Ripple Effects for the Future

Study of lasting value creation for the case of North Norway

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"*Yet, in any event, economic development brings about extra-economic effects in the social realm that have further repercussions within the economy. This kind of development expresses itself everywhere in national life. In each area of national life it assumes special, idiosyncratic forms – its effects on each area of national life can be captured using the categories specific to that area. As a final point one can say that the ripple effects of the dashing of the waves of this kind of development can be felt everywhere including within the economy, without it being possible to explain its causes from within the economy*"

(Schumpeter, 1912:65)

Preface

This thesis is the final exam and summation of schooling for the Master of Science program in Energy Management at the Bodø Graduate School of Business, in Norway, and MGIMO University in Moscow, Russia.

"Ripple effects in Northern Norway" has been a hot topic in popular media and political debates as of late. Current studies, political opinions, and real life examples suggest that ripple effects have been inadequate for communities in the unique biological, social, and economic landscape of North Norway, so questions naturally arise about what should be done to correct this in the future. The focus of this thesis will be whether alternative policies could be used to correct these shortcomings, and promote sustainable ripple effects that will benefit North Norwegian society long into the future.

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Marius Gavenas & Matthew Hastad

Sammendrag

Gjeldende studier samt folkemeningen har vist ringvirkninger fra olje-og gassprosjekter i Nord-Norge for å være utilstrekkelig. Spørsmål om hvordan man kan endre disse svakhetene har vært sterkt diskutert både i statlige sirkler, i tillegg til populære medier. I tillegg meninger om metoder hvordan man kan opprette permanente ringvirkninger, som kan vare lenge etter at olje-og gass tar slutt, har blitt uttrykt. USA har iverksatt ulike lover for å endre lignende problemer, og denne oppgaven samler og analyserer ringvirkningene og deres potensial bærekraft som disse lover har fremmet. Videre ble Nord-norske aktører intervjuet for å få deres perspektiv på hvilke ringvirkninger er ønsket i Nord-Norge. Analyseresultatene av de amerikanske ringvirkningene ble så sammenlignet med resultatene av analysen av det Nordnorske perspektivet, for å se om liknende politikk kan eller ikke kan gjennomføres i Nord-Norge for å forsøke å oppnå bærekraftige ringvirkninger. Dette ble etterfulgt av en diskusjon om hvem som burde være ansvarlig for å opprette, motta og opprettholde disse effektene i Nord-Norge. Basert på resultatene, forskerne anbefaler at liknende politikk blir gjennomført i Norge, med delt ansvar mellom myndigheter, interessenter og oljeselskapene, for å oppnå en balanse av effekter som er ønsket av alle parter involvert i videre bærekraftig utvikling i Nord-Norge.

Abstract

Current studies as well as popular opinion have shown ripple effects from oil and gas projects in North Norway to be inadequate. Questions about how to amend these shortcomings have been heavily discussed both in governmental circles, as well as popular media. Furthermore, opinions about methods to create permanent ripple effects have been expressed. The US has implemented various pieces of legislation to amend similar problems, and this thesis gathers and analyzes the ripple effects and their potential sustainability that these legislation examples have promoted. Furthermore, North Norwegian stakeholders were interviewed to gain their perspective on what ripple effects are desired in North Norway. In the discussion, the analysis results of US ripple effects were compared to analysis outcome of ripple effects that are desired by North Norwegian stakeholders, to see whether similar policies may or may not be implemented in North Norway as an attempt to achieve similar results. The study then proceeds with a discussion over who is responsible for creating, obtaining, and even maintaining these effects in North Norway. Based on the results, the researchers recommend that similar policies are implemented in Norway, with shared responsibility among government, stakeholders and petroleum companies, to achieve a balance of effects that is desired by all stakeholders involved in further sustainable development of North Norway.

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Abbreviations

CPSC – US Consumer Product Safety Commission
CSR – Company Stakeholder Responsibility, as applied in this thesis
EEOC – US Equal Employment Opportunity Commission
EIA – Energy Information Agency
EPA – The Environmental Protection Agency
GOM – Gulf of Mexico
GOMESA 2006 – Gulf of Mexico Energy Security Act of 2006
LWCF – Land and Water Conservation Fund
MLGRD – Ministry of Local Government and Regional Development
MMS – Mineral Management Service
MPE – Norwegian Ministry of Petroleum and Energy
NCS – Norwegian Continental Shelf
NCSA – Norwegian Central Statistics Agency
NGO – Non-Governmental Organization
NPD – Norwegian Petroleum Directorate
OCS – Outer Continental Shelf of the United States of America
OSHA – US Occupational Safety and Health Administration
SDFI – State's Direct Financial Interest
SIB AS – Competence Center for Applied Research in Economics and Innovation
TBL – Triple Bottom Line

Glossary

Ripple Effects – The authors define a *ripple effect* as "*any activity, impact or value created from the establishment or operations of a certain business or industry in a certain area."* This definition alludes to the complex and heterogeneous nature of such effects.

Sustainable Development – The using of natural resources for permanent or lasting value creation that can be enjoyed by future generations. This can be demonstrated through the TBL theory of economic, societal, and environmental sustenance.

Company Stakeholder Responsibility – A way to manage relationships with stakeholders that takes into account the interrelation of business/organization and society, while at the same time acknowledging the depth and breadth of ripple effects, and their impact on each stakeholder.

North Norway – Unique economic, social, and environmental area of Norway in which current petroleum projects have failed to create adequate ripple effects to local and regional communities.

Gulf of Mexico Energy Security Act of 2006 – Piece of legislation implemented in the USA which stipulates the sharing of Gulf of Mexico OCS revenues with the four qualifying states closest to the oil and gas projects.

U.S. Land and Water Conservation Fund Act of 1965 – Piece of legislation implemented in the USA that directs governmental oil and gas revenues to various organizations to promote conservation and obtain recreational lands for the public.

1. Introduction and Problem Statement

1.1 Background

Norwegian Oil and Gas History: Past to Present

In 1966, Norway first began searching for petroleum resources along the Norwegian Continental Shelf (NCS), with few favourable results. This drilling marked the beginning of Norway's oil adventure. Ekofisk was the first giant oil field discovered in 1969. The four major Norwegian fields, namely Ekofisk, Statfjord, Gullfaks and Oseberg, resulted in 80% of the overall Norwegian petroleum production by 1990's. Smaller oil and gas fields were discovered during the 1990's along with Ormen Lange, the last significant discovery on the NCS (KonKraft, 2008:5). The discovery rate on the NCS had been increasing, yielding "a find in every second exploration well" (ibid:5). However, despite high discovery rates, the number of commercial findings has declined during the last years. During the last decade only one out of three explorations were regarded as economically feasible, while up to the year 1995 three out of four finds were considered economically viable and could be brought on stream (ibid:5).

The NCS is considered a mature area for oil and gas development, indicating that production of the existing major Norwegian oil fields has reached the peak. Production rose from 1980, reaching a peak of 3.14 million barrels per day (excluding condensate) in 2000, however it has been declining ever since (Green Car Congress, 2006, January 2). Oil field operators on the NCS are hoping to maintain the oil production at levels close to the peak until 2015 (Adams, 2009, April 17).

In 2006 Norway's proven oil reserves amounted to 7.7 billion barrels, allowing Norway to be the leading oil resource "owner" in Western Europe (EIA, 2006 August). Oil reserves belonging to Norway are located on the NCS, offshore the Norwegian coast and could be divided into three sections: the Norwegian Sea, the Barents Sea and the North Sea (ibid). According to the EIA (2006 August), most of the production of the Norwegian oil takes place in the North Sea while the activity in the Norwegian Sea accounts only for a modest share of the total production. While the resources present are important, the authors think it is also crucial to understand what Norway has chosen to do with the revenues obtained from this wealth of natural resources.

Norwegian Fiscal System

In order to control the resource rent of its natural resources, Norway has designed fiscal and political schemes so that the Norwegian government has the dominant stake of oil reserves. The government owned 71% of the local national company Statoil in 2006, which again allowed the government control more than 60% of the country's oil and gas production (EIA, 2006 August). At the same time the Norwegian government had owned a 44% stake of another company, Norsk Hydro. After the merger of the two companies, the governmental control over the Norwegian oil and gas production increased. The major international oil and gas companies, such as ConocoPhillips, ExxonMobil and BP, are also present on the NCS, however, in order for these companies to operate on the Norwegian oil and gas fields, they have to work in partnership with the Norwegian national company StatoilHydro (ibid), now Statoil (*authors' note*). Furthermore, the companies are levied total taxes at the level of 78%.

Oil revenues have been the major driver of Norwegian economic growth since the production from the first field Ekofisk started in 1971. According to the report by the MPE in cooperation with the NPD, revenues coming from oil and gas activities accounted for 33.5% of the country's total income and 26% of GDP in 2008 (MPE & NPD, 2009:14, 24).

Challenge of Production Moving North

Since the oil fields below the 62nd parallel are matured and production has declined by 30% since 2000 (KonKraft, 2009:3), new possibilities for oil and gas drilling are being considered. Areas in Barents Sea and the fields Nordland VI, Nordland VII and Troms II are being considered due to their large petroleum potential. The possible fields in Nordland VI and Nordland VII will lie 60-100 km from the coast of the Lofoten islands (ibid:5). The areas are expected to possess 3.4 billion barrels of oil (Adams, 2009, April 17). These areas are currently under moratorium for oil and gas exploration because of the important fishing areas (400 000 metric tons of cod annually) and nature that attracts tourists (ibid). The areas were closed to oil and gas companies while the previous Parliament was in session; however the elections in September opened the possibility for a review of the moratorium in spring of 2010 (ibid). The studies are being conveyed before the area management plan will be presented to the Parliament for the final decision. There is no unity among and within the Norwegian political parties on the topic. The Labour party (Ap) is against oil and gas exploration in Lofoten, however some of the party's regional delegations still hoped to get the majority votes in the party's meeting and turn the party's position in favour to oil and gas

activity in the north-western Norway (Lode, 2009, April 17). The meeting ended without taking a clear stand in the issue…

The former Petroleum and Energy Minister, Aslaug Haga, also agreed that the main challenges for Norway and the Norwegian society in the nearest future will be the climate debate and production and exploration of new fields moving up north (Business News, 2008, January 14). The industry is looking north in order to find new oil and gas fields in these sensitive and still legally restricted areas. However, at the presence of declining oil production on the NCS, Norway will face political and economic challenges that will have to be overcome if the country is to continue reaping substantial revenues from the oil and gas industry, thus sustaining its economic growth.

Issue of Ripple Effects

As the climate debate and environmental questions follow the discussions of the Norwegian petroleum industry "invading" the northern areas, another topic has become a hot issue in the debate on the management plan of the hydrocarbon resources in North Norwegian territorial waters. Value creation from hydrocarbon extraction to local inhabitants in the northernmost parts of Norway, or a popular term *ripple effects*, has barely slipped any publication and debate on High North resource management. As mentioned in the previous section, it is no secret that Norway has greatly benefited from the petroleum during the last four decades. Oil and gas has caused extensive ripple effects on the national level. Norway has a well functioning value distribution system where all counties and municipalities gain a share of the petroleum revenue based on the population in the area. However, some areas in southern Norway, in addition to subsidies from the state, earn extra revenues from property and income taxes from oil and gas companies and their suppliers that have established their businesses in the areas due to petroleum project proximity on the NCS. These cities include Stavanger, Kristiansund, Bergen and other locations on the south-western coast of Norway. Sectors of the public and representatives of the four northernmost counties believe it is now the North Norwegians' turn to enjoy more growth in their locations if petroleum activity picks up the pace.

1.2 Problem Actualization and Relevance

Seen emerging from the presentation above, the topic of ripple effects is relevant in current public media publications and political debates concerning the area. Local communities are

being convinced that petroleum activity in the area will cause only positive effects to the community. Nonetheless, as will be presented in Chapter 4, the recent projects of Skarv and Goliat have, to a certain extent, failed to fulfil these promises to local and regional stakeholders. Even the project of Snøhvit in Hammerfest municipality, that has caused substantial ripple effects of 150 m NOK per year to the municipality, has failed to create greater value to the region as a whole. The supply industry is greatly developed in southern parts of Norway while the northern parts lack this kind of competence and infrastructure, thus making the North less competitive in possible tender competitions for valuable supply contracts. This fact implies that ripple effects in the form of contracts will travel to southern parts of Norway or even abroad. These examples outline some of the current problems that are being discussed. Questions such as "How do we create ripple effects in Northern Norway?" and "What is the best strategy for long term development?" are heavily debated amongst stakeholders in the area. Many feel that these concerns must be considered for future developments in the Barents Sea, as well as Lofoten and Vesterålen, if these areas are to be opened for petroleum exploration.

Furthermore, oil and gas business is considered unsustainable due to its depletion of non-renewable resources. The extraction business may be deemed as unsustainable not only to nature, but also to society. According to Kvadsheim & Fjose (2009, March 22), the construction phase of Snøhvit only created temporary employment for local inhabitants, meaning that when the project came into its operational phase, employment was reduced. This is just one example of the unsustainable nature of the petroleum industry towards society. One may argue that despite the reduction of employment the community still gains its tax revenues, however these revenues fall into the budget of only one municipality and will also disappear after the project is completed. This brings up further questions such as "How these revenues should be split?" and "Is it fair to develop one area more heavily than another?" and "Can we gain ripple effects far beyond the lifecycle of oil and gas projects?"

The Chairman of a North Norwegian oil and gas company North Energy, Johan Petter Barlindhaug, expressed an opinion that North Norwegian supply companies cannot compete for contracts with southern or even foreign ones (Paulsen, 2010, February 16). The chairman also points out the importance of the establishment of a fund for environmental protection, as well as oil spill response improvement (ibid). According to the chairman, a fund may also be used for enhancement of marine and maritime research, technology research, and infrastructure development in northern areas of Norway (ibid). Such a fund could create

ripple effects, or permanent effects, as the chairman chooses to call them, for the areas affected by operations of the extraction industry. The authors question the word *permanent* and choose to replace it with the term *sustainable* because being sustainable in nature alludes to a sense of everlasting or permanence. Such a statement could then rephrase the chairman's opinion as:"Such a fund could create ripple effects or *sustainabl*e effects".

Based on these current discussions, both about North Norwegian suppliers being incapable to compete with well established competitors down south or abroad, and the lack of ripple effects created from current northern Norwegian oil and gas projects to local and regional communities, the researchers contemplate about how to avoid these shortcomings in future projects. Using ideas based off of insufficient ripple effects and ideas arising from the opinion expressed by the Chairman at North Energy on creating "sustainable ripple effects" by establishing a fund, the researchers choose to examine the following problem statement in this thesis:

To what extent can alternative oil and gas policy examples contribute to creation of sustainable ripple effects for North Norwegian stakeholders?

In order to further examine this challenge, one should address different aspects of the problem. Therefore, one needs to choose research questions that will help analyze whether this statement is conceivable or not. As a qualitative study, the authors look for partial answers that allow one to draw a bigger picture or overall assessment of the statement's applicability. In order to do this, one needs to break the problem statement down into smaller, workable elements.

In order to address the *"alternative oil and gas policy examples"*-part of the research statement, the researchers have decided to analyze existing examples from other parts of the world. Among these examples one may mention the Alaskan and Canadian models; however, the researchers choose to look at the American system where the GOMESA 2006 and LWCF policies have been applied. These examples could be relevant to the North Norwegian stakeholders due to the purpose of these laws to appoint more of the oil and gas revenues to the states which are heavily affected for their further development.

Now that the examples are chosen, one should analyze the elements of *sustainability* and *ripple effects*. In order to address these elements the following research questions, through the lens of ripple effect and sustainability theories, will have to be answered:

- To what extent and what type of ripple effects do GOMESA 2006 and LWCF promote?
- To what extent the ripple effects promoted by GOMESA 2006 and LWCF are sustainable?

When getting answers to these questions, one should analyze the Northern Norwegian stakeholder perspective of the problem statement. The research question's that should be examined, again through the lens of ripple effect and sustainability theories, are:

- To what extent and what type of ripple effects do Northern Norwegian stakeholders want?
- To what extent the ripple effects desired by Northern Norwegian stakeholders could be sustainable?

Being able to answer these research questions will allow the researchers to draw links between the proceedings of the USA policy examples and the desires of the local and regional stakeholders. These links allow the researchers to delve into the heart of the issue, which is "*to what extent such policies can be applied in Norway*."

Through examination of the main research questions, the authors were faced with a sub-research question that naturally arises from the problem statement. This question, which will be answered through the lens of company stakeholder responsibility, is:

- Who should be kept responsible for creating ripple effects in Northern Norway?

In order to make this study both academic and scientific, the authors had to choose a theoretical lens through which these questions can be analyzed. This provides the study with a strong framework and gives it scientific relevance. As mentioned before, the first four questions will be explored through both Ripple Effect and Sustainability theories, while the sub-question will be examined by applying Company Stakeholder Responsibility theory. These theories will be looked at and argued for in depth in Chapter 2.

1.3 Disposition and Outline of Thesis

As mentioned above, the theoretical framework for the research consists of Ripple Effects, Sustainability and Company Stakeholder Responsibility theories that will be dissected and argued for in Chapter 2. Chapter 3 will more closely describe the research strategy and

methods applied for data collection and analysis. Chapters 4 and 5 will introduce the reader to the case of North Norway and the US policy examples, respectively. Chapter 6 will present the empirical findings derived from collected data, while Chapter 7 will discuss these findings towards the theories and will answer the research questions. In Chapters 8, 9 and 10 the authors will present practical and theoretical conclusions of the study, propose further research possibilities and will sum up scientific and practical implications that thesis provides.

1.4 Limitations

The applicability of alternative policies to promote ripple effects in Norway could be analyzed on various bases. The authors would like to emphasize that one should not be mistaken of the nature of the study because of choosing two countries. One may assume that the research chooses to compare two countries, thus conveying a comparative study of the backgrounds and political systems and tax regimes in countries at question. It is important to note that this thesis is not aiming to be a comparative study. The authors have contemplated on which common grounds the analysis should be based on to give the paper a scientific weight. The decision made is to exclusively analyze the data on the USA legislation regarding petroleum revenue sharing and possible ways to spend the revenues that could create ripple effects. The connection to Norway in the thesis will be made through the perspective of the Northern Norwegian stakeholders. The basis and limitation for the thesis here will be that the conclusions will be reached after analyzing the ripple effects promoted by the American system and how these are represented in needs and wishes of the Norwegian stakeholder perspective. The thesis does not aim to analyze political systems and tax regimes in the countries, thus solely limiting it to the opinions of the Norwegian stakeholders.

2. Theoretical Framework

The next step in the study is to highlight and define the three theories that make up the theoretical framework. This framework is the basis through which the data will be analyzed and interpreted later on in the paper. To understand how it is the authors interpret the data, the reader must have a complete and thorough understanding of these theories and the terms associated with them. The research problem stated in the introduction could have been analyzed from various angles. The researchers considered the possible theories that could shed the light on the problem to be within socio-economic, environmental economics, stakeholder dialogue and communication-related fields. However, the final choice landed on the theories of Ripple Effects, Sustainability and CSR as the most appropriate and suitable for this thesis. As ripple effects are a rather complex and heterogeneous phenomenon, the theories that would allow one to analyze the subject matter also represent various angles. The three theoretical concepts applied in the research paper allow one to analyze the research statement in depth and contribute to drawing a holistic picture of the subject matter. Every single element in the research problem, namely *ripple effects*, *sustainability* and *stakeholders*, could be directly addressed and described by employing the theories mentioned above. By analyzing the research problem through the lens of a theoretical framework consisting of all three theories, the reader may understand the interconnectivity of the elements, thus making the theories chosen perfectly suitable for further examination of the issue. The following chapter will therefore introduce Ripple Effect theory, Sustainability theory, and Company Stakeholder Responsibility theory, followed by arguments for relevance and importance of these theories to this particular study, as well as interconnectivity of the theories.

2.1 Ripple Effects Theory

The notion of ripple effects has been widely used in relation to the discussions surrounding the oil and gas industry. The term *ripple effects* has been used in different settings when calculating the economic value created for the local, regional and national communities as a result of a start-up of a certain business activity (Henriksen & Sørnes, 2010:8). However, the actual definition of ripple effects varies across the literature. Often times, an author uses the example of throwing a stone into a pond thus creating ripples that branch out and spread throughout the entire pond. Based on this model, the authors loosely define ripple effects as *any activity, impact or value created from the establishment or operations of a certain business or industry in a certain area*. It is no secret that the development of the petroleum

industry in Norway has created substantial ripple effects on the national level as the main industry in the country is the petroleum exploration and related technological solutions businesses. Norway has created its fiscal system in a way that would allow the future generations enjoy the benefits of resource rent from the country's major resource. However, initial petroleum projects on the northern parts of the NCS, as well as the intentions in recent years to open new areas for petroleum exploration and extraction have engaged the industry, politicians, NGOs and communities into more debates about not only creating national, but also regional and local ripple effects. All these different interest organizations represent different groups of the Norwegian societal structure. This shapes their interests in and agendas about the area in question. It also points to the fact that they all have different intentions and opinions about creating ripple effects. This situation leads to ripple effects being a complex and heterogeneous phenomena, as illustrated in the following section. Hereby, the authors feel it is important to set a first boundary for this thesis and present the first part of the theoretical framework that the research questions will be discussed within and lay out the existing theory on the research done on the *ripple effect* phenomena in the past.

2.1.1 Complex Nature of Ripple Effects

It is important to note that the nature of ripple effects is complex and often far reaching, thus making the effects unforeseeable and unpredictable (Henriksen & Sørnes, 2010:62). Furthermore, the volume of ripple effects varies throughout the different stages of a business activity. For example, the *initial* ripple effects from the construction phase of a petroleum installation will disappear once the construction phases are completed, while the *ongoing* effects will pick-up the pace once the plant enters into an operational phase (ibid:9). According to the report by Henriksen and Sørnes (2010:60), the varying perceptions of the term across the different societal layers add to the complexity of the subject matter. These varying settings make the comparison of the results of various ripple effect studies incomparable. When analyzing the effects, some stakeholders "include all activity within a region (as the MLGRD and petroleum companies), others exclude parts of the activity, based on type of activity (as the MPE) or on ownership (as the National Center for Innovation and Entrepreneurship), or on subjective evaluations on what is regarded as having an impact on the development within a region (as the High North Center for Business and SIB AS)" (ibid:62). Some of these reports use methods of mathematical calculations, others describe the ripple effects in narrative form and some institutions do both (Henriksen & Sørnes, 2010: 62).

The main intentions behind many of the previous studies have been to quantify and express the ripple effects as a number. Often ripple effects from a business activity are calculated by applying mathematical methods where one seeks to quantify and calculate a particular number that would express the value in monetary values or work places created to the community. These models apply a multiplier effect, simplify the concept and tend to lose the complex nature that ripple effects are featured by (ibid:8). However, recent studies in the Gulf of Mexico focus on the social aspects of the term and analyze how offshore petroleum activity affects the coastal communities in forms of their health and safety, family life, minorities and elderly, as well as employment of women (ibid:14). These studies imply that the nature of the ripple effects is rather complex and heterogeneous, thus keeping a focus on the fact that ripple effects have monetary, as well as non-monetary aspects (ibid:14). This thesis is an example of partial combination of the methods where quantification models will be used only as a frame to group, describe and analyze ripple effects.

2.1.2 MODAG Model

One of the models used by the Norwegian Central Statistics Agency (NCSA) is a so called MODAG model. The model quantifies and calculates ripple effects on the national level. Growth in primary activity induced by the petroleum activity provides, according to the model and the NCSA, a multiple of 4 (Oterhals & Hervik, 2006:14). The multiple of 4 means that, in case of an increase in the employees of petroleum companies in Norway by 1000, the overall national ripple effect, expressed in the amount of employees, would be 4000. However, Oterhals and Hervik (2006:14) believe that this multiple could be used only on a national scale and is not adequate on the local and regional levels because the ripple effects originating from establishment of local bases and localization of operational activities in a limited region are not representative to the ripple effects on the national level to the same extent, therefore making the multiple of 4 insufficient when calculating local and regional ripple effects. Due to its incompatibility, the authors of the report conclude on their own multiple that is lower than the one applied by the NCSA. However, the purpose of this thesis is not to calculate and express the ripple effects in a mathematical manner but to analyze the types and perceptions of the phenomenon. Therefore, the researchers choose not to present the theoretical part related to the issues of calculating an appropriate multiple factor for estimations of the local and regional effects, to a greater extent but rather focus on the part of the theory where ripple effects are grouped according to their type and origin.

When applying the MODAG model, Otterhals and Hervik (2006) sort the ripple effects into four groups. These are: Supplier Effects, Consumption Effects, Tax Effects and Investment Effects. All these four groups of effects will be presented in more detail in the following section.

Supplier Effects

The authors of the report "Ringvirkninger av petroleumsvirksomheten i Kristiansund regionen" do not elaborate on the definition to a greater extent, however it is clear that the effects bore in mind are those effected to the supply industry, namely supplies to the petroleum industry in the form of materials, technology solutions, services and other direct supplies to the petroleum industry in the region. The authors also mention the supplier effects that may not be directly and naturally linked to the petroleum industry, nonetheless these effects are also a result of the petroleum industry's presence in the area. These effects would include hotel services, restaurant meals, usage of taxi services and local purchases that are not directly related to the petroleum activity.

Consumption Effects

The private consumption effect appears through improved purchasing power of the inhabitants employed in the petroleum activity (Oterhals & Hervik, 2006:14). The phenomenon appears when the petroleum workers use parts of their income locally and thus contribute to creating new work places at groceries and other local consumer goods institutions. These increased levels of consumption and larger amounts of work-places from them, contribute to creating work places at other purchasing power-related businesses, let it be the suppliers of goods to grocery stores or other consumer goods producers and deliverers.

However, Oterhals and Hervik (2006:14) point out the inadequate sides of this ripple effect and the possible short-comings in comparison to what was expected by the local stakeholders before the start-up of petroleum activity in a region. The authors emphasize the deficiency of this effect and its dependence on an amount of workers actually living and settling down in the region and the amount of workers coming only to work (Oterhals & Hervik, 2006:14). If the majority of workers/professionals come to an area only on business trips and stay there only for a certain period of time, assumingly two weeks, then parts of their income (probably the substantial ones) will most certainly be used in the area other than the petroleum region, most likely where they live and have families and homes.

Another negative impact is particularly worrisome to small regions where oil and gas activity takes place. The short-coming in this situation is the fact that most consumer goods are produced outside of this region, in more industrialized places. Also, many services consumed or used by the inhabitants are bought from industrial centers and are not locally produced (ibid:14). This fact limits the extent of this type of ripple effect and its possible significant contribution to well-being of a small society, despite the improved purchase power of the local inhabitants.

Yet another factor affecting the consumption ripple effect is how the people's relocation affects the real estate market. Oterhals and Hervik (2006:14) mention that the local consumption effect will be more significant if the new-comers have to build new houses, settle down with their families in the petroleum region, rather than moving into already existing houses, and those which require limited input from the purchaser.

Tax Effects

Tax effects and additional income to the local budgets are greatly dependent on the amount of people moving to the region (ibid:14). The greater the amount of new-comers settling down in the region, the more substantial sums of financial support will be transferred to the local budget from the national budget, while the local budget will simultaneously enjoy greater income from the local taxes as a result of more people living in the area and paying the obligatory communal fees. In addition, increased overall activity in the petroleum, supply and consumer goods spheres will contribute to higher tax incomes. Increased income to the local budget can eventually induce improved investment activity in the public sector in forms of better standards of health and educational institutions, roads and other local and regional infrastructure.

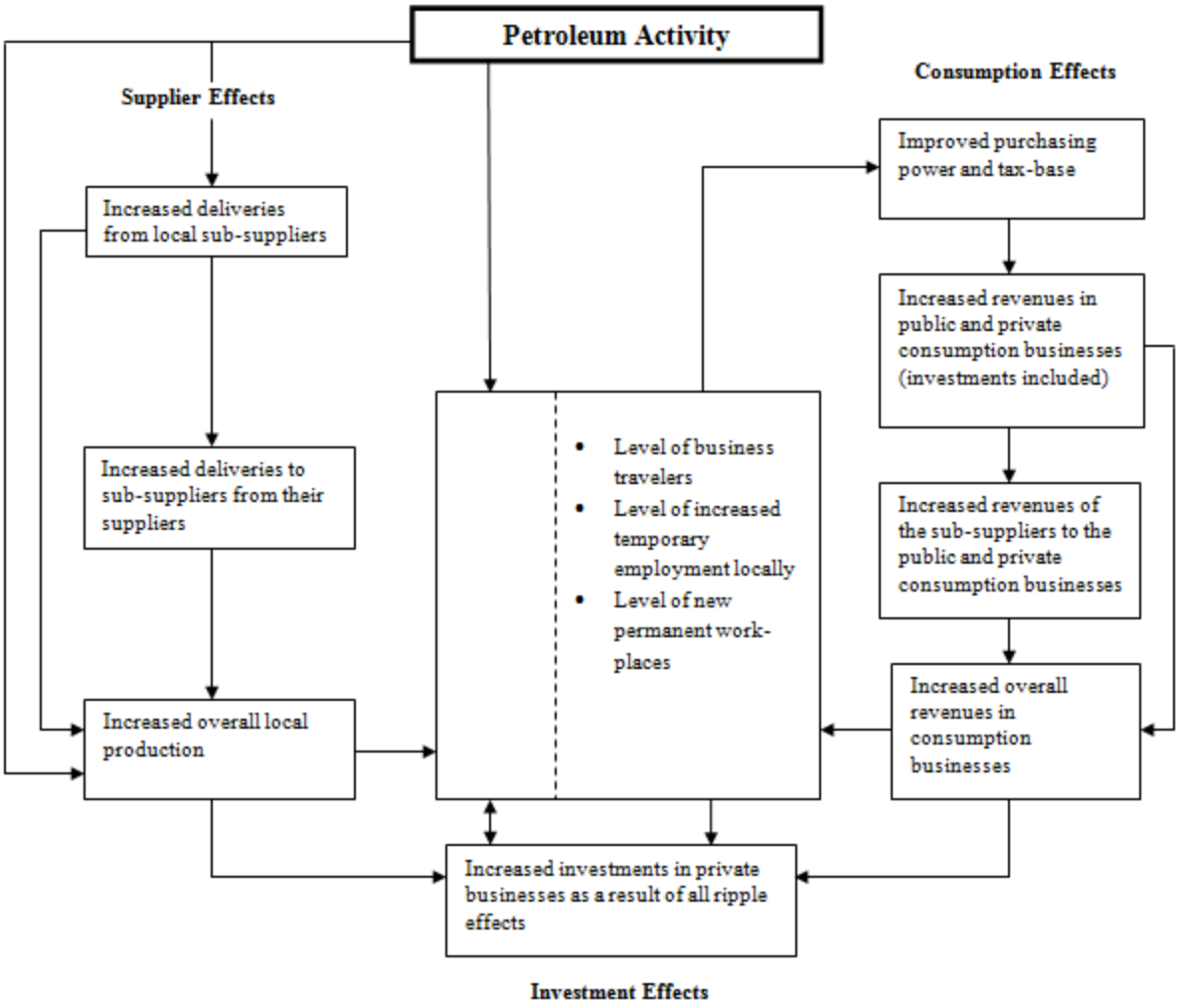

Figure 1: Local Ripple Effects of Petroleum Activity *(Adapted from Oterhals & Hervik. 2006)*

Investment Effects

According to Oterhals and Hervik (2006:16), the *investment* effects in the private sector come as a result of all the effects mentioned above. Improved purchasing power allows people to not only use their income on consumer goods but also improve their living standards and purchase real estate. Ripple effects in the supply chain cause investments in capacity improvement of the local stores and storages.

Figure 1 illustrates all the ripple effect groups discussed in this section.

2.1.3 Ripple Effects Classification by Cooper and Smith

In the section above, the authors have presented classification of ripple effects in a petroleum industry based on the MODAG model. This paragraph presents a slightly different

classification of ripple effects. It is necessary to be acquainted with as many of the various types and classification methods of ripple effects as possible due to the study's purpose of finding out what these effects are from a stakeholders' point of view, as well as analyzing the applicability of a n alternative policy as a promoter of lasting local and regional ripple effects.

The study by Cooper and Smith (2005) focuses on calculating catalytic economic effects in the European airport industry, however they mention three other types of ripple effects in the study: direct, indirect and induced. Even though the research report by Cooper and Smith focuses on the economic effects from the air transport activity, it is possible to adapt their classification of ripple effects to the petroleum industry too because the oil and gas exploration and production also results in more local, regional and national activity, thus stimulating economic growth.

According to Cooper and Smith (2005:11), the direct, indirect and induced effects have been paid more attention to in the previous studies, while the catalytic effects have been more neglected. Below are all four groups of ripple effects presented according to their type.

Direct Ripple Effects

Direct effects are the effects spurring from increased activity in the industry in question. In an instance of the petroleum industry, the direct ripple effects would include increased employment and output from the exploration and production part of the industry. Examples of direct ripple effects in this case could be increases in drilling, extraction, support and refining activities. Definition of direct ripple effects from the classification by Cooper and Smith (2005) could be related to parts of the Oterhals and Hervik's (2006) application of the MODAG model and more precisely to the section of the model that does not have an assigned definition, i.e. does not belong to the "supplier", "tax", "consumption" and "investment" definitions. As shown in Figure 1, the biggest box in the middle sums up the types of employment as a result of increased petroleum activity in the region. It is important to note that this box does not entirely mean increased employment in petroleum industry exclusively but also involves the employment in supply and consumer goods industries. Oterhals and Hervik (2006) did not separate the employment effects in exploration and production part of the petroleum industry from other industries, therefore *direct* impacts do not appear as a separate section in their classification, yet there is a partial connection to Cooper and Smith's (2005) definition of *direct* ripple effects.

Indirect Ripple Effects

The second effect described by Cooper and Smith (2005) is the *indirect* economic impact. The latter effect includes impacts on the employment and output of the supply chain of the industry (Cooper & Smith, 2005:11). Implications of this type of effect mean that the start-up of an industry in a region affects the supplier industry in forms of increasing their output as a result of increased orders from the actor of petroleum industry. Also, increased volumes of orders will provide increased revenues and allows for employment of extra staff. Examples of indirect ripple effects could be supply deliveries of engineering services, rig parts, cement, pipelines, machinery, etc.

The resemblance of indirect effects in Cooper and Smith's (2005) definition to Oterhals and Hervik's (2006) model is clearer here than in the case of *direct* economic impact. Oterhals and Hervik (2006) describe *supplier effects* as a separate section in the MODAG model, however this section still resembles only the "*impacts on output of the supply chain*" part of the Cooper and Smith's (2005) *indirect* impact definition, leaving out the "*impact on employment*" part. The *indirect* impacts on employment in Oterhals and Hervik's (2005) classification are put together in the "big box of employment" located in the middle of the model where the employment effects in the petroleum industry (*direct*) and in the supply chain industry (*indirect*) are listed.

Induced Ripple Effects

The induced economic impacts are defined by Cooper and Smith (2005:11) as: "… impacts on employment and output as those employed directly and indirectly in … services (*read: industry. Authors' note*) use their earnings to buy other goods and services." The interpretation of the definition is rather simple, meaning that the employees in the oil and gas industry, as well as employees in the supply-chain industry, gain income from employment in the petroleum related industries, achieve higher purchasing power and as a result consume more of other goods and services in the region, e.g. groceries and consumer goods, household purchases, entertainment, travel, thus resulting in *induced* ripple effects. The definition in Cooper and Smith's model (2005) has its reflection in the definition of *consumption* effects used by Oterhals and Hervik (2006).

Catalytic Effects

Economic *catalytic* effects are also called *spillover* effects by Cooper and Smith (2005:11). These can be defined as: "the extent to which the growth in … (industry) boosts the performance of other industries" (Cooper & Smith, 2005:11). In the case of petroleum industry's presence in a region, e.g. North Norway, one could analyze what effects this presence would have on tourism, fishing industries, as well as on the environmental quality of the region and its ecosystems. Furthermore, this will affect the well-being of the local people as, in case of negative effects on fishing industry and the environment, the local and regional inhabitants would experience reduced revenues from fishing activity, reduced flows of tourists to the region and eventual health problems due to congestions and pollution. On the upper side, the catalytic effects would result in increased air traffic and more bed-nights at local hotels, thus boosting the activity of these industries.

2.1.4 Model Unification

To unify the two ripple effect classification models previously presented, the authors of the research paper choose to sum up Ripple Effects theories in Figure 2. This model is the one the authors will use in Chapter 7 to dissect and discuss the collected data.

Once the reader has a solid understanding of Ripple Effects theory, it then becomes pertinent to grasp the concept of sustainability in order to shed light upon *sustainable ripple effects*, as

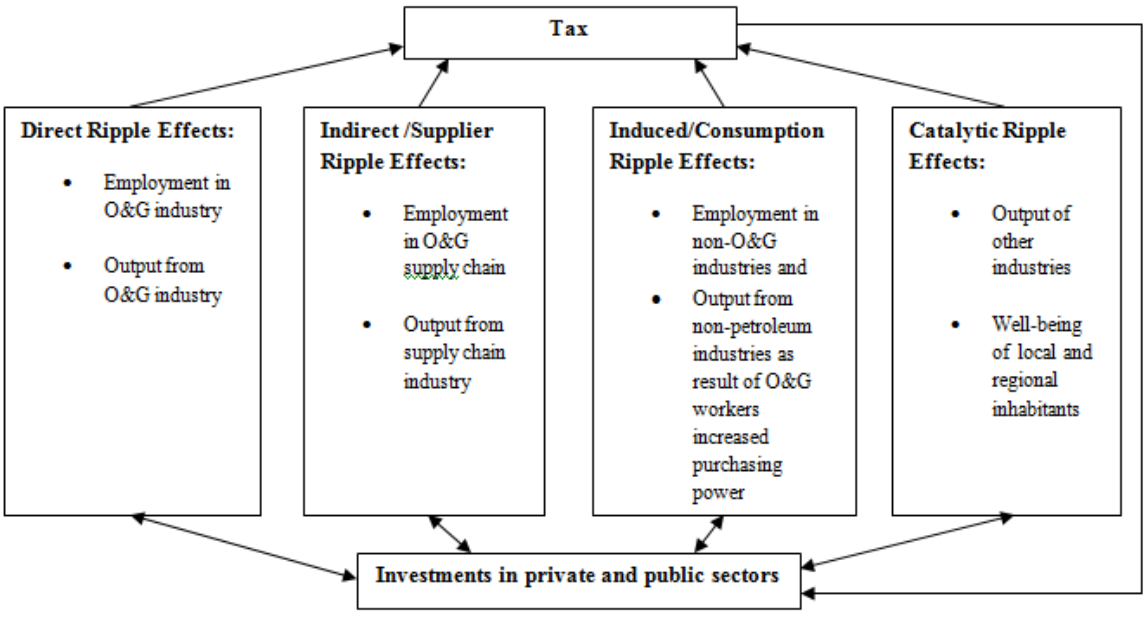

Figure 2: Ripple Effects Model

eluded to in the problem statement.

2.2 Sustainability Theory

Discussions related to the oil and gas industries, as well as other natural resource extraction businesses, have always involved a topic of development. Experts, politicians and representatives of local communities have contemplated about how the industry's presence in a country, area or region and profits reaped from the natural resource extraction activities of these petroleum companies contribute to further improvement of the living standards and well-being of the particular society and the overall region.

In Norway, just as in any natural resource-rich country, these discussions are also present. It is no secret that since the petroleum adventure started in this country in 1970s, the nation has enjoyed substantial benefits leading to constant positive growth and high development rates listing the country among the richest and most developed in the word. Norway has managed to facilitate the profits for the well-being of all of its citizens, thus creating a welfare state. Discussions about facilitation of the benefits from petroleum activity in the country have taken a step forward. Nowadays national and regional politicians do not desire the petroleum tax revenues and the activity by oil and gas companies being used only for development of the overall Norwegian economy, but for regional economies as well. As the petroleum industry is looking north, thus moving from the major industrial centres to sensitive and rural areas, the development of the local and regional areas, where the extraction businesses are to be presented, is becoming a hot topic on the national and regional political layers and therefore has affected the choice of the problem statement for the thesis. The term usually related to regional and local development is the one of *ripple effects,* as discussed earlier. This implies the term's roots originating from the term *development*. Thus, the idea behind creation of ripple effects to the people living in the area where oil and gas exploration or extraction activity takes place is based on the perception of development. The bottom line being the assumption that if one uses a resource and makes financial profits of it, then this money should contribute to development and improvement of the local and regional environment, local businesses, infrastructure and the general long-term well being of the local and regional inhabitants, therefore calling for a further explanation of the theory related to the term *development*.

However, before continuing with the explanation of the term *development,* another relevant term to the research topic should be introduced. Another topic related to the extraction

industry of non-renewable natural resources and the business' nature of depletion of limited resources involves the discussion of *sustainability*. Claims have been put forward to the extraction industry that their operations should be conveyed in a sustainable manner and therefore contribute to sustainable development.

The current issues related to development and sustainability that the representatives of the industry and politicians are facing, and the connection of the latter to ripple effects, facilitates the ground for one of the theoretical framework's parts that the research topic will be examined within, thus calling for further explanation of the term *sustainable development* and the theory related to the subject matter.

2.2.1 Terms "Sustainability" and "Sustainable Development"

In the changing world and everyday environment, new challenges emerge to corporations and organizations on how to address the changing surroundings and the diverse impacts that the corporations' or organizations' activities have on societies and environments surrounding them. The impacts may be rather deep and far reaching, oftentimes contributing to much more than just the economic sector of a business. These impacts may include such examples as; environmental pollution as a result of industries' waste and usage of diverse transportation channels, consequences to local communities when downsizing and closing a factory which may employ a great amount of local inhabitants, a decision made by a government (read: organization) to allow a certain industry to start its activity in the area that might greatly contradict with the local values and traditions, yet useful for the nation as a whole, or even vanishing local culture and local traditional industries as a result of industry's imposed activity in the area.

In order to face these dilemmas, the Rio Summit of 1992 proposed a new concept – *sustainability* (Crane & Matten, 2007:23). Even though the term is becoming more and more popular and takes front page headlines on the environmental and social issues worldwide, the term is still rather vague and has various interpretations and applications (Dobson, 1996). According to Crane and Matten (2007:21), the definition that is still mostly used when discussing the issues of sustainable development is:

> *'Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs'*
>
> *World Commission on Environment and Development (1987)*

The authors Crane and Matten (2007:21) advise to be cautious when applying the term and therefore argue for a more fundamental meaning behind the notion, namely maintenance of a system, "as in ensuring that our actions do not impact upon the system – for example the Earth or the biosphere – in such a way that its long term viability is threatened". Thus, the term *sustainability* lays ground for "intergenerational equality" where the future generations may enjoy the same environmental, economic and social life standards as their ancestors do (Crane & Matten, 2007:21).

The term has its roots in the subject of environmental challenge and has long been considered as a term for preserving the nature and the natural resources, so that the needs of future generations would not be compromised by contemporary consumption culture. However, the term has recently been expanded and two more dimensions, namely economic and social, have been added to the concept (Elkington, 1998). The reasons for expanding the concept by these two additional dimensions dually arose based on the term's impracticality and difficulties in application of the term exclusively to the environmental dimension. After all, there are arguments by other scientists claiming that the worldview is changing and it is becoming more organic and not mechanistic (Ingebrigtsen & Jakobsen, 2006), therefore all three dimensions are interwoven and dependent on each other. An example that Crane and Matten (2007:22) use is one dealing with the building of new roads, where the new infrastructure schemes are devastating to nature due to deforestation and landscape transformations, yet this activity adds value to society and the local economy by creating new jobs and reducing transportation times and costs for local inhabitants and businesses by decreasing the level of vehicle congestions around the area.

2.2.2 Triple Bottom Line

After establishing the origins and discussions related to the term *sustainability* and its interpretation as a means for the achievement of sustainable development, the authors of the thesis would like to more closely review the three dimensions for sustainable development. The term *sustainability* may be approached from three different angles, namely economic, social and environmental (Crane & Matten, 2007:23). The three dimensions may be summed up in the concept of *Triple Bottom Line* (TBL), greatly advocated by Elkington (1998). The concept argues that businesses do not have only one responsibility, i.e. to increase the economic value to the shareholders, but it also has a responsibility of adding social and

environmental value (Crane & Matten, 2007:23). The figurative illustration of the Triple Bottom Line concept is presented bellow.

Figure 3: Triple Bottom Line (*illustration by Kennecott Utah Copper*[1])

Environmental Dimension

Due to its origins in the environmental management perspective, as mentioned above, the term sustainability has been mainly associated with environmental topics. Looking from the environmental perspective, the bottom line is that physical resources should be managed effectively, so that they will be conserved for the future (Crane & Matten, 2007:25). According to the theory, "all bio systems are regarded as having finite resources and finite capacity, and hence sustainable human activity must operate at a level that does not threaten the health of those systems" (ibid:25). Furthermore, environmental sustainability is concerned with issues such as water, air and soil pollution, effects on an increasingly growing problem of climate change, as well as effects on wildlife. The petroleum sector is greatly involved in

[1] http://www.kennecott.com/our-company/

discussions related to sustainability on the *environmental* part of the Triple Bottom Line and its interwoven nature to the other two dimensions of the model.

As illustrated in the model above, the environmental dimension of sustainability focuses on pollution an environmental prevention, and natural resource management.

Social Dimension

This dimension gains particular importance when analyzing the effects of business activities on the indigenous communities, their culture, crafts, traditions and religion (Crane & Matten, 2007:27).

In other words, the social perspective of sustainability defines expectations for responsible corporate/organizational behavior towards the local and regional communities and its stakeholders. According to Vos (2003:142), corporate social responsibility may be defined as "the obligations or duties of an organization to a specific system of stakeholders". Companies/organizations must accept the social reality in shape of values and norms that exist in society, and comply with these norms when planning the company's operations.

The figure above emphasizes that the social dimension is mainly concerned with stakeholder engagement, human health and safety, as well as engagement and responsibility towards communities and education.

Economic Dimension

The economic dimension in the sustainable development model emerged after assessing the existing economic growth models and questioning the long term effects of the economic growth to society. Due to the Earth's limitations to bear with constant economic growth and consequent air and soil pollution, growth of population, industrial activity and non-renewable resource exploitation, the concept of economic growth may not be sustainable and thus may compromise the needs of future generations (Crane & Matten, 2007:26).

Economic responsibility may be looked upon from a narrow perspective or a broad perspective. The narrow perspective analyzes how a company/organization creates value by managing its resources thus creating long-term profitability to a company/organization in forms of growing share price, expanding market share and adding value to its employees and shareholders (ibid:26). In the narrow perspective of economic sustainability the entity strives

to avoid the short term "explosions" of substantial profits that might compromise the "viability for long-term success" (ibid:26).

From the broader perspective, one may analyze what attitudes the company has and what impacts it induces towards and upon the economic framework in which it is embedded in, i.e. creating cartels, paying bribes, avoiding tax payments, etc (ibid:26). Representatives of various industries, by avoiding tax payments and sparing support for local communities, erode the fundaments for their economic performance, thus causing short term profits at the cost of long-term unsustainable performance and the consequent losses (ibid:26).

The economic dimension in the figure above shows that this dimension focuses on creating value to the shareholders, as well as contributing to the overall economic well-being.

Interrelation of all Three Dimensions

Ingebrigtsen and Jakobsen (2006) argue that all three dimensions mentioned above are interwoven and therefore affect each other, and have both intrinsic and instrumental values. The authors claim that "the economy opens for self-realization through creative work and as a means for fulfilling individual and societal consumption desires" (Ingebrigtsen & Jakobsen, 2006:586). Furthermore, "whilst nature and culture have intrinsic value, natural and cultural resources have instrumental value as necessary inputs to almost all kinds of economic activity" (Ingebrigtsen & Jakobsen, 2006:586). In other words, these three dimensions should not be looked upon as existing on their own. One should bear in mind that while changing the features and outcomes of one dimension, the other two will follow.

2.3 Company Stakeholder Responsibility Theory

After discussing sustainability and its correlation to ripple effects, the researchers now turn attention to the concept and theory of Company Stakeholder Responsibility, and how it too relates to both the concept of ripple effects, as well as its relation to Northern Norway in particular. Arising from the background of business ethics, Company Stakeholder Responsibility is a reworking of the model of Corporate Social Responsibility. To be clear, the authors of the paper will use company stakeholder responsibility as part the theoretical framework, but in order to do so one must understand where it comes from, and how it developed. To do so, one must first look at Corporate Social Responsibility. The authors deem Company Stakeholder Responsibility as CSR in this thesis, which is opposed to the more popular definition of CSR as Corporate Social Responsibility.

Corporate Social Responsibility has become a hot-bed topic in the past ten years. In Norway, it has become such a catch phrase that nearly every business has a policy regarding it, or has at least some knowledge about what is being discussed. With the possibility of opening the NCS in the North comes the possibility for great profit not only to the companies extracting resources, but also the communities, surrounding governments, and even the possibility of improving or maintaining the delicate environmental balance currently in place. Tax revenue from the land and production rents can be used to infuse the area with a newfound source of income, while at the same time new business operations bring the potential for new jobs in the area. Local contracting would create large amounts of revenue to local businesses helping to ensure growth and longevity. Revenue may be spent on increasing tourism, or even on the preservation of the natural environment which is unique to this area. These are just a few of the options that are available to the stakeholders in North Norway, but, as mentioned before, the authors see a problem when looking to the past and what has been done historically in other parts of Norway regarding the same topic.

While much talk is done about the ripple effects caused by oil and gas activity, very little is done in the actual real world context in order to ensure that these ripple effects are realized. Thus, the next question to be asked is, "who should be kept responsible for creating ripple effects in Northern Norway?" Must a company be philanthropic in its efforts and go out of its way to improve or enhance the quality of life for all those it comes in contact with, or is it enough to simply pay taxes and conduct business in a way that provides maximum return to shareholders while neglecting the community in which it operates? While both of these views are rather extreme in opposite ends of the argument, the question must be asked by not only the company itself, but also by governments and various other stakeholders who will be involved in the area. This is where Company Stakeholder Responsibility comes into play. In order to get a better understanding of exactly what implications this term has for the study, one will need to look further into the background of CSR in order to get a better grasp on what the theory is all about.

2.3.1 Brief History

To begin with, Company Stakeholder Responsibility is a fairly new yet hotly debated theory regarding a company's responsibility to its surrounding society. It emerges out of the school of business ethics, following closely on the footsteps of corporate social responsibility. In order to get a better understanding of why the authors chose to use Company Stakeholder

Responsibility rather than Corporate Social Responsibility, one must first have a background of where both theories originated. To begin, the authors will look at Corporate Social Responsibility, since it is the framework from which Company Stakeholder Responsibility is drawn.

Beginnings

The theory of Corporate Social Responsibility began developing in the United States of America in the 1950's and 60's, but did not receive a lot of attention until the early 1970's. In the beginning, Howard Bowen, considered by many as the father of corporate social responsibility, stated that "social responsibility refers to the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society" (Crane *et al.*, 2008:25). On the other side of the argument, we find those scholars who believe that a business sole purpose is to maximize the value to the stockholders. One such researcher is Milton Friedman. Friedman (1970) argues that the manager of a corporation spends the money of the stockholders, and is therefore going against their very wishes if he spends their money through business practices that do not offer any monetary gain. This, of course, is unless the shareholders set up the enterprise for the sole purpose of rendering services, such as a hospital or a school (Friedman, 1970: 88-89).

In 1991, Archie B. Carroll wrote that because of the creation of governmental groups such as the EPA, EEOC, OSHA, and CPSC, corporations have had to struggle with how to balance their business commitments to shareholders, as well as their obligations to an ever growing group of stakeholders claiming legal and ethical rights (Carroll, 1991:1). This goes against what he claims are the "early" business ideals. Carroll's work is highly regarded as a norm in today's thinking, and the authors of this paper think it is important to mention his pyramid and how it has shaped CSR thinking.

2.3.2 Carroll in Depth

Carroll has been writing on the topic of corporate social responsibility since the 1970's, and has thus been present and active in changing the perception, as well as the basic concepts of the field. For this study, the researchers focus much of their attention to the model he laid forth in his 1991 publication in Business Horizons. In this article, Carroll (1991) lays forth the groundwork for much debate when he proposes a pyramid of Corporate Social

Responsibility that a business should use when it comes to decision making. This pyramid has been copied, altered, and refurbished by countless authors since its inception, but the overall idea still remains the same.

The Pyramid

The main points that one needs to focus on when looking at the pyramid is how Carroll intended it to be read. He points out that it is not a perfect model, and that it is intended to point to the fact that "the total 'CSR' of business compromises distinct components that, taken together, constitute a whole" (Carroll, 1991:8). The separate components are not meant to be mutually exclusive, and are not followed in the exact specific order, but he chose to put them in the pyramid based on weights in the decision process, and general relativity to a step by step process, beginning from the bottom up. The pyramid looks as presented bellow in Figure 4:

Figure 4: Carroll's Pyramid (Taken from www.sapereaude.org/escrito/csr.htm)

Economic Responsibilities

Carroll argues that businesses were historically created to be economic entities that provided goods and services to members of the society. As such, businesses were the essential building blocks, or economic units in our society. This paved the way for the profit motive. Thus the role of business transformed into providing goods and services that society demanded, whether through wants or needs, in exchange for a small profit. Eventually, earning a profit became earning maximum profits, which has been a lasting value since its inception. Therefore, the fundamental concept of any business decision, as deemed by

society, is based on the responsibility of the firm to earn a profit for the services it renders (Carroll, 1991:4).

Legal Responsibilities

The second tier of Carroll's Pyramid lies within the legal responsibilities of the firm. According to Carroll (1991:5), "business is expected to comply with the laws and regulations promulgated by federal, state and local governments as the ground rules under which business must operate." In other words, businesses are expected to make a profit, but only as long as that profit is obtained through strict adherence to the law set forth by society. Laws are seen as "codified ethics," according to Carroll (1991:5), in the sense that they are what lawmakers deem to be notions of fair operations.

Ethical Responsibilities

The third tier on the pyramid depicts ethical responsibilities, but what exactly does this encompass? Ethical responsibilities go beyond what is written into law, and take into consideration societal expectations or prohibitions that may not be codified into laws. Carroll (1991:6) states, "ethical responsibilities embody those standards, norms, or expectations that reflect a concern for what consumers, employees, shareholders, and the community regard as fair, just, or in keeping with the respect or protection of stakeholders' moral rights". Carroll notes that the ethical expectations from societies are difficult for a business to deal with, as they are ever-changing and often hold a business to a higher level of standards than those that are written in law. Ethical standards often precede law, and therefore it is prudent that a business know what ethical standards are expected, as in the future these standards often are then written into law. This nature also brings ethical considerations under intense scrutiny from different public sectors, making it ever more difficult for a business to incorporate.

Philanthropic Responsibilities – Discretionary

The fourth and final tier of Carroll's Pyramid is the one that is most often changed or adapted, and even Carroll himself modifies it later on in his work. The fourth tier begins as philanthropic in 1991, where Carroll (1991:6) states that philanthropic activities include those that "are a response to society's expectation that businesses be good corporate citizens." In other words, philanthropic activities are not required of a business, but voluntary on the part of the business, even though society expects or desires the activities. If a business does not do them, they will not be scorned or looked down upon, but society as a whole wants the

practices done (Carroll, 1991:7). Later, Carroll changes philanthropic to discretionary in order to include activities within the company, and not just in society surrounding the business. These activities could include company mixers or picnics to promote a healthy work environment (Crane et al, 2008).

2.3.3 Company Stakeholder Responsibility

This last step on Carroll's pyramid is the one that often comes under intense scrutiny from opposition. This is why the authors feel that a more applicable real world model comes from Freeman and Velumari (2005). The major flaw that they see with *corporate social responsibility* is that it separates business from society. In their opinion, business needs to be seen as an integral part of society, and that the two are so interwoven that without one there would not be the other. They make the claim that "corporate social responsibility is often about seeming to 'do good works'" (Freeman and Velamuri, 2005:3). This implies that the underlying structure of how business is run today is not good, or morally neutral. They believe this form of thinking does not account for the "central role business has played in improving the well being and prosperity of hundreds of millions of people around the world" (ibid:3). If a company takes a "creating value for stakeholders" approach to their everyday business strategy, then separating business and society seems to have no fundamental grounds. Two arguments Freeman and Velamuri (2005:2,3) make against corporate social responsibility are:

1. Companies underlying structure is not evil, and therefore focus should not be placed on doing good works to "make up" for the evil they do. They argue that this can oftentimes lead to businesses engaging in activities in which they have no expertise, which may end up doing more harm than good.

2. The word *Corporate* implies only large, successful firms need to shoulder society's burdens. The authors question whether this is due to the shareholding pattern of corporations, or whether this grouping is in fact unintentional.

Therefore, they propose a new way of looking at corporate social responsibility by renaming and redefining it as company stakeholder responsibility. Their argument is that by replacing "corporate" with the word "company," a broader range of businesses are included in the theory. Secondly, they propose to change social to stakeholder to harness the idea that the main goal of CSR "is to create value for key stakeholders and fulfill… responsibilities to

them" (ibid:5). Finally, they choose to retain the word "responsibility" since it implies that business and ethics are inseparable. Therefore, Freeman and Velamuri (2005) intend to coin Company Stakeholder Responsibility as the new CSR. The two go on to outline four successive levels of commitment to the stakeholder approach to CSR, followed by ten principles of the stakeholder mindset that a firm must follow in order to reach the highest level of stakeholder commitment, ethical leadership. But in order to understand why they make an argument for a stakeholder approach to CSR, one must first understand what Stakeholder theory is, and where it comes from.

2.3.3.1 Stakeholder Theory within Company Stakeholder Responsibility

From the concept of business ethics comes an interesting concept called Stakeholder theory that the authors of this report believe is extremely important to the study. Whereas Corporate Social Responsibility looks into the corporation's responsibilities, stakeholder theory begins by looking at the differing groups of people to which a business has responsibilities (Crane & Matten, 2007:57). But who exactly are the stakeholders for a company? What are their roles? How can a business take into account the wants and needs of the stake holder around them? In any case, a business needs to ask questions such as these, but we find it especially true when entering a new business environment.

Brief History and Definition

As with most theories, a commonly accepted definition of what exactly a *stakeholder* is may be hard to come by. Every researcher, let alone author comes up with what they believe fits into the model of stakeholder theory they use, and the authors of this paper are no exception, for they will look at commonly referenced ideas, but end up with the same definition that Freeman and Velamuri (2005) use in their CSR argument. To begin with, one should head back to the 1960's, where business ethics as a whole really began to take shape as a serious study. One of the earliest concepts of the *stakeholder* comes from the Stanford Research Institute. They claim that stakeholders are important to the point that a business would cease to exist without them (Stanford memo, 1963, from Mitchell *et al.*, 1997). For around twenty years this concept was played around with and slightly modified until Edward Freeman (1984) established quite possibly the most widely accepted definition:

"A stakeholder in an organization is…any group or individual who can affect, or is affected by, the achievement of the organization's objectives.

(Freeman, 1984:46, from Crane & Matten, 2007:57)

Some other commonly accepted and referenced definitions can be seen in Figure 5 below.

Author	Definition
Evan and Freeman 1993.	'benefit from or are harmed by, and whose rights are violated or respected by, corporate actions.'
Hill and Jones 1992.	'constituents who have a legitimate claim on the firm…established through the existence of an exchange relationship' who supply 'the firm with critical resources (contributions) and in exchange each expects its interests to be satisfied.'
Clarkson 1995	'have, or claim, ownership, rights, or interests in a corporation and its activities.'

Figure 5: Stakeholder Definitions (*Adapted from Crane & Matten, 2007:58)*

Noting the broad definitions of a stakeholder, the authors wanted to note that the important underlying principles in the definitions prove that each situation, project, task, or decisions made by a business will hold power to different groups of stakeholders, and therefore using a model that takes this into effect is extremely important. Freeman's (1984) definition that was highlighted earlier is the one that Freeman and Velamuri (2005) retain in their CSR theory. According to this definition of stakeholders, they argue that every business must have a close,

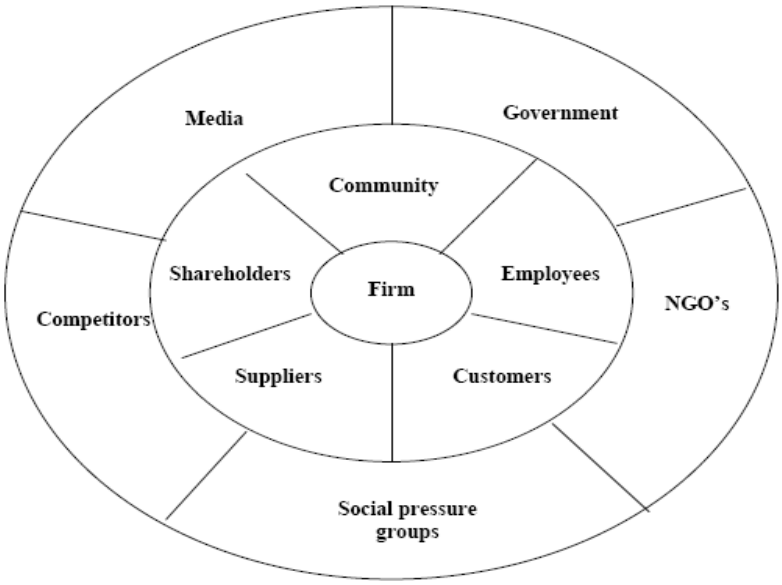

Figure 6: Stakeholder Mapping (*from Freeman et al. 2007*)

intimate relationship with each and every individual or business that affects the day to day activity of a company. Therefore, it is important to know which stakeholders are closest to the business, or have a larger weight, and which stakeholders have a smaller weight or are further away. In later works, Freeman *et al.* (2007) propose a model called *Mapping* that divides stakeholders into two groups, as shown on previous page in Figure 6.

These two groups are either primary (inner ring) or secondary (outer ring) stakeholders. Primary stakeholders are those that control essential processes or resources that the company needs or exploits, thus they are considered the most important stakeholders and are shown closest to the firm. Secondary stakeholders may not hold the resources that the primary stakeholders do, but they are still important because they may affect or influence the primary stakeholders, thus having an adverse effect on the firm (ibid: 2007). While this model is important to understand, the authors also want to emphasize another model illustrated by Crane and Matten (2007:60) that shows the complexities of stakeholder networks. The argument is made that stakeholders themselves have responsibilities to their own unique set of stakeholders. The actions of a firm will ripple through multiple levels of stakeholders, even if they are not immediately clear to initial acting firm. This is well illustrated in the following model:

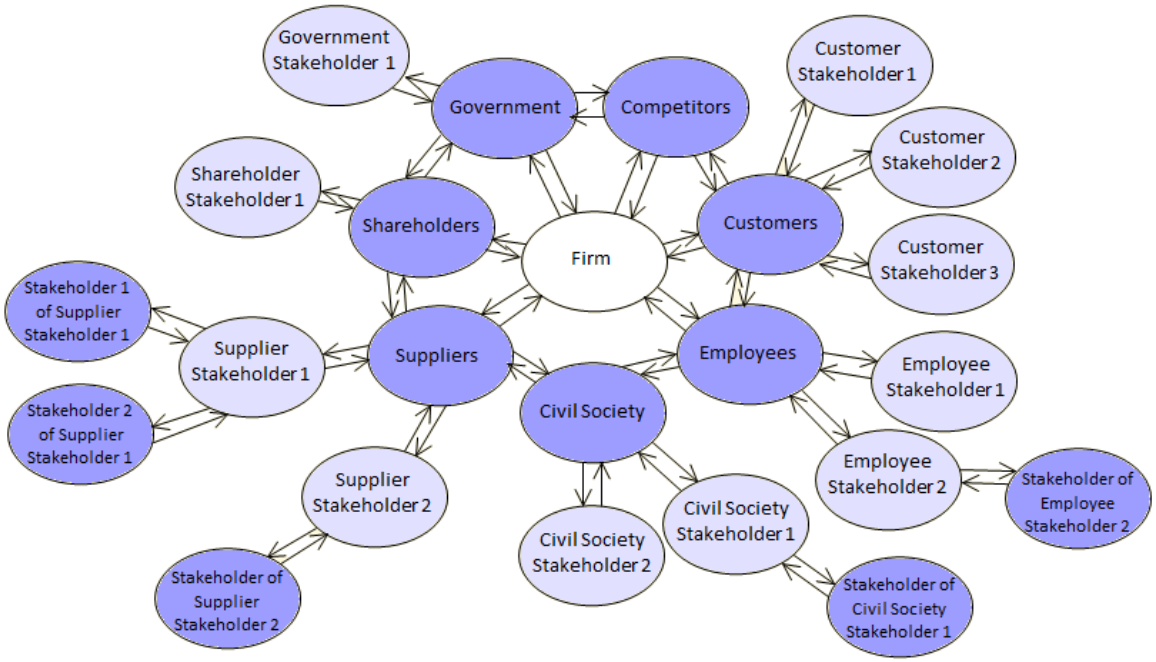

Figure 7: Stakeholder Network Model (*Crane and Matten, 2007:60*)

Using these models of stakeholder identification and relevence, one can see how Freeman and Velamuri (2005) divided CSR up into four consecutive levels.

2.3.4 Four Levels of Commitment to the Stakeholder Approach of CSR

The four leves proposed by Freeman and Velamuri (2005) are taken step by step on the path to ethical leadership. These levels follow the progression of:

1. Basic Value Proposition
2. Sustained Stakeholder Cooperation
3. Understanding Broad Societal Issues
4. Ethical Leadership

Basic Value Proposition

The basic value proposition states that a manager or entrepreneur "needs to understand how the firm can make the customer better off, while at the same time offering an attractive value proposition to employees, suppliers, communities, and financiers"(Freeman & Velamuri, 2005:9). Freeman and Velamuri (2005:9) argue that a business will prosper if its model for business satisfies the needs of its different stakeholders simultaneously.

Sustained Stakeholder Cooperation

This step basically sums up that once a balance is struck between stakeholders, a manager must realize that these relationships are dynamic and ever changing, and therefore must be reassessed constantly. The balance will continuously be upset, and therefore the manager needs to have an intimate knowledge of exactly what sacrifices or compromises each different stakeholder is willing to make and how to compensate for the compromises in the future (Freeman & Velamuri, 2005:9).

Understanding Broader Societal Issues

In this concept, Freeman and Velamuri (2005) try to show that a company cannot sit back and not take a position on matters that appear not entirely business related. They state that " a pro-active attitude is necessary towards all stakeholder groups, both primary, i.e., those that have direct business dealings with the company, and secondary, such as NGOs and political activists, who can affect the operations of the company"(ibid:11).

Ethical Leadership

The last level of company stakeholder responsibility lies in ethical leadership. Here, Freeman and Velamuri (2005:11) explore the relationship between ethics and business performance. They highlight three faces of morality set forth by William Damon in 2002. These three faces are restrictive, philanthropic, and generative. Restrictive morality consists of controlling and eliminating behaviors that can be deemed destructive, i.e. lying or cheating. "Philanthropic morality promotes contributions to worthy social causes" (ibid:11). This type of morality is usually only practiced once a firm is established and has received profits, and is often practiced out of enlightened self interest. In other words, it could be economically rewarding for a firm to invest in social causes if it can see a future payback in some form. Finally, philanthropic morality "is based on 'proactive promotion of positive moral initiatives… as simple as the urge to serve customers better by bringing them a better or less expensive product, or as complex as making the news available to everyone on earth 24 hours a day'" (Damon, 2002, adapted from Freeman and Velamuri (2005:11)). Freeman and Velamuri (2005:11) believe that this last form of morality can only be achieved through a deep understanding of your stakeholders' desires, needs, and priorities.

2.3.5 Ten Principles of Company Stakeholder Responsibility

The concepts that Freeman and Velamuri (2005) highlight in their argument for Company Stakeholder Responsibility is the defining of ten principles which make up a "mindset" necessary to understand and practice all four of the levels of CSR that were highlighted before. The authors of this paper chose to just quickly highlight these ten principles to give the reader a better understanding of how we will apply CSR theory to the findings later on.

1. We see stakeholder interests as going together over time.
2. We see stakeholders as real people with names and faces and children. They are complex.
3. We seek solutions to issues that satisfy multiple stakeholders simultaneously.
4. We engage in intensive communication and dialogue with stakeholders – not just those who are friendly.
5. We commit to a philosophy of voluntarism – to manage stakeholder relationships ourselves, rather than leave it to government.

6. We generalize the marketing approach – investment in social programs can be good business strategy.

7. Everything we do serves our stakeholders. We never trade off the interests of one versus the other continuously over time.

8. We negotiate with primary and secondary stakeholders.

9. We constantly monitor and redesign processes so that we can better serve our stakeholders.

10. We act with purpose that fulfills our commitment to stakeholders. We act with aspiration towards our dreams and theirs.

Thus, using the theory outlined above, the authors hope to make connections and pull references to analyze and discuss the responsibility of various groups to fulfill the wants and needs of their stakeholders in North Norway.

2.4 Importance and Relevance of Theories

Now that the reader has a general understanding of each of the theories, one needs to figure out exactly why it is the authors will use each one, and how it is that they are interwoven and interconnected in the context of this study.

2.4.1 Ripple Effects

The first theory that was dissected was that of Ripple Effects. The authors chose this theory to give the reader an understanding of what is meant by *ripple effects* when in the field looking for data, and when analyzing and interpreting this data later on. As was shown, ripple effects are loosely defined across the board, and therefore the authors combined much of the current literature about ripple effects into a model that will fit this study. By doing so, the authors hope to provide some clarity as to what it is they are searching for in the process of this research.

In Figure 2, (shown below) Ripple Effects theories were summed up into the model that will be used for analysis and discussion, but a further dissection of that model must be taken into account. The problem statement points us in the direction of *sustainable ripple effects* while ripple effect literature fundamentally states nothing on the sustainable nature of any ripple effect. The authors highlighted the “pebble in a pond” example earlier, but the big flaw that

they see coming from this model is that a ripple in a pond does not last forever. Since this study would like to discuss long term and lasting (sustainable) ripple effects, another theory must be used in conjunction with Ripple Effects theory to achieve the applicability that is sought. The theory chosen was that of Sustainability.

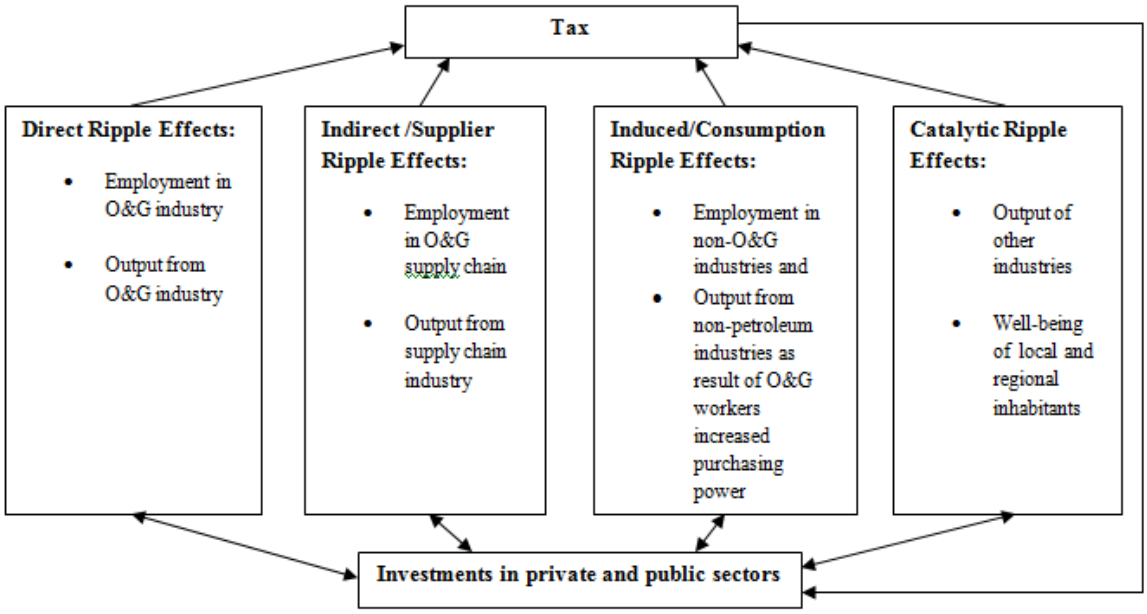

Figure 2: Ripple Effects Model

2.4.2 Sustainability

In the breakdown of Sustainability theory, the authors emphasize three main areas that are crucial to the development of sustainability. These three factors, shown in the Triple Bottom Line model, are economic sustainability, public or social sustainability, and environmental sustainability. The term *sustainable* also implies a long term approach, as discussed earlier. Since the main research question involves long-term or permanent effects, the authors feel that combining both theories is possible to help categorize and recognize what ripple effects they are in fact looking for. Looking at the model of ripple effects above, one must dissect the long term viability, or permanence of each level or group of effects that is outlined. To begin with, a quick way of eliminating or excluding these categories is to look at the long term possibility of each.

Direct effects can be eliminated as sustainable seeing that without oil and gas activity, these effects cannot continue. For example, employment in oil and gas extraction is a direct effect, but without continued oil and gas activity in the area, these effects are eliminated and therefore, unsustainable.

Indirect effects are those that are directly related to the supply chain. In the terms of oil and gas, this would be job creation in suppliers due to increased traffic volume, or even the creation of new industries in the supply field. These can be seen as unsustainable due to the short term nature of the ripple effects. For example, a business must be able to maintain all three levels of the Triple Bottom Line in order to be sustainable. If it fails to do so, it is not sustainable. If a pipeline manufacturing company is born due to the need of pipelines for an oil and gas project, it must be able to find other sources of income beyond the one project in order to be sustainable. These auxiliary forms of revenue are not based off of oil and gas activity and therefore are not considered a ripple effect of this activity. Therefore, for this thesis, the authors do not find indirect ripple effects to be sustainable, due the fact that once oil and gas activity leaves, these ripple effects will diminish and be replaced by other, catalytic ripple effects.

Induced ripple effects are those brought about by the increased spending power of the employees of a certain industry, once again oil and gas for this case. An example would be increased sale of groceries due to increased incomes in the area. These effects are only sustainable if the increase in wealth is maintained. One can therefore induce that a majority of these effects are not sustainable. If the oil and gas industry leaves, then employment will decrease and spending power of the suppliers also decreases. Therefore, these gains are short lived. For example, a grocery store may gain revenues based on workers in the area buying more, or more expensive goods. These revenues are the induced ripple effects. If, however, these revenue gains are re-invested in expansion and market penetration, a new sense of sustainability may arise. These investments would therefore be considered ripple effects of the induced ripple effects, or catalytic ripple effects of oil and gas activity.

Catalytic ripple effects are those that extend beyond the scope of the other three categories. Catalytic ripple effects may be seen as those that affect the output of businesses beyond the oil and gas sphere. If one looks at the previous grocery store example, it can be seen that catalytic ripple effects often arise as a ripple effect of a previous ripple effect. In a way, it can be looked at as a second or third level ripple effect, one that is brought about because of another's happening. These ripple effects rarely have any significant effect on the original business, and therefore are often seen as either destroying or creating value and well being to society. These ripple effects therefore may be influenced originally by oil and gas money, but have the potential to be sustainable without them. For instance, the increased market penetration and expansion of the grocery store in the previous example shows that even if oil

and gas revenues leave, an increased market penetration still leaves the store in a better position than before, yet it can now sustain itself on the larger part of the market it grasped.

2.4.3 Sustainable Ripple Effects

In essence, one may infer that the only ripple effects that have the potential to be sustainable without oil and gas revenues are the catalytic effects. While the focus will remain directly on these effects, the authors would like to point out that most of the catalytic ripple effects created come about as a by-product of a different category of ripple effects. Without *direct*, *indirect*, and *induced* effects, a community will see almost no *catalytic* ripple effects. Therefore, the authors need to dissect the other categories of effects in analysis and discussion, to determine whether this inference is correct or not. The authors would also like to take time to note that this theory is not perfect, and some catalytic effects are beyond the scope of this study. Therefore, they try to maintain focus on what sustainable ripple effects are desired in North Norway, and what (if any) ripple effects from legislation abroad have the potential to fill these wants and needs.

2.4.4 Company Stakeholder Responsibility

Once it is realized that this study is looking specifically towards ripple effects, the authors feel that a naturally arising questions then becomes "who should be kept responsible for creating ripple effects in Northern Norway?" and "who is affected by ripple effects in North Norway?" The authors feel their outline of Company Stakeholder Responsibility theory does a good job of explaining the grounds for company governance and responsibility, as well as providing a detailed look at who is affected by each action, therefore complementing a tie in to ripple effects.

To tie this theory into North Norway, one can see the possibility of large profits to surrounding communities as more and more of the NCS is opened to activity. As shown in the stakeholder models, there are a countless number of parties affected by each and every action of an oil and gas company. Therefore, whether or not they should be responsible for all of the ripple effects is raised in a question. However, if the reader looks more closely at the model, they realize a startling yet obvious point. Each stakeholder has responsibilities to more stakeholders. While this may seem completely obvious, the authors want to take special time to dissect this point here, through an example of oil and gas activity. If an oil and gas company called Gas X chooses Company Y as their supplier, then they have a

responsibility to uphold to that company. However, Company Y has responsibilities to its own unique set of stakeholders. If Company Y receives its raw material from Miner Z, then it is important to realize that Company Y has a responsibility to maximize the effects from Gas X to Miner Z. In essence, they have a responsibility to harness and create the most value from Gas X, and pass this value along through to Miner Z. If one then looks to the CSR model presented before, one can see how a company needs to organize itself and its core set of values in order to achieve and uphold this newfound sense of responsibility. This will be essential to the understanding of how the authors apply CSR theory to interpret the data and answer the research questions later on in this study. So to conclude, the authors feel it is important to understand the lens through which data was both collected, and then further analyzed.

2.4.5 Summary

Figure 8 on the next page illustrates the complete theoretical prism used to analyze and interpret data later on in the thesis. The reader might have understood from the description of the theories and the summary above that the Ripple Effects theory is a major player in filtering the data, as well as in examining and discussing the problem statement of the research. However, to fully analyze the issue in question, additional theories were employed.

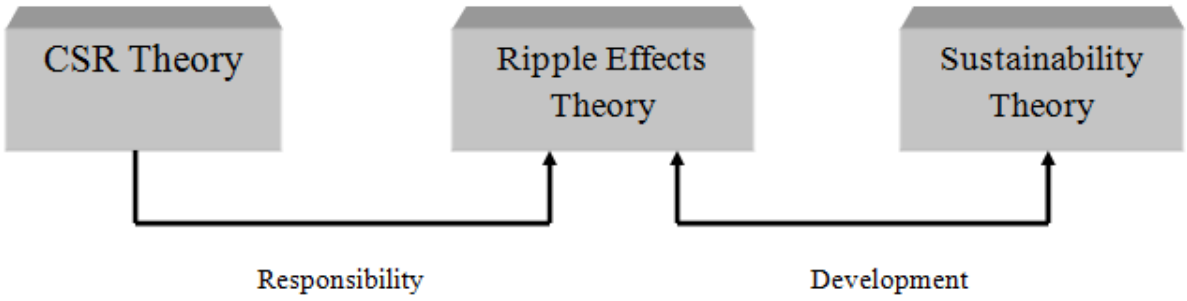

Figure 8: Theoretical Framework

As made clear in the description of the theories, *ripple effects* may be seen as means for development of a region as a result of petroleum activity. Furthermore, *sustainability* has been related to the term *development*. It becomes obvious that both, ripple effects and sustainability share the same feature, namely *development*; therefore it is important to talk

about sustainable development when examining possible lasting ripple effects in North Norway.

Since ripple effects have not been adequate at the current stages of the existing projects in North Norway, additional measures may be applied in order to secure the value from oil and gas activity staying in the region and contributing to its further sustainable development. These additional measures could be expressed as tools applied by stakeholders due to their responsible actions towards *their* stakeholders, let it be a petroleum company, supply companies, the government or other stakeholders in the region, that are described in more detail in the CSR theory. The links among theories explained above creates a multi-angled, yet necessary theoretical prism for examination of the problem statement of this particular research project.

3. Methodology

The purpose of this chapter is to present the research methodology used by the researchers to collect data, to analyze it and to draw valid and reliable conclusions. The chapter will discuss the reasons for choosing a particular philosophical position, argue for a qualitative or quantitative approach, as well as present considerations used to determine whether the research posed an inductive or deductive nature. Furthermore, tools for collecting and analyzing various types of data, ethical considerations, and questions of the reliability and validity of the thesis will be presented to the reader.

3.1 Philosophical Position

Philosophical positions taken by a researcher allows one to choose a research design according to which way the research process will be conveyed. According to Easterby-Smith, Thorpe and Jackson (2008:56), the two contrasting traditions are positivism and social constructionism.

The idea of positivism states that the social world exists on its own and that this world's properties should be measured by applying objective methods, instead of being involved into the subject personally and thus giving the research a personal dimension (ibid:57).

The epistemology of social constructionism is presented in the other corner of the ring, being an opposite of the positivism tradition. The ontology of nominalism, the base for the epistemology of social constructionism, implies "that 'reality' is not objective and exterior, but is socially constructed and given meaning by people" (ibid: 62, 58).

The concept *ripple effects* is not a totally new concept to the researchers, economists, politicians and representatives of various businesses, however, as already stated in the literature review, the previous studies have mainly focused on the quantitative side of the concept, i.e. the amount of employment places created in the region and the amount of money the start-up of a business brings to the local and regional economy. The purpose of this study is not to continue the ripple effects calculation line started by the previous researchers but an attempt to approach the concept in a qualitative manner. The authors assume that there is more to the concept and aim at researching it by choosing to convey a study based on meanings created by human beings and not numerical values. There has been a great deal of mentioning ripple effects in the Norwegian media, however the different perceptions of what

the concept actually means and how sustainable local and regional ripple effects may be achieved require more researching on the subject matter. Since the ripple effects are created for local and regional communities and economies, the representatives of these groups, namely stakeholders, are the people concerned with the meaning and outcome of the phenomenon. Representatives of different stakeholder groups may have different approaches and desires of the concept. Ripple effects are created by businesses alone or in cooperation with the local populations; therefore one may not say that ripple effects are "out there" and that they exist on their own, exclusive from the society, as an objective reality.

Furthermore, the authors choose to evaluate various types of ripple effects within the framework of sustainable development and a chain of responsible actions from organizations and businesses towards local and regional inhabitants and vice versa. The theorists researching the concept of sustainability claim that the three dimensions of sustainability, namely the environment, economy and culture (social dimension of sustainability), are interwoven and dependent on each other. The choice of evaluating the ripple effects from the interwoven dimensions of sustainability and company stakeholder responsibility angles builds a bridge between the concept of *ripple effects* and sustainable and responsible actions towards stakeholders, thus implying that the 'reality' of ripple effects is, as mentioned above, rather complex and "socially constructed and given meaning by people" (Easterby-Smith *et al.*, 2008:58). Based on the arguments above, the authors believe that the most appropriate philosophical tradition the research should be based on is that of social constructionism.

As mentioned above, there are models being constructed that would allow quantifying and simplifying the concept of *ripple effects* to measurable units, thus bringing the research of the phenomenon closer to the ideas of the positivist tradition. One may argue that these models define the ripple effects that may be measured, and therefore may not be used in a social constructionism philosophy. However, the authors take the liberty to use a couple of these models to analyze the ripple effects definition only from a qualitative dimension, i.e. they will not be concerned about the numerical values calculated by these models but rather the definitions and groups of ripple effects that these models employ. As the purpose of this research is to describe and partially explore the concept of ripple effects, in addition to discussing how sustainable and lasting effects in Northern Norway can be created, the authors primarily use the methods based on the tradition of social constructionism, in order to understand the meanings various stakeholders put into the definition of ripple effects, as well as sustainable dimensions particular types of ripple effects may represent.

Using the epistemology of social constructionism allows the authors to analyze the whole picture, appreciating the complexity of the problem statement and to increase general understanding of the situation. Methods based on social constructionism allow gathering rich data from the stakeholders, experts and representatives at organizations and understand their perception of the concept, thus inducing some ideas about what do they desire as ripple effects and to what extent those are sustainable (Easterby-Smith *et al.*, 2008:59). Also, same rich data could be collected about the US legislation. Ripple effects, especially in relation to the discussions about starting up petroleum activity in Northern latitudes of NCS, are a sensitive topic where stakeholders' interests are involved, therefore collecting rich data about the views of the stakeholders towards different types of ripple effects is necessary. Doing so enables one to understand and explain how one may achieve lasting and thus sustainable ripple effects in the case of opening areas in Barents Sea and Norwegian Sea for petroleum exploration and production.

Moreover, the object of the study will be a particular geographical area in Norway implying that there will be a small number of cases chosen to clarify and understand the overall perception of ripple effects. The choice of a small sample chosen for specific reasons, namely one area and stakeholders related to it, also makes this study of a social constructionist tradition (ibid:59).

3.2 Research Strategy

The previous section argued what ontology and epistemology the research will be based on. The conclusion the authors came about with was that the best way of inquiring into the nature of the problem complex about creating sustainable and lasting ripple effects is by following the epistemology of social constructionism. The research design and the methods chosen for addressing the research problem will be based on this epistemology.

3.2.1 Qualitative vs. Quantitative Research

The research being based on the social constructionist epistemology implies that the research will be of qualitative nature. According to Denzin and Lincoln (2005:10), "the word *qualitative* implies an emphasis on the qualities of entities and on processes and meanings that are not experimentally examined or measured (if measured at all) in terms of quantity, amount, intensity, or frequency". Since the qualitative researchers emphasize the reality being socially constructed, the qualitative studies imply the close relationship between what is

studied and the researchers herself, as well as one assumes the possible constraints that such a relationship may bring upon research (ibid:10). Qualitative research "involves collecting data that is mainly in the form of words" (Easterby-Smith *et al.*, 2008:82). This type of research method is used when the researched phenomena is complex and includes interactions between humans and organizations that cannot be translated into numbers. Qualitative data will be used in order to analyze the approach to ripple effects by stakeholders in Northern Norway, as well as a possibility of applying all or parts of the US legislation as an alternative policy in order to create sustainable and lasting ripple effects in case of opening new areas in northern Norway for petroleum exploration and production. The Sustainability and CSR theories chosen for this thesis employ models that are of significant qualitative nature, thus bringing the research close to the qualitative study.

In addition to the previously mentioned theories, using a combination of models that allow measuring ripple effects and expressing them as a number of work places or monetary value created to a particular region, has quantitative features because data collected here are numbers. However, the researchers would like to emphasize that these models will not be used to their full extent, i.e. the calculations will not be conducted in this qualitative research and the only parts of the Ripple Effects models employed will be the ones that allow grouping and classifying various sorts of ripple effects. Utilizing these models will provide a useful initial framework and structure for presenting parts of data founded on what ripple effects are expected by the stakeholders and promoted by the US policy before later on discussing the applicability of policy similar to the GOMESA 2006 and LWCF on the Norwegian offshore territory. The conclusion on the extent of applicability of such a policy will be based on the compatibility between ripple effects promoted by the US legislation and the ripple effects desired by Norwegian stakeholders.

Since the research question asks: "*To what extent* …", therefore, in order to find out "*to what extent*", the qualitative approach is mostly appropriate because it allows for more descriptions of the researched phenomena.

3.2.2 Case Study Research Design

According to Yin (1994), a research design is a bridge between the data collected about the phenomenon and the conclusions a researcher comes across from the data collected. The research design chosen for this project is a case study research design. There are three types of case studies, namely the *descriptive*, *explorative* and *explanatory*, used in the qualitative

research. *Explorative* case design is applicable in situations where one needs to study the phenomenon deeper (Selnes, 1988). When the reader knows a little about the problem studied, the *explanatory* design allows increasing the overall knowledge of the reader about the problem statement in question (Burgess, 1995), while *descriptive* case design describes the events and situations as they are (Yin, 1994). A *descriptive* case study allows the researcher to generate a hypothesis from real life situations and to build the research through testing these hypotheses (research problems). The study conveyed in this thesis clearly fulfills the criteria of a *descriptive* case study, where the problem statement was constructed from real life situations. The research seeks to describe the ripple effects promoted by the US policy examples and describe the expectations of local and regional effects in Norway by local stakeholders. This may be examined by exclusively using the *descriptive* case study research design; however some explorative features may be noticed in the research.

The case study method "looks in depth at one, or a small number of, organizations, events, or individuals" (Easterby-Smith *et al.*, 2008: 97). The research on the ripple effects may be looked upon as a case study of ripple effects in one area, namely Northern Norway, and how stakeholders in the area approach the concept of ripple effects and what effects on the society they see as most desirable.

According to Easterby-Smith *et al.* (2008:98), a case study seeks "to demonstrate the importance of particular research questions, for inspiring new ideas and for illustrating abstract concepts". The statement above provides yet another argument for the case method being appropriate as a research design for the research topic chosen for this thesis. A case design will help to address the increasing discussion on creation of ripple effects that could be looked upon as a rather abstractly used term in discussions relating to the northern areas. Applying the *descriptive* approach to the research will allow to clarify and explain the meaning behind the term, seen by the people that are directly involved in the subject matter, as well as the study might inspire new ideas on how to look at ripple effects as potentially sustainable. The study might spur new ideas on how possibly one could create new sustainable and lasting ripple effects by employing experiences from other countries, such as the USA.

3.3 Generic Considerations

Among the generic issues that should be addressed when conveying a research process are: choice of unit of analysis, what type of knowledge, local or universal, the study seeks to

contribute to, and what should come first- data or theory (Easterby-Smith *et al.*, 2008:102-105).

3.3.1 Study Unit

The unit of analysis may also be referred to as a sample in the study. By applying non-probability sampling (Saunders *et al.*, 2000), the study unit chosen for this research project, as already mentioned above, is an area in Northern Norway where discussions are taking place concerning local and regional ripple effect creation, or more precisely the sample for the study are the stakeholders in the region and their perceptions on ripple effects. The stakeholders (study units) chosen represent various societal institutions, thus providing the study with various and more representative data. Perceptions of the representatives of this area are of particular importance when analyzing and discussing the possible options for creating sustainable and lasting ripple effects in the environmentally and socially sensitive surroundings of North Norway. The area of North Norway was chosen as a sample unit for the case study because it is a hot topic in political and social debates. The area is an interesting study object with the type of environment described in Chapter 4, and therefore various sustainability and responsibility issues will have to be addressed by any company or the government in order to create ripple effects, which again might be interesting to other researchers studying creation of ripple effects in other northern areas around the world.

3.3.2 Local or Universal Knowledge

The study, at the first glance, is not aiming to generalize and create universal theory from the outcomes of the research. The study will primarily contribute to local knowledge of this particular situation. According to Easterby-Smith *et al*. (2008:104), local knowledge is important in research related to management. Actions taken in order to achieve sustainable ripple effects in the area will depend on the historical, environmental and cultural, as well as practical background the local society has from before, making it hard to generalize across these borders. However, as already mentioned before, North Norway is featured by common characteristics of sensitive environment, limited infrastructure and specific social and cultural environment, therefore finding out how to create sustainable and lasting ripple effects in such an area could work as a manual for management of other areas in High North and abroad that sooner or later will face the dilemma of petroleum exploration and production.

3.3.3 Inductive or Deductive Study

The last generic consideration reflected upon in this chapter is the issue of what should come first – data or theory, i.e. whether the study will be inductive or deductive. There is previous knowledge gathered by the authors around the subjects of *ripple effects*, *sustainability* and *CSR*, therefore, due to these presuppositions about the concepts, the approach to the problem complex may be deemed deductive. The research statement for the qualitative deductive study has been derived from current political discussions and will be analyzed with the origin in existing theories that relate to the subject matter.

In addition, it is claimed that case study takes an advantage of previous theoretical development (Yin, 2003:13). Thus, one should be familiarized with the previous studies and research material before starting a research. The authors of this study have already mentioned their knowledge of the theories and subjects in question, therefore it is no secret that this information will be used in this deductive study when seeking to find new approaches to ripple effects that more precisely should be referred to as sustainable and lasting ripple effects. Based on the arguments above, the researchers still believe it is appropriate to call this study a deductive one.

3.3.4 Data Collection

Social constructionist-inspired studies are complicated with many variables and factors playing an important role in the problem complex. Case study research design allows for the collection of various and rich qualitative data in order to make a study believable and to represent the problem matter in the best way. To achieve this goal and to thoroughly analyze the research problem, the method of data triangulation will be employed. This study will first use the data triangulation tool in a form of collecting both primary and secondary data. This chapter will lead the reader through the data collection and analysis methods for all the parts of the research.

Yin (2003:13) states that case studies benefit from previous theoretical prepositions that help guiding data collection and analysis. The researchers' information collection from various sources was initially affected by previous knowledge about existing theories. According to Yin (2003:13), "a case study relies on multiple sources of evidence, with data needing to converge in a triangulation fashion". In this research, data from various sources was used to learn more about existing ripple effects from petroleum projects in North Norway, possible

alternative policy examples were looked at, and the points of view of Norwegian stakeholders and opinions of experts were gathered. Therefore, the triangulation method was applied, thus increasing the possibility of investigating the problem statement from various angles.

To begin with, primary data collection concerning the definitions of ripple effects from the stakeholders was applied in the research paper. The stakeholders' perspectives were easier to reveal by collecting qualitative word data, therefore this kind of primary data was collected in order to investigate what the stakeholders put into the term *ripple effects* and what desires they have for the ripple effects in their region. It is important to note that not all data from the stakeholders was collected in primary manner. The researchers are a part of a bigger project that the Bodø Graduate School of Business is working on; therefore some of the stakeholders' perspectives were collected by other researchers at the business school. However, the researchers of this paper collected additional perspectives and opinions by employing the same interview guide as used by other researchers, thus making both primary and secondary data on the subject matter more relevant and applicable to the thesis.

Furthermore, the researchers introduced the GOMESA 2006 and LWCF idea to the stakeholders and tried to get their opinions on whether methods similar to the US policy could be applied in Northern Norway as a form for creating sustainable ripple effects that would last long after oil and gas are finished in the area.

Secondly, to collect more data about the GOMESA 2006 and LWCF, secondary data was again used. There is extensive information on why and how the Act and a fund were established in the states, as well as what implications it has had or intends to have on the local and regional environment, industries and societies. The triangulation method here again was applied. In order to confirm and enrich this secondary data, primary data here was also collected from independent American experts who are involved in policy creation related to the issues of ripple effects in the United States and therefore have an independent and trustworthy opinion about the subject matter. This primary data collection to support/falsify the secondary findings provides a triangulating effect to the study thus improving its internal validity.

Qualitative data, or natural language data from the stakeholders, was gathered by employing a semi-structured interview as a data collection tool. The interview guide was created by other researchers at the business school, however authors of the thesis concluded that an interview guide for gathering data relevant to this particular research would be similar to the

one constructed for the graduate school project, therefore they used questions from the same interview guide to collect additional data for the thesis. The theoretical framework formed on the base of the literature review, previous studies and topics brought up by current discussions featured the questions of the interview guide, allowing for relevant data collection for this thesis. Furthermore, background information in a form of secondary data on GOMESA 2006 and LWCF and the theoretical framework also formed a base for constructing an interview guide for the Norwegian stakeholders, as well as the American experts.

Using a semi-structured interview allowed the researchers to gain additional information from the interviewees. This type of interviewing might have features of an in-depth interview, where the researchers may find out not only what meanings and wishes the stakeholders have about ripple effects but also why they have them. Collecting primary data by employing semi-structured interview about the US legislation also contributes additional information about, for example, reasons for failure of the policies that may not yet be presented in official writings.

Additional interviews conveyed for this research were on a face-to-face basis because more details could have been paid attention to that could have been taken into consideration when analyzing data. Furthermore, it was easier to come with follow-up questions and get a more personal connection with an interviewee, which is important when trying to understand the meanings for “why” and “how”. However, bearing in mind the researchers being students, due to travel costs and time limitations, some interviews were conveyed by telephone and even email.

3.3.5 Data Analysis

The data analysis was performed based on *within-case* principle where data collected is compared against theories (Miles & Huberman, 1994). The analysis method applied in this research paper was used by Jacobsen (2000) and illustrates the analysis process in the figure of a spiral, shown in Figure 9.

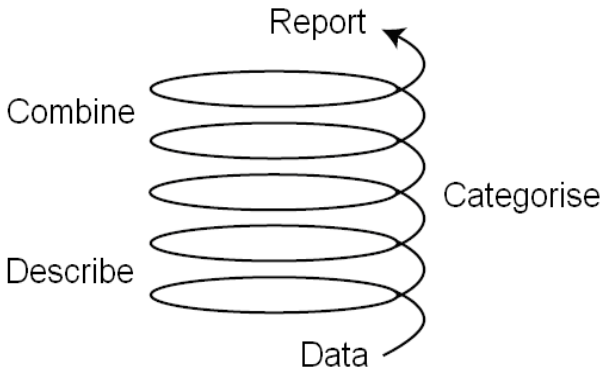

Figure 9: Data Analysis (*Adopted from Jacobsen, 2000:174*)

According to the analysis model, the unprocessed primary and secondary data have to be described in order to make more sense out of data. In order to do this, the primary data from the interviews with the Norwegian stakeholders was transcribed, thus simplifying further the analysis process. The secondary data on the GOMESA 2006 and LWCF, in its raw form, was written in various news articles, legislation, summary analyses, reports and research studies on the policy example in question.

After the first step is completed, data categorization is to be performed. According to Jacobsen (2000:185), categorizing the data is done due to the need to see what themes the raw data covers. Due to the study being of deductive nature, the researchers developed the categories based on the theoretical framework presented in Chapter 2. First, massive amounts of secondary data on the policy example in the USA, along with the supporting primary data from the interviews by American experts, were "appointed" to the categories originating in the theory of ripple effects. The relevant findings in their narrative form will be presented in Chapter 6. Furthermore, data on *ripple effects* from these legislation examples were put into the categories of *sustainability dimensions* that are also presented in Chapter 6 along with the findings on ripple effects. In addition, data regarding the responsibility issues were allocated to the category of *responsibility* and presented as relevant empirical data. After categorization of the data on GOMESA 2006 and LWCF were completed, a similar approach was chosen for the primary and secondary data from the interviews with the Norwegian stakeholders and their desires and thoughts on ripple effects in Northern areas of Norway. The categories here were rather simply defined by the interview questions, that again were created based on the theoretical framework, where the respondents were asked to define ripple effects, express their desires for the effects in Northern Norway, as well as where the responsibility should lie in order to achieve these effects.

When raw data was processed, and only relevant empirical findings in Chapter 6 were found with the help of categories, the third step of analysis, namely "combining", was employed. This step allows for the connecting of information among different categories either because the researchers decide so or because information in different categories allows so. The categories might have significant links among themselves in a way that one circumstance has an influence on another, or because one circumstance is the reason for occurrence of another (Jacobsen, 2000). Connections among the categories come about as a result of the connections among theories that are explained and illustrated in Figure 8, Chapter 2.4.5. This step enabled the researchers to combine data on ripple effects in the US policy together with the sustainability features these effects potentially possess. The same was done with the Norwegian stakeholder perspective on desired ripple effects. Furthermore, these categories then allowed the researchers to discuss the potentially sustainable ripple effects promoted by the alternative policy example in the USA and the desired ripple effects by Norwegian stakeholders. After finding the matches between the categories, data on responsibility issues was connected to the findings on ripple effects in order to analyze who is responsible for creating ripple effects in the USA and who should be kept responsible for promoting various, and more precisely sustainable, ripple effects in Norway. Later on, the "report" was written in the form of a discussion where the data from different categories was compared to the theories and allowed the researchers to answer the research questions and to draw conclusions on the applicability of alternative policy examples in order to achieve sustainable ripple effects in Northern Norway.

In other words, there was a proper analysis conveyed when the researchers looked for meanings within different categories originating from the existing theories, as well as across the categories, thus resulting in new approaches and concepts.

The data gathered and analyzed through the theoretical lens helped the researchers discuss to what extent the GOMESA 2006 and LWCF can find their roots in the Sustainability, CSR and Ripple Effects theories. Later on this analysis allowed the researchers to conclude whether policies similar to GOMESA 2006 and LWCF approach are suitable tools to promote sustainable and lasting effects in northern Norway, based on the stakeholders' desires for similar ripple effects.

3.4 Validity and Reliability

3.4.1 Validity

When conducting research, the issues of validity and reliability should be addressed to give the research more scientific weight. Validity may be external and internal (Easterby-Smith *et al.*, 2008:87). External validity is concerned with how well the results of the study may be transferred to other cases. Based on results from case studies, it is usually hard to generalize. This case is no exception. Since there are no identical areas, the approaches to sustainable ripple effects may also vary. Furthermore, the area researched is in authentic northern Norway, therefore results may not be transferred to other parts of Norway or the world to their full extent. However, companies/organizations may get inspiration from this case study and try to adopt some ideas when starting oil and gas activity in other northern areas, thus, the authors may claim that some results may be transferred to other areas.

Internal validity is concerned with credibility of the data and how well it represents the phenomena. Qualitative research is considered to be subjective; therefore achieving internal validity is a complex issue. However, by making the research process transparent and explaining all the steps (as done in this methodology part) the validity increases. Moreover, experienced and independent experts and stakeholder representatives contribute to high quality information provided to the research. Their expertise should not be doubted; therefore information provided by them should be valid. Data triangulation used when collecting data also contributes to a better picture of the problem complex and thus increases validity of the research. Furthermore, the interview guide and data analysis was partly based on previous knowledge of official and peer-reviewed theory, thus increasing representativeness of collected data to the phenomena.

3.4.2 Reliability

Reliability is concerned with how trustworthy data and thus the research are. In order to avoid bias, open-ended questions were used in the interviews, thus avoiding leading the interviewees towards a presupposed answer. In order to reduce our own bias when analyzing data, a supervisor was assigned and he/she helped us keeping an objective approach to the problem statement and data analysis. However, the possibility of bias still stays presented in the qualitative research because data is analysed by a human-being. Data triangulation used when gathering information also reduces bias to some extent because different sources of

information allows for a more objective reflection of reality. Furthermore, reliability is enhanced when researchers apart from the original study are able to replicate and recreate the research process portrayed in this paper. By having a detailed and thorough methods section, the researchers can show that the project is replicable, is scientific, and is in fact then reliable.

3.5 Ethical Aspects

There is a growing demand from disciplines to adopt ethical codes to the researches conveyed (Easterby-Smith *et al.,* 2008:132). The issues of ethics should be dealt with in all stages of the research, namely access to the study sample, data collection and data analysis.

Access to the sample was difficult because the stakeholders have the power of allowing the researchers into their organization or not. Creation of ripple effects is a widely discussed topic that affects different aspects of organizations, even the level of their dignity and integrity. The representatives of stakeholders might fear that the results of the research might reveal unpleasant sides of the subject matter to the organization, thus hurting the position of the organization, or that some questions would be inappropriate and would tangent sensitive information to the organization. The researchers provided a clear description of the study to the representatives to show the benefit of the study to the organization and the group of stakeholders a particular person represents. At the same time a contractual agreement was made that will not allow publishing names of the interviewees after the research is conveyed, thus easing the tension the representatives might have had before allowing access into the organization's information. Granting a promise of total anonymity to the persons interviewed, eases the possible pressure from their superiors and colleagues as the topics discussed are of sensitive political nature. Organizations themselves were provided with anonymity and their names are not published in the thesis. Furthermore, there are no personal relations between people interviewed and the researchers, thus certain personal distance was kept in order to avoid bias and a weakening of the reliability of the study.

When collecting data, it was important not to guide the interviewees to give the answers that were desired by the researcher. In order to reduce the pressure on the interviewee and to allow her/him express their own free opinion, open-ended questions were asked during the process of collecting primary data. However, it is important here to be critical towards the possibility that the interviewees might be giving information that directly or indirectly supports the secret political agenda of a company/stakeholder organization (Easterby-Smith *et al.*, 2008:124). The informants may have used the researchers to present the organization in

a desired light, which may not be representative of honest reality. In order to rule out the possibility of such an incident, experience is needed; however, since the researchers are only at a starting stage of such processes, a supervisor may have helped identifying critical and ambiguous data.

When analysing and presenting data, issues of what to publish and what to leave out were faced. All data, as the authors believe, was analyzed honestly without involving bias by the researchers. In case of coming upon unethical behaviour within an organization, the issue presented above could have been faced. Easterby-Smith *et al*. (2008:135) claim that the researcher should avoid using information that would hurt a company/organization. In case such information of sensitive and unethical nature appeared in the research process, anonymity was provided to the company/organization and representatives, thus contributing to the ethical nature of the research.

3.6 Strengths and Weaknesses of Research

Strengths and weaknesses of the research are those related to the general issues of the epistemology of social constructionism, qualitative research and the case research design.

The strength of this study is the possibility it provides to look extensively at the problem of regional and local ripple effects, new forms for creating them, their sustainability and how they are approached by stakeholders in the Northern Norway. The case study and the social constructionist approach to the problem complex allows one to get "under the skin" of the problem and to analyze all the details of how the organizations and stakeholders could create sustainable and lasting ripple effects for the future generations.

Furthermore, the study is designed in a way that increases the validity and reliability of the results of the research. Triangulation here is used as a tool when achieving these measures. First, both secondary and primary data were used. Secondary data is background information and results from the reports by other researchers and institutions and some of the stakeholders' opinions, while primary data is information gathered by interviewing some of the stakeholders, as well as independent experts. Secondly, interviewees with different background, competences, interests and expertise areas were used as informants for the study seeing as such method of triangulation contributes to shaping the picture of the ripple effects, as well as applicability of policies similar to the GOMESA 2006 and LWCF in Northern Norway from different angles.

The first weakness of the case study is also related to its feature of being of social constructionist nature (in this case). A weakness of a case study is that the results usually cannot be transferred to other cases because of its uniqueness to the special situation. Many argue that this, in fact, is strength, since the singular applicability is present in each and every case study. The results of this study will also be impossible to transfer to other areas to their full extent. Anyhow, because of the extensive nature of the case study there were vast amounts of details revealed that may be adopted by other areas that are planning similar ventures. Data gathered in the case study was rather difficult to analyse due to its explicitness. It was difficult to find common ground for comparison and drawing the conclusions, however this weakness was reduced by using a theoretical framework for constructing the interview guide and questions themselves, as well as predefining what criteria for applicability of alternative policies was to be applied to reach valid conclusions.

The last weakness would be that the conclusions were reached by two human-beings that may have subjectively affected the outcome of the study. However, presence of two researchers makes conclusions more subjective as the researchers may question each other's ideas, thus reducing this weakness.

4. Case Description

This chapter will include a description of the case of ripple effects in Northern Norway, focusing on existing oil and gas projects and the potential of hydrocarbon extraction in the region. Furthermore, actualization of current issues dealing with the creation of ripple effects in North Norway, and the outcomes and results of those oil and gas activities will be put forward. Lastly, the opinion of the researchers and local and regional stakeholders on the shortcomings of the petroleum activity in the northern part of Norway from various reports and thesis' will be presented.

It is important for the reader to understand the perceived shortcomings of the current projects in North Norway. To do so, each project is broken down a little more in depth than what has previously been discussed. This also gives the reader an understanding of why the researchers chose to interview and analyze data from North Norwegian stakeholders in particular. Furthermore, a thorough understanding of North Norway's unique situation gives the reader an understanding of why the two alternative legislation policies were chosen, and how they can relate to the situation currently being discussed in North Norway.

4.1 Ripple Effects in Northern Norway

The following section will shortly describe the existing oil and gas establishments in northern latitudes of Norway, the ripple effects they have created and concerns about the lack of positive ripple effects created for the local and regional stakeholders so far. At the end of the section the region of Lofoten and Vesterålen will be presented as the area heats up with discussions in political and social layers of society about whether to lift the moratorium, and how to create ripple effects for all parties included if the ban was scraped.

Before describing the various projects and ripple effects originating from them, one should be acquainted with the area "North Norway" as a whole.

The region is featured by long distances between major cities; the infrastructure is rather poorly developed. The railway connecting Northern Norway with its southern parts has been built only to Bodø, meaning that the most northern municipalities have to commute by air and boat traffic, as well as buses and automobiles.

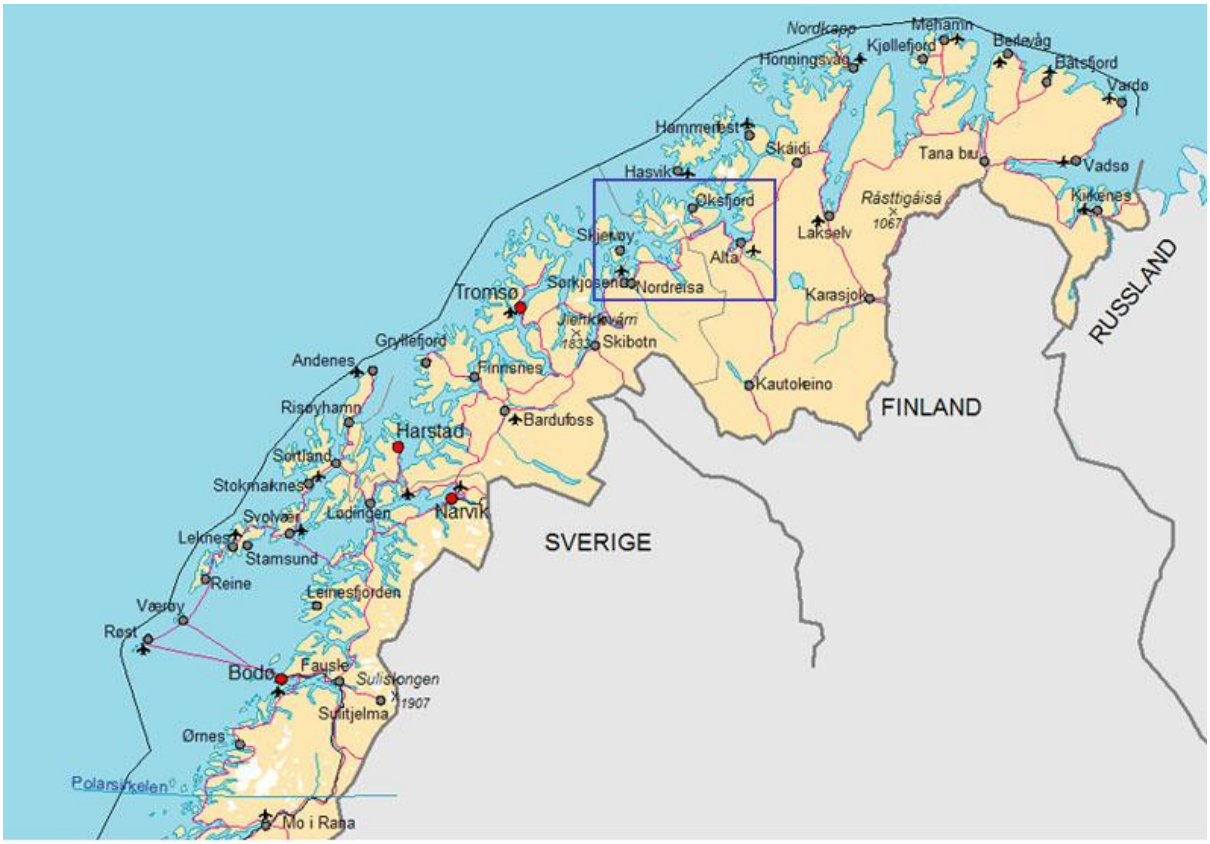

Figure 10: Northern Norway (*Taken from Gjæver. 2004*[2]*)*

Another important feature that describes North Norway is the overall negative population development. The northernmost part of the country is losing most inhabitants in the age group 20-40. Among 88 municipalities in Northern Norway, only 17 are experiencing positive population growth (Henriksen & Sørnes, 2010:23). Young people seek education and work opportunities in southern parts of the country due to lack of possibilities in the north.

As the reader might understand, the region could benefit from increased business activity. Since petroleum industry is the major value creator to the Norwegian society, the following sections will proceed with an introduction to the petroleum developments in the northern parts of the country together with the information on ripple effects the industry has caused so far. The authors feel it is important to note that of the examples being outlined below, only one (Snøhvit) has reached the production and operation phase. The other examples are either being planned, or are in the development and construction phases. Due to these differences, the extent and breadth of ripple effects vary across the board. Bearing this in mind, the reader can then understand that each and every single oil and gas project has had or will have

[2] http://www.giaever.com/Alteidet/kart_03.htm

different effects on the surrounding community. Therefore, the authors wish to show that the following projects, different as they are, still follow the common theme of inadequate ripple effects.

4.1.1 Skarv

The Skarv field is situated at a depth of 300-450 meters off Helgeland's coast, which lies in Nordland County, Norway. The project is being operated by the BP Corporation together with Statoil (30%), Shell (25%) and ExxonMobil (15%) as partners. The field contains 80 % gas and 20 % liquids that will be extracted employing an offshore FPSO installation[3].

Oil and gas industry's establishment off Helgeland's coast contributes to creation of regional and local ripple effects. The report by the Bodø Graduate School of Business (Henriksen *et al*., 2009) on BP's exploration and installation of the Skarv field in Sandnesjøen, Nordland, Norway, shows that ripple effects were created in the region at the start-up phase of the project. According to the report, the company prioritizes direct engagement in society's life in forms of supporting education, development of the local supply-industry and cooperation with the local authorities (ibid: 55). The company directly sponsors local events, organizes presentations and seminars, as well as generally advertises the Sandnessjøen region, where the oil and gas establishment finds place. The company also realized economic effects to the local society by purchases from the regional suppliers amounting 350 million NOK, divided in 8 contracts: Ruukii (fabrication and suction ankers), Aqua Rock (Stone deliveries), Allseas/Asco (storage of gas pipes), Bomek, Bodø (fire-doors), Nexans Rognan (fiber optical elements), Scomi Oiltools and Veolia (handling of drill mud and drill water from wells), as well as Asco Norge (base and base operations) (ibid: 55).

However, the project cannot be considered as perfect and sustainable for the regional and local society to its full extent. For example, in the start-up phase there was only one person receiving salary from BP in Sandnessjøen, therefore the employer fee and the income tax received by the local tax authorities were insignificant (ibid:54). This means that the main planning work was done in the southern part of Norway where BP has its headquarters and therefore there were very few local workers employed at the project's start-up phase in Sandnessjøen, resulting in low contribution to the local tax authorities.

[3] Subsea: http://www.subsea.org/projects/listdetails.asp?ProjectID=162

The company also reports that 28 of their employees had their addresses registered in Nordland County at the first phase of the project, however the company or the employees most likely will not own the houses in the county and will prefer renting the place of residence (Henriksen *et al.*, 2009:54, 55). This results in the company or its employees not paying direct property taxes to the local authorities. Taxes will be paid by the actual owner of the house/apartment and the company/employees will contribute to the tax income only through their rent payments.

Another issue being that, according to the consequence analysis conveyed by the company before the establishment of the Skarv field, only 3% of the technology and service deliveries are to be made by the local and regional businesses (ibid: 55). This amounts to only 420 million NOK of the total establishment costs, which amount to31.4 billion NOK. The analysis implies the much feared problem related to the oil and gas establishments in the less industrialized areas with less developed infrastructure. Instead of benefiting the region's businesses, the majority of the company's payments settle on the accounts of the bigger and more cost-effective suppliers in other areas of Norway or even abroad. The report concludes that the local and regional suppliers are not effective and competitive enough to land substantial supply-contracts from the oil and gas establishment in the area (Dahl Johansen & Pedersen, 2009). The researchers state in their interview to the regional newspaper (ibid) that assistance from petroleum companies and central authorities is very much needed right now, as in the 1970's when the Norwegian oil and gas adventure started, in order to change the trend and create more local and regional ripple effects.

4.1.2 Goliat

The Goliat field is the first oil development in the Norwegian part of the Barents Sea. The field was cleared by the Norwegian officials for oil and gas exploration and production in 1997[4]. The first discovery was made when drilling the first exploration well in 2000. The project is operated by the Italian petroleum company ENI that owns 65% of the rights to the field, together with the Norwegian Statoil Petroleum AS that has 35% share in the field development.

The project was greatly welcome in the region after the positive impact the Snøhvit installation had for the Hammerfest municipality. However, there are concerns that the Goliat

[4]ENI Norge: http://www.eninorge.no/EniNo.nsf/page/DED71D42177627E0C12574E60040DAF9?OpenDocument&Lang=norwegian

project is not creating the ripple effects as was desired by the local politicians and inhabitants. The issue in this case was a major supply-ship contract of 600 million NOK over 10 years for the field going to the Faroese company Esvagt, owned by the Danish Maersk. The Norwegian offshore supply company Troms Offshore competed for the contract, however was under prioritized when it came to the final decision. Questions were posed in the local newspaper *Folkebladet* (Lange Nordahl, 2010, February 6) whether the ripple effects in form of supply contracts are possible in Northern Norway if such competent firm as Troms Offshore does not manage to close a deal? Furthermore, appointment of the contract to a foreign country means that there are no national ripple effects created either, as the only supply companies benefiting from the decision are the foreign Esvagt and Maersk.

The stakeholder also points out that the installation of the Goliat field could become an offshore base for further oil and gas exploration in the northern areas of the Barents Sea (ibid). If this is the case in the future, floating extraction installations would take over the onshore installations, thus depriving the local communities and municipalities from ripple effects in form of property taxes and additional work places.

Furthermore, ENI not only reduces the possibility for local and regional suppliers to take a more significant part in the start-up operations of the Goliat field, but even national suppliers are being deprived of possible ripple effects. The supplier leader Aker Solutions lost a tender competition for construction of the FPSO for the first development of an oil field in the Norwegian part of the Barents Sea (Aakvik & Andersen, 2010, February 8). The loss of a possible contract means that the Aker Solutions plants will have excess capacity and will probably have to fire employees in order to save costs (ibid). The contract was awarded to the Korean company Hyundai Heavy Industries meaning that not only the local and regional stakeholders, but even Norway as a whole is being deprived of ripple effects on the national level.

4.1.3 Snøhvit

The Snøhvit natural gas field is the first ever petroleum installation on the Norwegian part of the Continental Shelf in the Barents Sea. Natural gas is being extracted by remotely controlled subsea installations lying in depth of between 250 and 345 meters and then

transported to the onshore processing plant outside the town of Hammerfest by 143 kilometers of subsea pipes[5].

The Snøhvit development in Hammerfest municipality has caused ripple effects to the local inhabitants. In addition to employment of local inhabitants, the installation brings tax income into the local budget. Costs of the installation of Train1 were bigger than Statoil had estimated at the planning stage of the plant, resulting in higher property tax to the Hammerfest municipality (Henrikesen & Sørnes, 2010:26). The property tax due to increased investment costs rose from 100 million NOK/year to 150 million NOK/year. The significance of such property tax income to the Hammerfest municipality may not be underestimated. However, a problem exists here also, as the municipalities around Hammerfest do not receive a single crown from this tax income. One may conclude that the Snøhvit establishment creates benefit to one municipality but fails to create adequate ripple effects to the region as a whole.

4.1.4 Lofoten and Vesterålen

The areas of the Lofoten and Vesterålen islands are under moratorium for oil and gas exploration and production and there are no actual projects initiated in the area. However declining production on the NCS and the potential of hydrocarbon formations off the archipelago has aroused discussions about whether the area should be opened for oil and gas activity. The potential for major findings and the question of possible ripple effects are some of the reasons for including and presenting this area as a part of the case study of the ripple effect creation in North Norway. Furthermore, the stakeholders' opinion from this region will have to be taken into consideration when studying desired ripple effects for North Norway.

Lofoten is an archipelago of islands situated above the Polar circle in north-western Norway. The district consists of six municipalities Vågan, Vestvågøy, Flakstad, Moskenes, Værøy and Røst. The archipelago was connected to the mainland Norway in December 2007, thus making travelling to this unique place more convenient to the local inhabitants, as well as visitors from other parts of the world.

Lofoten is a popular tourist attraction for Norwegian visitors due to its magnificent white sand beaches, rigid mountains, rich bird colonies and other wildlife, and is deemed to be paradise for fishermen during the fishing season called "Lofotfiske." The season starts in

[5] Statoil: http://www.statoil.com/no/ouroperations/explorationprod/ncs/snoehvit/pages/default.aspx

January and lasts till the end of April and the main catch during this period is cod. Cod is then used for production of clip-fish – sun-dried fish – that is the main ingredient in the baccalao dish, and therefore has been a major export resource to southern Europe for centuries.

In addition to the vast amounts of cod, Lofoten is a spawning area for various other types of fish, a summer place for different types of whales including orcas, a home place for coastal seals, has a deep-water coral reef and enormous bird colonies (Referansegruppen, 2009, May 7).

North from the Lofoten Islands in Nordland County lies the district known as Vesterålen. The district consists of six municipalities Andøy, Bø, Hadsel, Sortland, Lødingen and Øksnes. There are two cities in Vesterålen, namely Sortland and Stokmarknes, where one may find public and representative offices for various enterprises and also airports. The area, just like Lofoten, is spectacular due to high mountains, fjords, rivers and swamps. Some of the places are densely populated, while others are dominated by wildlife. The area has rich historical past and excavations have proved the existence of villages in the region since the stone-age.

The area, together with Lofoten, is famous for fishing; however during the last years other industries, especially tourism, have flourished due to Vesterålen's unique coastal culture and environment.

Petroleum off Coast of Lofoten and Vesterålen

Predictions for oil and gas reserves off of Lofoten and Vesterålen's coast claim that significant resources are located there. According to KonKraft (2009:4), oil and gas companies regard Nordland VI and its Ribban Basin and northern Træna Basin, the central/northern part and southern part of Nordland VII, as well as Troms II, to be the most promising areas for further oil and gas exploration on the Norwegian Continental Shelf (Figure11).

To sum up the case of ripple effects in North Norway, one may deem the Skarv, Snøhvit and Goliat establishments to be positive to a region challenged by population decline and limited infrastructure, however lacking the development of extensive ripple effects as desired by the local community. This experience should be considered when planning and starting-up future

projects in other small local communities in North Norway in order to create the desired ripple effects to the community.

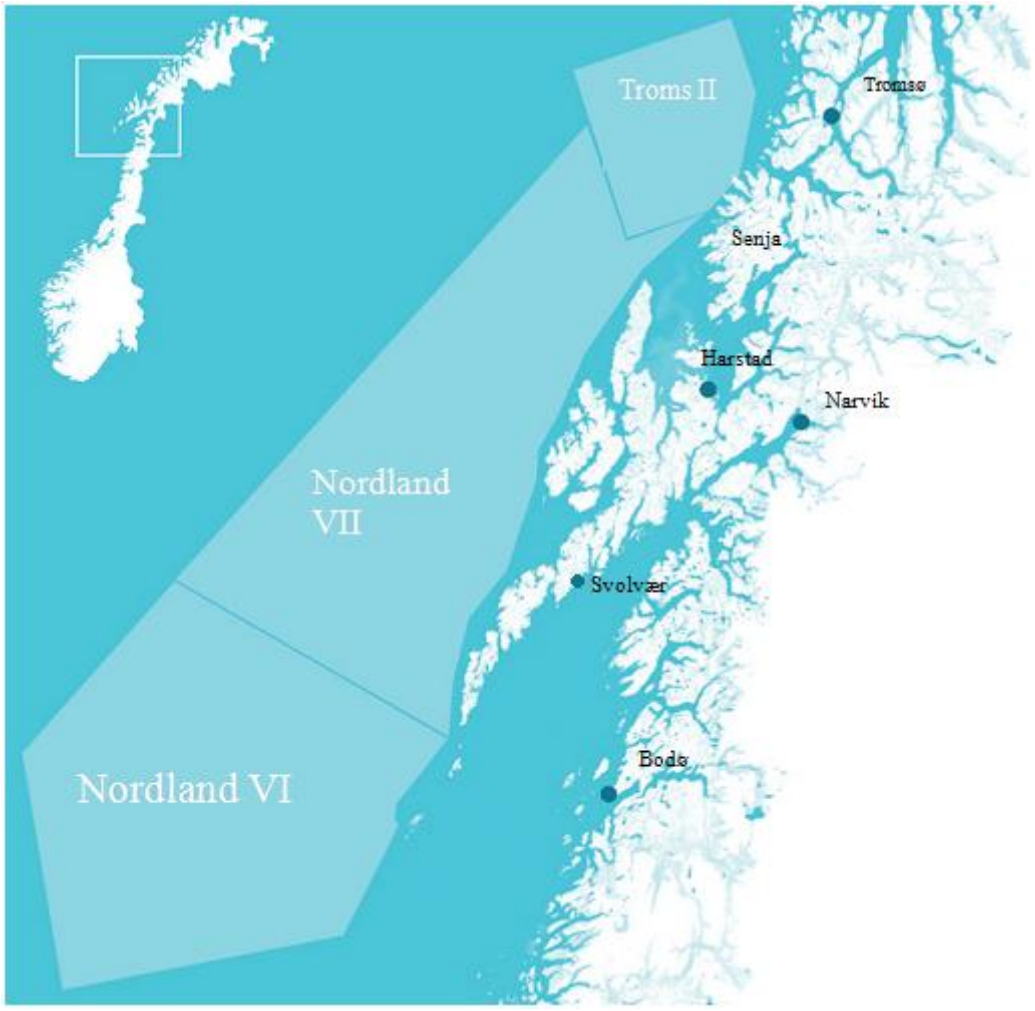

Figure 11: Lofoten and Vesterålen (*Adapted from KonKraft 2009:4*)

5. Alternative Policies Background

As mentioned before, the authors will be comparing ripple effects from alternative legislation to the ripple effects that North Norwegian stakeholders want. In order to do this, the reader must have a basic understanding not just of the ripple effects that the policies promote, but also of why the policies were implemented, what they are intended to promote, and how they are enforced in their current systems. The two pieces of legislation that will be looked at for this study are the U.S. Land and Water Conservation Fund Act of 1965 and the Gulf of Mexico Energy Security Act of 2006, both from the US. To reiterate, the focus and later analysis of this study is on the ripple effects that arise from these acts, which will be shown in Chapter 6, but a general understanding of what the acts are themselves is needed in order to better clarify and justify the actual ripple effects produced. So to begin, the authors will highlight and outline the particulars of the Land and Water Conservation Fund Act of 1965, followed by the Gulf of Mexico Energy Security Act of 2006.

5.1 U.S. Land and Water Conservation Fund Act of 1965

In 1958, the US responded to environmental, recreational, and public health concerns by creating the Outdoor Recreation Resources Review Commission (ORRRC). Shortly after, the ORRRC came up with a list of recommendations, one of which was a national recreation program. The ORRRC Report of 1961 strived to raise awareness that both the private sector as well as all levels of government were responsible for attempting to make recreational resources available (National Parks Service, 2008, September 19). According to the National Parks Service Website, the main suggestions of the report were as follows:

- "The United States should establish a national recreation policy to preserve, develop and make accessible to all Americans the resources needed 'for individual enjoyment and to assure the physical, cultural, and spiritual benefits of outdoor recreation.'"
- "All agencies administering outdoor recreation resources--public and private--should adopt programs designed to make the best possible use of available resources in light of people's needs."
- "Each State, through a central agency, should develop a long-range plan for outdoor recreation, to provide adequate opportunities for the public, to acquire additional areas where necessary, and to preserve outstanding natural sites."

- "An independent Bureau of Outdoor Recreation should be established in the Interior Department to lead nationwide efforts by coordinating Federal programs, conducting nationwide planning and assisting other levels of government."

- "A Federal funding program should be established to provide grants to States that would stimulate and assist them to meet new demands for outdoor recreation and to pay for additions to the Federal recreation estate."

(National Parks Service, 2008, September 19: para.1)

Taking notice of these recommendations, the Kennedy Administration introduced legislation to the second session of the 87th Congress in 1962 in order to set up a "Land and Water Conservation Fund (LWCF)" that would benefit recreational users. After two years of debate and revisions, the Act was finally signed into law on September 3, 1964. The law became known as the Land and Water Conservation Fund Act of 1965 (ibid). From there on out, it has been amended numerous times, but is still enforced today. The purposes of the act, as defined by the Defenders of Wildlife website, are "to assist in preserving, developing and assuring accessibility to outdoor recreation resources and to strengthen the health and vitality of U.S. citizens by providing funds and authorizing federal assistance to states in planning, acquiring and developing land and water areas and facilities, and by providing funds for federal acquisition and development of lands and other areas" (ibid: para.2)

How is it funded?

In its initial conception, there were three sources of funding for the LWCF. According to the National Parks Service website, these three sources were initially "proceeds from sales of surplus Federal real property, motorboat fuel taxes and fees for recreation use of Federal lands" (ibid: para.8). Unfortunately, for the first two years the fund only accumulated roughly $100 million per year, which fell far short of the expectations of law-makers. Thus, in 1968 amendments were implemented that raised the minimum balance to $200 million and allowed revenue from Outer Continental Shelf (OCS) lease receipts to make up the shortfall from the original funding sources. In other words, if the $200 million balance was not achieved through recreational fees, motorboat fuel taxes, and surplus Federal real property sales, then the difference would be paid through the OCS tax revenues (National Parks Service, 2008, September 19). Growing demands to the fund quickly showed that a larger balance was required, and in 1970 another amendment was put in to place that raised the level of the fund

to $300 million for the years 1971 – 1989. Finally, in 1977, the approved balanced was raised to $900 million which is where it currently sits today (ibid). Currently, almost all of the funding for the LWCF comes from the revenues on OCS leases. It is a big change from how it was originally funded, but also shows the attitude of the US Congress to recycle revenues gained from mineral extraction into use for securing natural resources for recreational use (Vincent, 2006, July 10).

Accredited vs. Appropriated

One big thing the authors of this paper would like to emphasize is that while these numbers are approved each year, it is not necessarily the amount of money that the fund has to work with. Currently, as we discussed, the fund is *credited* $900 million each year in the US budget, but the money cannot be spent unless *appropriated*. Unlike an ordinary trust fund, money is not put into a separate account where it could accrue interest; instead the money is only truly moved once it is appropriated. Otherwise, the money actually stays with the Treasury, and can be spent elsewhere. Money in the fund is available for outdoor recreation purposes only if appropriated by Congress. According to Vincent (2006, July 10:1), "current congressional issues include (1) deciding the amount to appropriate for federal land acquisition and identifying which lands should be acquired, (2) deciding the level of funding for the state grant program, and (3) determining what, if any, other programs should be funded through LWCF and at what level." Debate and discussion of these issues are held at the annual Interior appropriations legislation.

It is at this point in our writing that we would like to point out the disparities throughout the years between what has been credited and what has actually been appropriated. From FY 1965 through FY2006, approximately $29 billion has been credited to the fund, while roughly half -14.3 has actually been appropriated. As seen in appendices A and B, total appropriations have fluctuated greatly since the Act's inception, and have even had massive discrepancies from year to year. For instance, in FY1997 appropriations amounted to a mere $159 million, while the very next year, FY1998, showed appropriations of $969 million, which was actually in excess of the $900 million cap usually assumed. In FY2001, record appropriations of $1.0 billion were granted spurred by President Bill Clinton's Land Legacy Initiative (Vincent, 2006, July10). Since then, numbers have continuously fallen from year to year, with numbers rarely reaching back to half of the $900 million ceiling. Exactly where

these appropriations go and who uses them will be presented later on in the Empirical Findings section of our paper.

5.2 Gulf of Mexico Energy Security Act of 2006

The second act the authors will look at is the Gulf of Mexico Energy Security Act of 2006. The United States continues to be one of the only countries in the world that bars oil and gas exploration in a significant percentage of its potential domestic resources. Figure 12 highlights where the US has estimates of undiscovered oil and gas. In essence, only the central and western areas in the Gulf of Mexico and various parts of the Alaskan coastline are open for such activity (Lieberman, 2006, December 4). Recently, however, the US has began to take a comprehensive look at its overall energy strategy and slowly the winds of change are beginning to blow when it comes to opening more acreage.

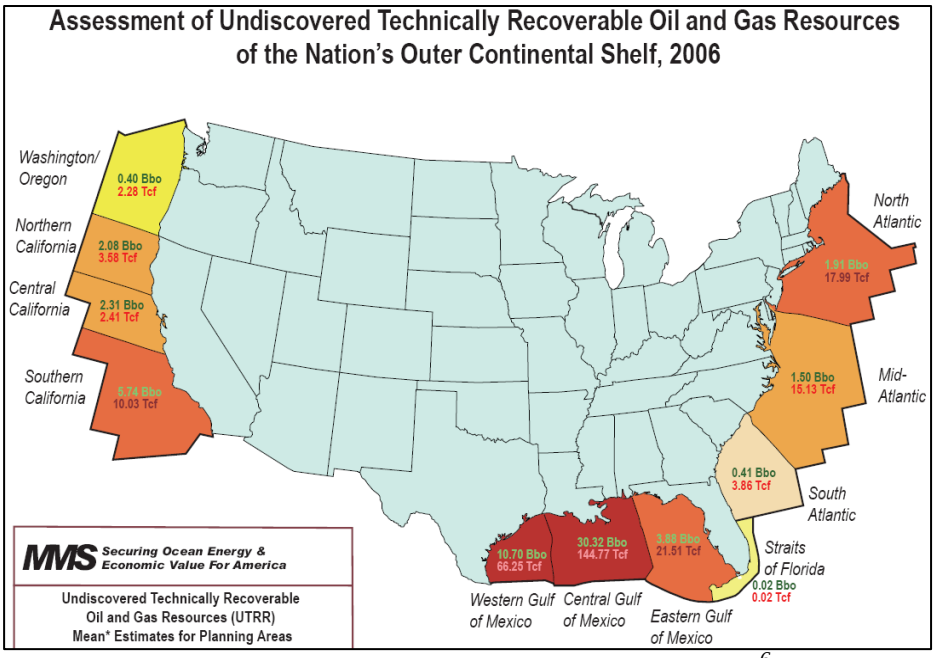

Figure 12: US Oil and Gas Resources (*Energy Policy Information Center)*[6]

As of late, a 26 year ban on drilling off the nation's coast was allowed to expire, opening up the east and west coast for drilling where it was previously not allowed (Consumer Energy Alliance, 2008, September 30). Another and possibly more glaring sign of proof lies in the passage of the Gulf of Mexico Energy Security Act of 2006, or from here on out referred to as GOMESA 2006. The GOMESA 2006 Act is the first time in a long period of time that US lawmakers have made a legitimate push to open more of the nation's offshore resources

[6] http://energypolicyinfo.com/2009/06/ocs-access-in-limbo-as-key-senate-mark-up-looms/

to exploration and production activities. While this is significant in itself, the authors feel that other aspects of the act are more significant to this study. One of the most significant effects of the act is how the revenues from offshore production and exploration are divided amongst not only the federal government, but among state and even regional governments. For the first time in US history, revenues from offshore leases and drilling activities directly influenced the individual states from which the offshore activities take place. Exactly how or why this is important will be discussed later on, when the authors of this paper look to the applicability of such legislation to North Norway, and the possible impacts that such similar legislation may have for localities in the North.

GOMESA 2006

According to Ben Lieberman (2006, December 4), the US House of Representatives decided to pass legislation in reference to current events of the time in 2006. "In response to high oil and natural gas prices and continued political tensions among oil-exporting nations, the House passed the Deep Ocean Energy Resources Act of 2006 (H.R. 4761) by a 232 to 187 vote, which included 40 Democrats voting in favor" (ibid:1). The Senate then stripped down the bill into a more simple version, which Lieberman (ibid:1) criticizes as "only a little better than the status quo." Once through the Senate, the bill moved on to the Oval Office for further approval. Then, on December 20, 2006, President George W. Bush signed into law the Gulf of Mexico Energy Security Act. The proponents of the plan emphasize three main points of the act that they feel represent what it stands for. These three points are:

1. "The act shares leasing revenues with Gulf producing states and the Land & Water Conservation Fund for coastal restoration projects;"

2. "The act bans oil and gas leasing within 125 miles off the Florida coastline in the Eastern Planning Area, and a portion of the Central Planning Area, until 2022; and"

3. "The act allows companies to exchange certain existing leases in moratorium areas for bonus and royalty credits to be used on other GOM leases."
(Mineral Management Service, 2010, March 3: para.1)

However, a policy expert who was interviewed on the subject says "*don't be fooled, GOMESA was first and foremost intended to open areas for exploration that were previously off limits to oil and gas production*." Likewise, Gibbs Tschudy (2009, October 7:29) says that the act was set up "To enhance the energy independence and security of the United States by

providing for exploration, development, and production activities for mineral resources in the Gulf of Mexico." While many criticize that the act did not do enough, others feel that the act is a positive step for the future of energy policy in the US.

Affected Area

To begin with, one should look at what area the new act affects and where exactly the area is located in a broader context to the states it is benefitting. The main, or substantially significant areas affected by the new act are the 181 Area in the Eastern Planning Block, also known as Sale Area 224, and the 181 South Area in the Central Planning Block (Mineral Management Service, 2010, March 3). The Eastern Block lies off the western coast of Florida and the southeastern coast of Alabama, as seen in Figure 13. According to the US Mineral Management Service (ibid: para.4), "The Act stipulated that 8.3 million acres be offered for oil and gas leasing shortly after enactment of the statute." This acreage is included in both the Central Gulf Planning Area and the Eastern Gulf Planning Area. It consists of approximately 2 million acres in the Central Gulf that was first offered for leasing after enactment of the law at Lease Sale 205 held in October, 2007; approximately 0.5 million acres in the Eastern Gulf that received a supplemental environmental impact statement review and were offered for leasing at Lease Sale 224 held in March, 2008, (orange area in the following map); and approximately 5.8 million acres in the Central Gulf that received a supplemental environmental impact statement review and were offered for leasing at Lease Sale 208 held in March, 2009 (blue area in the following map) (ibid: para.5).

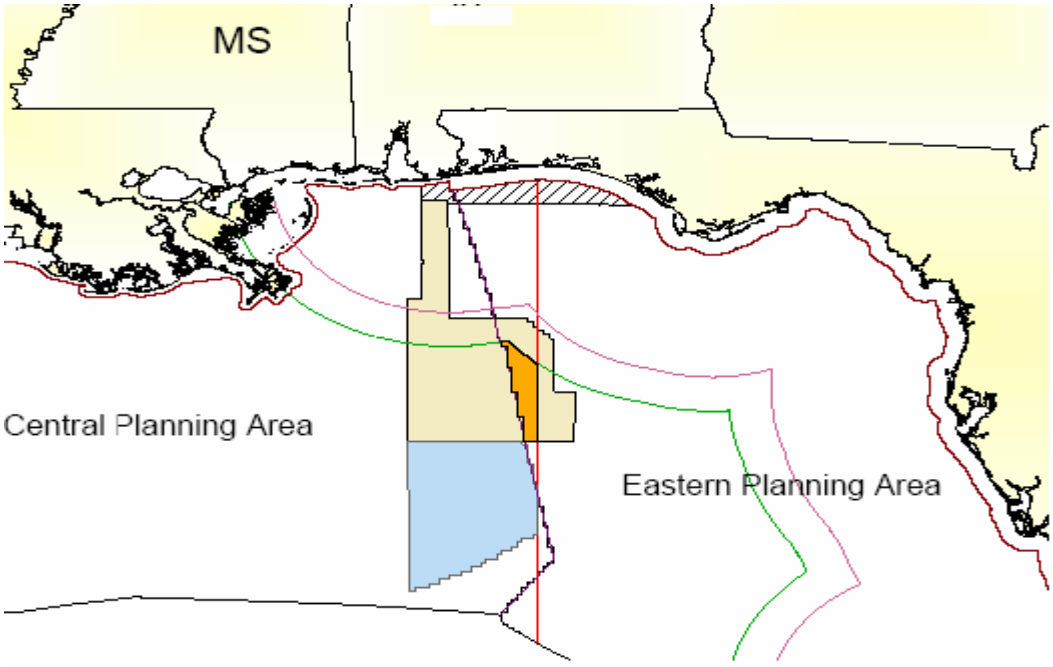

Figure 13: Affected GOMESA areas *(Mineral Management Service, 2010[1])*

Previously, the Eastern block was closed off to any oil and gas activity, and GOMESA 2006 opted to open a small, yet significant area. The largest opposition still comes from Florida and the resistance of the state towards the oil and gas sector. In Appendices C through I are maps that give a clearer and more exact definition of where these areas lie, but for all discursive purposes it suffices to say that much of the areas were previously in a moratorium. The act will eventually also affect the Central and Western planning areas, but currently these areas are all but unaffected. Now that the reader has an idea of where the new law is being implemented, it is important to note that there are two distinct time periods or phases that define the GOMESA 2006 legislation.

Phase 1

The first phase of the GOMESA 2006 legislation began in fiscal year 2007. The provisions of the act call for a revenue sharing between three different players:

1. The States,
2. The Federal Treasury, and
3. The Land and Water Conservation Fund.

For the first time in history, states are beginning to see revenue from the oil and gas industry that has been drilling offshore for decades. GOMESA 2006 calls for 37.5% of OCS revenues, including bonus bids, rentals and production royalties, to go directly to the states and their qualifying coastal political subdivisions (CPS). The states divide up this revenue based on proximity and distance from the new leasing areas (Mineral Management Service, 2010, March 3: para.1). These revenues only apply to the 181 East and 181 South areas as defined before. The states that are included in this revenue sharing are the four participating GOM coastal states of Texas, Louisiana, Mississippi, and Alabama, while leaving out Florida due to its ban on drilling in its offshore waters. This leaves 12.5% of revenues going directly into the LWCF, and the remaining 50% heading into the Federal Treasury. The Mineral Management Service (ibid: para.3) states that they plan to "distribute the funds on or before March 31st of the fiscal year following the fiscal year to which the OCS revenues were attributed." In other words, funds gained in FY2008 would not be disbursed until FY2009. This means that the first year that states actually began seeing revenues from GOMESA 2006 was in FY2008, after the act was implemented in 2007. While phase one is currently being

implemented, the second phase is the one that is being hotly debated by almost all parties due to unclear and undefined wording.

Phase 2

The second phase of the GOMESA 2006 revenue sharing begins in the year 2017, or ten years after the inception of the act itself. In essence, the second phase will be an expansion of the first to include all leases in the Gulf, including those in the Central and Western planning blocks. The qualifying revenues will include all those leases that have been "issued either after December 20, 2006, in the 181 Call Area, or, in 2002–2007 GOM Planning Areas subject to withdrawal or moratoria restrictions" (ibid: para.4). The states will once again receive 37.5% of the qualifying OCS revenues; however, there is a limit to the amount that the states can earn from the phase two leasing areas. According to the GOMESA 2006 legislation, a $500 million per year cap will be implemented for the states. This cap will not apply to the areas affected by phase one; therefore states may earn more than the cap when phase one and two revenues are combined (ibid: para.4). The phase two wording remains vague and loosely defined since much of it is to be defined at the time of implementation, which leaves room for much debate. We will discuss this aspect later, but now we would like to mention briefly a few of the other provisions that GOMESA 2006 laid forth in its passing.

Moratorium

During the write up phase of the GOMESA 2006 legislation, one major stipulation was put in place to preserve certain areas of the GOM to prevent oil and gas activity. This is known as the GOMESA 2006 Moratorium. The moratorium itself covers portions of the Central, and most of the Eastern GOM Planning Areas. In essence, the "Eastern Planning Area within 125 miles of Florida, all areas in the Gulf of Mexico east of the Military Mission Line (86^{o} 41' west longitude), and the area within the Central Planning Area that is within 100 miles of Florida" (Mineral Management Service, 2010, March 3: para.5). With the moratorium, oil and gas activity is banned until the year 2022 when the moratorium will expire and evaluations will be conducted to see whether these activities should be allowed to begin. With the implementation of the moratorium, some leaseholders found that their previously purchased leases were now unusable, which brings us to the last provision of GOMESA 2006 legislation we would like to talk about.

Credit Exchange

For those unfortunate lessees who found themselves in possession of a lease falling under the new moratorium, credit exchanges or bonuses are being offered to offset the potential losses that may have been incurred. According to the MMS (2010, March 3), the final rules and regulations for these trade credits were ironed out and implemented on September 12th, 2008. Eligible leases once again "lie within 125 miles off the Florida coast in the Eastern Planning Area or within 100 miles off the Florida coast in the Central Planning Area" (ibid: para.3). In return for the leases, the lessee may substitute the credits for monetary payments to pay for either a lease bonus bid or royalty due on oil and gas production from most other leases in the Gulf of Mexico or they may transfer the credits to other GOM lessees for their use (ibid: para.5). The biggest stipulation here is that the lease holders send in their requests for credit before October 14th, 2010, otherwise they may not be eligible to receive the credits and must take a loss on the purchased lease.

Proponents and opponents

The last section of this report will deal with some of the issues currently being discussed about the present and future of the GOMESA 2006 legislation. It is needed to understand which groups of stakeholders support and which groups of stakeholders oppose the legislation in the US, to better understand similarities between these stakeholders and potential stakeholders in North Norway. Doing so may create a better understanding of how implementing similar legislation in North Norway would be greeted by the local population, interest groups, businesses, and differing levels of government.

According to the experts, some common opponents of the GOMESA 2006 legislation were environmental groups, conservation groups, and hardcore anti-oil lobbyists. However, by including conservation spending in GOMESA 2006 some of these voices have not been as strong as they have been to other off-shore drilling projects. Others who oppose the bill include proponents who believe the bill either went too far, or did not do enough to open more areas offshore for oil and gas activity. This group consists of various local and federal politicians, interest groups, some fisheries, and various tourism groups. Many worries brought up by these groups include environmental damage, line of sight issues, heavy tanker traffic, and harm to fisheries.

One policy expert interviewed states that "*those who typically are for economic development and affordable energy prices support the GOMESA 2006 legislation*." Those supporting the bill include; oil and gas companies, lobbyist groups, local, state, and federal governments, and various other stakeholders who feel the bill is either sufficient or a step in the right direction in the US's energy policy. Interestingly enough, when asked whether or not he thought the oil companies supported certain parts of the GOMESA 2006 legislation, specifically the revenue sharing with states, he said "*the oil companies are always glad to have a piece of legislation that helps their image*." According to him, "*past accidents and public relations fiascos have left a sour taste in many people's mouths, and therefore oil companies are seen as bad guys. Whenever a piece of legislation is passed that helps them gain favor with stakeholders, they tend to get behind the bill and support it*." However, strong support for this legislation does not necessarily mean that implementation will be easy. Since the law is still young, many issues are currently up for debate that may have an impact on the future of GOMESA 2006.

6. Empirical Findings

The following chapter will focus on presenting the empirical findings derived from primary and secondary data that was collected for the research. First, findings from GOMESA 2006 and LWCF will be presented followed by findings observed from the regional and local stakeholders on their opinion about ripple effects, a dream scenario for North Norway, responsibility issues and possible policy solutions for creating lasting and sustainable effects. The empirical findings from collected data were derived through the lens of Ripple Effects theory, Sustainability theory and CSR theory, which have been unified in a theoretical framework in Chapter 2.4.5, or Figure 8. Focus on which information is included in the empirical findings is therefore decided by the theoretical framework and research questions that have origins in theories the authors employed for this research.

6.1 Alternative Legislations

Since the two pieces of alternative legislation have previously been outlined, focus is now turned onto what ripple effects have been produced by oil and gas activity through these acts. These ripple effects will then later be discussed further in Chapter 7.

6.1.1 LWCF

How is it funded?

As stated before, there were three sources of funding for the LWCF in its initial conception. These three sources were initially proceeds from sales of surplus Federal real property, motorboat fuel taxes and fees for recreation use of Federal lands. Finally, in 1977, the approved balanced was raised to $900 million which is where it currently sits today. Today, almost all of the funding for the LWCF comes from the revenues on OCS leases.

Ripple Effects Created and Stakeholders Affected

Vincent (2006, July10:1) states that "the LWCF has been the principal source of monies for land acquisition for outdoor recreation by the four federal agencies — the National Park Service (NPS), Bureau of Land Management (BLM), Fish and Wildlife Service (FWS), and Forest Service (FS)." Usually, "Congress identifies which areas are to be acquired with the funds it provides from the fund" (ibid: 1). Other programs or uses for the appropriated money include "a matching grant program to assist states (and localities) in recreational planning, acquiring recreational lands and waters, and developing outdoor recreational

facilities" (ibid: 1). States are allowed to set their own restrictions and criteria as to who can apply for the grant money, and then a competitive selection process follows with the "winners" granted funds based on statewide recreation plans. A recent trend in the fund began in FY1998 with the appropriated money going towards many other federal programs that are related and have a similar goal. As Vincent (2006, July 10:1) puts it, "there are no limitations on what programs can be funded from the LWCF."

However, there are three broad groups or reasons that funds are appropriated from the LWCF. These are: 1) "the federal acquisition of land and water, and the interests that lie within; 2) grants to states for recreational planning, including acquiring recreational lands, waters, and similar interests and then developing outdoor recreational facilities; 3) or related purposes" (ibid:2). The following sections will describe the three groups in more detail.

Federal Land Acquisition

The first of the groups, federal land acquisition, remains the primary source of funding for the purpose of purchasing or leasing new land to be used for recreational purposes. As mentioned earlier, four agencies receive the majority of this money and use it to purchase and manage about 94% of all the federal lands. These agencies are the NPS, the BLM, the FWS, and the FS.

The process these agencies go through each year to apply for funding rarely changes, but since the amount of money is fairly small compared to the amount of requests being made, each company usually has a backlog of funding requests that continue each year. As Vincent (2006, July 10:2) says, "the NPS estimates the cost of its acquisition backlog after FY2006 at $1.86 billion." Oftentimes, funding for a project is received a year or two before it is actually spent, since the process of acquiring lands can often times take longer than a year. The process starts by each company turning in its yearly budget with the land proposals included. "Section 7 of the LWCF Act (16 U.S.C. §460*l*-9) provides that federal funds may be used for purposes including water development projects with recreational benefits; land acquisition in areas administered by the Secretary of the Interior for recreational purposes; land acquisition in national park, national forest, and national wildlife system units" (ibid:2). Following the requests, Congress reviews the proposals and decides which lands are to be purchased, and how much money to appropriate for each project. Recently, Congress has not only appropriated money for the acquisition and development of the land, but also for emergencies, inholdings, hardships, and/or exchanges. This helps put less burden on the

agencies in the future, especially if the public doesn't take full advantage of the lands that are acquired.

Stateside Program

The second group or area that funds from the LWCF are distributed is the stateside program. In essence, states are provided matching grants that go towards recreational planning, facility development, and again the acquisition of lands and waters. Specifically, these grants go for outdoor recreational purposes, as opposed to indoor recreational centers such as community based centers. The lands that are acquired must then be used for recreational purposes from then on out, unless they go through a conversion process. Basically, they can be converted to use for the states needs, i.e. widening roads or building schools, but only if other land is substituted to replace the lost recreational plots (Vincent, 2006, July 10:9).

Appropriations to the states are divided out equally between the states by the Secretary of the Interior, though remaining appropriations are divided up according to need as seen by the Secretary. Usually, this comes down to population size and density, though states are still not allowed anything more than 10% of the total appropriations. Once funding is received, states then have three years to spend the money or else they are required to return it to the Secretary, whose job it is to reapportion any of the unused or unobligated money. However, it is very rare that the Secretary needs to reapportion anything since most states have no problem finding ways to use the money (ibid). A major factor for this is the lack of specific definition for where and how these monies can be spent. Beyond the general guidelines, i.e. "acquisition or maintenance," states are allowed to make the decision about where and how to spend the money.

The process for a state to receive money from the LWCF begins by preparing and updating an annual statewide recreation plan. This plan is fairly general, and is required to look at the needs and the current opportunities that the state has for recreation, and then set a goal and draw up a plan for reaching this recreational goal. This does not include specific projects or project details. Following the submission of the plan, it is then up to the Secretary to approve the plan, and if successful then goes on to the NPS for further approval. Finally, it is up to the states to award the money to specific projects through a competitive application process. Applicants are most often chosen based on the states own criteria or specific recreational goals, or else it is passed on to localities to use as they wish, as long as it stays within the goals of the original plan. Again, these payments are matching fund grants, so 50% of the

burden must be paid by the state while the other 50% may be funded by monies from the LWCF (Vincent, 2006, July 10).

Other Related Purposes

Since FY1998, funds from the LWCF have gone to various other federal programs according to Section 7 of the LWCF Act (16 U.S.C. §460*l*-9). Section 7 states that funds are to be used for federal purposes "unless otherwise allotted in the appropriation Act making them available" (ibid: 4). Since there are no clear definitions of exactly what these other uses are, governmental officials, including Presidents, have sent proposals asking for funds for various federal programs. Congress has either denied or accepted these propositions, with portions of the money even going towards maintenance of the big four federal agencies. Vincent (2006, July 10:4) lists various places money has gone including "FS highway rehabilitation and maintenance, the Historic Preservation Fund, the Payments in Lieu of Taxes program, FS State and Private Forestry programs, FWS State and Tribal Wildlife Grants, and FWS Cooperative Endangered Species Grants."

Ripple Effect Examples and Perceived Shortcomings

There are many accomplishments of the LWCF. Through FY2006, over 40,000 state grants have been awarded to acquire and develop recreational lands in the US. They are in every state, every county, and nearly every locality (National Parks Service, 2008, September 19: para.13). Included in this figure are "10,600 acquisition grants; 26,420 grants for developing recreation facilities; 2,760 grants for redeveloping older recreational facilities; and 641 state planning grants for studies of recreation potential, need, opportunity, and policy" (Vincent, 2006, July 10:3). $3.6 billion dollars have been awarded to the stateside program, with matching funds from the states themselves bringing the total amount of money spent on land acquisitions totaling around $7.2 billion. From this, "States have received about 8,300 grants and counties some 5,300 while cities, towns and other local agencies matched more 26,000" (National Parks Service, 2008, September 19: para.14). These projects combined have acquired about 3 million acres of land to be used for recreational purposes in the US and surrounding provinces. A breakdown of the funding between the three groups can be seen in Appendices A and B. According to the National Parks Service (2008, September 19: para.19), legacies include changing attitudes towards natural resource and land preservation. One of the more significant facts that they list is that a large portion of the fund comes from the revenues of OCS oil & gas rents, recycling the revenue into natural resource preservation,

instead of extraction. Another way the LWCF has changed attitudes is that states have realized their leadership roles in recreational land acquisition and development, empowering them to act. This goes beyond the fund, by empowering states to take notice of the necessity to preserve land; the act has influenced various programs in various states including the following examples:

- "Maryland has created "Program Open Space" to acquire key parklands"
- "Texas and Minnesota have dedicated portions of their cigarette taxes to support state and local recreation programs"
- "New Jersey has a Green Acres program that provides loans as well as grants for local acquisition, rehabilitation and development." (National Parks Service, 2008, September 19: para.19)

Another, more lasting effect of the LWCF Act comes in the form of its longevity and future impact. "The provision of Section 6(f)(3) of the Act requires that all property acquired or developed with LWCF assistance must be maintained perpetually in public outdoor recreation use" (ibid: para.21). In other words, land that has been acquired using money from the LWCF must be maintained for life unless it is converted, as stated previously, for other purposes. This ensures that future generations will have the land for recreational use, and is a fine way of preserving land from commercial, residential, or industrial development.

While the successes of the LWCF Act are important to discuss, one must also look at the negative side of things, and look at the problems that the act has brought forth. As with most acts, extremists can be found on both sides of debate over what should be done with the future of the act. Some feel that the act has had very little impact and should be scrapped altogether, while others feel the act is only a small portion of what needs to be done and the fund itself should be better funded, with the money being 100% appropriated to the appointed parties. In the following section the authors attempt to highlight some of the current issues raised by both supporters and detractors of the LWCF Act.

The first "failure" of the fund the authors would like to discuss is the lack of 100% appropriations. As stated earlier, the fund is credited with $900 million annually but recently less than half of that amount has actually been appropriated. Only twice has the appropriations reached the full potential of the fund in its history. And even when appropriations have been high, such as FY2001, much of the money was appropriated for

other purposes which may or may not have been directly related to the funds initial goals. One of the foreign policy experts interviewed for this study blames much of this shortfall on governmental failure. He states, "*billions and billions of dollars have been put into that account… and hardly any of it, in the grand scheme of things, has really been used for the purposes it was intended to be used for*." A separate expert also believes that governmental failure is the leading problem of the LWCF. He states that "*politics needs to be taken out of the equation*" when it comes to the LWCF because of how heavily they are influenced by public affairs and events that do not coincide with the main purpose of the LWCF. New legislation has been proposed to modify the fund into a more solid, traditional trust fund in which money is directly placed into the LWCF, and it is not only allocated, but appropriated the full $900 million per year.

The second problem that is often raised with the LWCF is the restrictive definition of what the money can be spent on. Many criticize the Act as being too focused on recreational land and lacking focus on conservation as a whole. Vincent (2006, July 10:9) points to the fact that discussions are increasing over the protection of "larger areas with multiple landowners — such as ecosystems, landscapes, or watersheds—" and also "for managing systems where only a portion of the land is in public ownership." In these situations, the LWCF may only be a piece of the puzzle when it comes to acquisition and funding, rather than being the sole money supplier, and that raises the point of who should be in charge of such projects.

As mentioned before, the third group, or other spending, is very loosely defined and this allows the possibility for loopholes or other related issues. For instance, the Bush Administration long fought for LWCF funds to go towards joint or "cooperative conservation programs through which federal land managers" usually "partner with other landowners to protect" and secure recreational and conservational lands (ibid:9). Where this draws a problem is that the land may only partially be used for recreational purposes, which is not necessarily what the fund was intended for (ibid). Another problem with this lies in the fact that having several landowners running a single project makes decisions about land usage and maintenance much less clear, and possibly hurts the sustainability of the program if another landowner decides to sell or back out. According to Vincent (2006, July 10:10), this has led many traditional fund beneficiaries to express "concern about expanding the uses of appropriations if that expansion is accompanied by reductions in the amount available for federal land acquisition or state grants."

All in all, the LWCF Act is just one piece of the puzzle that the authors of this paper would like to look at. The reason for doing so is to see what kind of applicability these acts may have in North Norway if new fields were to be opened for oil and gas activity. Furthermore, from the empirical findings of this piece of legislation one may understand what ripple effects are intended and achieved, as well as who is responsible for different stages of the process. The LWCF Act has been around for many years, but a more recent act has been implemented in the Gulf of Mexico leasing areas that not only has an effect on the states near the GOM, but also has an effect on the LWCF itself. This legislation, that the authors would like to dissect next, is the Gulf of Mexico Energy Security Act of 2006.

6.1.2 Gulf of Mexico Energy Security Act of 2006

In the following sections, the authors of this report would like to dissect the parts of the act that are most pertinent for the study, based on the focus that is predetermined by the theoretical framework. By looking into how the US handles off-shore drilling revenues, one can then discuss the applicability of the same or similar systems in a different environment, in this case North Norway. Therefore, the authors list their findings on how revenues are divided among participating interest groups (stakeholders), and how these various actors use the money gained to benefit local, as well as regional projects.

Revenue splitting

For the past two fiscal years, both FY008 and FY2009, the MMS has released data about how the revenues have been split, and who they went to, although the end user is not divulged to the public by them. Using the data collected from them, the authors will quickly breakdown how the money is allocated and where it has, up to this point, been distributed. A further, in depth look at how much money was appropriated and where it has gone can be found in Appendix D, E.

As stated earlier, Phase I of the act dictates that 50% of the qualifying OCS revenues go towards the Federal Treasury, 12.5% goes towards the LWCF, and 37.5% goes to the states. Why this is significant is that never before had any of the revenues gone anywhere but to the Federal Treasury. Unlike onshore drilling, where 50% of revenues go towards the Federal Treasury and 50% go to the states, offshore drilling has long been perceived as in waters only federally owned, therefore negating benefits to the nearby states, according to a policy expert that was interviewed. This has long been seen as contradictory, since oil and gas activity in

the GOM has long been proven to have an effect on the states. Tanker traffic, drilling effects, and even economic impacts have been seen as both positive and negative to the area, depending on who is speaking. The focus of this next section will be on the states revenues and how it is used by the states for their projects.

According to Gibbs-Tschudy (2009, October 7:29), only 30% of the revenues actually go to the states themselves, while the other 7.5% go to the qualifying coastal political subdivision. Depending on the state, these CPSs may be called counties, parishes, or boroughs; but we will stick with CPS as a defining term. Each state receives revenues based on a formula that is not open to the public, which is based roughly on its distance from the operating lease, and the impact that the drilling activity will have on the state. The CPSs receive revenue much in the same way, though on a much smaller scale (ibid:30). But what is it that the states and CPSs can do with this money?

Intended Ripple Effects

According to the GOMESA legislation itself, states and CPSs must use the funding they receive for 1 or more of the following purposes only:

1. Projects and activities for the purposes of coastal protection, including conservation, coastal restoration, hurricane protection, and infrastructure directly affected by coastal wetland losses.

2. Mitigation of damage to fish, wildlife, or natural resources.

3. Implementation of a federally-approved marine, coastal, or comprehensive conservation management plan.

4. Mitigation of the impact of Outer Continental Shelf activities through the funding of onshore infrastructure projects.

5. Planning assistance and the administrative costs of complying with this section. *(US Public Law 109-432, 2006, December 20:3005,3006)*

Along with these opportunities comes a stipulation that "not more than 3 percent of amounts received by a Gulf producing State or coastal political subdivision may be used for" this fifth administrative option (ibid:3006). Since the act is relatively young, little information is

known on how the states and CPSs have been spending the money, or what projects have benefitted from these revenues, but the authors feel it fairly safe to stipulate, based on previous successes of similar legislation in the states, that these effects will come about in some way or the other.

6.2 Stakeholders Perspective

After presenting the empirical findings from the foreign policy examples, the researchers find it natural to proceed with the opinions and findings from the stakeholders within the case of North Norway. The following sections will present the empirical findings that will primarily focus on definitions and expectations that anonymous Norwegian stakeholders from the business, political and interest organizations have for the ripple effects in the region, what is the minimum of these effects expected, as well as what the best case scenario would be for the local populations in case of an oil and gas establishment and development in the region. Furthermore, the opinions on responsibility issues derived from the data will be presented in this section. The data itself was a combination of primary and secondary source information that has been collected through interviews of North Norwegian stakeholders by the authors of this thesis, as well as by researchers at the Bodø Graduate School of Business. Applying the theoretical lens described in Chapter 2, the researchers grouped and categorized the data in the analysis stage of the research. These pieces of data that will help answering and discussing the research questions in Chapter 7 will be presented in form of empirical findings in the sections below.

6.2.1 Supply Business Stakeholders

Definition of Ripple Effects

According to the Chairman of suppliers' network in the north, the ripple effects are the effects that contribute to positive development of the society, as well as the local and regional businesses.

If one then focuses primarily on the effects for the businesses, then ripple effects could be defined as deliveries of products and services from the local and regional businesses to the oil and gas industry establishment in the area. The importance of the ripple effects to the local and regional businesses is based primarily on the possibilities they give for further development of the supply industry in the north.

Another area of ripple effects that the chairman points out is the positive effects to the overall society in the region. The positive effects that oil and gas establishment could have to the society is the effects of overall development of the societal life in the region. Ripple effects here could be expressed in forms of tax incomes to the local and regional authorities. However, it is worth mentioning that ripple effects may not necessarily be expressed in monetary values. This type of effects would eventually contribute to creating economic values to the society but in their initial stage these effects are economically intangible. Among these effects one could classify competent people moving to the region. Competent people could be workers in the petroleum industry who move up north due to the oil and gas establishment in higher latitudes, as well as their family members that are not necessarily representatives of the oil and gas industry in the region but rather representatives of other types of businesses, public organizations or other competences that may be useful to the further development of the local and regional society. These new-comers represent ripple effects in forms of possible innovation ideas and activities in oil and gas companies, supplier companies, as well as businesses not necessarily related to the petroleum activity, in addition to public organizations and societal groups.

A managing director of a software-supplying company defines ripple effects primarily as a positive economic development where establishment of one company/industry attracts other businesses to start-up their activity in the region or allows the already established businesses to contribute to the newly established industry in forms of supplies. Education is a central variable in achieving ripple effects. He believes that Rana (a city in North Norway) would be a totally different place if the town could offer better possibilities for education and especially on the level of higher education. New establishment of businesses in the north will be absolutely dependent on the competence created in the region through high educational standards.

Furthermore, improved infrastructure would be a form for ripple effects where one builds out and improves the service quality at smaller airports thus facilitating grounds for better flow of goods and people, as in an example of Alta where, according to the managing director, the climate conditions almost discourages people from settling down there.

On the other hand, ripple effects could be negative effects on the environment.

Expectations of Ripple Effects

One of the supply business representatives believes that expectations for ripple effects off the coast of North Norway are rather complex and constructed of various dimensions. According to the chairman of the supplier network, it is rather unrealistic to expect of the local and regional supply industry members the same form and volume of ripple effects as one has achieved in the south of Norway. It is a fact that the main players on the Norwegian supply market to the petroleum companies on the Norwegian Continental Shelf have a well established and developed production industry in the parts of Norway that are closer to the first and existing extraction sites in the North and Norwegian seas. In case of new exploration and production sites in North Norway, there will be a certain degree of increased activity from the suppliers that are already established in the north, as well as those few that will be newly established if the conditions are right. Mr. Chairman points out the drawback of the extensive new supply industry establishments in the north. The representative believes that such a change in the situation might misbalance the existing situation where most of the major suppliers are located in the south. The new establishments and the supply industry moving north together with the oil and gas industry would increase the free capacity of the southern supply firms because more orders would be placed at the newly established northern supply industry players. More players on the supply market would increase the size of the market, at the same time as new plants coming into operation assume long-term or even permanent operation procedures, while the exploration and production market (demand for supply services) has not yet been stable in North Norway. These new establishments might permanently change the market structure of the Norwegian supply industry. The scenario that is most likely to happen for the positive development of the northern supply industry, would be a combination of the development of the existing northern Norwegian supply companies, as a result of start-up of oil and gas activity, in addition to new establishments/spin-offs of the southern supply companies and international players in northern latitudes.

For ripple effects to take place one needs a predictable and continuous market. As for North Norway there has not yet been any stable market due to lack of all-year-around drilling activity off the coast of Troms and Finnmark. In order to promote and develop ripple effects for the local suppliers and communities, one should have development of exploration and production industry in the north, i.e. one needs development to build the fundamentals for further development.

Tools that are needed to promote these ripple effects should be rooted in the decisions of Parliament (Stortinget) where all the major petroleum projects are being evaluated before issuing the license. The Parliament should state concrete requirements to the oil and gas companies with respect to suppliers and development of the local business. This implies that petroleum companies should be prepared to provide information, to use the local suppliers' networks, which in turn would increase the possibility of the local suppliers joining in. In addition, the oil and gas companies could influence the major suppliers.

Another stakeholder has no clear expectations of ripple effects, however she reflects on previous experiences that the big oil and gas companies may not trust the small/medium-sized local and regional suppliers for complex deliveries, instead choosing companies with vast experience, as well as more cost effective players on the supplier market. This particular factor reduces the expectations of ripple effects for the local supply businesses. Furthermore, the local politicians in Norland have made a mistake, according to the representative, by not requiring the products from Skarv field to be processed onshore in the region of Helgeland. The fact of extraction taking place offshore and products being transported to Kårstø by pipelines deprives the local communities from additional ripple effects in forms of more work places, as well as additional taxes to the local and regional budgets. Another example is the Norne development that, due to the inactivity of the local politicians, has no more ripple effects in the region than a few helicopter flights every now and then.

In order to affect the decision making processes on the regional political levels, one should establish a "professional lobby organization" that would "know better" and therefore would inspire new ideas for the local politicians about taking advantage of the eventual oil and gas establishments offshore of North Norway. In addition, the representative concludes the lack of private capital to be a major hinder for further development of the local supply companies, as well as other businesses in the higher latitudes of Norway.

Dream Scenario

To achieve the best case scenario in North Norway in form of ripple effects for local communities, one should concentrate more efforts on drilling in the region and create a market. Luck and new discoveries would greatly contribute to achieving the desired ripple effects. The chairman points out that in the best case scenario the region should get a proportion of the tax income that the state budget receives from the oil and gas companies. These extra revenues to the local and regional governments would facilitate grounds for

spurring investments in economic and societal sectors. Furthermore, it will be impossible to succeed in creating local and regional ripple effects without accepting concentration of the suppliers in a few designated areas, instead of having unrealistic expectations of suppliers being spread out through the vast areas of North Norway and still successfully developing their business.

Who should be Responsible for Local and Regional Ripple Effects

Chairman of the supplier network believes that all of Norway should continue enjoying the benefits from petroleum activity in forms of taxes, fees and sales revenues paid to the state budget. If one would like to proceed and develop new schemes for state's petroleum revenues' distribution, then one should establish a fund based on the incomes to the SDFI, in the way that extra money would be taken out of the state's share of petroleum revenues and not oil and gas companies'.

The managing director of a software company believes that oil and gas companies, especially at the licensing stage, should not be overloaded with extra fees/taxes, otherwise this will hinder establishment of new small and medium-sized companies that are becoming increasingly important under current conditions in Norway where no new major findings have take place since the discovery of Ormen Lange.

Opinions on Alternative Legislation

One of the stakeholders is acquainted with various models used by countries like Canada, as well as the policy presented above in this chapter, namely the GOMESA 2006. The representative for the supplier-network also agrees that a fund where a share of petroleum income is being directly invested in the regional development is a possibility to achieve lasting ripple effects. Mr. Chairman points out, however, that the contributor to a fund should be the state where money could be taken out from the SDFI/state's share of petroleum's revenues, rather than keeping the companies responsible for this value creation.

The managing director of a software company also believes that the principle of GOMESA 2006 could be a model to look at in Norway. The example of Hammerfest shows that it is possible for one municipality to gain extra petroleum tax revenues, however, it would be more fair if the revenues would be split among the whole region, as in the USA, and not only one state/municipality. Furthermore, one should be careful with taxing the companies too much because soon they might not see the purpose of being in a region where production and

operational costs are higher due to harsh conditions and the location. The companies should be allowed to have the profits per barrel of the same proportion as they have today, implying that the state should be responsible for a bigger share of petroleum revenues landing in the regional budgets of Northern Norway.

6.2.2 Petroleum Companies

Definition of Ripple Effects

A representative of a major petroleum company generally defines ripple effects as effects that spread and find their roots in a limited area; let it be locally or regionally. There are many different types of effects, as well as different volumes. Ripple effects could be value creation but also totally different variables, such as effects on language and dialects. To find out more about the definition of the ripple effects in relation to petroleum activity one should look into politics. The corporation together with national and regional politicians had a dialogue where the term *ripple effects* was extensively discussed. The politicians are usually the actors that state requirements for the volume and type of ripple effects prior to development of oil and gas fields in Norway.

Expectations of Ripple Effects

The representative has noticed that the requirements and expectations for ripple effects in North Norway have been lately increasing. However, the drawback is that requiring and achieving something are two sides of the same medal. One may question if there is adequate competence in the region to create and sustain these requirements for ripple effects. The corporation's point of view is that it is totally acceptable of local and regional politicians and societies to require benefits in forms of positive effects to the region, however one has to be realistic and analyze how the region can contribute to achieving these effects. One should clarify whether the certain area in Norway possesses competent firms, environments and staff. In case the variables mentioned above are lacking, petroleum industry and suppliers have to relocate personnel from other regions in Norway, in order to sustain the petroleum activity in areas lacking adequate level of qualified personnel. Building the competence up north should happen gradually as in the southern parts in Norway since the beginning of the petroleum adventure in 1970s. It is obvious that the areas of Finnmark and Troms are far behind in comparison to Stavanger. One should start with the youth – give them the competence and experience that is needed, so that they could transfer knowledge further on.

However, it is important to note that if one educates more qualified personnel in the northern parts of Norway, it is necessary to guarantee that there are jobs for this qualified workforce. In order to benefit as much as possible from the competence created, a market should be established where the knowledge could be employed for creation of ripple effects. It is not enough to have competence and then require ripple effects. One should contribute with knowledge and willingness to establish a market and jobs where that competence could be used. It is positive that some politicians already see the need of local contribution to the future development and not only sit there requiring and waiting for things to happen. One should be realistic and not expect that a newly established company on the coast of Finnmark will be able to get a major contract on the existing stringent requirements. The politicians have to foresee how the competence from southern Norway could be attracted to the northern parts of the country in order to contribute to the development of local businesses. The major factor here would be the time and the need to educate the politicians within the areas of local development and management of existing and potential resources, both natural and human, because it is rather easy to require without thinking of consequences.

Who should be Responsible for Local and Regional Ripple Effects

The establishment of Snøhvit plant in Hammerfest has been a rather broadly discussed topic in relation to the ripple effects in form of property tax landing in the budget of the municipality while the neighboring municipalities do not enjoy the benefits as Hammerfest does. The representative of the petroleum corporation counter argues the statement that choosing an offshore installation solution would deprive the local communities of the type of property tax that Hammerfest reaps from Statoil's onshore plant. The representative believes that an offshore solution would allow for spreading tax revenues throughout the region due to the workers on the offshore plant/ship living in various locations of a county. In addition, an offshore installation requires helicopter and marine supplies that the local supplier companies could benefit from in form of maintenance and operation contracts. The tax income in an offshore solution would be bigger and more evenly spread throughout the lifetime of a plant rather than sudden tax incomes flowing in during a hectic period of much activity during the start-up phase of an onshore plant and there after declining level of activity and tax income to the local budgets as the regular operations start at an onshore installation. However, contemplating the statements by the representative, the tax to the local budgets from an offshore scheme would be coming from the workers and profits of the local supply companies rather than exclusively from an oil and gas company, as in a case of an onshore

installation. Furthermore, concerning the spreading of tax income throughout the county, due to workers settling in different locations, could also mean spreading the tax income into other parts of Norway since, in case of a lack of competent work force up north, the workers would have to be "imported" from southern areas of Norway, thus decreasing the local ripple effects in a form of income tax (*authors' comment*).

Opinions on Alternative Legislation

The representative of the oil and gas business assumes that the idea of a local fund in itself is a positive one, however one should carefully consider what the fund's resources should be used for, as well as a fair distribution of these to the local and regional stakeholders. In the current Norwegian system, where 78% tax from oil and gas companies settle in the national budget, it would be absolutely possible to redistribute these revenues to favor the local and regional municipalities that are located closest to the petroleum installations. Since all Norwegian municipalities already get a share of the petroleum revenues, the surplus funds to the northern counties should be appropriated to be applied only for certain and pre-decided local and regional development projects. However, since all municipalities already enjoy their share of oil and gas revenues from the national budget, the question would arise whether there is willingness from the Norwegian politicians to favor certain regions more than others.

Another stakeholder in the debate, the Chairman at a Norwegian petroleum company, states that petroleum industry in the north should benefit not only the companies and organizations directly involved in oil and gas activity. However he points out that it is naïve to believe that northern Norwegian supply companies can compete for contracts with the southern or foreign supply industry leaders. The Chairman points out the importance of alternative policy in a form of establishment of a fund for environmental protection, as well as oil response improvement. According to the chairman, a fund may also be used for enhancement of marine and maritime research, technology and infrastructure development in northern areas of Norway. Such a fund could create ripple effects or permanent effects, as the chairman chooses to call them, for the areas affected by operations of the extraction industry.

6.2.3 Interest Organizations

Definition of Ripple Effects

The Chairwoman at the interest organization for suppliers defines ripple effects as a business activity that starts up in direct or indirect connection with an industry coming into a region.

Expectations of Ripple Effects

The representative of the organization does not have concrete expectations for ripple effects, however, in her opinion, there should be more activity in the region of Lofoten and Vesterålen than there is today. If there is as big a potential for value creation from oil and gas that is in the formations of the seabed off the coast of Lofoten and Vesterålen as expected, then it is absolutely possible to create new work places as a result of extraction of these natural resources. However, it is difficult to have concrete expectations because ripple effects would be different, depending on whether the major natural resource found is oil or gas. The expectations the Chairwoman has is that, no matter what kind of resources are off the coast of Lofoten and Vesterålen, the local communities should have a significant position when negotiating with the national politicians about the ways of extracting the oil and gas that would be most beneficial for the local and regional societies. It is important that regional and national politicians, together with businesses, have a common dialogue when preparing an area management plan, in order to meet the expectations of ripple effects of various stakeholder representatives.

Dream Scenario

The organization does not estimate the dream scenario because, according to the Chairwoman, it is difficult to estimate a value of ripple effects. It is possible to quantify some of them, however there is an unquantifiable part of the effects due to effects working in the domino way where one activity affects another activity and so on, thus allowing for increased activity in different parts of society. It is impossible to have a complete overview of all possible effects and outcomes that would be present in a region as a result of the start-up of petroleum activity. However, there must be minimum requirements of ripple effects raised towards the industry and the State.

Who should be Responsible for Local and Regional Ripple Effects

According to the Chairwoman of an interest organization, as the petroleum companies usually show positive results in their annual reports, it seems that they are still fulfilling their responsibilities of creating economic value to their shareholders and employees. Therefore, the representative believes it being fair that the companies contribute to the revenues to the national budget and that they should take responsibility by also “paying” for the ripple effects on the local and regional level.

Opinion on Alternative Legislation

The chairwoman believes that the most important decision would be to set money aside for the environmental purposes. It is not of major importance whether the money is being managed by the local or national politicians. The most important is that money should be donated for the special purpose of preserving the environment and improving procedures of oil response, and that this money should be used.

There have been discussions in Lofotrådet over the necessity of a fund. There was an amount calculated that the local fishermen and businesses would be deprived of in case of an unsuccessful fishing season. The idea was to invest this amount in a fund and use interest income for investments in local and regional businesses.

6.2.4 Local and Regional Politicians

Definition of Ripple Effects

The definition of local and regional ripple effects by a county representative is mainly related to the exploitation of natural resources in the region and contributing to building up a society from the means of the natural resource extraction activity. It is important that a share of the benefits from the natural resources stays in the region. Local regions could take advantage of incomes from natural resources and direct them towards development of society in the form of creating new jobs, as well as supporting the local and regional businesses. Local politicians should have clear ideas of what the region lacks in form of education. Politicians being pro-active and prepared to improve quality of the existing educational programs, in addition to establishing new studies, would contribute to attracting new people to the northern counties not only for temporary living but for permanent settlement with families, thus enriching and strengthening the local society.

Expectations of Ripple Effects

The county leader expects petroleum industry to induce and create major ripple effects to some of the municipalities in North Norway. Yet it is important to remember the limitations that some of the northern counties possess. In case of the Finnmark County, the limitation is the fact that area of a county is bigger than Switzerland and Denmark; however it is populated only with 73,000 inhabitants. The business structure is also specific in the region where the public sector is taking the biggest share of value creation for local inhabitants and

the private companies presented in the region are of small/medium-size. So far Hammerfest has benefited greatly from the Snøhvit establishment outside of the city and the county leader is confident that more of Finnmark's societies could reap benefits from new petroleum establishments outside the coast of the northernmost county. However, it would be naïve to expect that petroleum industry could provide benefits to all of Finnmark. According to the county representative, the region should have "more legs to stand on," therefore he is determined to make sure the petroleum industry takes into consideration the ways oil and gas is being extracted in the area, the oil response and the existing local industries, especially the fisheries. The petroleum industry should especially consider carefully environmental issues and pollution, as well as possible territory conflicts. Due to these factors local politicians have very high expectations towards the petroleum industry, however they are being realistic and foresee that oil and gas extraction off the coast of Finnmark will benefit only 3 – 4 – 5 of 19 municipalities, while the rest will continue living off the existing activities. The petroleum industry in the north should not become the central driving force in the region but rather to take a role of an "extra leg" or a supplement to the tourism, fisheries, mining and the public sector in Finnmark. Politicians and business representatives usually perceive petroleum industry as the savior, however the representative believes such a perspective to be of a short-term nature. One should absolutely avoid building up a community around one company/industry because, in case of a closure, the whole community will be affected on economical and cultural levels.

A county representative points out that there are two sides of the case that should be presented. First, local politicians and communities should be allowed to raise requirements at the early stages of license distribution. Secondly, local politicians should be aware of the society's needs and be ready to put forward requirements to the Parliament and companies that would facilitate grounds for maximization of the value of the common good for local and regional communities. However, even when the requirements are made clear to petroleum companies, it will be difficult to make them fulfill these requirements due to the cynical and profit-seeking nature of the companies. Furthermore, when the local voice is not heard on higher political levels at the early stages of negotiations, later on local politicians have to convince a whole committee at the Parliament after the almost-final-decision is already taken. In the case of Goliat, the local society wanted the industry to create the greatest possible local ripple effects in the form of an onshore installation, however the final decision from the Parliament allowed ENI to proceed with a cheaper offshore solution. As per today, the

biggest local ripple effect the society has from the Goliat installation is the view of the platform in the Barents Sea. It is worth mentioning that the local stakeholders acted constructively and managed to raise other requirements that would create local ripple effects from the Goliat field. However, ENI is losing goodwill from the local society due to their wish to choose a cheaper offshore solution and to save money at the cost of the local society.

Who should be Responsible for Local and Regional Ripple Effects

According to the county representative, the local ripple effects should be created by a sharing initiative from both, a company and the state.

Opinion on Alternative Legislation

The politician believes that alternative legislation in form of a fund is not a bad idea; however it would take a long time to convince the Parliament and the government to modify the existing and well-functioning Norwegian value distribution system. The more realistic solution would be for the municipalities to come together and discuss sharing and distribution of the petroleum income across the county themselves. For the Snøhvit installation the train has gone, however this is a realistic solution for the projects to come. In Finnmark, the local politicians do not expect increased income from the State but rather increased development. It is important of the local and regional communities to fulfill their obligations before raising requirements. The region wishes to have benefits, not in form of more income, but in form of competence improvement, development of the society, work places and businesses. The problem is often that it is not a lack of money to the northern communities that hinders further development, but rather a lack of new ideas. The most important is to develop the society with the existing income, instead of requiring more income and establishing a fund. The national resources, such as fish, oil and gas, and mining, should be managed on the national level. Yet, it should be a requirement that when these natural resources are being exploited in the neighborhood of a certain community, the local inhabitants should have ripple effects created for them. This does not have to be in form of a fund, but local communities should rather raise other requirements and ideas that would benefit a society on a long-term basis.

7. Discussion

The discussion section of this paper will be focused on applying the theories highlighted before to further interpret and discuss the empirical findings. Furthermore, through the discussion, it will be possible to answer the research questions and examine the research statement that were drafted in the beginning of the paper.

Are GOMESA 2006 and LWCF relevant to the discussion of Norway's situation?

To begin the discussion, one must first look at the similarities between the intentions and results of the GOMESA 2006 and LWCF Acts, and the current situation in Norway. As was showed, the LWCF and GOMESA 2006 came about as the result of reactions to rising concerns about conservation, as well as increased concerns about the future of energy in the US. This relates very strongly to the position that North Norway is currently in. Arguments are not only raised about whether or not oil and gas should be explored, but also raised about where the money should go, and what it should be used for.

A concept that is commonly referred to in recent arguments is *Dutch Disease*. The underlying principle of this term is overinvestment in one, unsustainable industry. Commonly, this effect is brought about from over harvesting natural resources such as trees, minerals, or even the over-hunting of animals. In Norway's case, *Dutch Disease* would refer to over investment, production, and economic reliance on oil and natural gas. In a recent article in Norwegian popular media, *Dutch Disease* was discussed in reference to Norway and opinions were expressed over the avoidance of re-investment in and reliance on oil and gas. Popular opinion expressed in the article falls under the category of using revenues from oil and gas activities to expand Norway's competence and market penetration in new fields, or even updating established enterprises to take some of the weight and future dependence off of the declining output of petroleum resources. One of the options that have been presented to avoid this situation is the possibility of establishing a fund set up specifically to spur investments in other sectors. The US was in a similar situation when trying to decide what to do with oil and gas revenues, and two interesting pieces of legislation to come out of it (GOMESA 2006 and LWCF Act) were presented earlier. From these, the US has taken revenues gained from non-renewable resource extraction and reinvested them in conservation, restoration, and even developmental purposes. Therefore, the authors find it a viable option to look at these pieces of legislation through the analytical theories and examine

their relevance to North Norway, as stated in the main research statement. Once again, the research problem is:

To what extent can alternative oil and gas policy examples contribute to creation of sustainable ripple effects for Northern Norwegian stakeholders?

Furthermore, once finished discussing the relevance, the authors would further like to discuss and examine the possible or foreseeable ripple effects that such proposed legislation could promote.

7.1 Alternative Policies

To begin with, the authors refer back to the introduction and look at the first two questions:

- To what extent and what type of ripple effects do GOMESA 2006 and LWCF promote?
- To what extent the ripple effects promoted by GOMESA 2006 and LWCF are sustainable?

In order to address these questions, one needs to employ both the ripple effect and sustainability theories to shed light upon the empirical findings. Since the authors earlier looked at the idea of *sustainable ripple effects* and combined to theories into one, a quick refresher will be presented to remind the reader what it is that the authors bear in mind when discussing the issue.

Once again, ripple effects are defined as *any activity, impact or value created from the establishment or operations of a certain business or industry in a certain area*. Furthermore, ripple effects can be broken down into main categories, as represented in figure 2. By applying sustainability theory to this model, one comes to the theoretical realization that through the nature of oil and gas activity, the *catalytic* ripple effects have the potential to be

sustainable and long lasting, or even permanent in some cases.

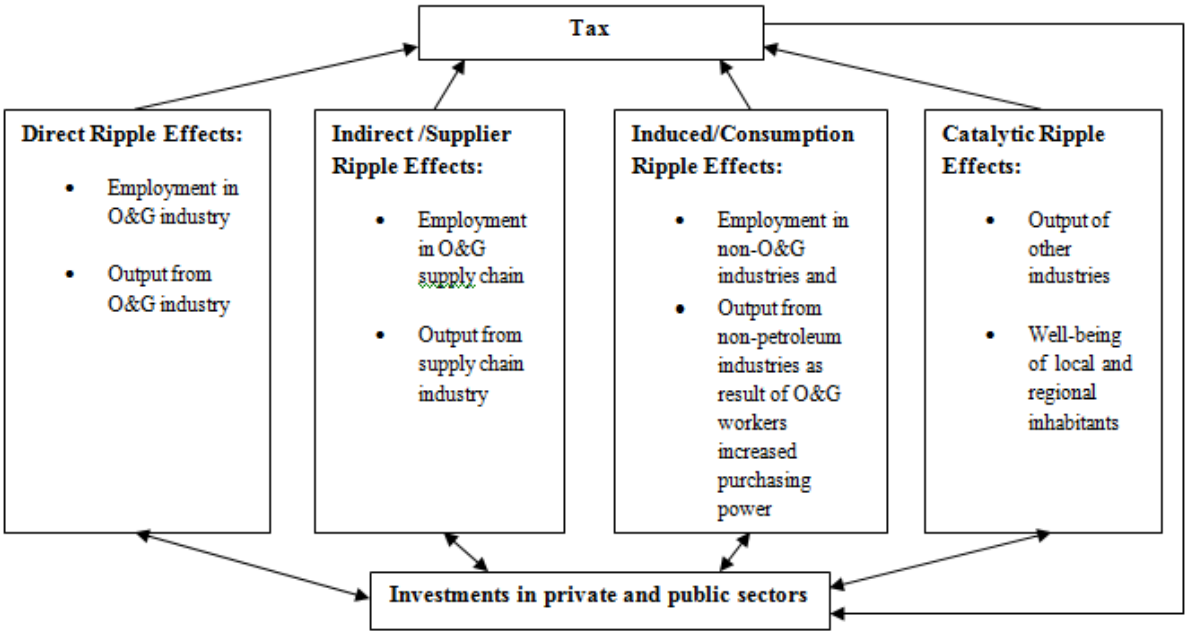

Figure 2: Ripple Effects Model

However, the authors will discuss all ripple effects from the empirical findings, what categories they fall into, how sustainable these ripple effects potentially are, empirically test if only *catalytic* effects could be sustainable and present arguments for why they believe so.

7.1.1 Land and Water Conservation Fund

When looking at the Land and Water Conservation Fund Act, one must first realize that the legislation creates a fund which itself is a ripple effect of oil and gas tax revenues, which come about as a ripple effect of oil and gas activity. As seen in the findings, the fund is primarily financed from revenues gained through petroleum extraction, but not solely funded through this means. Therefore, it is classified as a *tax* effect of petroleum activities. It cannot be labeled as a *direct* effect since it has no effect on the oil and gas industry itself. Likewise, it is not an *indirect* effect since no value is created to the supply chain, and finally it is not an induced effect since revenues are not based off the purchasing power of oil and gas employees. If one adapts the ripple effects model from Figure 2 to specifically look at the LWCF, then one can single it out as a *tax* effect as seen bellow in Figure 14. Using this model, it can be seen that *direct* effects from petroleum activities (or OCS lease revenues) go into the tax system (LWCF). From here, money is invested into acquiring lands for recreational uses. These lands that are acquired are therefore *catalytic* ripple effects. And

finally, rents from recreational uses of these lands go back into the LWCF, completing the model and giving it continuity. Seeing the fund as a *tax* effect of petroleum activities, one must then determine the sustainability of the fund.

Sustainability of the LWCF is found to be high based on various distinct factors. If oil and

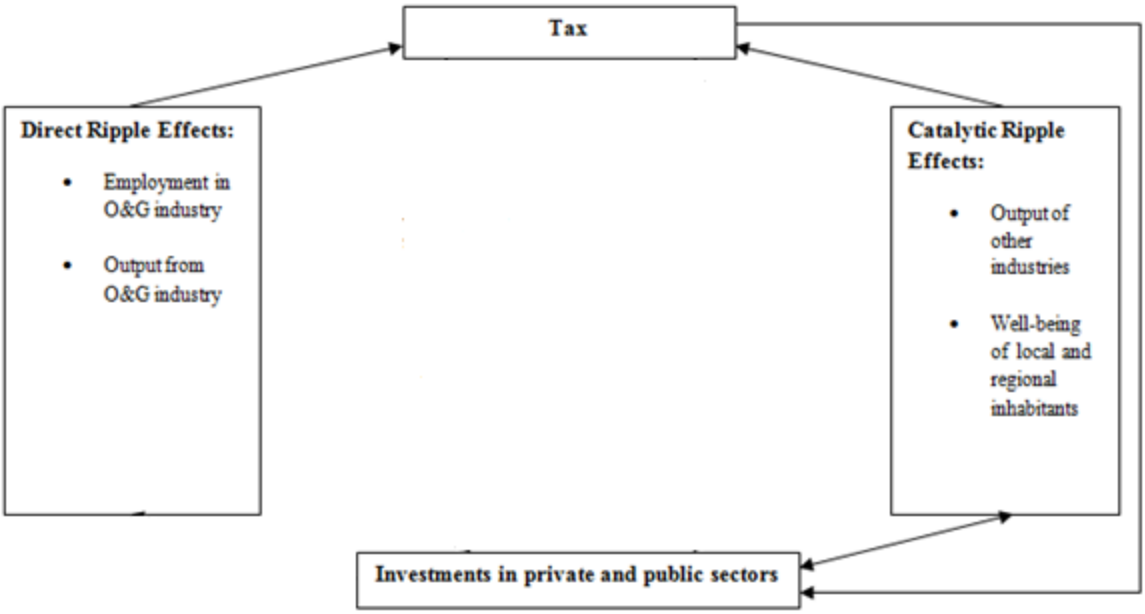

Figure 14: LWCF as a Ripple Effect

gas revenues are taken out of the equation, the fund still has the means to sustain itself through other sources of income, though it would drastically decrease the amount and availability of money since 99% of the fund's income is supplied through these revenues. This directly points to the economic variable of sustainability, as seen in the *Triple Bottom Line* principle explained in chapter 2. The other aforementioned sources of income for the fund are sales of surplus Federal real property, motorboat fuel taxes, and fees for recreational use of Federal lands.

The other two factors comprising the *Triple Bottom Line* principle are *social* and *environmental* sustainability. These dimensions are supported by the empirical findings through analyzing what ripple effects the money from the LWCF are actually spent on, and comparing them to Sustainability theory. Empirical findings show that money from the fund is being spent in three different ways. These three include 1.) the federal acquisition of land and water, 2.) grants to states for recreational planning, and 3.) other related purposes.

Federal Acquisition of Lands and Waters

Under this category it is found that four federal agencies, the NPS, BLM, FWS, and FS, receive most of the funding. These agencies in turn spend these funds on the acquisition of federal lands for recreational use. One can therefore group these ripple effects into the *catalytic* category. In this study, the definition of *catalytic* ripple effects refers to oil and gas outputs (revenues) being spent outside of the oil and gas sector itself and money being spent on the well being of local and regional habitants. Since the land being acquired with the money from the LWCF is going specifically for recreational uses, a connection can clearly be drawn to the catalytic nature of these ripple effects. Likewise, by providing funds to the four agencies mentioned above, the money is being used to further develop other industries lying beyond the scope of petroleum extraction and exploration. This link further solidifies the catalytic nature of these ripple effects. The next step will be to examine the sustainable nature of these catalytic ripple effects.

As mentioned before, the economic side of the sustainable equation is taken care of through the funding of the LWCF itself, so it will not be included in the further dissection of the LWCF ripple effects. Therefore the other two categories, *social* and *environmental* sustainability, are left to discuss. Once again, the land being acquired is strictly going for recreational purposes. Since recreational purposes are aimed at the health and well being of local, regional, and even national citizens, the *social* sustainability is high. Likewise, the land that is acquired is then deemed off limits to economic or residential development, ensuring that the *environmental* sustainability of the program is also high. Finally, since the land that is acquired is placed into the program indefinitely, future usage is ensured cementing the ripple effect as sustainable.

The authors would like to raise an example that truly shows the unpredictability of ripple effects. The National Parks Service acquires and maintains vast amounts of land for recreational use. Often, this land is open to the public, but for a small fee. Essentially, land that is acquired close to a city and put into use as a National Park may still benefit the surrounding community economically through the means of increased tourism. Examples include a bike tour company that may charge a small fee for equipment rental or even one that gives guided tours through the National Park. Therefore, ripple effects of this nature may be sustainable economically, socially, and environmentally, though this study would like to focus on the environmental and social aspects of the "foreseeable" ripple effects.

Grants to States

The second area that funding from the LWCF is spent is the state grant program. Here, the money is granted to each individual state to be used for recreational planning, facility development, and again the acquisition of state land for recreational purposes. The projects are thus funded 50% by the LWCF grant, and 50% by the state itself. These ripple effects can be seen as *catalytic* since they are spurred from the LWCF and have no real implications on the petroleum industry, are not in the form of increased supply industry activity, and also do not come about from increased purchasing power of petroleum industry workers. The sustainability of these ripple effects is seen, once again, as high due to the fact that *environmental* and *social* sustainability are both high. Not to mention, the sustainable economic features of the LWCF combined with the sustainable economic features of state funding ensure that money will be around in the future for further creation of like ripple effects.

One other ripple effect to take note of is the thought that by holding states responsible for 50% of the funding, the LWCF in fact urges state governments to take a more active role in the distribution of the money, and causes the state governments to be more selective and focused on their recreational needs. In essence, this creates a *catalytic* ripple effect that is difficult to quantify economically and therefore difficult to determine sustainability wise. In the social sphere, one can see long term improvements in the health of the people with increased governmental awareness of each individual state's recreational needs. Additionally, in the environmental sphere, governmental awareness of conservation and recreational lands increases the opportunity for long term conservation efforts. However, the economic sphere is blurred due to the complex nature of how the money is spent. Essentially, by being more aware of the recreational needs and wants of the people, the government is better able to make wise decisions on where to spend the money. If well spent, it can be assumed that more people will use the recreational land, with the taxes on this recreational use heading back into both the state budget, and the LWCF itself. Therefore, the *economic* sustainability can also be justified of this *catalytic* ripple effect, providing long term sustainability to the ripple effect as a whole.

Other Purposes

The last grouping of ripple effects that the authors found for the LWCF falls under the "other purposes" category. As explained in the empirical findings, these other purposes are loosely

defined, and therefore difficult to categorize. Examples of where the money has been allocated include FS highway rehabilitation and maintenance, the Historic Preservation Fund, the Payments in Lieu of Taxes program, FS State and Private Forestry programs, FWS State and Tribal Wildlife Grants, and FWS Cooperative Endangered Species Grants. In terms of ripple effects, these can all be categorized as *catalytic* ripple effects based on their purpose, where they get their funding, and the overall inability to fit them into any of the other groupings. Where one can run into problems is trying to determine the sustainability of these various and broad ranging programs.

As stated in Chapter 2.2.2, sustainability could be defined through the principle of the *Triple Bottom Line* consisting of the *economic, social* and *environmental* dimensions. Bearing these in mind, one may discuss the sustainability of the *catalytic* ripple effects originating from the "other purposes" category of fund allocation. Spending for the Historic Preservation Fund promotes *social* and *cultural* sustainability because of preserving historical heritage sites of the local and regional communities. Allocation of funding for FS State and Private Forestry programs and grants for FWS Cooperative Endangered Species support the *environmental* dimension of the *Triple Bottom Line*. The program FWS State and Tribal Wildlife Grants support two dimensions of the sustainability at once, namely the *social/cultural* and the *environmental*, since the tribal way of living is greatly intertwined with the nature. The Payment in Lieu of Taxes program covers lost property tax revenue to local governments if land is used for federal purposes, creating *economic* sustainability. These programs themselves may not meet all three levels of sustainability individually, but taken as a whole under the umbrella of "other uses," one may find an overall sustainability of the uses. For instance, using funds for FS highway rehabilitation and maintenance may support both *economic* and *social* sustainability based off the benefits of the improved roads to local businesses and communities, however the destruction or modification of surrounding landscape and environment may not be seen as environmentally sustainable. However, if this is put side by side with a program such as the FS State and Private Forestry program, one may see that the preservation and conservation of forests in one area can be used to mitigate the deforestation of another area that is used for roads. Likewise, the money from tax revenues due to increased traffic on the roads may be used to offset the *economic* un-sustainability of the FS State and Private Forestry program. This shows how different programs could co-exist to promote all around sustainability.

The authors would like to point out the dangers of seeing such programs as sustainable under an umbrella of "other uses." In order for this kind of sustainability to work, programs would have to have equal offsets. Looking at the previous example shows all around sustainability cannot be achieved if $700 a year is put into conservation, while $1 million is put into road construction or maintenance. This creates an imbalance of the offsets and has no *environmental* sustainability in the long run. Therefore, the concept is loose and generally thought of as unsustainable, due to the nature of the programs and the fact that they are not necessarily dependent on each other. This brings up the point of who is responsible to ensure that these programs are held to a sustainable nature, which the authors will tackle later on in a dissection of CSR.

7.1.1.1 Sustainable LWCF Ripple Effects

In summation, the ripple effects found are of mainly sustainable *catalytic* nature. These ripple effects found from the LWCF are as follows:

- Federal acquisition of Lands and Waters for recreational use
- Grants to the States for:
    - for recreational planning
    - facility development
    - acquisition of federal lands and waters for recreational purposes
- Other Purposes:
    - the Historic Preservation Fund
    - the Payments in Lieu of Taxes program,
    - FS State and Private Forestry programs
    - FWS State and Tribal Wildlife Grants
    - FWS Cooperative Endangered Species Grants

7.1.2 GOMESA 2006

The second piece of US legislation to be dissected is the Gulf of Mexico Energy Security Act of 2006. This legislation deals with where Federal revenues from oil and gas activity are divided. The authors of this paper do not see the legislation itself as a ripple effect of oil and gas activity, but rather a tool used by the US Government to divide the revenue stream that is coming to them. This revenue stream is the real ripple effect of petroleum extraction, and can be seen as a *tax* effect. This idea was also represented earlier in Figure 2, during discussion of the LWCF Act. Looking at this model, the qualified OCS revenues can be considered a *tax* effect. From here, the GOMESA 2006 legislation can be seen as a guide for investments of this revenue. Where this money is invested will then create ripple effects, some of which will be sustainable, as the authors attempt to discover in this thesis.

As a *tax* effect, one must look at the sustainability of the oil and gas revenues that create the fundamental basis for the GOMESA 2006 Act. Seeing as they are the result of petroleum activity, and seeing as there is a common understanding that petroleum resources are finite, the authors deem this *tax* effect as non-sustainable. However the revenue stream, as divided by GOMESA 2006, creates ripple effects further on down the line that have the potential to be sustainable. Therefore, where this money goes and what sort of ripple effects are created from its spending will be the main focus of this next section.

To begin with, the reader needs to understand the three ways that GOMESA 2006 splits qualifying revenues. The Federal Treasury receives 50% of the qualified GOM OCS revenues, while 37.5% goes to the states and their CPSs, and 12.5% goes to LWCF. The US Government uses the Federal Treasury countless ways, and the LWCF was analyzed earlier on in this paper. Therefore, the main focus will be on the individual states that receive these funds, and on their respective CPSs. Once again, one finds that these revenue streams are not sustainable due to the nature of petroleum extraction.

When each individual state receives its share, five options are presented with how the money can be spent. Likewise, an individual CPS that receives funding from GOMESA 2006 is entitled to follow the same set of rules, and are allowed the same option that are given to the states. In their fundamental form, these options create ripple effects that come about because of the *tax* effects of oil and gas activity. The five ways to spend this money, as presented in chapter 6.1.2, are:

1. Projects and activities for the purposes of coastal protection, including conservation, coastal restoration, hurricane protection, and infrastructure directly affected by coastal wetland losses.
2. Mitigation of damage to fish, wildlife, or natural resources.
3. Implementation of a federally-approved marine, coastal, or comprehensive conservation management plan.
4. Mitigation of the impact of Outer Continental Shelf activities through the funding of onshore infrastructure projects.
5. Planning assistance and the administrative costs of complying with this section.

It is at this point that the authors would like to point out one of the problems that must be faced at this time in the discussion. One of the major drawbacks of looking at the Gulf of Mexico Energy Security Act is the lack of actual, real life examples. The reason for this is that GOMESA 2006 is a relatively young piece of legislation, and therefore ripple effects are not fully understood. The ripple effects discussed here are intended ripple effects of the legislation, and therefore speculative in nature. Due to this fact, overall sustainability is impossible to determine at this time. The authors would like to suggest that the intentions of the ripple effects can be analyzed based solely on one or two dimensions of the *Triple Bottom Line*, but unless the programs created by these effects are analyzed as a whole, one cannot determine all three together. For example, while it may be possible to determine *environmental* sustainability of an intended conservation program as high, cash in and outflows (*economic* sustainability) cannot be discussed, since the program has not yet been created. The authors still chose to attempt to break down these ripple effects into categories and also attempted to determine sustainability of the possible ripple effects, since they found this data relevant to the discussion of stakeholder wants and needs in North Norway.

If the first group is coined as *coastal protection*, it becomes easier to identify the type and sustainability of these ripple effects. The authors find that since coastal protection, in theory, does not directly influence the offshore oil and gas industry, does not have an impact on the supply chain, and does not come about as a result of increased or improved purchasing power, it must be grouped as a *catalytic* ripple effect. This grouping is further solidified when it is seen that these effects promote the well being of society and may even help other businesses through improved infrastructure. As far as sustainability goes, both *environmental* and *social* sustainability are intended to be high seeing as coastal protection is a form of environmental preservation and respectively can be used to benefit the well being of society.

The second use of GOMESA 2006 revenues falls under the category of *mitigation of damage to fish, wildlife, or natural resources*. In other words, money is being spent to safeguard against further damage or losses to fish, wildlife, and natural resources. This is once again classified as *catalytic* since the intentions of the effect are the well being of nature and people, and the possibility that industries (i.e. fishing) may benefit from such programs. One can find that programs of this nature show a high level of *environmental* sustainability, as well as provide *social* sustainability. Once again *economic* sustainability is possible, but it is dependent on how the program is set up or defined. A onetime donation to an animal preservation program is not economically sustainable, but setting up a system to help animals through public fees or taxes may be.

The third way that money can be spent is through the *implementation of a federally-approved marine, coastal, or comprehensive conservation management plan*. This ripple effect is considered *catalytic* because of its effect on well being of local citizens, nature, and possible industries outside of oil and gas. This *catalytic* ripple effect can be seen as sustainable for various reasons. First, sustainability is both environmentally and socially high based on the nature of a conservation program. In this example though, there is a reference to *economic* sustainability. One can make the assumption that a federally approved program would have funding from the government in some way, shape, or form ensuring the longevity of the program. Since the government in itself can be seen as economically sustainable due to the nature of its revenue stream, the program in no need of other revenue sources, therefore cementing it as economically sustainable, and thus ensuring this *catalytic* effect as all around sustainable.

The fourth way to spend money is through mitigation of the *impact of Outer Continental Shelf activities through the funding of onshore infrastructure projects*. These effects seem to imply a catalytic nature, or even have the possibility to be indirect depending on what infrastructure projects are being funded. Once again, the authors would like to emphasize the Act being rather young and without successful proven implications, however a couple of examples spurring from the outline of this method of spending could be listed. For instance, an indirect effect of value creation for the supply industry could be created by building new and more efficient roads instead of the old ones that get damaged due to increased heavy traffic as a result of offshore oil and gas installations. Another example could be a new or expanded harbor or marina capacity being built to carry the increased load of goods to the offshore installation, at the same time allowing more local suppliers to become increasingly

competitive. All in all, an infrastructure project would have a positive impact on the supply industry (*indirect* ripple effects), as well as other industries in the area, e.g. tourism, fisheries, retail (*catalytic* ripple effects).

Sustainability of this way of spending money through infrastructure projects could once again be addressed through the concept of the *Triple Bottom Line*. To begin with, the method supports the *economic* dimension of sustainability. The new infrastructure installations would provide ground for the supply industry, as well as other companies in both the area and nationally, to use this infrastructure in order to pursue their economic goals. This supports the bottom line of economic and financial sustainability. Furthermore, improved and new infrastructure supports *social* sustainability because improved infrastructure increasing mobility of local inhabitants thus saving their monetary and health costs. An example of marina improves quality of life for the inhabitants as the facility could be used for recreational and sports activities. Since the theory in Chapter 2.2.2 implies that *social* sustainability reflects the business and organizations' responsibilities towards their stakeholders, improving infrastructure makes life for the community more convenient and thus more sustainable. However, the authors find *environmental* stability to be low, unless extreme caution is used in the building or updating of the so called infrastructure to ensure minimal environmental impact.

Finally, the last way that stats or CPSs may spend GOMESA 2006 revenue streams is through *planning assistance and the administrative costs of complying with this section*. In other words, the money can be spent on the salaries of those who are ensuring that the money is spent according to GOMESA 2006 regulations. This falls under the *catalytic* and probably *induced* categories of ripple effects due to the fact that it only applies to the well being and purchase power of the person who is employed by the governmental body to carry out its specific tasks. Sustainability of this method of spending is very low on all fronts except that of *social* sustainability. By providing a job, this form of spending contributes to building the community. *Economic* sustainability is low since the funds used for payment are derived from the oil and gas revenues, and *environmental* sustainability is not applicable since the job arguably has no impact whatsoever on the natural resources around it.

7.1.2.1 Summary of GOMESA 2006 Sustainable Ripple Effects

- Money to Federal Reserve

- Money to LWCF
- Money to states and CPSs
    - Coastal Protection
    - Mitigation of damage to fish, wildlife, and natural resources
    - Implementation of a federally-approved marine, coastal, or comprehensive conservation management plan
    - Mitigation of the impact of Outer Continental Shelf activities through the funding of onshore infrastructure projects
    - Planning assistance and the administrative costs

7.1.3 Research Questions Answered

In summary, the first two research questions have been answered through discussing both the LWCF Act of 1965, and the Gulf of Mexico Energy Security Act of 2006. The conclusions that the authors have come up with are:

1. Many examples listed above from both the LWCF and GOMESA 2006, are *catalytic* ripple effects.
2. For the most part, these *catalytic* ripple effects may be deemed as sustainable according to various dimensions of the *Triple Bottom Line* doctrine.

After discussing and interpreting both LWCF and GOMESA 2006 ripple effects, the authors have come to the conclusion that both pieces of legislation promote and develop ripple effects. Furthermore, these ripple effects are found to be mostly *catalytic*, and also many of them support the T*riple Bottom Line* of sustainability. The next task is therefore to analyze and discuss the Northern Norwegian stakeholders' needs and wants. Hereafter the same theoretical framework that was used for the North American findings will be applied to the data collected from the stakeholders interviewed in North Norway. The outcomes of this discussion will then allow placing both differing concepts into one framework for easier comparisons. It can be said that this method of analysis allows one to compare "oranges to oranges" further on in the discussions, and see if they are similar or not.

7.2 Stakeholder Opinions

When interviewed about what ripple effects should be promoted in North Norway, questions were broadly asked to ensure that researcher biased was not introduced to the study. In other words, the researchers did not ask leading questions that would influence a possible desired outcome. This ensures that the opinions gathered were truly those of the stakeholder, and not necessarily alluded to by the gatherer. Therefore, the data collected represents all possible forms of ripple effects, and not just those that are considered sustainable by the researchers. This creates a form of scientific validity, while requiring a more extensive analysis and discussion. In the next section, the researchers show how desired ripple effects fit into the used model of ripple effects (Figure 2) and thus break down which desired ripple effects may or may not be sustainable.

Direct Ripple Effects

Direct effects come in many forms that are mainly related to the output from and input into oil and gas activity. As seen in the empirics, North Norwegian stakeholders greatly desire these ripple effects. Stakeholders wish to increase oil and gas exploration and production in the North. In this section, the authors wish to clarify what some of them are, and whether or not they are sustainable. The first want involves competent people, such as workers in the petroleum industry, who move up north due to the oil and gas establishment in higher latitudes. This *direct* effect creates *induced* effects, as well as *tax* effects in the form of increased spending in the area income tax respectively. The sustainability of this effect is called into question when it is seen that a continuous flow of people will not move into the area without oil and gas activity. Therefore, if the oil dries up, so does this *direct* effect.

Other ripple effects desired by the local and regional stakeholders interviewed for the research paper are innovation ideas and activities in oil and gas companies. These effects could also be deemed to be of *direct* effect nature since they directly relate to the gas activity in the region. Sustainability dimensions of the *Triple Bottom Line* are rather poorly represented in this ripple effect as the innovation ideas and activities of the workers of a petroleum company will leave a minor impact on the local society when the oil and gas operations are over in the northern parts of the Norwegian Sea and Barents Sea.

In order to create *direct* ripple effects, oil and gas companies might want to invest in improved infrastructure, thus allowing for better flow of goods and people. This *direct* effect

in its nature has a potential to create other sorts of ripple effects. For example, a direct investment in improved infrastructure that could be used by both a company and the society, would also create *catalytic* effects. To promote sustainability, the up-keeping of this infrastructure should be done by another agency than a petroleum company because, after leaving the region, it would not be in company's best interest to keep financing the maintenance of infrastructure.

As a *direct* effect in form of employment is greatly represented in the stakeholders' opinions, another issue that the stakeholders are concerned about is the decisions on the type of installations that a company would employ in the region. According to one of the stakeholders, the local politicians in Norland have made a mistake by not requiring the products from Skarv field to be processed onshore in the region of Helgeland. She feels that the region was deprived of *direct* ripple effects because by establishing an offshore installation the company left an option for itself to "import" workers from other regions, thus reducing direct local and regional ripple effects. As already mentioned above, direct employment in petroleum industry would not be economically or socially sustainable because the presence of an oil company in a region will come to an end, eventually reducing the employment.

Indirect Ripple Effects

From the empirics, one can determine that stakeholders wish to develop the supply industry through deliveries of products and services from the local and regional businesses to the oil and gas industry. This can be labeled as *indirect* ripple effects based on the fact that it increases or even creates supplies and suppliers to the singular gas and oil project.

Another *indirect* ripple effect desired by the stakeholders is innovation ideas and activities in supplier companies. This effect is not quantifiable due to the nature of ideas. Therefore, the authors conclude that to promote ideas and activities in supply chains, the stakeholder actually wants investment in research and education. This form of *indirect* ripple effect would create value for the supply industry on the long term; however the long run effects would disappear as the supply companies would have to look for contracts outside of the region and reduce the local production capacity once oil and gas in the area abstained. This conflicts with the *economic* and *social* dimensions of the sustainability concept. Even though education and research can be applied to various areas and businesses, the authors look upon

education related to the oil and gas supply chain industry as exclusively applicable to jobs related to this industry.

As in *direct* effects, improvement of infrastructure is a desired ripple effect of oil and gas activity. This can be seen as *indirect* if the infrastructural facilities benefit the output of the supply industry. Like earlier, this effect is non-sustainable if these infrastructural improvements are not maintained by an outside, independently funded source.

Stakeholders have expressed concern of an imbalance in the supply market if supply industry growth in the North is left unchecked. This would create a misbalance in Norway as a whole between the supply and demand markets. The new establishments and the supply industry moving north together with the oil and gas industry would increase the free capacity of the southern supply firms because more orders would be placed at the newly established northern supply industry players. This can be seen as a negative *indirect* ripple effect, and is not sustainable due to failing *economic* and *social* spheres.

An *indirect* effect that is desired by stakeholders is increased local supply activity due to the development of an onshore facility. This increased activity would especially be present during the construction and start-up phases of the facility. However, these activities would be short lived once the plant is completed and operational. Therefore, *economic* and *social* sustainability is low. However, if an oil and gas company chooses to have an offshore platform, then *indirect* ripple effects may be seen in the form of helicopter and marine supplies that the local supplier companies could provide. These too are seen as unsustainable based on the fact that without the offshore installation, these services are no longer required.

Induced Ripple Effects

From the data collected stakeholders either did not think about or did not put extra emphasis on *induced* ripple effects. Once again, *induced* ripple effects are the result of the increased purchasing power of employees of the industry in question. This means that *induced* ripple effects arise because workers in the oil and gas industry, supply industry, or any industry related to oil and gas, spend their money in the local communities. Whether stakeholders just made the assumption that these would follow due to *direct* ripple effects, or whether they just did not consider these possibilities is up for debate.

Catalytic Ripple Effects

One wanted ripple effect is the increase of other types of business due to family members of oil and gas employees moving to the region. These family members may be representatives of other types of businesses, public organizations or other competences that may be useful to the further development of the local and regional society. This *catalytic* ripple effect is seen as sustainable. The reasoning is as follows: 1.) The moving of the family members is a *direct* effect of oil and gas activity. 2.) The family members get jobs, create businesses, or even start-up and join public organizations outside of the oil and gas industry, which is a *catalytic* effect. 3.) These competencies cannot be removed from the area once passed to society based on the nature of knowledge. 4.) The competencies brought by the family members are permanent, regardless if they remain in the area.

Another ripple effect mentioned is positive economic development where establishment of one company/industry attracts other businesses to start-up their activity in the region. This can be seen as *catalytic* depending on the type of business that is attracted to the area. If oil and gas activity attracts a donut shop to the area, then society is benefitted by having the donut shop. Of course there is the possibility for this to compound. If the donut shop in turn attracts a coffee shop, then development is out of the hands of the oil and gas company and therefore catalytic. This is seen as potentially sustainable since the attraction of one business is not directly related to the attraction of another. Without oil and gas activity, businesses may still be attracted to the area due to businesses that were attracted because of oil and gas activity. This is therefore potentially, but not guaranteed as sustainable.

Improved infrastructure is wanted by the local inhabitants, which can be seen as *catalytic*. For example, increased marine traffic will require the improvement and maintenance of marinas. Due to improved marinas, local inhabitants and businesses benefit through faster commute times, improved supply chain, better environmental protection possibilities, and possible increased tourism. The benefits of increased infrastructure cover the gamut of ripple effects. One can see this *catalytic* ripple effect as sustainable since not only oil and gas companies, but other users as well, will pay into and maintain the marinas. *Economic, social* and *environmental* sustainability can all be seen as possible within a marina environment.

Extra revenues to the local and regional governments are desired to facilitate grounds for spurring investments in economic and societal sectors. These effects are *catalytic* due to the nature of governmental decisions on investments, and come about as a result of *tax* effects on

the oil and gas industry. It is generally accepted that the Norwegian government has the people's best interests in mind when deciding on what projects to invest in. Therefore, these are seen as sustainable if and only if the government can find other ways to fund these projects once oil and gas taxes are gone. According to stakeholders, the surplus funds to the northern counties should be appropriated to be applied only for certain and pre-decided local and regional development projects.

Stakeholders propose the idea that a fund may also be used for enhancement of marine and maritime research, technological improvements, and infrastructure development in northern areas of Norway. The same stakeholders stress that the most important decision would be to set money aside for environmental purposes. There was an amount calculated that the local fishermen and businesses would be deprived of in case of an unsuccessful fishing season. The idea was to invest this amount in a fund and use interest income for investments in local and regional businesses. These effects would therefore be ripple effects of the fund, which is a *tax* effect of petroleum activities. Therefore, these effects are *catalytic* and sustainable. As described, the fund would be sustainable without oil and gas, and money would go towards *social, economic* and even *environmental* sustainability.

Stakeholders also show interest in maintaining ripple effects without oil and gas revenues, or in other words ensuring the region has "more legs to stand on." They wish to do this through environmental restrictions, an oil spill response plan, and ensuring that existing local industries especially fisheries and tourism, are not negatively affected. These ideas imply a push for environmental preservation plans, as well as economic preservation plans, funded by oil and gas revenues. These plans are *catalytic* ripple effects since they all deal with separate industries outside of oil and gas. The ripple effects caused, such as preservation of natural resources and other businesses can be seen as sustainable. If oil and gas funds leave, the programs may leave, but the avoided negative impacts will remain forever.

Tax Effects

Other forms of ripple effects desired are tax incomes to the local and regional authorities. This is clearly seen as a *tax* effect, and can be seen as unsustainable. If oil and gas activities stop in the area, then it naturally follows that companies will no longer pay taxes. This is similar to the ripple effects of the GOMESA 2006 legislature discussed earlier.

Another desired effect is an onshore facility to promote property tax. This is opposed to those who want an offshore facility and believe that an offshore solution would allow for spreading tax revenues throughout the region due to the workers on the offshore plant/ship living in various locations of a county. Those who support an offshore facility state that the tax income would be bigger and more evenly spread throughout the lifetime of a plant rather than sudden tax incomes flowing in during the hectic period of the start-up phase of an onshore plant. They state that these large inflows would be followed by a declining level of activity and tax income to the local budgets as regular operations start. However, onshore proponents point to the fact that large initial tax revenues could be used in surplus as economic investments in the local community, and that an offshore facility would not capture as much of the local population as predicted, as in the case in Hammerfest. While these are two different types of installations, the effects of both can be classified as *tax* effects; one as property and the other as income tax. These *tax* effects can also be seen as unsustainable, since the end of oil and gas operations would also end the flow of tax revenue.

Stakeholders in North Norway believe the regional budget should get a larger proportion of the tax income that the state budget receives from the oil and gas companies. These stakeholders believe that to create further ripple effects, money must be spent locally, and this money should be taken from the state budget. They believe the money should come from the state and not oil and gas companies because taxing the companies too much may result in unfavorable conditions for oil and gas activity. According to the stakeholders, the companies might not see the purpose of being in a region where production and operational costs are higher due to harsh conditions and unfavorable location. These larger tax incomes are again grouped into *tax* effects, and once again unsustainable without the oil and gas industry. However, programs into which the money is spent may be considered *catalytic* and therefore have the potential to create sustainable ripple effects.

Finally, when asked about a local fund to help promote development, stakeholders stated that the idea of a local fund in itself is a positive one. They were not favorable to a fund that just accrued interest such as the national Pension Fund, but believed that money placed into the fund needed to be spent locally and regionally to promote immediate, long lasting ripple effects. A fund of this nature would be a *tax* effect of oil and gas revenues, and therefore could be unsustainable if completely funded by these oil and gas revenues. If one looks to the LWCF however, one sees that a fund that has supplemental revenue streams from alternative sources may in fact be sustainable in itself.

Education as Ripple Effect

Finally, the researchers chose to pay special attention to a common theme expressed throughout the entire spectrum of stakeholders interviewed. Almost every stakeholder interviewed mentioned education of some form for North Norway. The researchers however found this to be a troubling ripple effect to group. No stakeholder was specific in their definition of what type of education they believed should be developed, just that the effects of education would help all sectors of life, whether social, economic, or environmental. Therefore, the researchers took the liberty of classifying education in all groups of ripple effects. The argument for this is as follows:

- *Direct* ripple effect – this form of education would directly benefit oil and gas industries. It can be seen as on the job training, or even children being taught about the oil and gas industry in their community.

- *Indirect* ripple effect – this type of education would help oil and gas suppliers. Again, this education can be seen as on the job training or even the sponsoring of a college degree in supply chain management.

- *Induced* ripple effect – this type of education can be seen if the workers or employees of a company invest their earnings in an education program for their kids in the local communities.

- *Catalytic* ripple effect – this effect comes about as the result of an oil or gas companies activities improving the education level of all those in the community. This may come about as a result of new community programs, or even investments in schools which teach many differing subjects that may not be applied to the oil and gas sector.

- *Tax* effect – here, the government invests tax revenues in the Norwegian education system, thereby providing an education to the entire state. Furthermore, the education effect could be created only for a specific region if the share of national *tax* effect was allocated for the specific programs in the region in question.

As one can see, *education* is a tough concept to fully label as a result of the nature and definition of knowledge. To gain knowledge is to become educated. Being educated does not necessarily mean that an institute of learning was involved, i.e. a person who never went to school can still gain knowledge to do a single job and therefore be "educated" in that field. Thus, just by opening its operations in a region an oil and gas company will provide education. In many cases, the education even comes about before operations begin, through the process of finding and developing suitable plots to operate on. For instance, before an oil and gas company can begin drilling, it must let the local population know its plans. By letting the local population know its plans, a company educates the community. At the same time, a local stakeholder may want the oil and gas companies to directly invest in schools, but since it was not specifically made clear, the researchers cannot make the distinction, and therefore must place the concept of education in all the categories as listed above. Whether or not these effects are sustainable is another area of confusion. If one looks at education specifically from one category, then they may find sustainability for the area as weak. For example, if a company specifically develops the education of the local youth strictly to benefit the oil and gas sector, the long-term sustainability for the region would be weak and even might cause eventual "brain-drain" when the petroleum industry finishes its operations in northern Norway. Seeking for new projects companies would attempt to gain licenses in other parts of the world, thus "dragging" the competent people with them. However, once someone is educated, you cannot "un-teach" them. Knowledge gained will be taken with an individual for life, and skills gained through education may be applied to more than one specific area. Therefore, *education* as a concept can be seen as sustainable and growing.

7.2.1 Research Questions Answered

At this point the researchers feel it is possible to answer the next two research questions of this paper, namely "To what extent and what type of ripple effects do Northern Norwegian stakeholders want?" and "To what extent the ripple effects desired by Northern Norwegian stakeholders are sustainable?" The data analysis within the theoretical framework of *ripple effects* and *sustainability* allows one to conclude that the North Norwegian stakeholders wish all categories of ripple effects created in their region. As *catalytic* ripple effects have the potential of being sustainable for local and regional societies and because those effects are promoted by alternative policy examples, they will have a major importance for further discussion. It is important to note though that the *catalytic* effects, being of secondary nature, are interwoven and partially dependent on the creation of other sorts of ripple effects, namely

direct, indirect, and induced and *tax* effects. Furthermore, the researchers found that *education* also could be seen as a ripple effect that would be presented in all five types of ripple effects employed in the theoretical framework, or even as a standalone effect. Therefore, to answer the research question the authors will shortly list the *catalytic* ripple effects that are, according to discussion above, the only effects having a possibility to be sustainable:

- increase of other types of business due to family members of oil and gas employees moving to the region
- positive economic development where establishment of one company/industry attracts other businesses to start-up their activity in the region
- Improved infrastructure (marinas, roads)
- spurring investments in economic and societal sectors
- enhancement of marine and maritime research, technological improvements, and infrastructure development
- ensuring the region has "more legs to stand on"
- ensuring that existing local industries especially fisheries and tourism, are not negatively affected
- environmental preservation plans, as well as economic preservation plans, funded by oil and gas revenues

7.3 Stakeholder Perspective vs. Alternative Policy

The next step in the process of analysis and discussion involves comparing the sustainable ripple effects found resulting from alternative legislation abroad, with the sustainable ripple effects found that North Norwegian stakeholders want. To do this, the authors will implement a table showing what ripple effects are desired, and what ripple effects have been attained through the LWCF and GOMESA 2006 that makes these policies considerable for application for fulfillment purposes of the needs in North Norway. This is a crucial part of the thesis as the comparisons made between the LWCF, GOMESA 2006 and the stakeholder

perspective builds the fundamental foundation for later conclusions and policy proposals to the North Norway and Norwegian authorities.

Wanted/Desired Sustainable Ripple Effects (as perceived by stakeholders)	**Implemented Sustainable Ripple Effects** (as effects of LWCF and GOMESA)
Increase of other types of business due to family members of oil and gas employees moving to the region	N/A
Positive economic development where establishment of one company/industry attracts other businesses to start-up their activity in the region	• Mitigation of the impact of Outer Continental Shelf activities through the funding of onshore infrastructure projects
Improved infrastructure (marinas, roads)	• Mitigation of the impact of Outer Continental Shelf activities through the funding of onshore infrastructure projects • Grants to the States for facility development
Spurring investments in economic and societal sectors	• Mitigation of the impact of Outer Continental Shelf activities through the funding of onshore infrastructure projects • Grants to the States for: ○ acquisition of federal lands and waters for recreational purposes • The Historic Preservation Fund • the Payments in Lieu of Taxes program, • FS State and Private Forestry programs • FWS State and Tribal Wildlife Grants
Enhancement of marine and maritime Research, technological improvements, and infrastructure development	• Mitigation of the impact of Outer Continental Shelf activities through the funding of onshore infrastructure projects • Grants to the States for facility development • FWS Stat and Tribal Wildlife Grants • Mitigation of damage to fish, wildlife, and natural resources

	• Implementation of a federally-approved marine, coastal, or comprehensive conservation management plan

Ensuring the region has "more legs to stand on"	• Mitigation of the impact of Outer Continental Shelf activities through the funding of onshore infrastructure projects
	• Grants to the States for:
	  ○ for recreational planning
	  ○ acquisition of federal lands and waters for recreational purposes
	• Implementation of a federally-approved marine, coastal, or comprehensive conservation management plan

Ensuring that existing local industries especially fisheries and tourism, are not negatively affected	• Implementation of a federally-approved marine, coastal, or comprehensive conservation management plan • Mitigation of the impact of Outer Continental Shelf activities through the funding of onshore infrastructure projects • Mitigation of damage to fish, wildlife, and natural resources
Environmental preservation plans, as well as economic preservation plans, funded by oil and gas revenues	• Implementation of a federally-approved marine, coastal, or comprehensive conservation management plan • Mitigation of damage to fish, wildlife, and natural resources • FS State and Private Forestry programs • FWS State and Tribal Wildlife Grants

Figure 15: Desired vs. Achieved Ripple Effects

The table above clearly illustrates that the *catalytic* and *sustainable* ripple effects promoted by the USA policy examples satisfy many of the *catalytic* ripple effects desired by the local

and regional North Norwegian stakeholders. It is important to note here that the two countries are governed by different political systems with different backgrounds, legislation and ideology. Due to these reasons, the authors do not attempt to make this research into a governmental comparative study, but instead choose to exclusively focus on the ripple effects and not political systems. Here by the authors conclude that a policy intended to promote ripple effects, similar to those gained by the policies in the US, is applicable in Norway, as long as it is written bearing both Norwegian ideology and the Norwegian governmental system in mind. Whether this includes changes to the Norwegian policy is left to the observer.

7.4 CSR: Who is responsible?

Once it is concluded that *sustainable catalytic* effects are desired and possible in North Norway, the question becomes "who is responsible to provide and ensure these ripple effects take place?" If one looks at the empirical findings in the North Norway case, it is seen that stakeholders overwhelmingly believe that one of two different actors should be responsible for these sustainable ripple effects. The first opinion expressed by some of the stakeholders is that "the oil and gas companies should be in charge of creating this effect since they seem to be earning enough money each year." Secondly, the majority of stakeholders pointed to local, regional and national government as responsible for ensuring that ripple effects are produced, maintained, and expanded in North Norway. Therefore, the next section will focus on analyzing which, if any, of these two groups can be labeled as responsible for *sustainable catalytic* ripple effects.

7.4.1 Petroleum Companies

Since stakeholders believe that an oil and gas company can be held responsible for ripple effects, one must look into what ripple effects the company can in fact be held responsible for. It is then possible to see if *catalytic* ripple effects fall under this realm of responsibility or not. Since the term *responsibility* can be widely interpreted, the authors chose to base their discussion and analysis on the theory of Company Stakeholder Responsibility, as argued for and explained in chapter 2.3.

To begin this discussion, one must first realize that ripple effects from oil and gas activities are not possible without activity from oil and gas companies. It then goes without saying that *sustainable catalytic* ripple effects from oil and gas activities are 100% dependent on oil and

gas activities. However, what the authors are trying to decide is if an oil and gas company is responsible for implementing and maintaining ripple effects of a sustainable and catalytic nature. By turning to the CSR theory being implemented in this study, one can start to analyze exactly what categories of ripple effects lay within the normal business activities of a petroleum company, and which groups may lay outside their natural and professional realm. It goes without saying that both *direct* and *indirect* effects are the responsibility of an oil and gas company.

Direct effects will come about due to the regular operations of the company, and will therefore be the responsibility of the company. In the CSR model, an argument was made that in order for a business to operate, it must take into account all of the stakeholders that influence, and are influenced by its day to day activities. Therefore, customers, employees, interest groups, and even suppliers have to be considered constantly. By looking at this definition, one can see that through suppliers, oil and gas companies will be responsible for *indirect* ripple effects.

Indirect effects will be those concerning increases or decreases in the supply industry surrounding the oil and gas sphere. Theory implies that a supplier should not necessarily be chosen based on location, but by what is best for the overall business model that the company. Whether this supplier is then local or not depends on the capability and cost of the local supplier. If the reader looks back at what the North Norwegian stakeholders said, a common discussion of wanting oil and gas companies to use local suppliers is found. However, this has often not been the case in practice due to either the inefficiency, or incapability of local suppliers to meet these demands. Therefore, the authors believe that theory points to the general understanding that an oil and gas company will not and should not use local suppliers unless the local suppliers are either the best solution, or unless they are required to by law. Requiring by law that local suppliers be used may however open up the possibility that oil and gas companies cannot financially operate in North Norway due to the current supplier situation.

Induced effects are outside the control and responsibility of an oil and gas company, except for the fact that they do have control over employee wages. A higher wage usually translates to larger *induced* effects, but what wage is fair is still left up to the company and its legal obligations.

Tax effects fall under the legal aspect of a company's day to day activities, however the amount to be paid and where these effects end up further down the road is strictly up to the government. Company obligations include paying the amount required from the government, and that is about it.

Lastly, one must look at whether an oil and gas company is responsible for *catalytic* ripple effects. CSR theory plainly states that a business should not get involved in activities outside its sphere of expertise. For instance, and oil and gas company should not try to run a social welfare program since its employees are not trained in this business and may end up doing more social damage than good. However, investing money and resources into such a program may prove to be both economically and socially rewarding for such a company. If doing so promotes the image and reputation of the company, then the investment may payoff in the form of increased sales or easier implementation of future policies in the area. Once again the theory shows us that just by running ethical and natural business in an area, the business will contribute to the social well being of society. Therefore, the conclusion drawn by the authors is that an oil and gas company may invest in *catalytic* ripple effects in the short term, but the long term success of these programs and institutions relies on someone else.

7.4.2 Governments

The second body that stakeholders believe should be responsible for creating and maintaining ripple effects is the government. According to them, this responsibility falls on all levels including local, regional, and state bodies. Again, the question is raised of which type and category of ripple effects the government really is responsible for, and therefore the authors will once again compare each category of ripple effect to Company Stakeholder Responsibility. In order to do this, the authors take the liberty of looking at and categorizing all levels of government as a company. Each level will have different stakeholders, but the general way that government works can be analyzed as a business, with customers, employees, suppliers, and even shareholders. "Suppliers" of a government come in the form of those who are taxed by the government. The taxes can be seen as governments "raw product." From this raw product, government creates a "good" in the form of services and programs. The "customers" in this case are all those who are affected by these social and economic programs, or in essence, the population over which the government presides. Stakeholders that are affected by the day to day "business" activities of the government are every person, company, environmental, and special interest group; in essence every single

level business and society. These stakeholders can therefore be seen as interchangeable with shareholders, since the purpose of government is to maximize the welfare of these stakeholders. Finally, employees can be seen as elected officials as well as those employed in the programs implemented by the differing levels of government. Therefore, the theory of Company Stakeholder Responsibility is seen as incredibly relevant in terms of being used as the lens for analysis, and the following section will be devoted to breaking down government responsibilities to each category of ripple effect.

The Norwegian Government can be seen as having a responsibility to promote *direct* ripple effects only through laws and regulations placed on an oil and gas company. Setting legal rules and creating laws lay within the day to day business activities of the government, so the extent of responsibility for *direct* ripple effects in the oil and gas sector really end here. In essence, the decisions of where, what, and how to develop resources still falls on the oil and gas companies, which is essentially where responsibility lies for direct ripple effects.

Indirect ripple effects come about as a result of suppliers, and yet again a government finds itself with little to no responsibility over this category of ripple effect. The only way one may see a shred of responsibility is if the government forces oil and gas companies to use local suppliers, as we discussed earlier.

Induced ripple effects are controlled through setting the minimum wage that companies may pay employees. This, according to the CSR model, lies within the day to day activities of law making and enforcing, but beyond this point the authors find it hard to find more examples. Seeing as the government cannot force oil and gas employees to spend their money at particular stores, the extent of responsibility for *induced* ripple effects ends here.

Tax effects are absolutely, 100% controlled by the government. As discussed earlier, governments get their revenue from taxing the public as well as businesses. Since they set the amount and ways that taxes are collected, it can easily be inferred that responsibility fully lies with the government for this kind of ripple effect. For local communities, the government should be ready to receive these revenues, but should also have a plan for what to do with them that best benefits and fits with what the local and regional stakeholders desire. This once again falls into the day to day activity of the government, and therefore CSR provides full responsibility to the government. As discussed and concluded earlier, the LWCF and GOMESA 2006 legislation are *tax* effects that are used by the US government to influence further, *catalytic* ripple effects. Through discussion and analysis conclusions were

drawn that similar effects are wanted in North Norway, and therefore governments in Norway can look to provide similar legislation. This legislation would promote further ripple effects which the authors have deemed *catalytic* ripple effects.

The responsibility of government to ensure and provide *catalytic* ripple effects for local and regional stakeholders can be seen to be very high if one uses the CSR model to analyze it. *Catalytic* effects can come about as a result of tax money, as is primarily seen through GOMESA 2006 and the LWCF act. Seeing as the government's job is not only to maintain but to improve society, the money from *tax* effects can be spent on *catalytic* effects such as social programs, environmental preservation programs, infrastructure programs, and many other such programs that, with government backing, have the chance to be sustainable. Seeing as stakeholder wants are at the very core of what make up the founding principle of a government, it can therefore be inferred that much of the responsibility lies with the government to provide effects to fill these wants and needs.

Seeing as the government is responsible for wise investment of tax revenues and for social programs, the question is raised, "what if no one participates in these programs?" As the Norwegian Government is not a dictatorship, it cannot force citizens to participate in social welfare programs. It cannot force a business to take on an activity that will destroy the business either, therefore responsibility to use these programs to the fullest and best extent still lies somewhere else. Therefore, the authors take the liberty of looking into Stakeholder responsibility, even though stakeholders did not take interest in this concept themselves.

7.4.3 Stakeholders

As stated before, the government should be responsible for setting up programs to promote *catalytic* ripple effects. These programs can come in the form of infrastructure improvements, environmental protection, social welfare programs, and a plethora of other programs; however stakeholders will be responsible for taking full advantage of these programs and ensuring they are used to create continuous effects in the future. Without stakeholder interest and support, these programs will quickly fail and the government will be looked at as the failure. If, on the other hand, stakeholders know what they want and work in close collaboration with the government to gain these *catalytic* ripple effects, then the chance for them to become sustainable greatly improves, and the stakeholders can create more value not only to themselves, but to society as a whole.

7.4.5 Summary

Sticking with discussion, the main concern from the previous section was on who should be responsible for creating and maintain *catalytic* ripple effects, which promote sustainability. The authors found that oil and gas companies cannot be held to much more than goodwill investments or sponsorships and that governments can be held responsible for creating and maintaining programs and plans to promote *catalytic* effects, but stakeholders must also take responsibility to know what they need and want, and fully take advantage of the ripple effects they are offered. Through this process of cooperation, the authors conclude that *sustainable catalytic* ripple effects are the responsibility of all stakeholders involved in the process, but to varying amounts.

8. Conclusions

The authors now look back to the discussion and attempt to draw out the conclusions that were found from discussing the empirical findings.

8.1 Practical Conclusions

1. *Sustainable* ripple effects are possible in the *catalytic* category of ripple effect theory.
2. The US Land and Water Conservation Fund Act of 1965 created *sustainable catalytic* ripple effects in the United States.
3. The Gulf of Mexico Energy Security Act of 2006 promotes *sustainable catalytic* ripple effects in the United States.
4. Northern Norwegian stakeholders desire local and regional ripple effects, including *sustainable catalytic* effects.
5. Responsibility to create, promote, and maintain *catalytic* ripple effects lies with:
    a. Oil and Gas companies – to the extent of investments and creating potential
    b. Governments – to the extent of knowing wants and needs, developing programs, and spending tax revenues; and
    c. Stakeholders – to subscribe to and create maximum value from governmental programs and ensure the longevity of the ripple effects

To conclude upon the research problem, the points above allow the researchers to claim that alternative policy, similar to the examples from the US, would promote sustainable and lasting ripple effects for North Norwegian stakeholders to a certain extent. As these policies mainly promote *catalytic* and potentially sustainable effects, similar policies could also be applied in Norway to create the *catalytic* effects that are desired by the Norwegian stakeholders. It is important to note though, that the increase of extent of other ripple effects desired by the North Norwegian stakeholders, i.e. *direct*, *indirect, induced,* and *tax* effects, would have to be achieved by different methods that are beyond the scope of this research.

Based on the findings, the authors would like to propose a possible plan for ensuring *catalytic sustainable* ripple effects in North Norway. This proposal comes in the form of a governmental fund, much like the one used in the US, to promote ripple effects specifically

for the northern regions of Norway. For clarity purposes, the authors feel it is important to distinguish that money in the fund not only be used to accrue interest, but actually be spent on projects and programs in the North to boost development, while at the same time ensuring the preservation of much of North Norway's special and unique ecological systems. This fund should be specially tailored to fit in with Norway's current governmental and social system, to ensure maximum efficiency and social relevance.

8.2 Theoretical Conclusions

Due to this study being deductive in nature, the researchers conclude that the data collected and analyzed both fits and confirms the existing theories incorporated in the study. Each theory will now be broken down one by one.

8.2.1 Ripple Effects Theory

Using a theoretical lens, the researchers chose to collect data specifically dealing with ripple effects. This was done when collecting data from the stakeholders, as well as when looking at the policy examples in the US. The data collected confirms the theory model used by the researchers in Figure 2. However, the researchers were not able to group *education* into a specific form or category within this model and therefore proposed that it was in fact a standalone, or new category in itself. Thus, the researchers conclude that *education* is, in theory, a separate form of ripple effect not previously taken into consideration in the proposed model. It is important to note, however, the model used by the researchers consists of a compilation of two models that are used to quantify ripple effects. However, this theory, in the case of this research, was not used to specifically quantify effects, but merely used as a way to categorize and describe effects. As stated in the theory, ripple effects are extremely complex and heterogeneous while not necessarily being quantifiable. Being a qualitative study, the authors see *education* as such an effect, and therefore categorize it as a ripple effect outside of the model used in this research, but still within the complex theoretical framework of ripple effects.

8.2.2 Sustainability

Since this study focused Sustainability theory on ripple effects particularly, the authors found that the data both fit and confirmed the theory. Differing ripple effects were found to be sustainable or unsustainable, but applying this theory specifically to ripple effects was a new

way of looking at it. Various ripple effects contributed to varying levels of sustainability, which were shown in the discussion section.

8.2.3 CSR

For Company Stakeholder Responsibility theory, the authors applied the theory by looking at the government and the stakeholders themselves as firms, rather than just recipients. In the discussions, it is shown that one company, or player, cannot be held responsible for all the ripple effects. While one company, in this case oil and gas, may be the *cause* of all the ripple effects, all stakeholders are *responsible* to maximize and continue the ripple effects that they receive. This confirms the Stakeholder Network model (Figure 7) shown in the stakeholder section of theory, which was applied in the creation of CSR. Therefore, it confirms the model of CSR that the authors chose to apply for this study, and for the analysis of the last problem question. This model is a refurbished form of the Corporate Social Responsibility model so often used in similar studies. However, Company Stakeholder Responsibility focuses heavily on a stakeholder approach to management, and declaring society and business as one, interchangeable sector rather than two, mutually exclusive sectors. The authors therefore believe that Company Stakeholder Responsibility was confirmed, and Corporate Social Responsibility may have even been shown to be outdated and inapplicable, at least for this and similar studies.

9. Further Research

The authors feel that this research should be seen as the opening of a discussion in North Norway for looking at various forms of policy intended to satisfy the wants and needs of all involved and affected by petroleum activities in North Norway. This research is specifically focused on the applicability of foreign policy based on stakeholder opinions in Norway. Therefore whether a fund is applicable based on other grounds, i.e. taxation, welfare distribution, or cultural, institutional and governmental ideology, could be further analyzed and combined with this thesis to help make decisions about the future of North Norway.

Since this study is a case analysis, the applicability of the authors' model of sustainable ripple effects to other industries or locations is also of great interest and has the possibility to either verify or falsify the findings set forth in this research.

Further research can also be done on the topic of *sustainable ripple effects*, and whether or not the two theories can be combined in a different way. Applicability of these two theories together outside of this case is also an interesting angle to investigate.

A comparative study between the applicability of US legislation in Norway by looking at their relative Governmental structures is a separate angle that can be taken. The authors used ripple effects rather than the actual policies themselves in order to limit the study and exclude this factor, but one should consider a further study on policies themselves to analyze the further applicability of such policies in Norway.

Whether or not Company Stakeholder Responsibility can replace Corporate Social Responsibility would be a fascinating study as well. Since Company Stakeholder Responsibility is meant to modify and change Corporate Social Responsibility, whether or not this was possible in various settings at ALL times could be looked into.

Doing a similar study in a different case setting, and then comparing the results would be a new way of looking at the applicability of the proposed theoretical contributions, while at the same time seeing if similar results are attained outside of this specific case.

10. Contributions

10.1 Theoretical

The first theoretical contribution comes in the form of summing up two differing ripple effect models into one practical and applicable model for qualitative research. Since the concept of ripple effects as a theory is relatively young, few models are actually present in the field. Therefore, the authors propose their model as a new way of looking at and categorizing ripple effects in a qualitative manner.

Secondly, as far as the authors know, the concepts of *sustainability* and *ripple effects* have not been looked at together scientifically. Therefore, the authors feel that they contribute to theory by combing and using the two theories in conjunction with each other to analyze data in a way that has not been done before.

Thirdly, the authors use a quantitative ripple effect model to categorize and analyze qualitative data. By doing this, they have shown that the nature of ripple effects may be too complex to specifically quantify, and justify using quantitative models only as qualitative guides for qualitative studies. It also suggests that by looking at ripple effects through a specifically quantifiable lens, a researcher may exclude effects that are non-monetary, yet found to be more desirable to a community, such as *education*.

Fourthly, the study does not go as far as disproving the Corporate Social Responsibility theory, but does suggest a strong argument for the use of Company Stakeholder Responsibility. Since Company Stakeholder Responsibility is meant to replace Corporate Social Responsibility, this study makes a strong argument that it does so in a way that is applicable in the real world.

This study provides methodological contributions in a different way since it takes policies from a different country and uses them in a comparative way to North Norway, without actually being a comparative study. In this case, the authors looked at desires of Norwegian stakeholders and the findings of American policy and found common grounds through theory in order to be able to compare the desires, and actual outcomes in a way that compares "oranges to oranges."

10.2 Practical

This study looks into what ripple effects are desired by North Norwegian stakeholders, which is very applicable to today's discussions over North Norwegian petroleum resources. It also proposes that stakeholders in themselves need to take more responsibility for ripple effects than they have taken before. By demanding real, reachable effects, and then maximizing value and passing it along, stakeholders may in fact get more and longer lasting or *sustainable* effects, which is what the authors have found to actually be desired by the stakeholders.

The conclusions of this study provide proof that alternative policy is probably needed in Norway, since other studies so far have shown that ripple effects up to this point have been inadequate. This implies that something further needs to be done and through research implies that these changes may need to come in the form of policy adaptation. It is a fact that production is moving north in Norway, which is an indication that the economic climate is changing. Therefore it follows that policies and regulations must change as well. It may be found that old policies and strategies that worked while production was in the south may not be applicable as it moves north, and therefore must adapt accordingly. This project proposes a fund as a possible solution, or as part of a bigger solution to the problems that will be faced.

The authors feel this study can be used in stakeholder and governmental dialogue as a tool to further dissect and analyze what needs to be done about the current situation. This study may open the door for further dialogue and cooperation between all players in the new oil adventure. It is especially applicable in the form of making stakeholders aware of the larger role they may need to play. Making sure the national and regional governments and stakeholders are aware of their roles in creating and maintaining *sustainable* ripple effects is made clear in the discussion chapter as well. If the pressure is put fully on companies to maintain and create ripple effects, then ripple effects may be inadequate due to the companies acting beyond their realm of expertise. Therefore, this study finds that an oil and gas company can only be held responsible to certain standards, and the rest is up to those who want the specific ripple effect to happen.

Finally, the authors show that local wants and desires may have a bigger weight than previously thought by companies or governments, and that cooperation in an attempt to fulfill these desires is crucial, especially in economic and environmentally fragile areas such as North Norway.

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Web Resources:

Map taken from http://upload.wikimedia.org/wikipedia/commons/0/0c/US_map-Gulf_Coast.PNG on April 5, 2010

Map taken from http://www.oilvoice.com/n/Central_Gulf_of_Mexico_Lease_Sale_208/17ab7bdb.aspx on April 5, 2010

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Appendix A

Total LWCF Appropriations, FY2001-FY2006

(in millions of dollars)

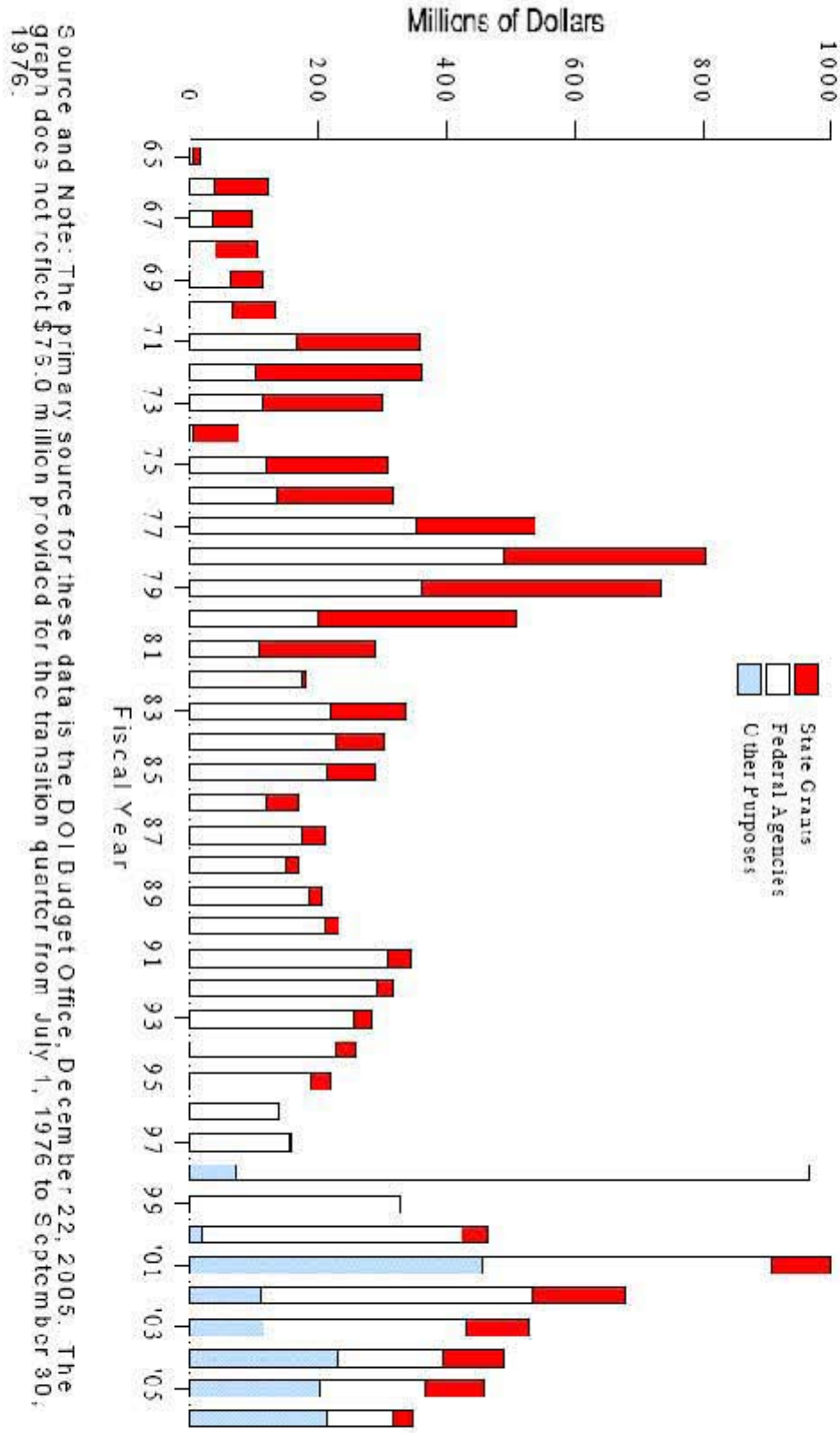
Purpose	FY 2001	FY2002	FY2003	FY2004	FY2005	FY2006
Land Acquisition						
Bureau of Land Management	$56.5	$49.9	$33.2	$18.4	$11.2	$8.6
Fish and Wildlife Service	$121.2	$94.3	$72.9	$38.1	$37.0	$28.0
National Park Service	$124.8	$130.0	$74.0	$41.7	$55.1	$34.4[f]
Forest Service	$150.9	$149.7	$132.9	$66.4	$61.0	$41.8
Total Land Acquisition	*$453.4*	*$423.9*	*$316.0[b]*	*$164.6*	*$164.3*	*$120.1[e]*
State Grants	**$90.3**	**$143.9**	**$97.4**	**$93.8**	**$91.2**	**$29.6**
Other Programs	**$456.0**	**$109.8[a]**	**$115.5[c]**	**$229.7[d]**	**$203.5**	**$214.1**
Total	**$999.7**	**$677.6[a]**	**$528.9[bc]**	**$488.1[d]**	**$459.0**	**$346.8[f]**

Source: The primary source for this data is the DOT Budget Office, December 23, 2005.

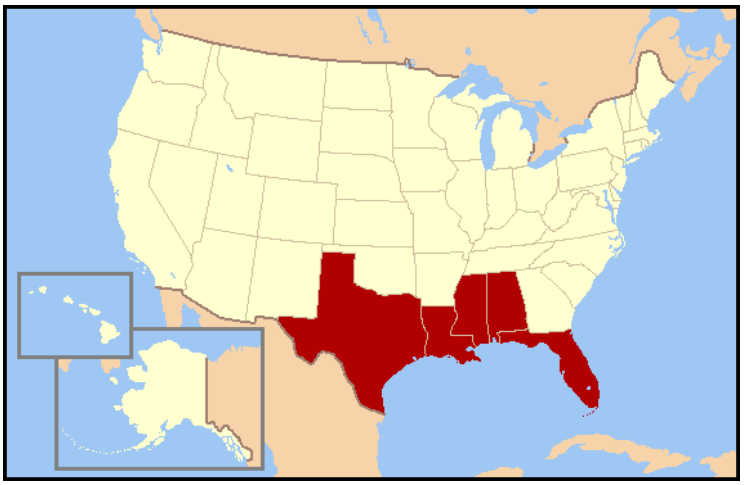
a. This figure reflects a *$25.0* million rescission of FY2001 funds for State Wildlife Grants.
b. This figure includes $3.0 million for the Bureau of Indian Affairs for Indian Land and Water Claim Settlements that is not shown in the figures above.
c. This figure reflects a $40.0 million rescission of FY2002 funds for the Landowner Incentive Program and a $10 million rescission of FY2002 funds for the Private Stewardship Grants Program.
d. Tins figure includes $5.0 million for Bureau of Indian Affairs settlements and $5.0 million for FWS resource management.
e. This figure includes $7.3 million in appropriations for DOI Departmental Management for land acquisition appraisal services.
f. The NPS land acquisition and total appropriation figures are reduced by $9.8 million clue to the use of prior year funds for NPS federal land acquisition. The total only also is reduced by $17.0 million due to the use of prior year funds for NPS land acquisition and state assistance. Thus, the figures in this column exceed the total by $17.0 million.

(*From Vincent, 2006:7)*

Appendix B
(*Vincent, 2006:5*)



Appendix C



Map of Gulf Of Mexico States

From L-R: Texas, Louisiana, Mississippi, Alabama, and Florida

http://upload.wikimedia.org/wikipedia/commons/0/0c/US_map-Gulf_Coast.PNG

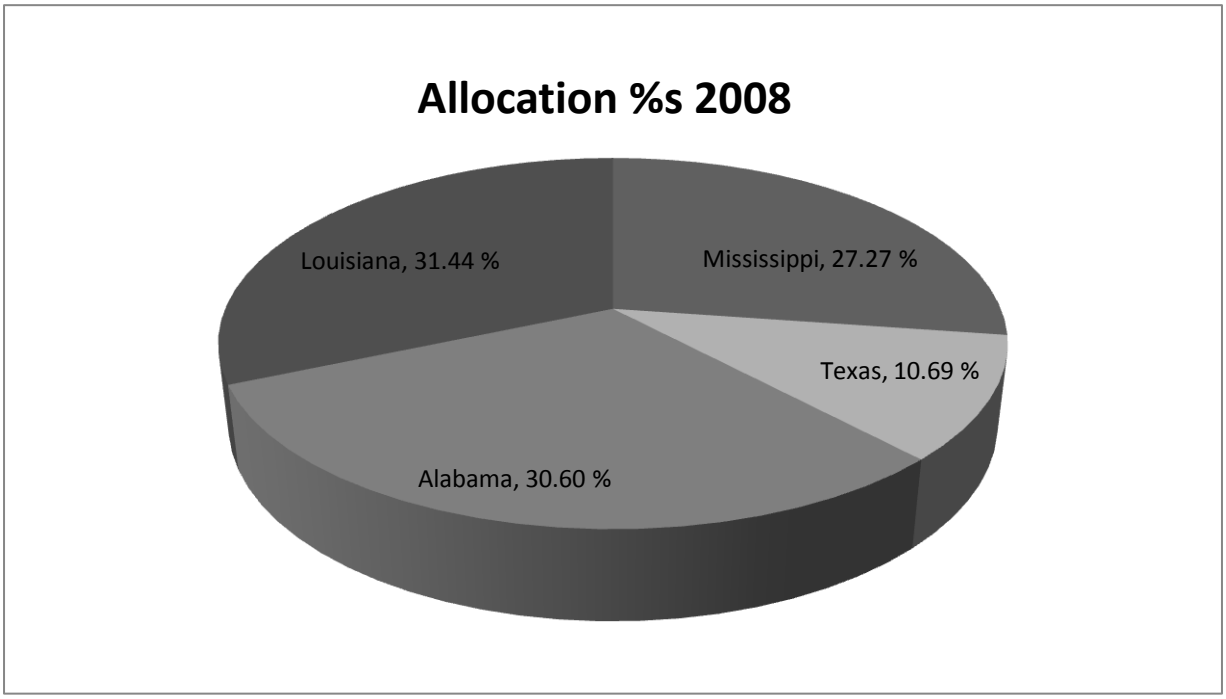
Map of GOM Planning Areas Open for O&G Leasing Activities

http://www.oilvoice.com/n/Central_Gulf_of_Mexico_Lease_Sale_208/17ab7bdb.aspx

Appendix D,E

(Taken from http://www.mms.gov/offshore/PDFs/GOMESA%20FY2008Final.pdf)

In the fiscal year of 2008, qualifying OCS revenues amounted to $67,306,775.93. If we split this up then $33,653,387.80 (50%) went in the Federal budget, $25,240,041.04 (37.5%) went to the states and their respective CPSs, and $8,413,347.09 (12.5) was put into the LWCF.



When we look into individual states, we can see a little clearer how they are divided up. If we look at the figure above, we can see a breakdown of what percentage each of the qualifying states received from the 7.5% total OCS revenues in FY2008. In numerical terms, Alabama received $7,723,845.31, with $6,179,076.25 going directly to the state and $1,544,769.06 being divided between Alabama's two CPSs. Similarly, Louisiana received a total of $7,934,151.41, with $6,347,321.13 going to the state, and $1,586,830.28 being divided up between nineteen CPSs. A complete breakdown of the four states for FY2008 can be seen on the following page.

Producing State	% Allocation	Total Allocation	Amount Direct to States	Amount Direct to CPSs
Alabama	30.60%	$ 7,723,845.31	$ 6,179,076.25	$ 1,544,769.06
Louisiana	31.44%	$ 7,934,151.41	$ 6,347,321.13	$ 1,586,830.28
Mississippi	27.27%	$ 6,882,794.75	$ 5,506,235.80	$ 1,376,558.95
Texas	10.69%	$ 2,699,249.57	$ 2,159,399.65	$ 539,849.92
Total of states	100	$ 25,240,041.04	$ 20,192,032.83	$ 5,048,008.21

Taken from Mineral Management Service Gulf Of Mexico Energy Security Act of 2006 Fiscal Year 2008 Allocations.

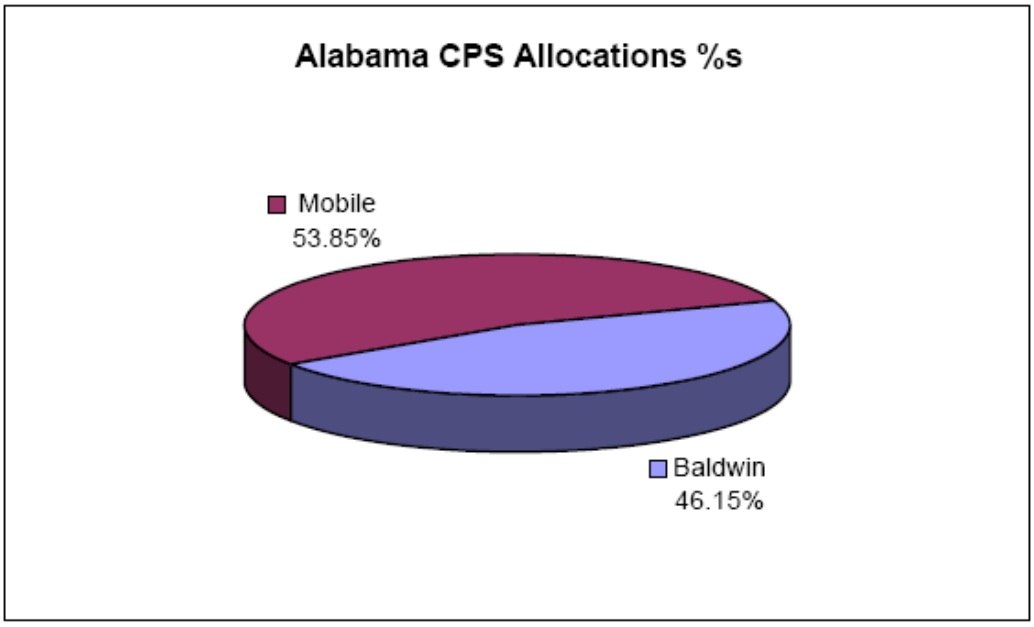
Each state has a varying amount of CPSs which means that allocations from the table above can be deceiving. For instance, it looks as if Louisiana is getting the bulk of the profits going towards its CPSs, but it divides this number up between nineteen CPSs, while Alabama, who shares a similar amount of revenue, divides it up between only two CPSs. Meanwhile Mississippi has three, and Texas has eighteen CPSs. How each state divides revenue amongst CPSs is also unique, based loosely on a formula of distance from the field, and individual need of the CPS based on conservation and protective efforts. The amount that each county receives varies greatly. For example, the CPS of Mobile County in Alabama received just over $830,000. This is due to its close proximity to the leases and the impacts that the drilling done in these areas is most likely to affect this county. On the other side of the spectrum is Refugio County in Texas which received just under $14,000. Since the drilling done in the newly affected GOMESA areas is on the opposite end of the GOM, it goes without saying that Refugio would receive less money for the activities done.

Appendix F

Affected Alabama CPSs

Map and Allocation Breakdown
FY2008

(http://www.mms.gov/offshore/PDFs/GOMESA%20FY2008Final.pdf)

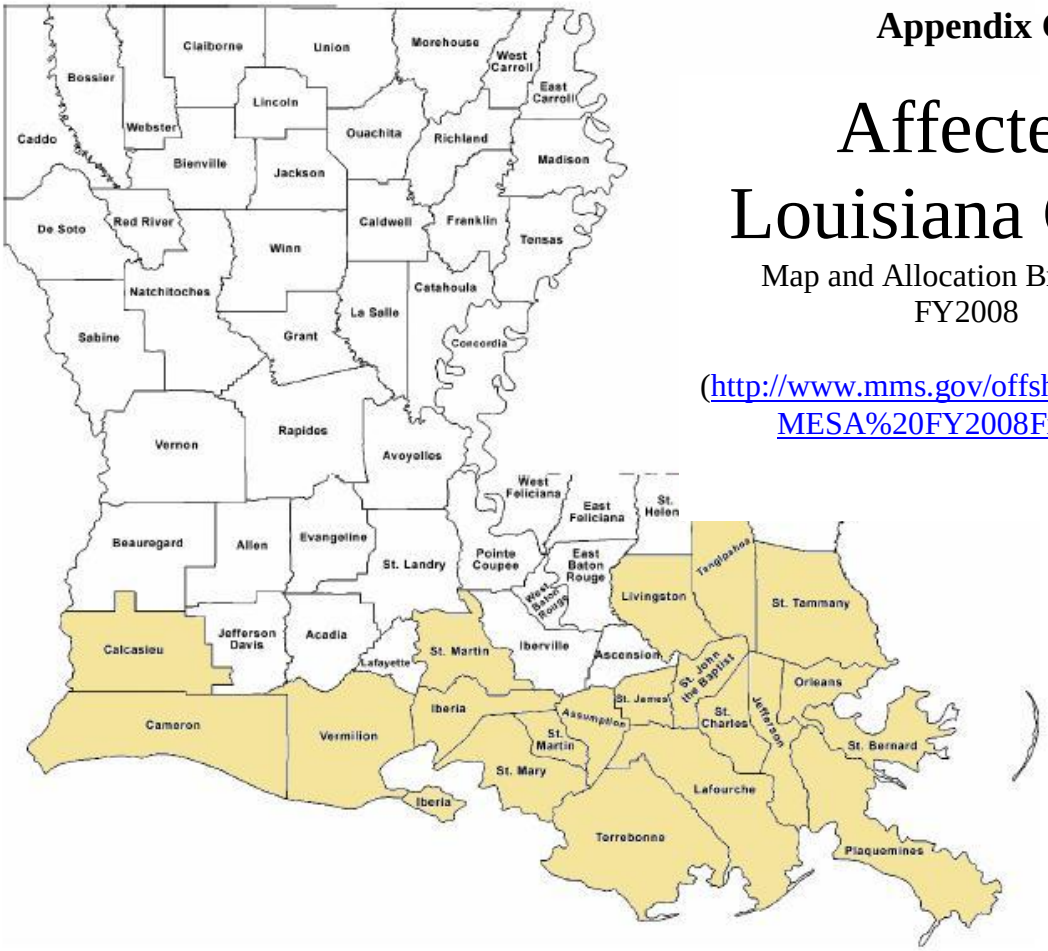


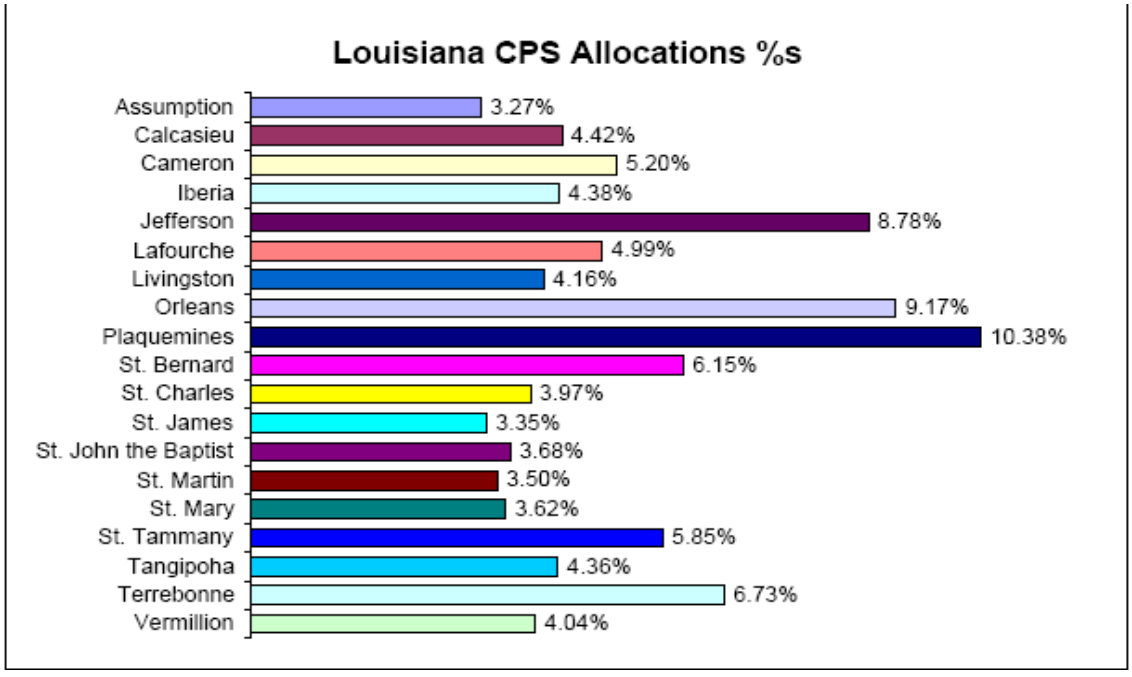
Appendix G

Affected Louisiana CPSs

Map and Allocation Breakdown
FY2008

(http://www.mms.gov/offshore/PDFs/GOMESA%20FY2008Final.pdf)



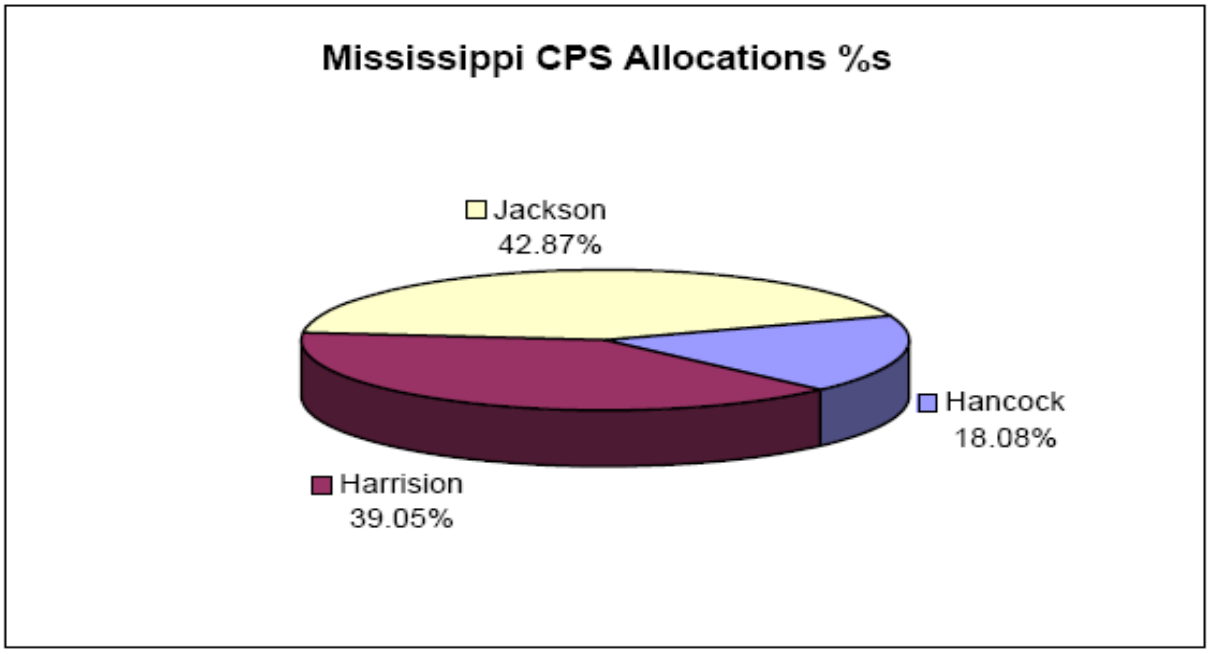


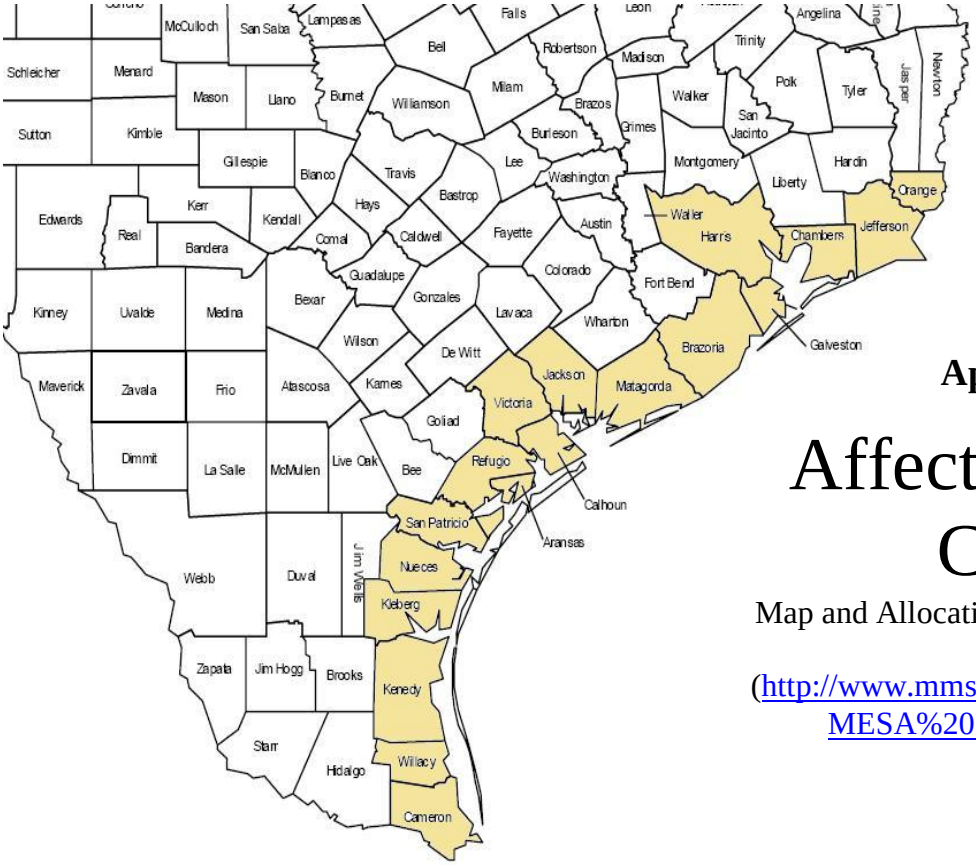
Appendix H

Affected Mississippi CPSs

Map and Allocation Breakdown FY2008

(http://www.mms.gov/offshore/PDFs/GOMESA%20FY2008Final.pdf)



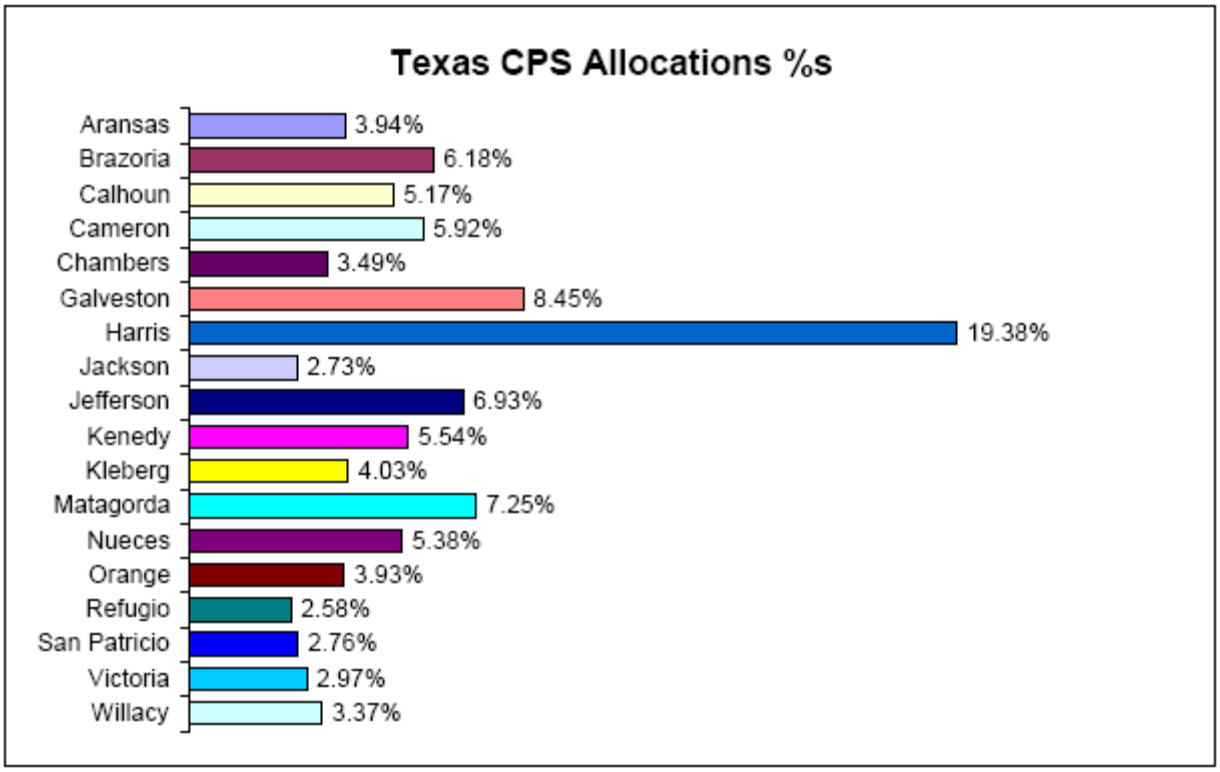


Appendix I

Affected Texas CPSs

Map and Allocation Breakdown FY2008

(http://www.mms.gov/offshore/PDFs/GOMESA%20FY2008Final.pdf)



Appendix J,K

Interview Guide

1. In the first part of the interview we would like to know what does a term ”ripple effect” mean to you?

2. What expectations do you have for ripple effects that could be created as a result o foil and gas activity off the coast of North Norway?

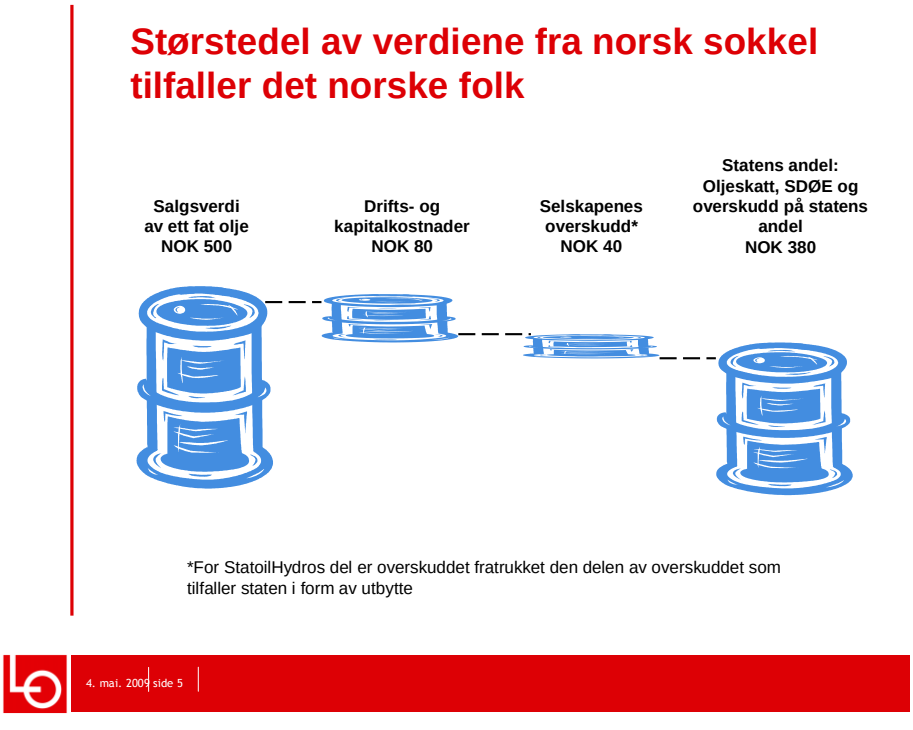
3. Who should take responsibility or which players should play an important role in order to create these ripple effects?

4. What tools/means/methods should be used in order to create these ripple effects?

5. What do you think would be an optimal volume of ripple effects, a sort of dream scenario for North Norway?

6. What do you think should be a minimum volume of ripple effects? Where should the line be drawn where local and regional stakeholders in North Norway would not desire petroleum activity off the coast of North Norway?

7. This model is an illustration we have borrowed from a presentation by LO held in



Stokmarknes, Norway, on 29 March 2009. It illustrates income distribution from sales of one barrel of crude oil.
When one talks about ripple effects, it is almost a given that companies have to be responsible for creating them. Let’s consider an example of Snøhvit project where the

Hammerfest municipality directly receives ripple effects in form of property tax amounting to 150 mln NOK a year. This is a cost that is incurred for the company and affects its net income by reducing it by 150 mill NOK per year, resulting in lower net income tax to the company.

The question is as follows: who should be responsible for ”paying” for local and regional ripple effects? Should it be a license owner or should one take an amount from the state’s share of petroleum activity? What is your opinion about it?

8. An example related to the question above and the possibility of the government ”paying” for local and regional ripple effects could be the Gulf of Mexico Energy Security Act of 2006, where the states mostly affected by petroleum activity in the gulf receive a share of tax income from the federal budget. Furthermore, as a result of the GOMESA 2006, a share of federal oil and gas income is deposited in the US Land and Water Conservation Fund for environmental protection and federal land acquisition. In your opinion, would such a model be useful for Norway?

9. The Conservative Party (Høyre) has raised a discussion about a separate petroleum fund for North Norway. What is your opinion about this proposition and would such a fund be useful?