current regulation, with expensive licenses, has affected the level of sustainability in the industry?</li> </ol>
<b>Stakeholders</b>	<ol style="list-style-type: none"> <li>19. How will you describe the relationship between the industry and the authorities?</li> </ol>



	20. How do you communicate with the industry?
<b>Cooperation</b>	<p>21. It is not a required that the aquaculture companies be given granted licenses binding agreement with a research facilities. How do you think this will affect the quality on the new solutions?</p> <p>22. In the guidelines it is stated that « knowledge should be shared so that it can benefit the whole industry». What challenges can this knowledge sharing result in?</p> <p>23. How will patents affect this process?</p>
<b>Long-term orientation</b>	<p>24. How long-term is the development license policy?</p> <p style="padding-left: 20px;">a) Will it potentially be altered associated with a governmental change?</p> <p style="padding-left: 20px;">b) Will it be terminated if it does not meet the intention of the policy?</p> <p>25. Do you think the development licenses will facilitate long-term strategies in the industry?</p> <p style="padding-left: 20px;">a) Why/why not?</p>
<b>Closure</b>	<p>26. To be granted development licenses is currently the only way to achieve long-term company growth. Do you think some industry actors will take advantage of this arrangement, and use it only to increase their production?</p> <p>27. There are no requirements of a measurable improvement of sustainability after realized project. Do you think some industry actors thus not will emphasize sustainability to the extent the authorities hope?</p> <p>28. Do you think the development licenses will facilitate increased sustainability in the industry?</p> <p>29. Do you think the development licenses will facilitate long-term growth in the industry?</p>

<b>Interview guide for other industry stakeholders</b>	
<b>In general</b>	<ol style="list-style-type: none"> <li>1. Can you briefly explain what you do for a living?</li> <li>2. How do you personally define sustainability?</li> <li>3. What do you think are the main challenges in the industry today?</li> <li>4. What do you think of the newly issued development licenses?               <ol style="list-style-type: none"> <li>a) Is there a need for them?</li> <li>b) How do you think they will affect the industry?</li> <li>c) Do you see any weaknesses with this type of licenses?</li> </ol> </li> </ol>
<b>The Environment</b>	<ol style="list-style-type: none"> <li>5. Do you think the current industry is sustainable?               <ol style="list-style-type: none"> <li>a) Why/why not?</li> </ol> </li> <li>6. In the application there is a requirement of describing how the environment and fish health will be cared for, but there are no specific requirements of how this will be achieved. Do you think the environment and fish health will adequately cared for on many of these innovative solutions?</li> <li>7. It is also stated in the regulation that the purpose is to develop technology that could help solve one or more environmental and area challenges that the aquaculture industry is facing. Do you think the development licenses will help reduce the challenges related to sea lice and escapes?               <ol style="list-style-type: none"> <li>a) Do you consider sea lice to be a beneficial sustainability indicator?</li> </ol> </li> <li>8. Do you think fish health will be cared for on ocean facilities?</li> </ol>
<b>Innovation</b>	<ol style="list-style-type: none"> <li>9. How will you describe the will to take risk in the industry?</li> <li>10. How do you think the development licenses will affect the level of innovation in the industry?</li> <li>11. To what extent does the industry collaborate with other industries when it comes to develop new solutions?</li> <li>12. Do you think the current regulation, with expensive licenses, has affected the level of sustainability in the industry?</li> </ol>
<b>Stakeholders</b>	<ol style="list-style-type: none"> <li>13. Which stakeholders do you think have most power in the industry?</li> <li>14. What role do the media play? Environmental organizations?</li> <li>15. What are your impression of the relationship between the authorities and industry actors?</li> <li>16. Are you under the impression that there exist tensions between the owner of companies and the companies' managers in terms of long-term strategies?</li> </ol>
<b>Cooperation</b>	<ol style="list-style-type: none"> <li>17. In the guidelines it is stated that « knowledge should be shared so that it can benefit the whole industry». What challenges can this knowledge sharing result in?               <ol style="list-style-type: none"> <li>a) How will patents affect this process?</li> </ol> </li> <li>18. It is not a required that the aquaculture companies' being granted licenses binding agreement with a research facilities. How do you think this will affect the quality on the new solutions?</li> </ol>
<b>Long-term orientation</b>	<ol style="list-style-type: none"> <li>19. Are you under the impression that the development licenses are a long-term phenomenon?</li> <li>20. Do you think the development licenses will facilitate long-term strategies in the industry?               <ol style="list-style-type: none"> <li>a) Why/why not?</li> </ol> </li> </ol>

<b>Closure</b>	<ol style="list-style-type: none"><li>21. To be granted development licenses is currently the only way to achieve long-term company growth. Do you think some industry actors will take advantage of this arrangement, and use it only to increase their production?</li><li>22. There are no requirements of a measurable improvement of sustainability after realized project. Do you think some industry actors thus not will emphasize sustainability to the extent the authorities hope?</li><li>23. Do you think the development licenses will facilitate increased sustainability in the industry?</li><li>24. Do you think the development licenses will facilitate long-term growth in the industry?</li></ol>
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## BIBLIOGRAPHY

- akvARENA. 2015a. *Delprosjekter* [Online]. Available: <http://www.akvarena.no/index.php?page=delprosjekter> [Accessed 05.11 2015].
- akvARENA. 2015b. *Om Teknologi akvARENA* [Online]. Available: <http://www.akvarena.no/index.php?page=om-akvarena> [Accessed 19.10 2015].
- Asche, F. 2008. Farming the sea. *Marine Resource Economics*, 23, 527-547.
- Badaracco Jr, J. 2013. *Defining moments: When managers must choose between right and right*, Harvard Business Press.
- Bansal, P. & DesJardine, M. R. 2014. Business sustainability: It is about time. *Strategic Organization*, 12, 70-78.
- Baumgartner, R. J. & Ebner, D. 2010. Corporate sustainability strategies: sustainability profiles and maturity levels. *Sustainable Development*, 18, 76-89.
- Brown, D. & Knudsen, J. S. 2012. No Shortcuts: Achieving Shared Value Means Changing Your Business Culture. Available at SSRN: <http://ssrn.com/abstract=2179926>.
- Bryman, A. 2012. *Social Research Methods*, New York, OUP Oxford.
- Carroll, A. B. 1979. A three-dimensional conceptual model of corporate performance. *Academy of management review*, 4, 497-505.
- Chesbrough, H. 2003. The logic of open innovation: managing intellectual property. *California Management Review*, 45, 33-58.
- Clarkson, M. E. 1995. A stakeholder framework for analyzing and evaluating corporate social performance. *Academy of management review*, 20, 92-117.
- Crane, A., Palazzo, G., Spence, L. J. & Matten, D. 2014. Contesting the value of the shared value concept. *California Management Review*, 56, 2.
- Dahlsrud, A. 2008. How corporate social responsibility is defined: an analysis of 37 definitions. *Corporate Social Responsibility and Environmental Management*, 15, 1-13.
- De Wit, B. & Meyer, R. 2014. *Strategy: An International Perspective*, Cengage Learning EMEA.
- Dembek, K., Singh, P. & Bhakoo, V. 2015. Literature Review of Shared Value: A Theoretical Concept or a Management Buzzword? *Journal of Business Ethics*, 1-37.
- Demsetz, H. 1974. *Toward a theory of property rights*, Palgrave Macmillan UK.
- Directorate of Fisheries. 2015a. *Oversikt over alle forskningstillatelsene til matfiskoppdrett av laks, ørret og regnbueørret*. [Online]. Available: <http://www.fiskeridir.no/Akvakultur/Tildeling-og-tillatelser/Saertillatelser/Forskningstillatelser/Alle-forskningstillatelsene> [Accessed 05.11 2015].
- Directorate of Fisheries 2015b. Retningslinjer for behandling av søknader om utviklingstillatelse til oppdrett av laks, ørret og regnbueørret
- Directorate of Fisheries. 2016b. *Kunnskap fra utviklingsprosjektene* [Online]. Available: <http://www.fiskeridir.no/Akvakultur/Tildeling-og-tillatelser/Saertillatelser/Utviklingstillatelser/Kunnskap-fra-utviklingsprosjektene> [Accessed 20.02 2016].
- Directorate of Fisheries. 2016c. *Oversikt over søknader om utviklingstillatelser per 1. juni 2016* [Online]. Available: <http://www.fiskeridir.no/Akvakultur/Tildeling-og-tillatelser/Saertillatelser/Utviklingstillatelser/Soekere-antall-og-biomasse> [Accessed 10.05 2016].
- Dyllick, T. & Hockerts, K. 2002. Beyond the business case for corporate sustainability. *Business strategy and the environment*, 11, 130-141.

- Eccles, R. G., Ioannou, I. & Serafeim, G. 2014. The impact of corporate sustainability on organizational processes and performance. *Management Science*, 60, 2835-2857.
- Eccles, R. G. & Saltzman, D. 2011. Achieving sustainability through integrated reporting. *Stanford Social Innovation Review*, 59, 56-61.
- Eccles, R. G. & Serafeim, G. 2013. The performance frontier. *Harvard business review*, 91, 50-60.
- Elkington, J. 1997. *Cannibals with forks*, Milton Keynes, Capstone.
- Epstein, M. J., Buhovac, A. R. & Yuthas, K. 2015. Managing social, environmental and financial performance simultaneously. *Long Range Planning*, 48, 35-45.
- FAO 2014. The State of World Fisheries and Aquaculture - Opportunities and challenges. Rome: FAO.
- FHF. 2005. *Slik arbeider FHF* [Online]. Available: <http://www.fhf.no/slik-arbeider-fhf/> [Accessed 05.11 2015].
- FHL 2012. Sjømat 2025 - hvordan skape verdens fremste havbruksnæring, rapport nr. 4. Oslo: FHL.
- Figge, F. & Hahn, T. 2012. Is green and profitable sustainable? Assessing the trade-off between economic and environmental aspects. *International Journal of Production Economics*, 140, 92-102.
- Fisheries, D. o. 2016a. *Utviklingstillatelser* [Online]. Available: <http://www.fiskeridir.no/Akvakultur/Tildeling-og-tillatelser/Saertillatelser/Utviklingstillatelser> [Accessed 15.03 2016].
- Freeman, R. E. 1984. *Strategic Management: A Stakeholder Approach*, Boston, Pitman.
- Freeman, R. E., Harrison, J. S., Wicks, A. C., Harmor, B. L. & De Colle, S. 2010. *Stakeholder Theory: The State of the Art*, New York, Cambridge University Press.
- Friedman, M. 1970. The social responsibility of business is to increase its profits. *New York Times Magazine*, 13, 32-33.
- Gao, J. & Bansal, P. 2013. Instrumental and integrative logics in business sustainability. *Journal of business ethics*, 112, 241-255.
- Haffar, M. & Searcy, C. 2015. Classification of Trade-offs Encountered in the Practice of Corporate Sustainability. *Journal of Business Ethics*, 1-28.
- Hahn, T., Figge, F., Pinkse, J. & Preuss, L. 2010. Trade-offs in corporate sustainability: you can't have your cake and eat it. *Business Strategy and the Environment*, 19, 217-229.
- Hahn, T., Pinkse, J., Preuss, L. & Figge, F. 2014. Tensions in Corporate Sustainability: Towards an Integrative Framework. *Journal of Business Ethics*, 127, 297-316.
- Holstad, G. 2016. Havmerd kommer i villaksens utvandringrute. *Adresseavisen*, 13.04.2016, p.18.
- Husted, B. W. & De Jesus Salazar, J. 2006. Taking Friedman Seriously: Maximizing Profits and Social Performance. *Journal of Management Studies*, 43, 75-91.
- Igarashi, M., de Boer, L. & Michelsen, O. 2015. Investigating the anatomy of supplier selection in green public procurement. *Journal of Cleaner Production*, 108, 442-450.
- Jones, T. M. 1995. Instrumental stakeholder theory: A synthesis of ethics and economics. *Academy of management review*, 20, 404-437.
- Kristoffersen, A. B., Jimenez, D., Viljugrein, H., Grøntvedt, R., Stien, A. & Jansen, P. A. 2014. Large scale modelling of salmon lice (*Lepeophtheirus salmonis*) infection pressure based on lice monitoring data from Norwegian salmonid farms. *Epidemics*, 9, 31-39.

- Langørgeren, S. 2015. Ingen snarvei til nye laksekonsesjoner. *Adresseavisen*, 02.12.2015, p.18.
- Lo, S. F. & Sheu, H. J. 2007. Is Corporate Sustainability a Value-Increasing Strategy for Business? *Corporate Governance: An International Review*, 15, 345-358.
- March, J. G. 1991. Exploration and exploitation in organizational learning. *Organization science*, 2, 71-87.
- Margolis, J. D. & Walsh, J. P. 2003. Misery loves companies: Rethinking social initiatives by business. *Administrative Science Quarterly*.
- Meld. St. 22 (2012-2013) Forutsigbar og miljømessig bærekraftig vekst.
- Ministry of Trade Industry and Fisheries 2004. Laksetildelingsforskriften: forskrift om tillatelse til akvakultur for laks, ørret og regnbueørret.
- Ministry of Trade Industry and Fisheries 2015a. Melding til Stortinget om vekst i norsk lakse- og ørretoppdrett.
- Ministry of Trade Industry and Fisheries 2015b. Forslag om å åpne for tildeling av løyve til akvakultur til utviklingsformål.
- Mitchell, R. K., Agle, B. R. & Wood, D. J. 1997. Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of management review*, 22, 853-886.
- Montiel, I. 2008. Corporate social responsibility and corporate sustainability separate pasts, common futures. *Organization & Environment*, 21, 245-269.
- NCE Seafood Innovation Cluster. 2015. *The cluster* [Online]. Available: [http://www.seafoodinnovation.no/page/7/About\\_us](http://www.seafoodinnovation.no/page/7/About_us) [Accessed 09.11 2015].
- Nidumolu, R., Prahalad, C. K. & Rangaswami, M. R. 2009. Why sustainability is now the key driver of innovation. *Harvard business review*, 87, 56-64.
- Nofima 2015. Rettslig rammeverk for norsk havbruksnæring - Kartlegging av dagens status. Tromsø: Nofima.
- Norges Miljøvernforbund 2010. Faktarapport om miljøkonsekvensene ved oppdrett av nordatlantisk laks i Norge.
- Porter, M. & Kramer, M. 2006. Strategy and society: the link between corporate social responsibility and competitive advantage. *Harvard business review*, 84, 78-92.
- Porter, M. E., Hills, G., Pfitzer, M., Patscheke, S. & Hawkins, E. 2011. Measuring shared value: How to Unlock Value by Linking Social and Business Results. Cambridge, Massachusetts: FSG.
- Porter, M. E. & Kramer, M. R. 2011. Creating shared value. *Harvard Business Review*, 1-17.
- Shrivastava, P. 1995. The role of corporations in achieving ecological sustainability. *Academy of management review*, 20, 936-960.
- Simon, H. A. 1964. On the concept of organizational goal. *Administrative science quarterly*, 9, 1-22.
- SSB. 2015. *Akvakultur, 2014, foreløpige tall* [Online]. Available: <https://www.ssb.no/jord-skog-jakt-og-fiskeri/statistikker/fiskeoppdrett/aar-foreloepige/2015-06-02> [Accessed 09.11 2015].
- Starik, M. & Rands, G. P. 1995. Weaving an integrated web: Multilevel and multisystem perspectives of ecologically sustainable organizations. *Academy of Management Review*, 20, 908-935.
- Strand, R. & Freeman, R. E. 2013. Scandinavian Cooperative Advantage: The Theory and Practice of Stakeholder Engagement in Scandinavia. *Journal of Business Ethics*, 127, 65-85.

- Svåsand, T., Boxaspen, K. K., Karlsen, Ø., Kvamme, B. O., Stien, L. H. & Taranger, G. L. 2015. Risikovurdering norsk fiskeoppdrett 2014. Bergen: Institute of Marine Research.
- Taranger, G. L., Svåsand, T., Kvamme, B. O., Kristiansen, T. & Boxaspen, K. 2014. Risikovurdering norsk fiskeoppdrett 2013. Institute of Marine Research.
- The Aquaculture Act 2005. Act of June 17th 2015 no. 79 about aquaculture (The Aquaculture Act).
- The Food Safety Authority 2014. Tap av Laksefisk i Sjø. Trondheim: The Food Safety Authority.
- Thorstad, E. B., Todd, C. D., Bjørn, P. A., Gargan, P. G., Vollset, K. W., Halttunen, E., Kålås, S., Uglem, I., Berg, M. & Finstad, B. 2014. Effekter av lakselus på sjøørret - en litteraturoppsummering. Trondheim: Norsk institutt for naturforskning.
- Tveterås, S. 2002. Norwegian Salmon Aquaculture and Sustainability: The Relationship Between Environmental Quality and Industry Growth. *Marine Resource Economics*, 17, 121-132.
- Van Marrewijk, M. 2003. Concepts and definitions of CSR and corporate sustainability: Between agency and communion. *Journal of business ethics*, 44, 95-105.
- Vogel, D. J. 2005. Is there a market for virtue? The business case for corporate social responsibility. *California Management Review*, 47, 19-45.
- WCED 1987. Our Common Future. Oxford: World Commission on Environment and Development.
- Yin, R. K. 2003. *Case study research: Design and methods*, Thousand Oaks, Sage publications.