

**EN310E 003**

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**Master of Science in Energy Management**

**Bodø Graduate School of Business, Norway, May 2009.**

**Arctic Governance and  
Human Economic Interest:**

**An Ecosystem Management Approach to Arctic Stakeholders**

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The fjord is a UNESCO World Heritage Site.



The Arctic Circumpolar area © European Commission

## Arctic Governance and Human Economic Interest:

### An Ecosystem Management Approach to Arctic Stakeholders

## **Abstract**

The Arctic has substantial natural resources and a rich wildlife which is important to the inhabitants. Environmental changes and economic openings such as mineral extraction and shipping have great consequences and opportunities for the global community. The dialogue about how to govern the Arctic suggests this should be done with an *ecosystem management approach*. This paper sheds light regarding how stakeholders in the Arctic perceive ecosystem management and get influenced of so-called ecosystem management plans.

Empirical data on ecosystem management is tied together with real life experience of ten stakeholders in the Arctic. The theoretical foundation consists of stakeholder theory, the value sphere and communicative arena which are finally examined in relation to the empirical findings.

Despite varying interpretations of the term, findings show that stakeholders in the Arctic associate ecosystem management with these elements: nature, economic interest and people. Many view ecosystem management as a holistic approach and precautions are taken before the consequences and impact are known. Stakeholders represent different perspectives, each focusing on different Arctic issues. Ecosystem management indicates closer cooperation between different interests rather than independent approaches to issues. Indeed, the interests are economic in nature whether the natural wildlife represents a food source for indigenous people, petroleum for the world's economies or beneficial healthy and stable environment. Arctic issues are intertwined.

## Sammendrag

Nordområdene består av unike naturressurser og et rikt dyreliv som befolkningen er avhengig av. Arktis utvikling påvirker og får konsekvenser for hele verden gjennom økonomiske muligheter som petroleum og transport, men også gjennom klimaendringer. Dialogen og diskusjonen om hvordan vi skal forvalte nordområdene har landet på at dette bør skje gjennom økosystem-basert ledelse. Denne masteroppgaven belyser hvordan interessenter eller *stakeholdere* i Arktis oppfatter dette begrepet og hvordan de blir påvirket av myndigheters forvaltningsplaner.

Empirisk informasjon om begrepet er sett i relasjon til hvordan nøkkelinteressenter med forskjellige perspektiver i Norge og USA opplever begrepet. Den teoretiske forankringen ligger i interessent-teori, verditriangelet og modellen Kommunikativ Arena, som vil bli sett i relasjon til førstehånds funn gjennom intervjuer og og empiri.

Det er mange måter å beskrive begrepet på, men funnene viser at interessenter i Nordområdene assosierer økosystem-basert ledelse som bestående av tre elementer: naturen, økonomiske interesser og mennesker. Mange ser økosystem-basert ledelse som en helhetlig måte å lede på der man tar forhåndsregler og er forsiktig med handling før man kjenner konsekvensene. Interessentene representerer forskjellige synsvinkler og perspektiver som gjør at de naturlig ser forskjellig på problemstillingene i nordområdene. Økosystem-basert ledelse indikerer at man samarbeider på tvers av de forskjellige interessentene istedet for å se på problemstillinger isolert fra hverandre. Interesser i nordområdene kan sees som økonomiske enten det er snakk om dyrelivet som representerer matressurs for urbefolkning, petroleum for verdens økonomier eller den økonomiske verdien av en sunn natur. De arktiske spørsmålene og problemstillingene er derfor inter-relatert.

## **Preface:**

The Canadian poet, Henry Beissel once said that north is where all parallels meet. As a graduate student, I purposefully chose to study in the north and focus on the interesting topic energy management. Throughout my master's degree program of study, I have enjoyed the opportunity to study and live in two other Arctic countries: the United States of America and the Russian Federation. I believe this has expanded my sphere of knowledge regarding the complexity of the Arctic beyond that of a Norwegian perspective to views issues more objectively. The final thesis has been written in Houston, USA, where I also have worked as an intern for HBW- Resources.

During the first semester of Energy Management at Bodø Graduate School of Business, we attend: "Philosophy, Ethics and Environment". This course inspired me to refine my thesis in this paper's direction. Furthermore, it was this eye-opening experience of how the business world and the world in it self can be seen with a holistic view where social human constructions, the natural and economic structures are all intertwined. As others have stated, I believe the Arctic must be seen from a broader perspective as multidimensional involving many different disciplines. I am eager to understand more about the empirical meaning of the term "ecosystem management". Though widely used, the term has not been described in real practice in relation to Arctic stakeholders. In writing this paper, I hope to contribute to the ongoing Arctic dialogue and shed light on a previously unexplored part of complex issues that affect this region.

Houston, May 2009

Tonje Fingalsen

## Definition of central concepts

- The Arctic /The high north/ The Circumpolar area: The area around the North Pole, often north of the Arctic Circle (latitude 66° north of equator). See appendix 1 for borders.
- Arctic states: States that are located north of the polar circle; Canada, Denmark / Greenland / Faroe Islands, Finland, Iceland, Norway, Sweden, The Russian Federation and United States of America.
- Coexistence: is the relationship when two or more groups of various interest or perspectives live or operate in the same area. In the ocean, fish, ships, and petroleum extraction coexist. Despite differences, the groups respect each other and aim to solve potential conflict in a non-violently manner.
- Communicative arena: A communicative arena is the place where the people (stakeholders) affected by an action meet and interplay with the decision makers of the action (Ingebrigtsen & Jakobsen, 2007).
- Ecosystem Management: A way of govern or manage that include the ecosystem.
- Ecological economy: addresses the dynamics between human economics and natural ecosystems.
- Nordic Council of Ministers: Nordic governmental cooperation forum
- Continental Shelf: The sea bed and the soil beneath it. The continental shelf is attached to a maritime state and outside the limits of the state's territorial waters.
- NGO: Non- governmental organisation is an interest group advocating a specific point of view. In this paper it is Nature NGOs and Indigenous People are by UN considered a NGO.
- Stakeholder: Any group or individual who can affect or is affected by the achievement of the organization objectives. Freeman, 1984:46

## Abbreviations

CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CSR	Corporate Social Responsibility
EIA	Energy Information Administration
EU	European Union
GDP	Gross Domestic Product
IEA	International Energy Agency
NASA	National Aeronautical and Space Administration (USA)
NGO	Non-Governmental Organisations
NPFMC	North Pacific Fishery Management Council
IMO	International Maritime Organization
IPCC	Intergovernmental Panel on Climate Change
JPOI	Johannesburg Plan of Implementation
LOS/UNCLOS	United Nations Convention on the Law of Seas
UN	The United Nations
UNFCCC	United Nations Framework Convention on Climate Change
UNCED	UN Convention on the Environment
USGS	United States Geological Survey
WBCSD	World Business Council for Sustainable Development
WCED	World Commission on Environment and Development
WWF	World Wide Fund for Nature (former: World Wildlife Fund)

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# 1 INTRODUCTION, STAKEHOLDER- AND CONTEXT PRESENTATION

## 1.1 Introduction

Arctic governance deals with the management of Arctic issues and stakeholders. Arctic issues include: geopolitics, economics, science, technology, climate, development and many more. All of the issues of the Arctic are interconnected.

Many people perceive acceleration in globalisation, international trade, fuel extraction, climate changes and urbanisation. These aspects are not necessarily negative but will have great impact and consequences beyond the circumpolar area. The public opinion and international society demands actions to be taken in order to address these issues (Støre, 2008). This is on the basis of social, political, environmental and economic concerns. An increased interest in finding a sound, sustainable and operational solution to the complex issues of the Arctic is viewed as necessary. To achieve this goal, dialogue between states and stakeholders are key regarding governance of natural resources. The dialogue in the north has “stranded” on the term *ecosystem management*. Through the Arctic dialogues, there is a call for implementing ecosystem management. The depth of involvement and the meaning of this term are not entirely clear, nor is the effect on stakeholders in the Arctic. The focus needs to extend beyond the concerns of the marine environment.

This thesis paper problem statement is:

*What does the term ecosystem management mean and involve for stakeholders in the Arctic?*

First handed information will be gathered from dozen stakeholders, secondary data and then linked up to relevant theory. The context of the problem being studied will be explained further in the section following the presentation of the Arctic stakeholders.

The Arctic is facing a wide range of complex issues. How do we solve these? This is of great importance for the society at large. Arctic issues affect us all through great challenges and opportunities. There is an ongoing dialogue regarding governance of the natural resources and vulnerable environment in the high north. The call for *ecosystem management* occurred in this dialogue as a possible approach to handle these complex issues. This approach has

already been implemented in marine areas in Norway and the USA. In addition to natural environment, stakeholders are in the centre of Arctic issues.

To give this question a philosophical relation, Albert Einstein once stated: *“The world we have created by our way of thinking is in serious trouble, the problems cannot be solved by the same way of thinking.”*

Before discussing the ecosystem management term, it is necessary to dedicate a section to present the stakeholders and issues which represent the complexity of the Arctic region.

When applying a holistic approach it is important to present and discuss all the stakeholders carefully. Other studies have failed to apply a holistic approach because some stakeholders are left out of the study.

## **1.2 Arctic Stakeholders**

Some of the main issues the Arctic face are represented by the various stakeholders and interest groups discussed below.

### **1.2.1 Nature**

It is discomfited to define the Arctic natural environment as a stakeholder since it is the foundation for everything else. However, it is appropriate in this section because nature is *the* most important in the Arctic. The Arctic Ocean alone is approximately 4 million square kilometres which is almost one and a half times the size of the United States of America (Corell, 2008). The Arctic also consists of vast landmasses (see appendix 1). The entire area is an ecosystem representing a rich biological natural wildlife, sea mammals, and other marine life that have an intrinsic value. The ocean and nature also has great value for the people and global interests. Environmental concerns in the Arctic include climate change, health and safety, and transboundary pollutants.

The natural environment of the Arctic is very vulnerable and affects the entire world. Both NASA (NASA, 2009) and the European Space Agency (ESA, 2009) have space pictures showing that the Arctic ice is getting thinner and receding beyond the impact of seasonal changes. This may result in an ice-free Arctic. Additional issues arise as the icecap recedes rapidly and creates open sea. Open sea, which enables easier access for human activity and interests represent enormous economic benefits. This could include petroleum extraction, shipping, fishing and tourism. Human activities will influence the Arctic environment (US

Secretary of State Clinton, 2009). Analysis of crude oil production in the Arctic National Wildlife Refuge (onshore areas in Alaska) by the Energy Information Administration (EIA, 2008) confirms that this development is a concern regarding how petroleum extraction will be managed. In the fragile Arctic region, it takes nature considerable time to recover from oil spills. (Cornellier, 2009). Twenty years after the Exxon Valdez oil spill, Prince William Sound in Alaska still has remarkably large amounts of oil in the ground and on shore (Cornellier, 2009). There is much we know about the Arctic, but there is still a considerable amount that is unknown. For example, it is not known how Prince William Sound will still be affected by the Exxon Valdez twenty years from now.

### **1.2.2 Indigenous People and Local Communities**

The indigenous people are a very important group of stakeholders in the Arctic, as they represent the inhabitants of the region and have lived in the area for thousands of years. The indigenous people's knowledge is the key to understanding the changes in the area's environment. Any activity or change in the Arctic will impact the four million indigenous peoples of the Arctic. Issues related to the environment and its co-existence with industrial or transport activity is an example of this. How the indigenous people perceive governance and are affected by ecosystem management are of great interest. The indigenous people already live in a harsh climate where the land area each person needs to survive is many times larger than in southern regions. The people are extremely vulnerable to changes in the environment and even the smallest climate changes have had an impact on their daily lives.

### **1.2.3 Commercial Fishing**

Fish is a food resource that has significant economic potential. If the ecosystems change, the fish migrating patterns will also change. This is already a fact with certain species. These changes have affected indigenous peoples in northern Russia, they have to go out further to catch fish which area a part of their livelihood (Vasiliv, 2008). Støre (2008) points out that the herring population not yet has fully resumed twenty years after the Exxon Valdez spill. The receding ice opens up the possibility for commercial fishing in new areas. Rules, regulations and policies must be agreed upon between the states with waters. Fishing in the Arctic also involves the question of co-existence with potential petroleum extracting endeavours indigenous people and the natural environment.

#### **1.2.4 Petroleum Business**

Regardless of natural changes and development in the Arctic, the world needs energy to sustain its established economies and societies. At present, oil and gas make up a large share of the demand as opposed to renewable energy. Energy consumption is tight and tied up with the GDP of countries and the increasing demand throughout the world for more energy resources to maintain consumption and fuel for further development. Both states and the petroleum industry are interested in extracting petroleum resources in the region. The relatively unexplored Arctic could be home to 90 billion barrels of oil, 1,6470 trillion cubic feet of natural gas, and 44 billion barrels of liquid natural gas according to the US Geological survey (USGS, 2008). This four-year long USGS project is the first effort to estimate undiscovered but technically recoverable natural resources across the entire Arctic region. The report USGS released also claims that the Arctic could hold just under a quarter of the world's undiscovered resources.

Several of the Arctic countries who have claimed rights in the Arctic are already extracting petroleum resources in the circumpolar area. At present, petroleum extraction is underway in the Beaufort Sea Coast, Mackenzie Delta and the Barents Sea, but not further north. Beneficiaries of potential mineral extraction will receive gigantic economic advantages as energy is a scarce resource. Though, there are petroleum resources in the Arctic, mineral extraction in the circumpolar area is challenging due to the harsh climate. Ice damaging installations is one challenge, while co-existence with indigenous people and wildlife such as sea mammals is an additional challenge.

#### **1.2.5 Shipping**

The majority of international trade is shipped over the oceans. An Arctic meltdown would unblock the frequently-frozen Northwest Passage making a potential shipping route over the North Pole possible. This would reduce the transportation distance by approximately *forty percent* from Asia to Europe, but would also decrease the distance for shipment to North America (<http://www.german-foreign-policy.com/en/fulltext/56163>).

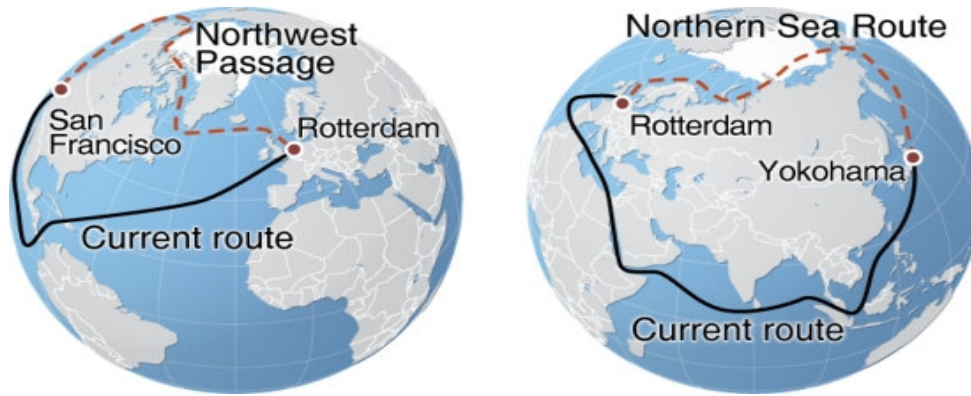


Figure 1 Northern Sea Route and the Northwest Passage compared with currently used shipping routes. (June 2007).  
In UNEP/GRID-Arendal Maps and Graphics Library.

Today, shipping accounts for great transboundary pollution. By reducing the freight length, emissions would also decrease unless more items are shipped. The total freight bill would decrease proportionally with reduced distance and canal fees in e.g Suez Canal can be saved. Megaships that do not fit in the current canals represent even greater savings. In addition to economic benefits there would also be a reduction of risk because ships would not have to travel around the Horn of Africa or along routes including Somalia and The South China Sea where pirates are a threat. Reduced freight costs would benefit both consumers and producers. However, pollution, and possible spills and wrecks would have a severe impact on the vulnerable environment of the Arctic. The benefits and drawbacks of shipping in the Arctic can be summed up with a statement from the Norwegian Minister of Environment; shipping is part of the challenge, but also a part of the solution (Solheim, 2008). The solution would include reduced routes, new technology and innovative solutions, whereas the challenges are pollution and disturbance to the natural wildlife.

### 1.2.6 States

Arctic states that have claimed rights are obvious stakeholders in the region. Rights regarding how far out a country's continental shelf extends are important issues for the Arctic countries. Rights over the continental shelf mean the possibility for mineral extraction from the ground.

When the Russians planted their flag at the bottom of the North Pole, the media referred to it as a new cold war and chill. However, many see this as a mere scientific expedition. In general, Arctic countries put many resources in scientific mapping of the sea floor to prove

that their countries can claim rights in the Arctic if their landmass has a natural extension into the North Pole. One example of this is Canada who claims that the Lomonosov Ridge is an extension of the North American continent. Russia claims that it is an extension of the Siberian landmass (Barentsobserver, 2008). This highly illustrates the geopolitical tension that might occur because of common interests at stake. Potential political tension in the high north might have consequences beyond the neighbouring countries.

### **1.2.7 The Global Community**

Arctic challenges and opportunities will have far greater consequences beyond the neighbouring countries, and will affect countries throughout the world. Organisations like the EU, therefore sees themselves as stakeholders. Non-Arctic states want to have a say in the protection and conservation of the Arctic. Additionally, they want to take part in the economic opportunities that the Arctic represents. Examples of such opportunities include the global markets of energy and shipping.

The melting icecap affects us all. "...This is a very serious situation which is having serious impacts on ecosystems and the livelihoods of the local inhabitants" (Støre, 2008). According to stakeholder theory (see the theory chapter), all parties affected are stakeholders. Globally, the ecological changes, increased energy supply or reduced shipping costs and emissions in the Arctic impact everyone resulting in the global community being a major stakeholder. Moreover, the climate set the standard for human activity and any changes attract global political attention all over the world. The UN leads the way in mapping out the governance, which will be explained in the discussion below. The European Union passed through a Communication on "The European Union and the Arctic Region". The official EU pages states:

*"Environmental changes are altering the geo-strategic dynamics of the Arctic with potential consequences for international stability and European security interests calling for the development of an EU Arctic policy. On the whole, Arctic challenges and opportunities will have significant repercussions on the life of European citizens for generations to come".*

–European Commission, Maritime Affairs, 2009. Any kind of increased activity or changes



will from the above presentation have significant implications to the Arctic people and all other stakeholders who are involved economically, politically, socially and environmentally.

### **1.2.8 Summary**

The study focuses on Arctic governance through an ecosystem management approach. This involves managing Arctic issues. Arctic issues are highly representative of the way the natural environment is developing. Everything that *is affected by the Arctic* is seen as stakeholders. The nature can be affected by its own development, but also by other stakeholders in the Arctic. Therefore it is presented as a stakeholder here. The stakeholders are of great importance to understanding the complexity of Arctic issues. The main stakeholders are the people living in the area, human economic interests (petroleum extraction, fishing, shipping) and states. The presented stakeholders are in the position of influencing the Arctic and gaining influenced through its natural development.

## **1.3 Context of the Problem**

Arctic governance includes dealing with the evolving complexity of the area. The dialogue regarding this question can be seen as several dialogues since discussions are conducted as various forums. Some of them are presented in the discussion below. The literature explicitly states that dialogue as a medium not should decide upon something nor draw a conclusion. However, what comes out of the dialogue are being used in states policy. The dialogue participants aim to seek common ground, as the participants express and discuss their views. This is natural, though conflicting interest of the dialogue.

### **1.3.1 The Arctic dialogue**

The great dialogue of United Nation's "World Summit on Sustainable Development" was last held in Johannesburg, South Africa in 2002 (UN, 2002). In Johannesburg, stakeholder participation was extensively discussed and the stakeholder participation in the process of environmental governance has since the last World Summit increasingly been referred to as "ecosystem management" (Steel 2001:120). A very interesting aspect of this paper is that both the Norwegian and American governments have implemented ecosystem plans in the oceans in the Arctic. The Johannesburg Plan of Implementation (JPOI) endorsed the

ecosystem approach for fisheries, biodiversity protection, and sustainable development by 2010 (JPOI, 2002).

For the reason that the ecosystem management approach comes out of the dialogue focusing on sustainable development, it indicates how important a holistic ecosystem view is for sustainable development. When extensive climate changes are seen as well as other issues in the Arctic, already knowing the area plays an important role in the global ecosystem, sustainable development are at stake. The empirical data included in the paper points to existing research on the topic. The aim of the thesis is to present and clarify the ways in which key stakeholders perceive the term. I have chosen to interview a few key Arctic stakeholders and discuss in depth about how they perceive the term. The term serves as an analytical framework for the discussion. The context is set by introducing the Arctic stakeholders and the main Arctic bodies that influence its governance. The connection between the various categories or groups of stakeholders will be seen in relation to aspects of themselves. What I find out in my empirical data will be connected up to already known research on the term.

### **1.3.2 Limitations**

The Arctic may at first glance be compared to the Antarctic, as it is the opposing polar area on the globe. However, there are fundamental differences both geologically and politically. The Antarctic is landmass covered with a large icecap and surrounding oceans, whereas the Arctic is a semi-closed ocean with an ice cap. Politically, the Antarctic is recognised as a continent based on United Nations Conventions Law of Seas (UNCLOS/LOS) common heritage of mankind principle (article 136). Many of the Arctic states have explicitly announced rejection of a common heritage principle in the Arctic. The United States of America, Canada and Norway refuse to give up their territorial sovereignty for the common good. Additionally, the southern hemisphere's ecosystem does not have inhabitants. For these reasons, this paper does not compare the two poles nor does it try to make further connections between the two.

This paper acknowledges the United Nations Framework Convention on Climate Change (UNFCCC) and the Intergovernmental Panel on Climate Change (IPCC) which states that climate changes are consequences of human actions. Moreover, the receding ice and issues in the Arctic have significant impacts on the environment, politics, indigenous people, and commercial interests, such as fishing, shipping and extraction of non-renewable resources.

## **2 ARCTIC ADVOCATE BODIES AND DIALOGUE FORUMS**

No one country has jurisdiction over the Arctic. Moreover, it is no *one* set of rules and regulation, whereas there are specific regulations on the various issues such as the ocean (LOS), shipping (IMO). There are several international treaties, laws and regulations that apply, in addition to organizations advocating their interests, and dialogue forums discussing specific topics. This section will present the main Arctic Bodies, organizations and dialogue forums.

### **2.1 Arctic Advocate Bodies**

The Arctic Council is at presently the summit for the Arctic countries. In addition to the main institutions: LOS, IMO, The Arctic Council, there are many Indigenous People's organisations representing a range of policies and strategies from both public and private sectors from other stakeholders in the Arctic.

#### **2.1.1 The Arctic Council**

The Arctic Council is currently the only circumpolar forum where all the Arctic states and indigenous people take part and come together. It is a unique forum for the reason that everyone in the Arctic has a say. However, this forum does not have laws to regulate arising issues and therefore work more as a stakeholder's meeting point. Environmental issues and scientific research obtain most of the Council's work. It is therefore not an operational body with binding legal authority although many useful non-binding legal guidelines set the framework of the organisation. The Arctic Council is project-driven and therefore carries out much scientific researches (WWF, 2009). The Norwegian Minister of Foreign Affairs Jonas Gahr Støre states in a speech to the Nordic Council in May 2008 that the key aim for the Council is to integrate new knowledge into policies. In the same speech he refers to Professor Oran B. Young who perceives the Arctic Council as an umbrella body committed to set the agenda and amplify the voice of the Arctic. This implies that debate and dialogue can put greater focus on policy-making (Støre, 2008). The Arctic Council in Tromsø 2009 decided that the foreign ministers will meet once a year, not every second year due to increased activity and focus on the Arctic (The Tromsø Declaration, 2009).

### **2.1.2 UNCLOS**

All coastal states have a continental shelf of 200 nautical miles from their coastline. However, many countries claim a larger continental shelf than this. Coastal states have 10 years to prove that their continental shelf extends further than 200 nautical miles from the day they ratify the LOS (LOS, article 76). The claim including geological documentation, are to be submitted to the Commission on the Limits of the Continental Shelf, which reviews the submission in accordance with established guidelines and makes recommendations regarding the outer limits of the continental shelf (Ministry of Foreign Affairs, 2009). It has been claimed that there is a legal vacuum in the Arctic (Borgersen, 2008). However, the Arctic Ocean has a legal regime, the UN Law of Seas (LOS). The rules give the coastal states sovereignty over their coastal zones, such as the continental shelf, the exclusive economic zone, and the territorial sea (Corell, 2008). These rules and regulation provide guidelines for businesses, protects and manage the marine environment of the vast natural resources in the international high sea. LOSs Article number 77 regulates the rights coastal states have over the continental shelf.

The Ilulissat Declaration, May 2008, which was signed by the five Arctic Ocean costal states refer to the LOS as “extensive international legal framework”. The LOS does not solve all issues related to area. Improvement of the current framework is needed as new issues evolve. There are rules, but more comprehensive implementation of policies would help evolving the current convention.

### **2.1.3 IMO –International Maritime Organisation**

United Nation’s International Maritime Organisation (IMO) is the specialized agency where improved global regulations for the shipping business need to be addressed. IMO coordinates the relationship between member states and the shipping industry to prevent maritime pollution and improve safety. The shortcoming of IMO is that it is voluntary and not binding. However, an Arctic management regime could integrate and make parts of the IMO mandatory.

### **2.1.4 Indigenous People’s Organizations**

Amongst indigenous people there are also a wide range of governance arrangements, organisations and regulations. UN’s Economic and Social Council (ECOSOC), the Permanent

Forum for Indigenous People and International Union for Conservation of Nature (IUCN) are a few examples of some important intergovernmental institutions.

In Norway, the Sami people have their own parliament through the 1987 Sami Act. The Sami meet in the Sami Council. In Russia, the Russian Association of Indigenous Peoples of the North, Siberia, and the Far East (RAIPON) takes part in of making the legislation. The Inuits and the Athabaskans also have their own councils, whereas the Aleut, the Athabaskans and the Gwich'in have their own organizations. This way, the indigenous people are more guaranteed that their rights and preservation of life and economic development are secured. In many places in the Arctic, the indigenous people are getting territories transferred back to them through legislation.

Besides the Arctic Council, there are many attempts and dialogues that also advocate the Arctic issues. These are dialogues or communicative arenas where stakeholders come together and discuss their concerns. Examples of this are:

## **2.2 Dialogue Forums**

Issues discussed in various Arctic dialogues could be of commercial, security, climatically/environmental, political, technological -or legal matters. Because the Arctic consists of many complex issues and do not have one set of rules, might be why the dialogue calls for ecosystem management: to see the rules and issues in relation to each other. Some important dialogue forums are presented below.

- Arctic Frontiers supports an open and independent dialogue under the motto “Balancing human use and ecosystem protection” (<http://www.arctic-frontiers.com/>). For Arctic Frontiers: environmental sustainability is a goal for our involvement in the vulnerable Arctic and circumpolar areas. The dialogue consists of an annual conference.
- Arctic Transform is EU’s project led by four major institutes that together cover most of the Arctic issues. Arctic Transform aim to “...develop transatlantic policy options for supporting adaption in the marine Arctic environment” (<http://www.arctic-transform.org/index.html>). It also emphasizes the importance of involving a wide range of stakeholders to address the major climate issues.

- The Aspen Institute Dialogue and Commission on Arctic Climate Change is an ongoing dialogue to consider the social, environmental, economic, and legal implications for the region's inhabitants and resources. The commission consists of a wide range of stakeholders.
- "Common Concern for the Arctic" organised by the Nordic Council of Ministers in September 2008 at Greenland, "Arctic Ocean Conference" arranged at Greenland in May 2008.
- Arctic Parliamentarians, which consist of parliamentary representatives from the Arctic countries, have a conference every second year (the first in 1993). The Arctic Parliamentarian Standing Committee's main priority was originally to support the establishment of the Arctic Council, but now it is responsible for the work between the conferences. The Committee participates in the meetings of the Arctic Council as an observer. (Arctic Parliamentarians, <http://www.arcticparl.org/about.aspx>)
- Arctic Study Tour is annually arranged by the Bodø Graduate School of Business and the Business Centre of the High North. This is the dialogue the author has been participating in and also helped organised. On this yearly study tour, stakeholders from the Arctic countries come together with students to discuss Arctic issues.

The Arctic dialogues have many different stakeholders. The dialogue level of communication is not necessary at governmental level. However, governmental positions are important as it is the government that represents a country's interests and acts as the representative when countries meet in e.g. UN forums.

## **2.3 Governmental Positions**

In this paper, there is a special focus on the US and Norway, and the governmental positions will present the governmental position below.

### **2.3.1 USA**

With the recent inauguration of the new administration, it is not entirely easy to outline the US position in the Arctic. One of the last things Bush did as a President was to sign a new Arctic policy in January 2009. In Clinton's confirmation testimony for Secretary of State, she said that the LOS needs to be coherent with the current national policy. Furthermore, she

said that it therefore will be a priority to change the Arctic policy. “We have got to find out where our boundaries are...people start to drill when there is no sea ice and that is disadvantage for us not to be prepared for that.” (Clinton’s hearing January 13<sup>th</sup>. 2009). The United States of America is the only Arctic state that has not ratified the LOS. The Bush administration, a majority of the US Senate and the Pentagon all favoured the ratification and the bill he passed through in January 2009, also favoured a ratification, but a group of Republican senators had until now blocked it. With a new Democratic administration, committed to ratifying the LOS (Clinton, 2009), this is likely to happen. This will give the US the clarity to work more smoothly and efficiently together with other nations on issues in the Arctic region.

### **2.3.2 Norway**

Norway is of the opinion that they already have a comprehensive multilateral regime and a legal framework that applies to the whole Arctic Ocean, including ice-covered waters, namely the LOS. In April 2009, the LOS Commission on the Limits of the Continental Shelf made its recommendations regarding the location where the Norwegian continental shelf based on claims and geological research. Furthermore, Norway believes that a potential Arctic treaty should be based on the Antarctic treaty. The ruling parties, (Regjering) have targeted the high north as the highest priority in their administration. This expresses a clear responsibility and aim to create more predictable conditions for activities in the High North. It confirms that Norway has substantial rights and responsibilities in maritime areas of some 235, 000 square kilometres (Ministry of Foreign Affairs, 2009). Norway has good relation to all the Arctic countries and the long standing relationship with Russia goes back many years. Although Norway may disagree with Russia, Norway is resistant to do something that would negatively impact their relationship with Russia.



### **3 THEORETICAL FRAMEWORK**

The term “ecosystem management approach” from the dialogue will serve as the analytical framework for this research. Under this stakeholder dialogue, stakeholder participation was extensively discussed. For this reason, the theoretical framework of this paper consists of stakeholder theory as the main theory. The communicative arena will be presented because it is a place where all stakeholders come together and discuss a companies or issues impacts. Stakeholder theory and communicative arena belong together, for the reason stakeholders, in the representation of states and indigenous peoples, came together at the World Summit for the purpose of participating in a dialogue. The groups or people that have an interest in the in the Arctic are called stakeholders, and is therefore the key term.

The literature on ecosystem management will serve as a description of the context in this paper. Research which has been done on what this term involves, and the author wants to view this in the Arctic context. The empirical data from key stakeholders in the Arctic will then be related to already existing research. The combination of these will provide a holistic perspective of the thesis’ problem field: Arctic governance with an ecosystem management approach and what this means for the stakeholder.

#### **3.1 Stakeholder Theory**

All the informants in this research acknowledge themselves as stakeholders in the Arctic. However, through research it became clear that indigenous people discuss this term. This chapter presents how theorists argue the term, and a practical section showing how stakeholders are involved.

##### **3.1.1 Shareholder**

The term shareholder represents the direct economic interest someone has in a company. This has always been a mutual interest between the company who receives financial support and the shareholder who expects economic return from the invested money. American economist and Nobel Prize Laureate in economic science, Milton Friedman, saw the businesses as merely in it to make business, where the business serves the interest of its

shareholders. The shareholders or stockholders are therefore the main interest the company is responsible for.

**3.1.2 Stakeholder Origin**

The concept of stakeholder is fairly new and comes from the western literature in the 1960s, where its approach to strategy emerged in the mid-1980s. The idea behind a stakeholder approach to strategy and management is to try to “...build a framework that was responsive to the concerns the managers who were being buffeted by unpredicted levels of environmental turbulence and change” (Freeman and McVea, 2001). The term was a play on the word “stockholder”, as it sought to broaden the concept of strategic management beyond its economic focus (Freeman and McVea, 2001).

**3.1.3 Traditional Management**

Stakeholder theory serves the stakeholders’ interests, as well as the company’s ultimate purpose (Evan and Freeman, 1993:255). This means that the firm has ultimate responsibility for non-shareholders, such as employees, costumers, and suppliers. Figure two shows this traditional view. This traditional management model also sees employer, costumers and suppliers as a part of the firm, but only in the periphery. Moreover, this model has only one way arrows towards the non-shareholders interests, indicating a one –way communication or information.

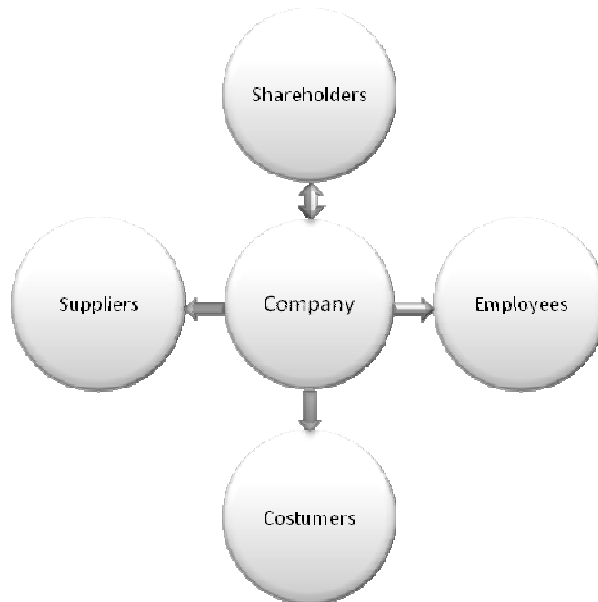


Figure 2 Traditional managerial model of a corporation (Crane & Matten, 2004)

The contemporary stakeholder theory we have today goes beyond this approach and sees the company's obligations in an even broader perspective. This paper acknowledges a wide range of stakeholders as important to the Arctic context and therefore will disagree with Friedman's view on business which says that shareholders are the only relationship of importance.

Freeman (1984:46) gave this early definition of a stakeholder:

*"Any group or individual who can affect or is affected by the achievement of the organization objectives."*

This definition is broadly acknowledged and used. After it was published, it led the research in a more complex direction as a stakeholder could be *any* group or individual who get affected by a company's decisions or are in the position to influence the company. It is then reasonable to expand the Traditional managerial model of a corporation in Figure 2, and add arrows in both directions between the firm and stakeholders. What this exactly means will be discussed more closely below.

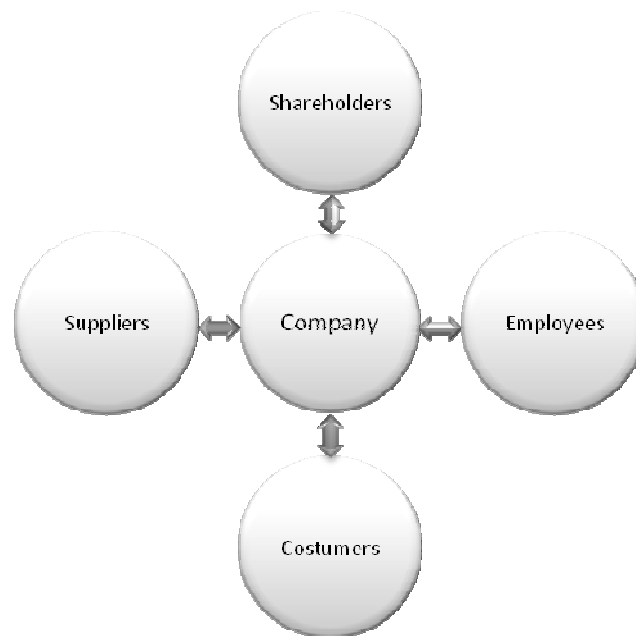


Figure 3 The author's perception of the stakeholder model according to Freemans definition

The author participated on the Arctic Study Tour (2008) which is an Arctic stakeholder dialogue. The author experienced that a wide variety of stakeholders were in the position to influence the dialogue (substitute with company for the purpose) and also be influenced by it.

Evan and Freeman (1993) in Crane, Matten (2004) suggest that this means applying two principles. The first is principle of corporate *rights*. This principle demands the organisation not to violate the rights of others. The other principle is about corporate *effect* and emphasizes the effects of cooperation on others. This means that a stakeholder can be affected in a good or bad way (harmed or benefitted) as well as be in the position to influence the company. Furthermore, the company has a special responsibility not to violate the rights of the stakeholders who have to be respected by the company (Crane & Matten, 2004). The obligations are not necessary legally binding contracts but can be obligations created by governments or other institutions. Examples of this are employee rights, union policy, UN human rights.

#### **3.1.4 Contemporary Approach**

According to Freeman's definition, there could be many stakeholders in today's complex society where so many aspects that are intertwined. In a welfare society, tax revenue from corporations is distributed to a large amount of people. It is reasonable to argue that aspects in society influence each other: businesses and money are operated by humans influence each other. Our business and money have the ability to change processes in the ecosystems. Ecology, humans, and economy are therefore intertwined. This view is supported by Jakobsen (Nov. 2007). Another example is that when politics change, human behaviour and ideology will change and will in turn affect economic structures. In the US there is a willingness to pass a law to make sure managers in the financial industry are not able to receive giant bonuses like the insurance company, AIG, received during the 2008 financial crisis.

If we are talking about a company harming the environment it is indefinite how many people would be affected, as the whole ecosystem could be affected. Referring to the figure below; a stakeholder to the business could have its own set of stakeholders that it also would have obligations to. A petroleum company engineer is a stakeholder in his company's perspective,

but he also has a range of obligations to his own set of stakeholder. He or she will have colleagues, family, and financial obligations to maintain such as a place to live and other living costs. This analysis leads us to see stakeholders in a network as opposed to mere individuals isolated from one another.

The arrows in Figure 4, indicating communication and information flow, goes in both directions, according to Freeman's definition.

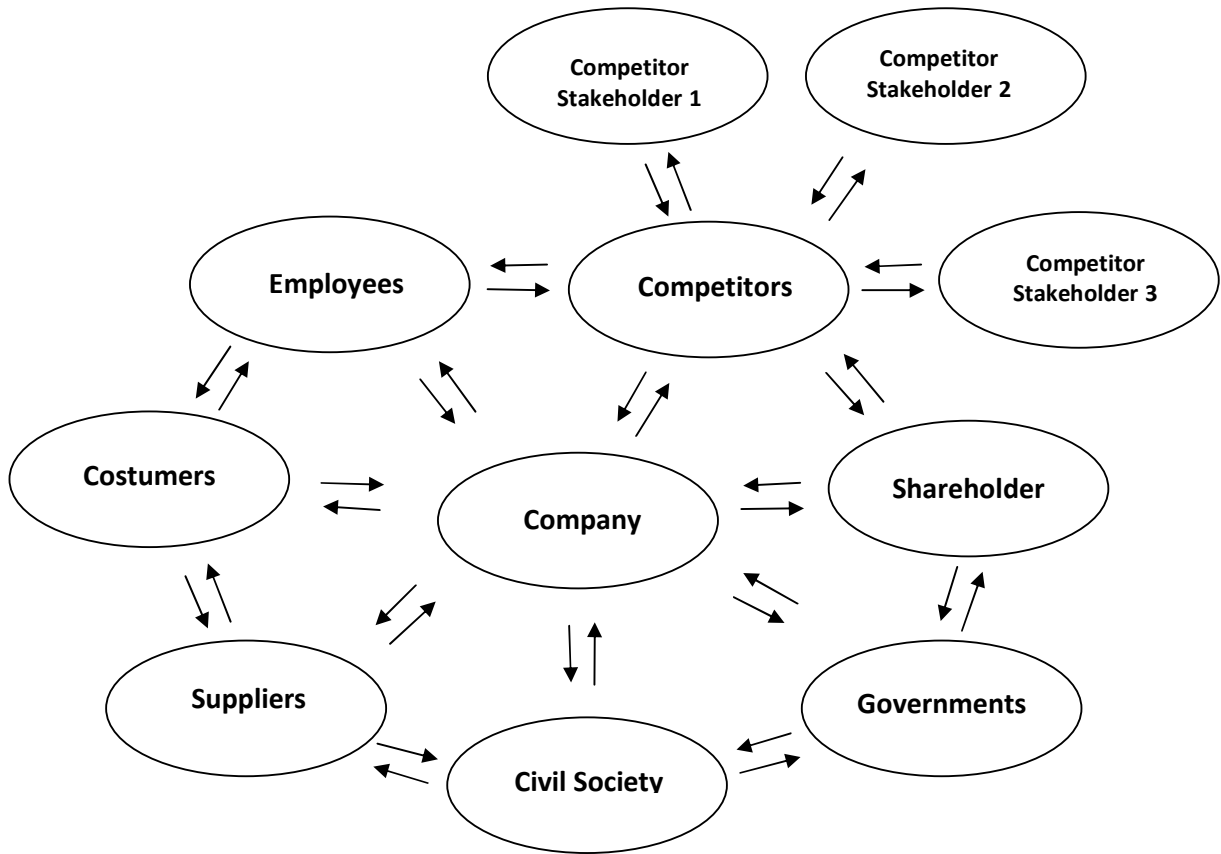


Figure 4 Stakeholder model as a network model (Crane & Matten, 2004)

**3.1.5 Benefits and Limitations**

It is important to state that the stakeholder perspective represent both benefits in terms of opportunities and limitations for a company. Stakeholders give a company or an issue valuable information about their opinions, thoughts about the product or service, and suggestions for improvement. This can help a company to know how markets and surrounding interests view the company, who can then use the information to improve its products, services or operations. On the other hand, it is very time consuming to communicate with stakeholders which may delay projects greatly. Practical use of the stakeholder theory therefore has conflicting interests for a company. It also is a matter of priority, as multiple stakeholders most likely have different agendas, perspectives, and thus have different demands from a company. A company therefore needs to determine to what extent they want and need to prioritize the various stakeholders. Managing this is not easy and Freeman et al. (2007) argues that a company should not trade one group’s interests

over another. How this is practically done is another question that will not be discussed further in this paper. Many companies acknowledge that understanding their stakeholders and the relationship between them sets them in a better position to have success in their relationships with the stakeholders, which ultimately provides the company with economic benefits. This is supported by Hillman and Keim (2001) who did research with five hundreds firms and found evidence that stakeholder management leads to improved shareholder value and better business.

### **3.1.6 Stakeholder and Communication**

The way the stakeholders are related to a company is through communication and the Freeman's definition states "everyone [is] affected". A company or cause is the focus of stakeholders. The communication goes from the stakeholder to the company and from the company to the stakeholder. As discussed above, stakeholders will also communicate among themselves. For a company to be able to include stakeholders in their strategic management, it is reasonable to set the stakeholder communication in a system. Since stakeholder's exist in a large network where interactions occur in all directions, it is imperative that all of these stakeholders meet, discuss, and communicate their opinions and concerns. This idea leads us to the concept of a communicative arena.

### **3.2 Communicative Arena**

With stakeholder involvement in mind, Ingebrigtsen and Jakobsen (2007) have made a model where they integrate stakeholders as agents for the company and call it a "Communicative Arena" which defines this as the place where all stakeholders meet. The model distinguishes the market into three stakeholder groups representing values or focus on economy, ecology (nature), and culture. Within these three sections, there are many examples of stakeholders and stakeholder groups. The Communicative Arena is in the centre of all the stakeholders and represents how all the stakeholders should be a part of a network where decisions take place and conflicts are solved through dialogue (Ingebrigtsen and Jakobsen, 2007:267).

Stakeholder as integrated perspective representing multi-values:

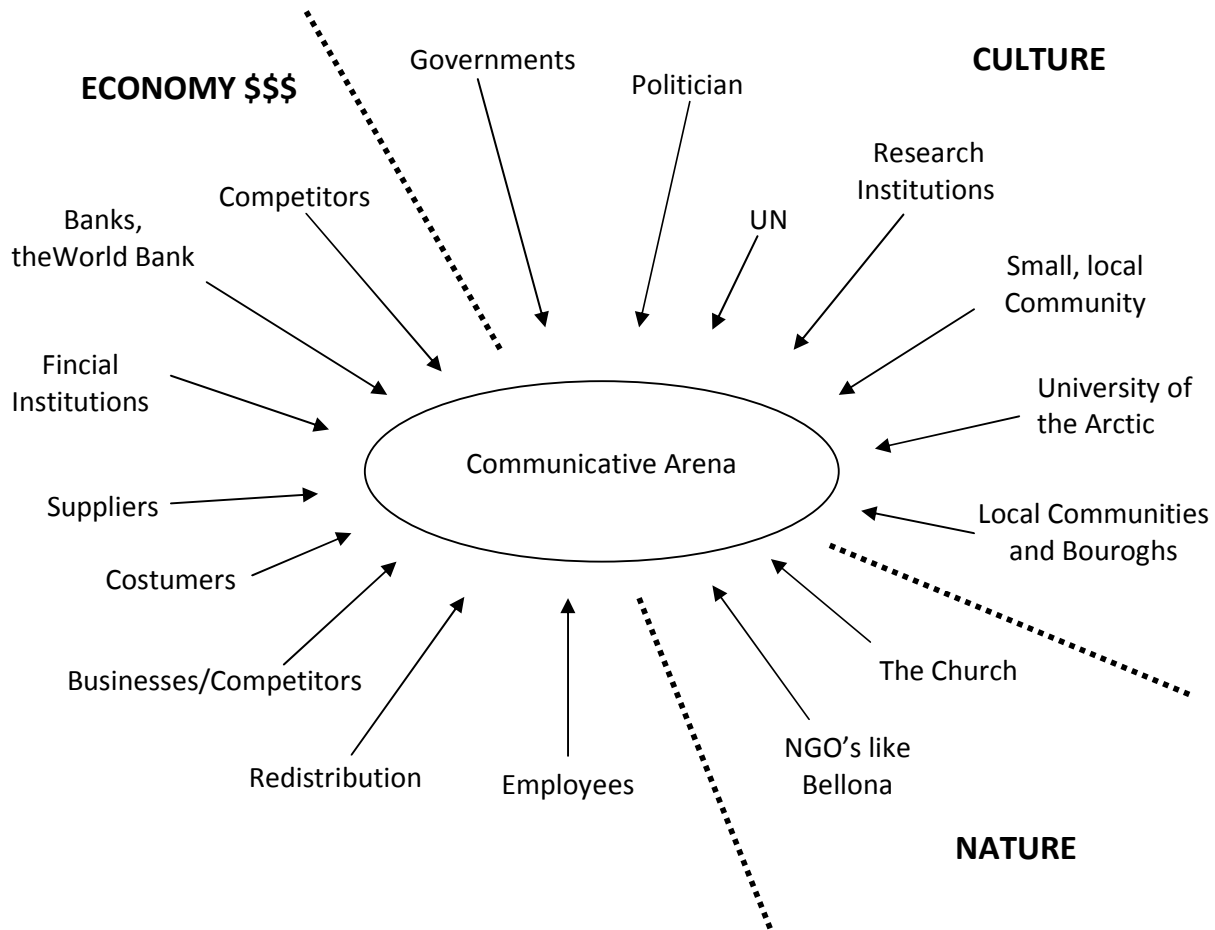


Figure 5 The Communicative Arena (Ingebrigtsen and Jakobsen, 2007:267)

The communicative arena is a critique of the focus on merely economic values, such as Friedman's view, because the founders of the concept believe that economic values are also linked to nature and culture (Ingebrigtsen and Jakobsen, 2007; Habermas, 1984).

Communicative arena can be seen in relation to Freeman, who advocated a "...stakeholder democracy where every cooperation has a stakeholder board of directors giving stakeholders the opportunity to influence and control the corporate decisions" (Crane & Matten, 2004). There are many examples of companies inviting their stakeholders to comment on their operations. However, to what extent this is done formally through a board will not be discussed in this paper. That being said, cooperation is a key word that will be discussed further in this paper.

According to Ingebrigtsen and Jakobsen (2007) the communicative arena should;



- Open up for dialogue where interaction shall be oriented toward mutual understanding, and
- Be a place where information is shared without strategic agendas from some of the participants to achieve their own success.

The communicative arena is seen as relevant to stakeholder theory because stakeholder theory says that a company is in the centre and surrounded by all of the stakeholders. The communicative arena does not specify the company to be in the centre. Perhaps this could likely be an issue? The idea is that the networks of stakeholders come together and participate in a dialogue. Ingebrigtsen and Jakobsen (2007) argue that the networks of stakeholder represent economic, ecologic, and social values.

They claim that the market focus today is more on economic values, which is reflected by market prices (Ingebrigtsen and Jakobsen, 2006). With a communicative arena, Ingebrigtsen and Jakobsen (2007) argue that today's focus on economic value can lead to more long-term solutions because stakeholders represent cultural/human values and ecological/nature values. The aim with this approach is to achieve ecological and social satisfaction, as well as economic satisfaction. This is related to sustainable development which is discussed below.

A communicative arena is the place where dialogue between various stakeholders takes place. Dialogue is based upon common interest among the stakeholders and works well for discussion of issues whereby economic interests conflict with ecological and social values. Ingebrigtsen and Jakobsen (2006) argue that goals based on merely economic means are bound to fail. If a company focuses on merely economic aspect, stakeholders will not have a role. Welford (2000) sees the competitive market as insufficient to establish co-operative solutions based on stakeholder perspective, because competition is based on an idea of conflicting interests (cited in Ingebrigtsen and Jakobsen, 2006). The market today is highly driven by competitive aspects that create innovation and value. However, this leave out the social and environmental aspect that is necessary to obtain sustainable development. Stakeholders therefore need to cooperate.

Korhonen, 2002 (cited in Ingebrigsten and Jakobsen, 2006) stresses that competition is “...a barrier of the efforts of increasing stakeholder cooperation and cooperation between the firms and its suppliers or the local community actors”.

For this reason, Ingebrigtsen and Jakobsen, (2006) believe that competition must be replaced by cooperation, which is one of the ideas behind the communicative arena. This way is a structure for how stakeholders interact in a cooperative way with the economy, which is represented by business in most cases. The other purpose of the communicative arena is to develop a structure to harmonize the values of economy, nature, and culture to achieve long-term solutions (Ingebrigsten and Jakobsen, 2006). Long-term solutions are linked to sustainable development and harmonizing these three elements is therefore related to sustainable development. These three aspects will be discussed further below. It is worth mentioning that Herman E. Daly and Johan B. Cobb, Jr. wrote an article about how the economy needs to be redirected toward community, the environment, and a sustainable future for the purpose of the common good (Daly and Cobb, 1994).

*“When competition is replaced by cooperation as the main principle for interaction in the market, the development of solutions based upon the common good will gradually take place.”* (Ims and Jakobsen, 2006)

Cooperation is what happens when stakeholders of different values and perspectives will participate in dialogue and communicate in the same arena.

The Arctic Study Tour is an example of such a dialogue or communicative arena. The focus in this dialogue is petroleum extraction in the high north, which is of interest for fishermen, local communities, NGOs, petroleum companies, and a wide range of other stakeholders. The Norwegian church is also showing their interest in the dialogue, and a bishop from Sør-Hålogaland participated on the 2009 tour. Obviously a dialogue is suited better for issues of a specific size that has a broad public interest, as opposed to other minor problems than can be solved in other forums.

The natural and cultural factors should therefore be included in the decision making process.

This goes well with Richard Welford (2000) who sees the market to be considered as a whole, and not a group of individuals or groups.

As stated above, the Communicative Arena advocates that through dialogue, long-term solutions can be found not on basis on only economic focus. The arena provides a more holistic perspective, which includes the same three aspects that also are found in CSR and the value sphere of sustainable development. The thesis focus: ecosystem management in the Arctic is linked to sustainability and it is necessary to present the concept of sustainability.

### **3.3 Sustainable Development**

Sustainable development has its roots in environmental management and analysis and has been for a long time synonymously associated with environmental sustainability (Crane and Matten, 2004). More recently, the concept of sustainability has gone from not only environmental focus but also focus on economic and social constructions (Elkington 1999 in Crane and Matten, 2004). The World Commission on Environment and Sustainable development (1987), also called the Bruntland Commission, defined Sustainable development as:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

The UN Commission defined the three components of sustainability as: environmental, social, and economic. Figure five below shows these three components. The economic aspect represents economic value for businesses but also welfare for states. The environmental aspect represents not only nature and ecology but also ecological values and the basis of existence. The social aspect represents culture, people’s values, life quality, and human knowledge.

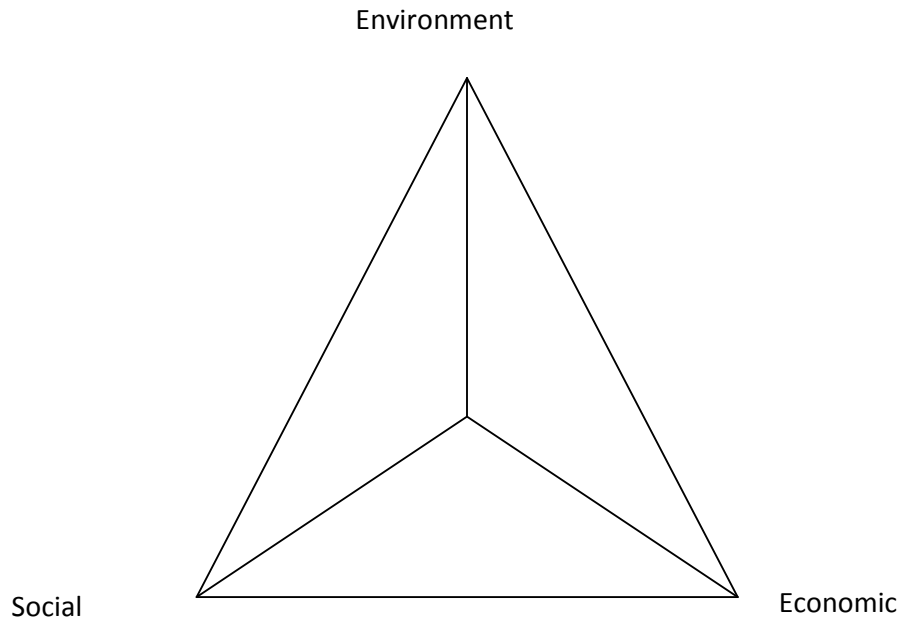


Figure 6 The three components of sustainability, World Commission on Environment and Development, 1987.

### 3.3.1 The Concept of Sustainable Development in Practical Life

The ultimate goal is to find the optimal combination of these factors. The UN tries to see balance among these three aspects when making decisions because there is a conflict between the trade-off among these three aspects. The benefits of this model are that it is easily understood and covers all the complex issues we have to deal with. The drawbacks are that it is socially and economically complex and difficult to use in traditional models.

Many developed states today have comprehensive environmental regulations that companies are required to implement. Additionally, business has a set of obligations to their stakeholders as discussed above. Vos (2003:142) defines CSR as “the obligation or duties of an organization to a specific system of stakeholders”. This gives a clear link to stakeholder theory. Furthermore, it means that what goes beyond formal obligations is for a firm to define what they think is moral and ethical (voluntary CSR). Crane and Matten (2004) ask if sustainability could possibly be the new goal for business ethics. Large cooperation today has extensive CSR attempts, and it is common to deliver a Sustainability report or triple bottom line report as some countries call it, together with the annual financial report.

### **3.3.2 Practical Example of Stakeholder Involvement**

The Norwegian Petroleum Act requires quite active information, communication and systems of hearing from the company to the society which consists of stakeholders (The Norwegian Petroleum Act, § 77). To what extent this is required will be determined by the project's size and impact. The stakeholder process, hearing requirements, and impact analysis for a smaller project in an already developed area might be more of a formality, as opposed to a larger project in a less developed area such as Eni Norge's Goliat project in the Barents Sea (Sørås). Through this information and communication requirement, the companies are required to undertake a quite extensive stakeholder-process, by Norwegian law. The Ministry of Petroleum and Energy can require companies to have extensive stakeholder involvement. Since the level of stakeholder involvement and communication needs will partly be determined by circumstances, good communication with the Ministry is essential for larger projects (Sørås).

The operator first has to propose impact assessment with a program that is sent to stakeholders. On basis of the comments, the Ministry Petroleum and Energy decides on an assessment program. After the impact assessment is finished, this is sent for a new hearing. The impact assessment becomes part of the Plan for Development and Operation that has to be approved by the Parliament for large developments, or the Ministry for smaller petroleum developments.

### **3.4 Ecosystem Management**

The term ecosystem management is broadly used when talking about environmental governance. Some countries have made ecosystem management plans, but what does the term really mean? There is no one common definition regardless of what discipline or science we are talking about and the term is evolving. This paper calls "ecosystem management", "ecosystem-based management" or "ecosystem management approach" a term, but research shows that it also is being used more as a description in some cases. Thus, it is for that reason necessary to present the research. The term is an evolving term and set of principles. From a broader perspective than just marine environment or natural science, human interaction and recognition play an important role.

The majority of the ecosystem management literature assumes that the scientific understanding of ecosystem management is solely linked to natural science. It is also more of a term of understanding than definition. UN's Food and Agriculture Organization have developed technical guidelines saying that "the Ecosystem Approach to Fisheries strives to balance diverse societal objectives, by taking into account the knowledge and uncertainties about biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecological meaningful boundaries" (cited in WWF, 2007). This is more of a description than a definition, which indicates the complexity of the term.

WWF therefore sees ecosystem management as an effort to achieve sustainable exploitation of natural resources, as well as maintain a balance between social and economic human needs in accordance with the ecosystems. The approach is more holistic, participatory, and integrated than the contrasting biological and usually single species-oriented approach. (WWF, 2007)

Grumbine (1994) is one of the most widely cited papers on the topic. He argues that sustaining ecological integrity and understanding the biophysical nature must be the primary concern for ecosystem management. This is also supported by Cristensen et al. (1994). Furthermore, Grumbine does not believe it is possible to balance ecological, economic, and social concerns. The same authors recognize the human dimension as part of the ecosystem. The way Grumbine (1994) sees the human factor of the ecosystem is two ways. First, there is a need to understand how humans impact or act to prevent the ecosystem from being in the "natural" condition. Secondly, the ecosystem management should incorporate "human values" in decision making. This last aspect is political.

These researchers and many others recognize people as a part of ecosystems, but only as part of the social considerations in decision-making and political processes when initiating and implementing ecosystem management (Endter-Wada et al., 1998).

On background of the above perspectives, Endter-Wada et al. (1998) presents a framework for understanding social science contribution to ecosystems in an article and argue that the social science aspect of ecosystem management has two distinct components:

- Ecosystem management concerns a greater public involvement in decision-making process, and
- Social considerations must be integrated into the science of understanding ecosystems.

Regardless of how the researchers value the different components and aspects of the term, there is a widespread agreement that using an ecosystem-level approach in management of resources is valuable (Fred B. Samson, Fritz L. Knopf and Grumbine 1994). This is the opposite of looking at species isolated.

The origin of the term is also somewhat clear and it depends whether the term is seen strictly as a biophysical understanding or a broad and general understanding. In natural science the term has been used for a while. However, lately it has been evolving to a more general understanding with a holistic approach.

Sainsbury et al. 2000 claims that ecosystem objectives mainly stem from high level policies, agreements and treaties such as the LOS and UN Convention on the Environment and Development (UNCED) where principles are set out for human use of biological resources. WWF are in line with this and claim that LOS, Johannesburg Program of Action, the Reykjavik Declaration, the FAO guidelines and the Stockholm Declaration back in 1972 all are principal instruments in laying out the application of the ecosystem approach (WWF, 2007). Managing the marine resources and ecosystems in a sustainable way for human nutritional, economic and social goals are phrases being used in these UN agreements. In other words: the element of resources (environment), human, economy and social goals.

There are many organisations and groups that have their own definition of ecosystem management or ecosystem-based management. Some of these definitions will be presented below and there will also be an effort to see the similarities between them.

*...management driven by explicit goals, executed by policies, protocols, and practices, and made adaptable by monitoring and research based on our best understanding of the ecological interactions and processes necessary to sustain ecosystem structure and function. (Christensen et al. 1996. p 688)*

Grumbine came out with this definition already in 1994, which has been widely quoted; *...ecosystem management is integrating scientific knowledge of ecological relationships within a complex sociopolitical and values framework toward the general goal of protecting native ecosystem integrity over the long term.* (Grumbine, 1994)

GreenFacts defines ecosystem management this way: *An approach to natural resource management which aims to sustain ecosystems to meet both ecological and human needs in the future.* <http://www.greenfacts.org/glossary/def/ecosystem-management.htm>

The Convention for the Protection of the Marine Environment in the North-East Atlantic (OSPAR) and the Baltic Sea (HELCOM) consists of Ministers and Member of the EU Commission. They define ecosystem approach in terms of integrated management. They also see it as two goals of sustainable use of ecosystems goods and services and maintenance of the ecosystem integrity (WWF, 2007). This is in line with a report by the Ecological Society of America (ESA) has in a report (ESA, 1995) which has established eight principles of ecosystem management. These principles have been widely cited in the scientific literature. The principles are applicable to any ecosystem management effort regardless of specific context or definition and should include the following eight principles:

1. Long-term sustainability as fundamental value.
2. Clear, operational goals.
3. Sound ecological models and understanding.
4. Understanding complexity and interconnectedness.
5. Recognition of the dynamic character of ecosystems.
6. Attention to context and scale.
7. Acknowledgment of humans as ecosystem components.
8. Commitment to adaptability and accountability.

These same eight principles are also mentioned in Christensen et al. 1996. page 669. In addition to this, the authors add a couple of more principles.

What we can understand from these definitions is that there is a goal of achieving sustainability. The world as an ecosystem or smaller ecosystems is central to reach this goal.



The companies' survival (and sustainability) depends not only on ability to make economic profit but also to take ecological and socioeconomic consideration in to account when producing goods and services.

A cross-selection of the definition states that they include a way of saying that:

- a) the management or leadership shall maintain and improve the ecosystems, and
- b) "ecosystem management" balances the natural resources and human needs in a sustainable way.

Introducing sustainability as a part of the term ecosystem management leads us back to the first milestone in UN's Department of Economic and Social Affairs' division for Sustainable Development. It was the Bruntland report that placed sustainable development on the agenda (<http://www.un-documents.net/ocf-02.htm#!>). Another milestone is the Johannesburg Plan of Implementation in the work towards a sustainable development which is from then onwards the term "ecosystem management" became widely used. Possibly, the UN climate change conference in Copenhagen, December 2009 could be another milestone in this important work of proceeding forward with the same framework? There are already a lot of effort and initial meetings before the Summit in December. Many of the informants in this study have been involved in this initial work towards the Summit in Copenhagen.

The following section will describe how the researched have been conducted.

## 4 METHODOLOGY - RESEARCH APPROACH

The purpose of this chapter is to present the scientific approach and methodology that I have chosen to answer the problem statement and how I carry out this social science research. To start with, research design including philosophical position and methodological approach and design will be presented. Then, what type of data that have been used and how it was gathered and systematized will be presented. A descriptive qualitative analysis has been chosen to frame the research. The framework will be a case-study where secondary data and interviews will be the foundation of the research.

The word methods comes from the Greek word “methodos” and mean; the road to the goal. The purpose of this chapter is to describe how the data in this research were gathered, systematized, analysed and interpreted (Easterby-Smith et al. 2002).

When conducting a research project, it is not only necessary but very important to organize the research activity in the most adequate way. The choices I make as a researcher about how to conduct the research will influence the research. According to Silverman (2005:110), methods are linked to both methodology and to society and we should therefore “...resist treating research methods as mere techniques”. This can be understood as the methods are not physical tools completely isolated from what is being studied. Research methods, society and methodology are all intertwined.

I have chose to use a qualitative *method* of interviewing key stakeholders in the Arctic dialogue to obtain a better understanding of what ecosystem management approach could mean for them as well as how it affect them. The Arctic is the setting which is a *society* or at least a part of it. Because these are intertwined, it is complex task. Moreover, it illustrates the conflicting methodological and theoretical framework that occurs when completing analysis. I had to be aware of how the different aspects of the research influenced each other. The research question is one aspect, the way I get answers is another aspect, and what role my answers have in the society is another.

## **4.1 The Research Design**

The research design is the main plan for how the empirical data was gathered in order to shed light over the problem context. There are three general categories of research approaches, namely: exploratory, descriptive, and causal. Exploratory research lies in the name, meaning that the research problem needs to be explored a bit more before taking it a step further. With the descriptive research approach the researcher tries to describe what is going on and happening around the subject and context. The causal approach aims to look for a cause and effect relationship.

For the reason that I have some knowledge and understanding of the problem context, I will choose a descriptive research approach to address the problem statement. This enables me to describe the term “ecosystem management” in the Arctic context. The best and most feasible way to approach the problem of exploring a new term within a context is by using a descriptive research design. A descriptive research design allows me to describe how this term relates to the Arctic context.

### **4.1.1 Type of Data; Qualitative Methods**

The problem regarding what the term “ecosystem management approach” implies and how this relates to the Arctic, petroleum extracting companies and governmental position is of qualitative nature. There are good reasons for explaining the problem in a qualitative setting as pure numbers will not explain the term, impacts, human and organisational interactions and perceptions. Choosing a qualitative method will improve the understanding of the problem context (Web Centre for Social Research Methods). Since I had to fully rely on verbally collected and interpreted data, statistical data and quantitative methods were disregarded. According to Selnes (1999), qualitative methods make sense when we are not completely clear about what to ask for and the subject is situated deeper down in our consciousness, or we are not really clear about it. Furthermore, it is important to receive a deep understanding of the phenomenon, the context, and the relation to gain something out of the research.

### **4.1.2 Philosophical Position**

Conducting a qualitative research is a complex task, and it is of significant importance to understand that the researcher’s choice of philosophical approach influence further

considerations throughout the research. As a philosophical paradigm, I wanted to keep in mind that what is true is changing. There are two main schools of thought about how social science research should be conducted, namely social constructivism and positivism.

*Social constructivism* is the philosophical approach where the social reality is perceived as constructed and renewable through our interactions. Furthermore, it implies that the consensus is "...still open to new interpretations and as information and sophistication improve" (Denzin and Lincoln 1998:211). The social structures are the objects in this research, and were in the position to change. In the Arctic context, there are a lot of elements we find true now that are subject to change. This could be: who the stakeholders are, how they communicate, the prioritizing of the stakeholders and perception of climate changes.

*Positivism* looks at reality as external and objective and should therefore be considered through more objective research methods where the researcher will be independent observer (Easterby-Smith et al. 2002). A positivistic research looks at different parts of a phenomenon and sees them as independent variables. According to Easterby-Smith et al. (2002) the problem statement in a positivistic philosophical approach is best understood when information is measured quantitatively.

I am approaching the problem statement with a qualitative approach, through social constructivism. The main reason is that a social constructivist focuses on how people share their experiences and interpret this in their way. The informants were naturally influenced the research when they reflected over the term "ecosystem management" and both they and I were in the position to influence the outcome of this paper. The research will therefore to some extent be affected by the individual's meanings, perceptions, and world views.

The goal for my research as a social constructivist was to increase the general understanding and interest around the term "ecosystem management approach" in the Arctic. The strength of this paradigm is that I was allowed to try to understand people's meanings. The weakness about using social constructivism is that the interpretation of the collected data

was complex and the collection of the empirical data was very time consuming. This demanded a much of me as a researcher.

#### **4.1.3 Main Method: Case Study**

Case studies are especially relevant when researching an issue in a specific context. This method is a very intense way of studying a topic because it focuses on the culture of the topic. To place the “ecosystem management” term in a case setting was done to frame in the area of the research. Not choosing case for this study, it would have made it difficult to see the boundaries and borders of the research. The case study is defined by Yin (2003:14) as; “... a research strategy comprises all-encompassing method –covering the logic of design, data collection techniques and specific approaches to data analysis”.

My case study suits the above definition as I tried to see the situation stakeholder are in with a holistic perspective when talking about ecosystem management approach in the Arctic. A case study is also a comprehensive study and analyze and the data is usually collected in series of long and partly unstructured interviews. Using case as a method, a meaningful characteristic of real life experience can be understood in a more holistic way (Yin, 1994). This is exactly what I aimed to find out: how this term is perceived in real life. Examples of this are organizational processes, such as how stakeholder structures are as well as the international relations this represents. The drawback of choosing a case is that it will be hard to generalize. However, the author believed it was more important to develop an understanding of what the term means for key stakeholders in the Arctic as opposed to generalize a smaller problem context. The strength of using a case study for this paper is that it can answer questions like “why”, “how” and “what” that would not be possible in a broader context. This paper tries to describe *how* stakeholder is affected of the term ecosystem management and *what* it means in their perspective.

#### **4.1.4 Method of Reasoning**

Through secondary research I have a term of interest (or an evolving theory) of what ecosystem management is. This will be tested to see if it is applicable in real live the informants are representing. I expected the informants to reflect around the topic, but also explain their unique relation to the term. In some cases, the interviewees relation to the

term was not unique, but of importance for the research. Since this is a qualitative social science research, the research proved flexible and to some extent moved back and forth between data gathering, coding, and the possible conclusion. The various sections of text were written somewhat unstructured and at a later stage restructured and reorganized in an appropriate manner.

This paper will start by describing possible definitions of the term ecosystem management approach and why it is of interest in the Arctic context. The context of where this term occurred and where it is being talked about is presented together with governmental position before gathering the empirical data. Then, the appropriate stakeholder theories and ideas will be explained before analysing this all-together in a holistic way. After assessing the theories, it will be appropriate to present the areas of interest that in turn will be further explored.

## **4.2 Data Gathering**

In the early phase of retrieving information for my problem statement I used secondary data and already existing literature to get a pre-understanding of the ecosystem management. This showed to be a time consuming phase but very important as the author was forced to narrow the research down as the term seemed more complex than first expected. The phase helped the author to identify the main questions asked in the interviews. Secondary data were used to find theories and then interviews were conducted to find primary empirical data.

### **4.2.1 Primary Data from Interviewing**

The in-depth interview in qualitative research is usually with one person at the time and is often less structured than other interviews (Selnes, 1999). By using interviews, I got very close to the informant. However, I was forced to use telephone interviews as time, money and practical circumstances did not allow me to interview informants face-to face. The drawback of this is that I was not able to see the body language and gestures that were conveyed during the interview. On the other side, I found the interviewees very focused and I experienced that many expressions transfer through the voice. One informant's answered:

“Now, *that* is a question I really like”, and I could hear that he was smiling. If the interviews were conducted face to face, body language might be analysed to downsize the importance of the words. All the interviews were conducted over the phone, and I do not believe that was a drawback for the research.

#### **4.2.2 Informants**

The people I interviewed are very busy in their jobs and I was overwhelmed that they were able to prioritize this graduate paper. Moreover, I made sure to be well prepared as well as aiming to establish a good relation and mutual trust to activate their reflection around the topic. On the other side, the personal contact in the interview can also be a drawback because unintended answers can occur. In many cases, email and shorter phone conversations were done prior to the main interview. All the informants have participated in one or several Arctic dialogues. This is also the connection between the author and the informants. The benefit of finding the informants engaged in the dialogue is that they all are engaged and reflected on the topic.

#### **4.2.3 Conduction of the Interviews**

The in-depth interview in itself demands a lot from both interviewer and interviewee. When interviewing, it is important to rely on the informant’s correctness and wording of the reflected issue. For this reason, a tape recorder was used to be able to transcribe the whole interview and get reliable quotes. This enabled me to focus on listening. Secondly, the need to acknowledge that I might perceive the informants answer differently than what he or she intended to communicate. Thirdly, the informant might tell what he or she thinks than what I want to hear. This could be due to personality or a wish of being perceived as polite. I hope that since I was aware of these possibilities to fall short, did not do so. The benefit about in-depth interviews is the possibility for later contact if needed (supported by Selnes, 1999).

The author appreciated the flexibility and asked follow up questions there and then. Many of the informants offered contact at a later stage if needed. In the cases they did not offer this, I politely asked for it. If something needs to be clarified, this is a unique opportunity to still have access to the verification source.

The structure of the interviews was somewhat semi-structured. Appendix 2 shows the interview guide that was sent to the informant some time before the interview in order to reflect over the questions. A brief explanation of where the term occurred was described as well as six open-ended questions were sent to eight of the informants before the interview was conducted. The other two were interviewed immediately when first contact was made and they were very reflective on the topic. Six of the eight that received the interview guide were prepared for the interview and had taken notes.

Since the term ecosystem management can be perceived as scientific, neutral background information for the interviewee if he or she lacks knowledge in order to understand the interview question. The reason I have chosen to do this is because it is a fairly new topic and the informants might not be able to reflect without any background information. Most of the informants proved knowledgeable about the term, whereas some of this information was provided for a couple of the informants. For the reason that most of the interviews were conversation led, I was careful not to push my biases over on the interviewee to make them answer what I hoped they would answer. This was challenging when asking about how the informant perceives the human dimension in the already established ecosystem management plans. The reason for this is that it is unintended to lead the interviewee too much in to a track of reflections which is not his or her own if the interviewee lacks knowledge about the topic.

In summary, the author was very impressed by the effort and reflection the informants did in order to transfer valuable information needed for the research. The overall impression after carrying out the interviews was that personality showed to be more important than the openness and ability the informants had to reflect around the topic.



#### 4.2.4 Stakeholder Informants

Loc.	Name	Role	Organisation	Stakeholder	Abbr.
Norway	Barlindhaug	Chairman of the board	North Energy	Petroleum Company	P
Norway	Jonassen	Communication Manager	Shell Norge	Petroleum Company	P
Norway	Aamot	Special Advisor	StatoilHydro	Petroleum Company	P
USA	Anonymous	Anonymous	Anonymous	Petroleum Company	P
USA	Paine	Director	United Catcher Boats	Fisheries	F
Norway	Lorentsen	Advisor	Fisherman's Assosiation	Fisheries	F
USA	Smith	Land & Resource Manager	Bristol Bay Native Cooperation	Indigenous People	I
Norway	Oskal	Director	International Centre for Reindeer Husbandry	Indigenous People	I
Norway	Gintal	Advisor; Rights, Industry and Environment	Sami Parliament, Administration	Indigenous People	I
USA	Short	Pacific Science Director	OCEANA	Environment Advocate	NGO

Table 1: The informants categorized in stakeholder groups

Loc.= Country the person is working in, not necessary the country of organisation's origin.

Abbr. = Abbreviation of the stakeholder perspective the informant belongs to.

The informants first and foremost represent themselves. However, in the few occasions the informant addressed the whole organisation, this is stated. That being said, it is reasonable to argue the informants may be influenced by the organisation they are occupied in. One of the informants asked to be anonymous in order to accept the interview. This person has a very interesting position in regards to the problem context and the author accepted the request and referred to the person as an *oil company representative*. Being anonymous may have freed this person to speak more freely, and not giving a so called politically correct answer.

#### **4.2.5 Strengths and Weaknesses With the Chosen Design**

The importance of the design is often underestimated. Although a qualitative case research design is by far more flexible than a quantitative research, the qualitative research will be strengthened by having a clear and structured strategy. At all stages in the research design there are weaknesses.

### **4.3 From Data to Empirical Research**

How the analysis of the large amount of collected texts, articles, interviews and other sources of data were done is described in below. In qualitative analysis there are no standard techniques and the analysing task is likely to be more flexible than quantitative methods. To accomplish a good analytical part, there were several steps I applied to reach the goal:

Firstly, selected and collected data of interest to the topic within the frame were set. The in-depth interviews were also a large part of the information gathering and limitation phase. Secondly, the data was coded and structured in a logical way. This proved to be very challenging. The data that matched each other in one or another way were catalogued and looked at together. This also proved challenging as most of the information were related and intertwined. Then, at last, information was prioritized and some had to be limited out.

What the focus is in regards of the Arctic depends on the stakeholder you are asking. The author got the impression that some in the petroleum industry (the anonymous informant) feel the focus is on the nature and climate, where as the nature advocate amongst others claims that the focus is on mineral extraction. For this reason, it is important to include all stakeholders and the see the importance of applying a wider perspective to understand the ecosystem management term. Hermeneutical methodology when analysing the written data was therefore chosen. The hermeneutical principles of interpretation and explanation of the written text suit the research problem, because a hermeneutical interpretation aims to understand a part of something in a larger context. According to Miles and Hubermann (1994) the "...hermeneutical circle (is) used for the interpretation of texts, centre more on interpretation than on gaining firm empirical knowledge of social and natural facts". I intend to apply a holistic framework to understand what ecosystem management mean and are

perceived by Arctic stakeholders. The important aspect with the hermeneutical approach is that cultural and social sources have influence, which is essential in the dialogue conducted of people.

#### **4.3.1 Secondary Data**

This paper has a very extensive context and I chose to dedicate quite some space to describe it clearly in order to set a context for the term, ecosystem management, as the analytical framework. Background information about the term and the two countries position are described using secondary data. The UN, Norwegian government, EU, US government, the Arctic Council, and other dialogue forums and bodies have very informative web pages with many full text articles and information that were helpful for the research. Researchers and professors associated with Bodø Graduate School of Business have given me help in order to find the most important scholars, thinkers and theorists for the theoretical background. The theories all have one thing in common: the key element or origin of idea is the stakeholder, which is also key element of the problem context.

#### **4.3.2 Primary Data**

After conducting the interviews I had a large number of transcribed pages in addition to secondary data and theories. This proved to be the biggest challenge in the paper. The abbreviations: P, F, I and NGO were used so information could be categorized in a table while analysing. This was done to prevent losing the holistic perspective. I therefore could allow myself to be more critical about the data gathered and dismiss information that will not be as relevant for the problem context. The working table worked well, whereas the country of the informant's origin only became useful when looking at how the governmental effort had influence on the stakeholders. When presenting a view of informants, it made sense to count or get an overview of who else that was of the same opinion although some of them used different words. Even though there were not more than ten interviews, it was useful because there was a large amount of other information that needed to be related to the informants' opinions.

The analytical strategy that proved to make the most sense was setting up headings that needed to be analysed and then pulling together all the information related to the heading. For the reason that I ended up with more broad and better information around the Norwegian ecosystem management plan as opposed to the US and Alaskan attempt, the Norwegian case was analysed somewhat better.

Choosing both secondary data and gathering empiric first hand information from the field, I were able to decrease the possibility for wrong measurements and increase the reliability of the research. The strength about the secondary data is that it is less time consuming to find. The weakness is the amount of the data available and the possibility that I interpreted them in an incorrect way. However, the secondary data served well for the purpose of background information to frame the problem case. The strengths about using interviews as a method are the closeness to the problem context. When finding our *how* the indigenous people are tied to nature, the author found it many times more efficient to ask specific questions to the informants than to look for secondary information. The informants represent first hand understanding because they are the ones closest to the problem context.

#### **4.4 Ethical Considerations**

Although many people acknowledge that climate change is a threat to sustainable development, some of the people who do not believe this might be among my informants. I have been careful and respected other people's opinions. To incorporate climate change as the truth in the Arctic may be seen as controversial. Moreover, it is controversial what should be the *main* focus in the Arctic. The context of the research is therefore controversial and raises ethical issues.

As a researcher, one of the main challenges is to see the problem aside of the natural biases held due to personal knowledge and experience. Additionally, an interviewee might perceive the topic as instructed to take on some new ideas about how to view the environment he or she is working in, and that his own views are less worth. This was not the intention. I intended to be careful of not to taking on a telling and instruction role. It was also aimed to find the relationship between the interviewee's perceptions of the ecosystem management and relate it to existing research.

The results and findings from secondary data (texts, articles, theory) and interviews were not entirely obvious, nor easy to analyze. The findings were approved by the informants whereas the author carefully analysed them. This emphasizes that the information and data can be interpreted. The author used her ethical framework not to misinterpret the data.

Moreover, the author tried to set personal biases and preferences aside although this were challenging. The research was conducted with the author's ethical efforts.

#### **4.5 Summary**

The research design used in this qualitative research consists of: primary and secondary sources. These were described in relation to each other, linked up towards appropriate theory and research on the ecosystem management term. This was done because the problem context is somewhat unexplored. Through the methodology chosen, the paper aimed to understand a part of something (stakeholder perceptions) in a larger context (the Arctic). Because the informant's cultural and social sources influence the paper, a hermeneutical approach were applied to achieve a more holistic picture of the empirical data. In the chapter below, empirical data will be presented.

## 5 EMPIRICAL PART

The main sections in this chapter are the findings on ecosystem management. Ecosystem management in fisheries and governmental attempts represent both firsthand and secondary information. They jointly shed light over the ecosystem management phenomenon. Then, what the term involves for various stakeholder groups is presented. The sections following present how the stakeholders are being affected by governmental ecosystem management approaches, and ecosystem management in the Arctic. At last, an interesting and unexpected finding will be presented.

### 5.1 Ecosystem Management

This paper sees the term ecosystem management in a holistic context. Ecosystem management is a fairly new term modern society a decade or two ago started using. In natural science, it has been used for longer. Several of the informants pointed out during the interviews that this way of thinking is not new to them, where as the term is. According to Gintal, the Sami people see the nature and ecosystem with a holistic approach has always been the indigenous peoples' philosophy and way of living. Many other informants pointed out that the term indicates all-encompassing issues and *everything*. The fisheries have also had this approach for many years as long as one has known that species are dependent on each other (Ulriksen, 2006. Lorentsen). This paper aims to see the term in a broad and holistic way.

#### 5.1.1 Ecosystem Management in Fisheries

Under the World Summit in Johannesburg in 2002, the participants were committed to implement an ecosystem approach to fisheries management within 2010 (Norwegian State Secretary Ulriksen, 2006). In 2003, the UN's Food and Agriculture Organisation (FAO, 2002) published guidelines for an ecosystem –based management approach to fisheries. The guidelines emphasized that fisheries should be conducted to limit the impact on ecosystems. Moreover, it also states that dependent and associated species being harvested should maintain their ecological relationship for further generation to be able to benefit from them.

State Secretary Ulriksen (2006) points out that it is not easily done to implement an ecosystem approach and says that; “It requires sound knowledge of the ecosystems in order to be sure that we focus on the most important factors in our management. ...And we must gradually implement new knowledge as it becomes available...” Without discussion, this view is easily transferable to the Arctic as a whole, since there are many areas in lack of knowledge.

### **5.1.2 Norwegian Attempt**

In 2006 the Norwegian government launched a White Paper for the Norwegian part of the Barents Sea including ecosystem –based management plan: Integrated Management plan of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands. This comprehensive plan includes a framework for human activities such as petroleum industry, fishing and shipping as well as the ocean as an ecosystem of multiple species.

The plan does not however include land issues according to section 2.4 of the white paper. The preparation of the management plan included Sami interest groups amongst others and according to the white paper “These groups provided substantial input to the scientific basis for the plan” (Integrated Management plan of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands, 2006:8).

In section 2.5.5, the plan is narrowed down stating that it will not deal with interests of indigenous people “These issues will be examined through separate processes in the context of this management plan.”

### **5.1.3 United States Attempt**

The North Pacific Fishery Management Council (NPFMC) is the governmental body, regulating and governing the US fisheries in the Bering Sea. It has jurisdiction of over 900, 000 square mile Exclusive Economic Zone in the Bering Sea and off the Aleutian Island in Alaska. The US has eight of these Council’s, but this is the one concerning the Arctic. The NPFMC was specifically reacting to the Ocean Action Plan which was former President George W. Bush’s response to the US Commission on Ocean Policy when they developed the “Aleutian Islands Fishery Ecosystem Plan”.

NPFMC states that; “An ecosystem approach to fisheries management should consider the interactions among fisheries and their target species, their direct and indirect impact on

other species and this influence on target fisheries, as well as broader ecosystem actions such as climate, predator-prey relationship and other socioeconomic activities (NPFMC:71). The plan sees other activities that affect the marine ecosystem, such as communities, shipping, oil and gas development, and military.

Diana Evans is in the chair of the Aleutian Islands Ecosystem Team, which developed and updates the plan for the NPFMC, and says the plan is more advisory than regulatory in nature. It is intended to provide the NPFMC with an understanding of the ecosystem context when making decisions on fishery actions that impact specific parts of the ecosystem. In the plan, there is a socioeconomic section discussing the communities and users of fishery resources in the ecosystem today. Public outreach was done to get input from the communities and other user groups in order to develop the plan. However, the area the plan covers includes only two communities, with fewer than hundred inhabitants, and some personnel at two military bases.

## **5.2 Stakeholders Perception of Ecosystem Management**

The different stakeholder groups: petroleum industry, fisheries, indigenous people and environment perception of the ecosystem management term is presented in this section. In addition it was necessary to extend the indigenous people's section and describe how human and nature is inseparable.

### **5.2.1 The Petroleum Industry**

Aamodt sees ecosystem management approach as mapping and measuring the conditions, before, under and after any type of activity taking place. This could involve mapping out the conditions, finding out who the polluters are, and evaluate if the environment can sustain more activity or pollution. Then, straight and strict requirement must be implied to keep control of the environment, and last: create a sustainable situation for the future through better planning and monitoring. The anonymous oil company representative who was interviewed perceived the ecosystem as a holistic approach. This means that the ecosystem must be understood as a whole, including interactions within, dynamics and natural changes. Moreover, the anonymous representative argues that *the management* of this ecosystem takes all the potential different users impacts and operations into account. The representative also points out that a plan for the potential users impacts and operations



must both individually and collectively to mitigate impacts on the environment. This was also pointed out by Jonassen, although he did not use the word holistic. However, he referred to sustainability when stating that one must "...create an understanding of what the ecosystem can take...". Barlindhaug also mention sustainability and points out that the oceans' goal is not to be sustainable in itself, but for the people who live in the area in a sustainable way.

"Shell look at the economic aspect, the environmental aspect and the social aspect. Then we try to balance the three". Jonassen

### **5.2.2 Fisheries**

For the fishermen, it is the fish stock and environment that is in the centre of this term. With an ecosystem management approach; the species are seen as dependent on each other, according to Lorentsen in Norwegian Fisherman's Association. He also means that one must see what fisheries are doing with the fish stock in terms of activity and reproduction. Paine, in United Catcher Boats, shares this view and adds that this is a very complex holistic approach. Paine associates the term with precautionary approach where one is really careful about taking any actions before knowing the effects.

### **5.2.3 Indigenous People**

According to the Sami Parliament in Norway an ecosystem management is a governing of the ecosystem as a "whole", using a holistic world view where species in the nature and humans are intertwined and coexists (Gintal).

Smith in Bristol Bay Native Cooperation (BBNC) in Alaska thinks of all living things in the environment interacting with everything around them. In other words: how the nature and the biology itself live in co-existence with everything around. People in Bristol Bay live off the land. For this reason, fisheries, activities and human are therefore part of the ecosystem.

### **5.2.4 Human and Nature Inseparable**

Sami ethnicity goes back many thousand years, and they have always lived off what the Barents Sea has to offer in addition to herding reindeer. To present the humans and nature separately is therefore not natural for the Sami people who have always had a close relationship with nature (Gintal, Oskal, Nystø). International Centre for Reindeer Husbandry

says that “Reindeer husbandry can be viewed as a coupled ecosystem”, meaning that human and reindeer is interconnected, making it impossible to separate them from each other. For instance, in Eastern Siberia in Russia, it can be -60 degrees Celsius in the winter; meaning that in this extreme climate it is not possible for people to live there without the reindeer. Reindeer is being used for food, clothing, housing arrangements and is therefore a fundamental part of the culture. In the circumpolar area reindeer and fish has been the main source of food and livelihood. For this reason, it is necessary to take in the human dimension connection to the ecosystem management plans because there is interdependence between human and nature.

The Inuit, like other indigenous people, is closely tied to the nature and have been that for centuries. The ocean is our guardian, says Koonuk. Like other Boroughs, his Borough’s natural wildlife is rich. What the nature brings is not only the main food source for the Inuits, but is a way of living in a culture full of traditions. Although whaling and hunting is a great part of the tradition, commercial fishing does not take place in Koonuk’s Native Village of Point Hope. The tradition of cooperation amongst the community inhabitants to gather food is inherited from past generations. The catch is shared in the community among a thousand tribal members.

### **5.2.5 Environment**

On the question on how OCEANA perceive the term “ecosystem management approach”, the Short asks back: Within fisheries or in general? This paper is interested in the general approach as the aim is to achieve a holistic perspective of the complex issue of the Arctic. Short states that in a general perspective; it is a much broader question. As an advocate for the nature he sees the environmental sustainability as the major factor. Short add that; “one of the things you want any ecosystem to do is to support the people who depend on them, especially those who depend on them directly like fishing communities and subsistent harvesting for native Alaskans/indigenous people”. This is a very clear dimension that OCEANA emphasizes when thinking of an ecosystem management approach.

“Not only does ecosystem integrity have to be maintained, but also have to provide the goods and services that people depend on. We very much think that people’s needs have to

be included as a part of the ecosystem management” (Short). For environmental advocates, the environment is the primary concern, with human dimensions and economic factors supported by it.

### **5.3 Ecosystem Management Approach: Impact on Stakeholders**

If we see the Integrated Management plan of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands together with the Aleutian Islands Fishery Ecosystem Plan as attempts to this approach it varies how the stakeholders are affected. Below, the findings in regards of how the stakeholders are affected will be presented:

#### **5.3.1 The Petroleum Industry**

Jonassen believes governmental initiative on ecosystem management will help industry player for the reason that regulations are determined when entering a new country or area. The oil company representative who was interviewed said her company was strengthening its internal standards and guidelines stating how to operate responsibly regardless of local regulations. The oil company representative thinks that with an ecosystem approach to the management of the area, the petroleum companies will have a seat at the discussion table to influence the development of the plan. It would probably have more effect if the industry were not included in the ecosystem management approach. As an example of this, the representative thinks the petroleum companies would get their operations restricted if their meanings were not being heard. Barlindhaug states that the premises for petroleum development are determined by the biology and governments.

#### **5.3.2 Fisheries**

If ecosystem management approach is the way the Arctic is governed, Lorentsen does not think it will effect the Fisherman’s association so much as long as the Norwegian government is handling these issues in cooperation with the fishermen and stakeholder and take part in the dialogue. What would be positive for the fishermen is if there are other species to fish on. Paine, who has a US perspective, does not see any large population of a stock to commercially fish on further north in the Arctic nor new such plans will impact them very differently from today. The Aleutian Island Ecosystem Management Plan is more of a

monitoring plan and in the vast majority of the area that it covers, there is no commercial fishing. In areas where commercial fishing takes place, the United Catcher Boats watch the development carefully and are involved in the processes. "If the governmental authorities want to establish quotas or reduce fishing zones, we want to know why they are doing that and what the benefits are before we support it" (Paine).

### **5.3.3 Indigenous People**

Because the Sami people see the human dimension as a part of the ecosystem, they are disappointed that the Norwegian government's integrated management for Barents and the area of the Lofoten Island does not include this dimension and they have a hard time seeing that the plan has a holistic approach. The Norwegian ecosystem management plan does not cover area on land and the Sami People is therefore affected because their issues are not included. Developments in the ocean will affect the people on land and those who live off the ocean. The indigenous people are affected and therefore concerned because there is no one holistic plan for how a sustainable culture should be maintained.

The informant in Alaska has another point of view. Smith refers to the many natural resource management plan and national wildlife refuge (5 in total). In addition to this there is the maritime national wildlife refuge, state refuges (2 in total), half a dozen critical habitant areas, and a sanctuary. Bristol Bay Native Cooperation (BBNC) is a for profit organization. That means they have a key interest in assessing their sub surface resource and then potentially exploring and developing it to make money off it one way or another to increase shareholder value. Smith therefore asserts that the management plans, coastal zone management plans and so forth usually do not fit very well to what the regional native cooperation is about; to make money off their sub surface land. Resources could include minerals like copper, iron, gold or oil and gas reservoirs. While the hard rock minerals and oil and gas are still in the assessment phase for BBNC the mining and extraction of sand gravel and rock has been happening for about 30 years selling the gravel that has a sub surface value.

"Usually, from a regional native cooperation's perspective, we will look very critically at any management plan, that would impede or otherwise destruct our ability to manage our land

responsibly. In other words, somebody that tries to stop me from looking or using my land to get value out of it, I may not support that plan.” (Smith)

The indigenous people do not get as affected if for instance petroleum extraction is done from the ocean floor and shipped away as opposed to first taking the petroleum to shore. In cases where installations are made on the mainland, the indigenous people are more affected. Two examples of this are pipelines crossing reindeer feeding area or rocks taken out from the nature (reindeer feeding area) to build constructions.

Given that 25% of total Norwegian reindeer herding areas has been lost since the second-world war, no other business or industry has lost as much fundamental ground as reindeer husbandry. Another 30% of the total area is so damaged that it's hard to use. If land areas are taken in small pieces for different causes, it becomes a great deal after a while. The reason why this has happened is because there is not a holistic management plan for how much land should be maintained to herd reindeer. According to Oskal, decision on how much land areas is to be designated to reindeer herding in the Barents region has not been made in reality in any of the countries. The problem with this is, in theory, that one day the line may be crossed for what is sustainable to *have* reindeer herding and a sustainable culture for the Sami people.

For this reason, the International Centre for Reindeer Husbandry have made a report commissioned by StatoilHydro where one of the recommendation is to: “Develop an integrated management plan also for the Barents Sea land region involving and balancing the land changes associated with industrial and infrastructure development, climate change and the long term sustainability of reindeer husbandry” (Vistnes et al. 2009).

#### **5.3.4 Environment**

OCEANA was an instrumental factor encouraging the North Pacific Management Council to produce a fishery management plan for the Aleutian Island. This management plan gave the template for the same body to produce Aleutian Islands Fishery Ecosystem Plan. Short thinks this was a very important step towards moving the dialogue away from a resource exploitation focus and towards a focus on ecosystem stabilisation. In other words, it is very

important to establish such plans in order to achieve the goal of a sustainable and healthy ecosystem. He also points out the importance of the management plan for the Gulf of Alaska that grew out of the Exxon Valdez oil spill. The core for this plan was to keep track of how the marine ecosystem changes over a period of 100 years. Short argues that this plan was not ultimately successful because of political interference, but it did include people as an explicit part of the ecosystem. The plan also got a lot of attention in scientific circles for the cause of its ambitious efforts and the government-funded endowment to support it.

The Inuit peoples notice the climate changes in their way of living. The Inuit peoples see the weather and ice conditions changing. The ocean freezes up much later than normal and the ice are thinner. This is challenging when hunting whales. Changes in migrating patterns are therefore one a great fear for the Inuit people. There are no studies on how seismic exploration affects sea mammals (Koonuk). The sound from the air gun used under seismic shootings travels for miles under water, and the long term affects on this are therefore unsure.

#### **5.4 Ecosystem Management in the Arctic**

During the yearly Arctic Frontier conference in Tromsø January 2009, “everyone” was talking about the need for an ecosystem management in the Arctic (Oil company representative). The five day conference has all the presentations webcasted and it is obvious that the definition of what an ecosystem management for the Arctic is not coherent. For something to be agreed upon it is necessary to have the same definition or perception of the concept. When the author asked the informants whether an ecosystem management could be applicable in the Arctic, the informants in the research found the question very difficult to answer. Furthermore, the frame of the question could be perceived in two ways;

- the Arctic in general where each Arctic country define their ecosystem management plan north of the Arctic Circle or within the borders in Appendix 1, or;
- the deep Arctic Ocean around the North Pole where there is year round ice.

This last perception of the question assumes that countries go together and agree upon a common framework like it has been done in the Antarctic.

For the reason that the dialogue do not necessary distinguish what the boundaries of the Arctic are, it makes it difficult for the informants in the research to have an opinion, but it

also increases the complexity for the researcher. With this in mind, some of the findings will be presented where as some will be left out. This issue will also not be analysed to the extent what the term means and how it affect the stakeholders. However, since the term is intertwined with the problem statement it will be touched upon without determining the boundaries of “the Arctic”. The oil company representative that was (anonymously) interviewed pointed out that there is no definition of “where the Arctic starts and ends” when calling for “an ecosystem management in the Arctic” like many did under the Arctic Frontier conference in January 2009. The representative points out that up until now the activities in the Arctic has been looked at separately, where as now they are tried to be seen more combined.

That said, the informants hope this will happen and see many positive sides of implementing an ecosystem management in the Arctic Ocean and within countries because the intentions of implementing a more holistic approach are entirely good and give a better overview than the alternative.

If the human dimension were included, the indigenous people in the research found it very hard to see any negative sides of implementing an ecosystem management in the Arctic. For ecosystem management to be a reality in the Arctic, the informants see one main obstacle; how and when will all the nations and stakeholders be able to align and agree upon the same thing? Most participants in the research argued that this will be very difficult and some were very concerned this will take time.

Some of the Norwegian industry informants and the Directorate-General for Environment in the European Commission (Berrozpe, 2009) see the Integrated Management for Barents and the Sea Areas off the coast of Lofoten as a pioneer work towards an ecosystem management approach and that ideas like this can be moved north as the boundaries are moved. If this is the way the Arctic Ocean is going to be governed; many of the informants think this is the right way to govern these vulnerable areas. The indigenous people in Norway agree with this if the human dimension is included (Gintal).

#### **5.4.1 Practical Example of Stakeholders in the Arctic**

This is a list made by an oil company that has interests in the Arctic, to identify their stakeholders. It is a proof that the industry is concerned and focus on their stakeholders. Moreover, it shows the cooperation between the various stakeholders. The order of the stakeholders in this list might be random.

- Central authorities and politicians
  - Government, Ministries
- Regional and local politicians, authorities and general population
  - Municipalities, Counties, Boroughs and Regions
- Indigenous Institutions and interest groups
- Organisations / NGOs
  - Fisheries, labour unions, employers' organisations, environmental organisations
- Industry in the area/ potential suppliers
- Media

Another oil company, also wanting to be anonymous, added that in addition to law, regulations and license requirements, the company will draw from its codes of conduct or guidelines when addressing how to implement stakeholder participation. This could be;

- Company's procedures and guidelines
- CSR Program
- Stakeholder Management Plan

#### **5.4.2 The Governmental Positions: US and Norway on LOS /Arctic**

According to US Secretary of State Hillary Rodham Clinton, the LOS governs navigation, fishing, economic development and environmental standards on the open seas. The Norwegian Minister of Foreign Affairs, Jonas Gahr Støre claims that it also includes ice covered waters. Nevertheless, it is the current regulation for the ocean in the Arctic.

*"The formulation, adoption and implementation of international legal rules that are applicable to all States concerned is very time-consuming and often difficult process. We do not wish to weaken earlier normative achievements, but to strengthen implementation and accountability. In my view, the challenges we are facing may have more to do with lack of*



*implementation of exciting rules than with an actual lack of rules. There is no lack of rules. There is a lack of policies.*” Minister of Foreign Affairs, Jonas Gahr Støre (2008).

By this, Minister Støre believes that it take so much more effort for the countries to come together on a new agreement that it might be better using existing rules and regulations as a foundation and rather work on those.

## **5.5 Additional findings**

One of the questions that were asked to the informants was how they perceive ecosystem management *as a stakeholder* in the Arctic. For the reason that the author allowed the informants to speak freely and reflect around the question and topic, an additional reflection was found. The stakeholders in the circumpolar area meet each other in many different forums around the Arctic and one of the indigenous people that the author interviewed pointed out that the indigenous people really take pleasure in meeting each other at these Arctic forums. The indigenous people in the circumpolar area have many things in common and therefore will communicate with each other in such forums. Another interviewee pointed out one of these communication topics when they meet. The author find it interesting and relevant to present the below finding because this paper look at the term from the stakeholder’s perspective. It is therefore of interest what some of the indigenous people in the circumpolar area talk about the term stakeholder.

### **5.5.1 Indigenous People on Stakeholder as a Term**

In Eastern Siberia, indigenous people have herded reindeer for centuries without anyone else being interested in living in the extreme climate. Then, mineral resources were discovered in the ground where the people have lived for thousands of years. Linking back to the stakeholder theory, something has to be in the middle of the attention and then the rest are seen as stakeholders opposed to this interest, company or issue. Petroleum extraction represents an enormous economic opportunity for the country and most states decide to exploit the minerals instead of leaving the “black gold” in the ground. Referring back to the stakeholder theory, petroleum extraction is now the question or issue in focus. The focus is on petroleum extraction discovered under the ground of the indigenous people, and all other affected of this are defined as stakeholders. This can be seen as a *new interest* as

opposed to the indigenous people that have lived off the ground for thousands of years. Without discussing the indigenous people in Russia and their coexistence with the land based petroleum extraction, the point is that indigenous people in the circumpolar area sometimes refer to the term “rightholders” as a better description than “stakeholders” (Oskal). The term is therefore both new and somewhat awkward to many of the indigenous people. The use of the term stakeholder is therefore a key element to see who has the main interest in this picture.

The following chapter will analyse the empirical data collected, and tie in the theory, and other related findings into the discussion.

## 6 ANALYSIS

The structure of this chapter is somewhat the same as the empirical chapter, but this chapter includes some sections in addition for the reason that more data must be connected. The first page of this analysis can be seen as an introduction to the following analysis. The four sections after that (6.2 -6.5) is chronological equivalent to the empirical sections. Then there are three chapters in addition analysing governmental attempts to the approach, theory in relation to findings (which is what the whole chapter is about) and a new paradigm, before 6.9 touches upon ecosystem management in the Arctic equivalent to chapter 5.4.

The Arctic is a complex area facing many different issues. The environment rapidly change, there are enormous geopolitical- and human interest due to potentially large petroleum resources and new shipping routes. Many of these issues have historically or are still seen as separate issues. Because this paper takes on a holistic approach: data gathered will connected to existing theory, laws and secondary findings.

### 6.1.1 The Origin of the Term

The term ecosystem management has been used for a while, especially in terms of biophysical relations. In a broader all-encompassing perspective, which this paper look at, the term can be traced back to the UN summit dialogue in 2002. The benefit of having a dialogue is that you can include all stakeholders or interests of an issue for discussion. There is a difference between dialogue and decisions. The outcome of the dialogue are not decisions, but will rather send strong signals to stakeholders that works as a foundation before going further and taking an individual decision. Dialogues therefore naturally occur before taking a step in any direction. It is difficult to see how countries could come together and share experiences and thoughts if there was not a dialogue. The term ecosystem management came into use seven years ago and has increasingly achieved more attention and broader meaning. Due to the fact that it is not coherent how this term is being perceived in a broader context then just fisheries, it strengthens the paper that this topic is somewhat unexplored.

### **6.1.2 Government in Relation to Dialogue and Fisheries**

Sustainable development and governance of the world's natural resources were discussed in a broader perspective at the UN Summit in 2002. After that, some states made this influence its natural resource policy and even implemented aspects of the dialogue's outcome in their own countries. Olsen et al. (2007) states the development of the Norwegian plan took place between 2002 and 2006. USA and Norway has done some effort to implement a marine ecosystem-based management at their coastal zones. This is most likely an outcome of the UN Summit dialogue in Johannesburg in 2002 and a call for an "ecosystem management approach" to be implemented. The Integrated Management plan of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands (2006) together with the Aleutian Islands Fishery Ecosystem Plan are two examples of sustainable ecosystem management plans of two large areas in the Arctic oceans. This is at least what the plan aim to be from the governmental point of views (Evans, and Olsen et al, 2007). The Norwegian government proceeded further with this approach when they presented the "holistic management plan for the marine environment in the Norwegian Sea" May 8<sup>th</sup> 2009 (St. meld. nr. 37 2008-2009). This new management plan is introduced before the management plan for the Barents and Lofton are revised in 2010. Because this plan came out a week before the paper was delivered, it will not get that much focus.

These management plans are pilot ecosystem management plans areas in the respective countries. State secretary Ulriksen (2006) referred back to the UN Summit in 2002 when giving a speech about how to implement ecosystem approach in Norwegian fisheries. Evans states that the NPFMC where responding to federal policy when making the Aleutian Island Fishery Ecosystem Plan. This means that ecosystem based management has been implemented in Norway and the USA. The outcome of the summit was not a "binding law", but the Johannesburg Plan of Implementation endorsed the ecosystem approach to fisheries, biodiversity and protection and sustainable development and called for its implementation by 2010 (WWF, 2007). How obligated other countries apart from the US and Norway felt with this commitment will not be discussed any further.

By applying an ecosystem management approach to the marine environment and fisheries in terms of implementing the Fishery Ecosystem Plan, the goal is to understand more of the ecological interactions in the Aleutian Islands in the eastern Bearing Sea (Evans).

According to Brent Paine, the U.S. Government has been fairly proactive in promoting such an ecosystem management style, or approach, for a number of fisheries, including the U.S. Arctic area. The stakeholders will be affected of governmental plans, but first will the stakeholders perception of the term be presented.

## **6.2 Stakeholders Perception of Ecosystem Management**

For the reason management plans have been implemented in marine environment, the stakeholders had a better idea of what they thought of the term than the author expected. However, the informants perceived the term challenging to describe as the term seems very *scientific*. The answers on the question regarding perception on the term were somewhat different although many ideas were similar. It was therefore a great challenge to analyse the data. The verifying question whether an ecosystem management consists of the three elements; environment, economy and human was asked to the majority of the interviewees and it was confirmed to be the right perception. This confirms that an ecosystem management involves a wide range of elements and many of the informants used words such as *holistic, sustainable, healthy environment and everything* when describing the term.

In the chapter about findings, these perceptions are presented individually. It is not easy to see the interviews cumulatively because it is all explained with different wording, and very few real life informants will have a definition-like answer. It is certainly not easy to be precise on this. If one informant says holistic, what does he or she include? Oskal pointed out that he preferred the name holistic or integrated as opposed to ecosystem management. The likely reason for this is that holistic is closer linked to an all-encompassing approach, where as ecosystem management is harder to determine what it includes. It is however difficult to argue that the other informants were thinking about human, nature and economic interest when saying that ecosystem is holistic. The stakeholders in the research have different background, different perspectives and somewhat different lifestyles. Oskal pointed out that it is challenging to communicate this. Koonuk emphasise

that “you need to be here and experience the real thing and observe all the interactions of how we do things in our traditional ways and to preserve everything that is harvested”.

Strictly speaking about the words used to describe the ecosystem management:

- the three elements (*human, economy, nature*) were mentioned by 7 informants, *holistic* was mentioned by 7 informants, and
- *sustainable environment* was mentioned by 5 informants.

For many informants, sustainability was an obvious part of ecosystem and the author believed that is why some of the informant that were most likely to emphasise it, did not do so. All together there were 10 informants asked exact the same questions. There were more similarities than differences, and it seems like the main difference was the wording and way of personal expression as opposed to what the informants mean. It is quite natural for stakeholders to display different focus for the sole purpose that they represent different interests.

On the background of other questions that was asked, wording, reasoning, and the verifying question; the author has the perception that all the informants were somewhat of the same opinion. This opinion reflects that ecosystem management approach needs to involve the elements of environment, economy and humans. The informants mentioned and emphasised the three elements to a smaller or larger extent. Some did not spell out the three elements, but emphasised them indirectly. An example is the couple of informants that mentioned sustainable environment and human activity in the Arctic. Analysed, with the support of empirical findings that the three elements are intertwined suggests that human activity is both economic driven and includes the human dimension.

Research already conducted on ecosystem management supports that the term includes all the three elements regardless of the context (ESA 1995, WWF, UN). The stakeholder model as a network model (Crane and Matten, 2004) sees the stakeholder theory in a contemporary approach where everyone affected is stakeholders. If the Arctic is the centre of focus, everyone affected are seen as stakeholders. For the reason that empirical data shows that everyone is affected of issues in the Arctic such as climate change, mineral extraction or shipping. It is therefore reasonable to argue that an Arctic management should

involve all stakeholder groups presented in the communicative arena and can be summed up to be of environmental perspective, human perspective and economic perspective. These perspectives are the same as the interviewees represent and suggested should be involved in ecosystem management. The author participated in one of the Arctic dialogues in 2008, Arctic Study Tour, and has the impression that this is the perception. Furthermore, the author believes that the world can be described as one ecosystem and an ecosystem management therefore must have a broad view, not leaving out any important elements. In order to proceed forward with the discussion, the three elements of environment, human and economy will be the foundation.

Another finding that supports the triangular element of ecosystem management is the four petroleum industry informants emphasise on sustainability and the question of how much the nature can sustain of *human activity*. This indicates that the nature and human also are components of this term. For the reason that human activity is mentioned, the author draws the line to economic interest, because that could be seen as the reason behind *human activity*. On a small scale, it could be to acquire food, as opposed to buying fish or other foods in the store, or on a larger scale it can mean mineral extraction of fisheries for export. Because theory suggests that human and economies are intertwined, the above reasoning is sufficient. Support for this was also findings through interviews. When Barlindhaug refers to ecosystem management, he thinks of environmental sustainability and human (cultural) sustainability. This includes both the sustainability aspect and the human aspect.

Nature advocates also see this relation: OCEANA recognises that there are clear economic dependencies on the ecosystem that need support and that promote human well being. You obviously need a healthy productive environment to support economic activity and other human dependence on the ecosystem (Short). The oil company informants all mentioned and emphasised environmental sustainability as a part of ecosystem management, but the nature's advocate, would see this as a primary concern making sure that the ecosystem is and remains capable of delivering it.

The Sami people do not have a specific definition of ecosystem management, but for the reason indigenous people's always have had a holistic way of thinking they clearly understand the meaning behind the concept and include the nature, economy and the

human dimension (Gintal). Holistic is a term many of the stakeholders' use. The fishermen in the research see the *ocean* with a holistic perspective where reproduction of the stock gets influenced of fishing, a human activity. The human dimension is not directly mentioned, but the author would argue that fishing is a human activity and therefore highly involves humans.

### **6.3 Ecosystem Management: Empirical Findings in Relation to Secondary data**

Findings in secondary data of ecosystem management approach support what was found through interviews; the majority of scientific understanding of ecosystem management is linked to natural science. It is therefore not surprising that many of the informants have their main focus on the nature and its sustainability. The marine ecosystem management plans focus on the nature's sustainability, and it is reasonable to argue that this is way to start implementing more complete ecosystem management. Secondary information also shows that this term is increasingly being used in a broader context. Grumbine (1994) is one of the more quoted definitions and focus on natural resource management as scientific knowledge of the ecological relationships within a socio-political framework. Grumbine (1994) does not believe it is possible to balance ecological, economic and social concerns. According to UN, this is the great challenge, but also the ultimate goal. Since the term is closely linked to natural science, economic interests are not widely mentioned. The governmental ecosystem management plans in marine environment include human economic activity such as fishing, petroleum extraction and shipping. Human has a relation to the nature and ocean and therefore is a part of the ecosystem. Human interests are economically driven either in small or large scale and can therefore be seen as an aspect in itself. ESA (1995), Christensen et al. (1996) and WWF (2007) all cite eight principles that should be part of an ecosystem management definition regardless of context.

Below are the principles with some highlights and comments of what was found in the empirical data. Note that the comments are merely a small sample of the findings.

1. Long-term *sustainability* as fundamental value. Short in OCEANA advocated the long term value and perspective. Sustainability was widely mentioned amongst the informants.
2. Clear, operational goals. Aamot in StatoilHydro had a clear opinion on this perspective.



3. Sound ecological models and understanding. Understanding the ecosystem and changes was broadly emphasised and also seen as a challenge.
4. Understanding complexity and interconnectedness. That it is all interconnected advocate a holistic approach to the complex issues. This was highlighted by many of the informants.
5. Recognition of the dynamic character of ecosystems. The dynamics of environmental changes, climate changes and migrating species occurred numerously in the empirical data.
6. Attention to context and scale. Dialogue must be lifted up at a higher lever to move the focus away from economic interests. The communicative arena is a tool here.
7. Acknowledgment of *humans* as ecosystem components. All informants and secondary research acknowledged human as part of the ecosystem.
8. Commitment to adaptability and accountability. Precautionary was a key word Paine used to describe ecosystem management. Barlindhaug amongst others pointed out that it is the nature that set the boundaries for human activity and we therefore have to adapt.

## **6.4 The 3 Dimensions**

The informants emphasise the three dimensions in regards of ecosystem management. This can be explained by UN's value sphere (from the theory chapter). It can also be explained by secondary data such as WWF. WWF has written a report: assessing ecosystem-based management in multilateral environmental agreement and the process towards adopting this approach in the management of living marine resources (WWF, 2007). The report support the three dimensional elements as part of the ecosystem management. This means WWF, like empirical data, acknowledge: environment, economy and human dimensions as an integrated part of ecosystem management.

### **6.4.1 Ecosystem and Sustainability**

Words like; sustainability, sustain, maintain, and not worsen were found through interviewees regarding how stakeholders perceive ecosystem management. Theory and secondary data on ecosystem management emphasises that: it is necessary to see sustainability in relation to the ecosystem. The UN sees social goals as a part of managing marine resources in a sustainable way. The ESA (1995) say that regardless of what specific context ecosystem management is in, it should acknowledge long term sustainability. It is their first principle of what ecosystem management should include. Ecosystem

management is therefore closely tied together with sustainable development. Research and informants drew attention to the three elements of: economy, nature and humans when referring to ecosystem management. Ecosystem management was also linked to sustainable development according to the informants. One of the dialogue participants defines sustainable development as the Bruntland Commission's definition including the three element of environment, social and economic pillars (Sørås). Ecosystem management and sustainable development are interconnected and it is therefore reasonable to split sustainable development up to the same three components as ecosystem management consists of;

1. Sustainable Economy
2. Sustainable Nature
3. Sustainable Culture

#### **6.4.2 Sustainable Economy**

In today's complex society the economic focus has moved beyond Milton Friedman's idea that *the business of business is business*. Economic sustainability refers to a development which "can continue indefinitely because it is based on the exploitation of renewable resources and causes insufficient environment damage for this to pose an eventual limit" cited in Allaby 1988:374. The states need sustainable economies in order to secure the predictabilities of the societies. The 2008-2009 financial crises prove that economy has tremendous impact on states and humans.

#### **6.4.3 Sustainable Nature**

There's a dynamic interdependence between ecosystem and economic systems. Economic activity depends upon the conditions of ecosystems in the nature. Barlindhaug says that it is the nature that set the boundaries for the nature, meaning that sustainable nature is the most important thing.

A minimum requirement for ecological sustainability is thus that economic operations do not threaten "the natural systems that support life on Earth, the atmosphere, the waters, the soils and living being" (The world commission on Environment and Development 1987:45).

Without a sustainable environment it will be difficult for nature to deliver people goods in the future.

#### **6.4.4 Sustainable Culture**

Cultural sustainability demonstrates to what extent social systems and the interaction between social systems are sustainable over a certain period of time.

Social structures are to an extent continuously changing but some aspects are culturally determined and will remain or change more slowly. To define what sustainability could involve in social and cultural matters it could be beneficial to direct the thoughts in the American philosopher Rawls (1971) way and the term “the just society”.

#### **6.4.5 Practical Impact**

Oskal explains that reindeer husbandry an important work source and foundation for economic sustainability amongst the Sami people. He argues if you do not have sufficient access to available grassing land, it will be difficult to have a sustainable reindeer stock, and this may threaten the sustainability of the Sami culture.

Obviously and well known, reindeer is the Sami’s source of food, skins are used for clothes and housing in addition to cultural and traditional aspects itself. A non- sustainable Sami culture is not the intended outcome wanted for the indigenous people in Norway, but the risk is there as long as there is no holistic plan preventing land to be used for other causes.

Short in Oceana says that you obviously need a healthy and productive environment to support economic activity and other human dependence on the ecosystem.

This fit very well with Oskal’s perspective of the people’s dependence on the ecosystem, the above discussion and the UN perspective. Barlindhaug points out that we cannot look at sustainability in the ocean’s ecosystem isolated. The goal of the ocean is not to be sustainable for its own cause, but makes meaning when it is sustainable for the people.

The petroleum industry makes *money* by extracting mineral resources from the *nature* to serve *human* needs. That is the nature of the business, suggesting that the three elements are interconnected. Short points out that there are clear economic dependencies on the ecosystem that need to be supported which again support promotes human well being.

North Energy's vision is interesting in this regard as "With northern Norwegian ownership and expertise, North Energy will produce *alternative solutions for profitable and sustainable petroleum activities* in the north". Without comparison to other industry's visions, this emphasizes the importance of sustainable economic activity.

#### **6.4.6 Balancing the Three Dimensions**

Although it has been argued that the informants in the research and secondary data say ecosystem management should include the dimension of: environment, economy and human, it is not the same as saying these should be balanced. The oil company representative pointed out the issue of prioritizing the issues in the Arctic. Moreover, the person also pointed out the issue of who this organisation is. By that, the person means that some interest is more important than others. The UN through the value sphere and Jonassen in Shell are making an attempt of balancing the three elements. Short in OCEANA acknowledges the three, but emphasise the priority on nature as the main dimension. The communicative arena suggests the dialogue should include all stakeholder perspectives and not merely focus on economic interest. This indicated a somewhat balanced discussion. One of the participants on the Arctic Study Tour 2009 touches upon the above discussion in his presentation under the dialogue. Sørås is previously a External Affairs Advisor in the petroleum business and emphasise that "in the end, the society (e.g government) must decide what is the proper balance between the three pillars of sustainable development, social development and environmental protection, and how the fourth pillar, cultural diversity should enter the equation" (Sørås). With informant's perception on human, economy, nature and sustainability as a part of ecosystem management, the discussion will now link this to management.

#### **6.5 Ecosystem Management Approach: Impact on Stakeholders**

This section is seen in relation to section 5.3 in empirical part. Following is the analysis of how the stakeholders are affected of the already implemented ecosystem policy plans (marine areas) and how an *ecosystem management* (broader perspective) would affect them as a stakeholder. The discussion is carried out regardless of the extensiveness of the governmental efforts so far. How the informants perceive themselves as affected will highly

depend of what the person think of the governmental plan. This will again be influenced by what perspective the informant has as a stakeholder.

### **6.5.1 Industry**

If government initiates ecosystem management plans it will be determined what is expected of potential industry players. This will ease the work for the industry. Findings shows that company guidelines can be strengthen. Anyhow, an operator must communicate with stakeholders affected of the operations and in case of using own internal guidelines the message must therefore be communicated to the stakeholders. By doing so, hopefully the operator and the stakeholders (the ones getting affected) come to an agreement. If the government already has established an ecosystem management plan that includes *all* stakeholders, the expectations might already determine. Then, the government in terms of the plan has been through much of the communication process already. Jonassen thinks such management plans will help industry players.

### **6.5.2 Petroleum Industry**

Petroleum companies execute numerous of CSR attempts in addition to what is expected from the governmental part. The participation in dialogues, research and extensive environmental impact assessments are other indicators of petroleum companies involving stakeholders. For this reason, Aamot does not think such management plans will change the way petroleum companies operate. Together, the government and society have expectations to the petroleum industry. If the authorities have a demand (e.g. a holistic ecosystem management approach), it will force the petroleum industry to analyse all parts of the area they want to operate in. This means the more extensive governmental ecosystem management plans, the more it will affect the petroleum industry. Sørås points out that it is the government that decides initially. Empiric data can therefore be explained by Norwegian law stating that companies are required to undertake a quite extensive stakeholder-process. The Norwegian Ministry of Petroleum and Energy can require companies to have extensive stakeholder involvement.

### 6.5.3 Indigenous People

The Integrated Management plan of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands set the standards when business are to apply for operation and development in the area the plan cover. An example is Eni Norge's application of developing the Goliat field. Through this process, stakeholder involvement was extensively included. Before the plan was sent the government the Sami Parliament and Eni Norge had constructive dialogue (Sametinget, Sak R12/09). Eni Norge had and offered public stakeholder's meetings in many of the affected communities. When the proposed plan of operation and development was sent out on hearing, the Sami Parliament supported the plan because it was in line with the management plan and all the strict environmental precautions it required. The Sami people would prefer their rights as people in the area where industrial development is to taking place having a larger role, but this is a matter between the Sami Parliament and the Norwegian government and cannot be addressed by Eni Norge (Gintal). The background is the lack of the management plan covering the land areas and the human dimension.

Co-existence and cooperation between the interests are what the management plans aim for. Because there is other interest in the Arctic such as petroleum, co-existence is a challenge for the Inuts people in Alaska. The greatest fear is an oil spill. Koonuk question how the petroleum company is going to clean it up, especially from the ice. Referring to the Exxon Valdez documentary twenty years after the spill, Prince William Sound cannot be perceived as clean (Cornellier, 2009). Oil spills might be rare, but it we still do not know the long term consequences on how an oil spill and seismic exploration affects sea mammals.

The petroleum industry might create jobs, but how important is this if it interferes with the way of life of the indigenous peoples? If great enough interference with indigenous people's activity such as reindeer herding and whaling, how can the culture then be sustainable? Koonuk pointed out that they are able to adapt and co-exists, but as Oskal pointed out: one day you might cross the border for what is a sustainable stock. Referring to theory, and empirical data, the ecosystem management takes on a precautionary approach and should prevent taking action before the consequences is known.

#### **6.5.4 Fisheries**

The empirical data through interviews showed that the fisheries have somewhat had a marine environment -ecosystem management approach to their operations for years. The last couple of years, this has also been turned into governmental policies. This approach sees the species in the ocean as one ecosystem and not necessary include all other factors.

Neither of the two fishermen in the study could see how an ecosystem management plan would affect them severely. Paine in Seattle points out and question how e.g. the Aleutian Island Ecosystem Management Plan will apply to the fishermen pragmatically? Will there be restrictions on fisheries? Paine see this approach as a concept moving forward that make people feel good, but what will it mean in the end is what matters for fishermen. Paine claims that fishermen are quite pragmatic as opposed to theorists and scientists and want to know the facts and how it affects them. He gives an example of the fisheries making sure restrictive measures are taken if one specie is in danger to regain stability in the stock.

Nowadays, the species are attempted to be seen as a whole, possibly with all other elements such as the human dimension included. This is an adaptive management where one measure will have effect on something else.

Summarized, it is hard to see how fisheries will get affected of these new management plans as fish is a renewable resource and many measures are already in place in case of not sustainable stock. Possibly, the fisheries will be forced to cooperate more closely with other types of activities. Petroleum extraction, seismic exploration, fishing and other co-existence issues will aim be handled more holistically with an ecosystem management approach, and fisheries will be affected in regards of that.

#### **6.5.5 Environment**

Jeffrey Short, who is a professor and Pacific Science Director in OCEANA argues that “ecosystem management plans could and should be implemented in the Arctic and the Arctic Ocean”. He sees this as a critical event not only for the region but for the whole planet because what is happening in the Arctic has reverberation over the whole world. Moreover, he is concerned that this is not much discussed outside scientific circles. Short explains that the loss of sea ice the last couple of years in the summer times is very alarming for climate

stability around the world. “When you lose the reflective surface and turn it into an absorbing surface heating really accelerates and this can end up destabilising the climate world wide” (Short). There are two big forcing factors that contribute to the ice loss; one of them is greenhouse gas emissions and the other one is particularly from combustion black carbon and sulphides. The two factors points out that the urgency of getting the emissions under control and international cooperation through bilateral agreements is necessary to reach the common goal of a sustainable Arctic. The global community and Arctic countries therefore have to address this concern urgently in order to stabilize the climate changes and environment.

The Norwegian government approved the first oil field in the Barents Sea on basis on Eni Norge AS and StatoilHydro Petroleum AS application (St.prp. nr 64 2008-2009). Nature and Youth and the Bellona Foundation, both located in Norway, are very disappointed about this approval. Bellona (2009) claim that Goliat is located 45km off Hammerfest city in Norway. Integrated Management plan of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands (2006) bans new petroleum extraction in the area 35- 50 km from shore as a general rule. This is what makes the development controversial and nature advocates against it. However, exceptions are made for licences already given out and some that are to be given out. The management plan will be reviewed in 2010. From an environmental perspective it is consequently urgent to establish comprehensive natural resource governance plans or ecosystem management plans aiming for a sustainable development. Consequently, they need to be followed.

#### **6.5.6 Implementing of Ecosystem Management Plans**

The ecosystem management term is already in use through the Integrated Management plan of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands and Aleutian Islands Fishery Ecosystem Plan. It is reasonable to believe many of the informants had this in mind, when answering the questions of how they perceive ecosystem management. The informants in the research believe that ecosystem management or these plans are the way to govern the Arctic and see the benefits of implementing this approach. The Indigenous People, especially advocate that this is true if the human dimension is



included. All participants saw the challenges of implementing an ecosystem management approach in the Arctic regardless of how the Arctic is defined. If the Arctic is defined within each country's area, it will be determined by the local authorities, the question is how such plans can be implemented in international waters and common areas. One reason it is challenging to implement such plans is because nature is very complex in itself. Then, it is a question of cooperation between the countries. Another argument for this to be a challenge, depending on who you ask, is that the existing plans either are short of involving or do not touch upon the human dimension. If such plans are going to be implemented in international waters, there has to be an agreement between the states in which the informants see extremely challenging. This regardless of using the existing ecosystem management plans as a foundation to move northwards or make new arrangements. Many argue for the established plans possibility to be transferred northwards. If the established plans are moved northwards, what will be done to include the human dimension?

Another very important factor that will prove challenging in order to an agreement in the Arctic is the economic potential of non-renewable petroleum resources and shipping. Petroleum extraction will be executed of countries that have rights on the ocean floor; whereas for shipping, international agreements must be agreed upon. With potential shipping in the Arctic there will be by far many more countries benefitting and having a stake in this question, making the process more complex. The reason why petroleum and shipping is highlighted as complex factors in the Arctic is that they aggregate so much more value as opposed to commercial fishing. Fish is also a renewable source as opposed to mineral extraction. This is supported by Lorentsen. This reflects the economic potential that also distinguished the Arctic from the Antarctic.

### **6.5.7 Human Dimension**

Research shows most definitions and principles acknowledge the human dimension of the ecosystem (ESA-1995, WWF-2007, UN-2002 and interviewees amongst others). Moreover, research shows that management plans also acknowledge human dimension, but *only as part* of the social considerations in decision making and political processes when initiating and implementing ecosystem management (Endter-Wada et al., 1998). This highly

represents the findings in this research. Both the Aleutian Islands Fishery Ecosystem Plan in Alaska and the Integrated Management plan of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands in Norway recognize that human is part of the ecosystem but it is only partly included in the management plan. In the Norwegian ecosystem management plan the Sami people and some human aspects are *mentioned* but not analysed as the plan narrow it down and only include ocean areas. “The plan does not deal specifically with links between settlement patterns and activities in the Barents Sea–Lofoten area and issues relating to exploitation of the resources in the area by different population groups, including the interests of indigenous peoples.” Part 2.5.5. of the Integrated Management plan of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands. The Aleutian Islands Fishery Ecosystem Plan does not affect as many people as the Norwegian, for the reason that it is only a couple of hundred inhabitants in the area. This plan also has some sections devoted to social-economic issues.

Endter-Wada et al. (1998) argue that by only partly including human, the “...scientific inquiry related to ecosystem management is the realm of natural scientists, and the social scientists’ realm is implementing or perhaps studying (though that is rarely mentioned) the political processes related to ecosystem management”.

Barlindhaug says that in the Norwegian management plan proposal the ecosystem–human dimension was included, but disappeared along the way. Nystø says that it must have been a political decision not to include the Sami dimension in an appropriate way conducting the integrated management plan for Barents and the coast off Lofoten. The marine climate does not have a voice in the same way as the indigenous people have. This is supported by Noss and Cooperrider 1994:328 (cited in Endter-Wada et al. 1998) that argues that at worst “...people are political obstacles to implementing what the natural scientists believe is necessary to meet ecological goal, and that the role of social science is to understand how to “educate” people so they become more supportive of those goals.”

## **6.6 The Norwegian Government Attempts in Relation to the 3 Dimensions**

The research indicates that ecosystem management approach should include the human dimension as well as ecological concerns and human interests (which reflect the economic

potential. The findings differ from this for the reason that the Norwegian ecosystem plan does not cover land area and therefore not the human dimension on land. In the marine area, petroleum extraction and fishing interests are extensively incorporated along with how to obtain a sustainable ecology. However, it seems like a bit vague regulations around petroleum extractions with the Goliat approval fresh in mind. The plan acknowledges that settlement patterns influence the marine environment but does not include “people on shore” in the Integrated Management plan of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands. This is a though provoking incoherent or inconsistent statement.

Perhaps it is easier to implement a more holistic approach for a small area or to leave out certain elements? It is reasonable to argue that the more elements that is incorporated and influence each other, the more complex the management plan will be. Merely ocean life is easier to monitor than activities on shore in addition. A fisherman will see from year to year the changes and know the consequences if he or she over fish one stock. But how his actions affect his on shore neighbours in the fishing community is harder to monitor. However, what is an ecosystem without humans? “Humans should not be seen differently than other species. We are all animals living in the same ecosystem” (Paine).

An ecosystem management without the human dimension is quite meaningless seen from the indigenous people’s point view (Nystø).

As already stated, some of the issues the Sami people are experiencing are mention in the management plan. Aamot claim that the indigenous people’s issues should have been taken more into account when fulfilling an ecosystem management approach through the management plan. A press release from the Sami Council in November 2006 states that the Sami people are disappointed that the UNs declaration for indigenous peoples are not taken into account in the Norwegian Integrated Management plan of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands.

The management plan could be seen as a first step in a possible direction of a holistic management plan. Barlindhaug believe that the government will include the human dimension at a later stage in this ongoing process. He argues it is not an ecosystem management plan saying how the people should function in it, it is all about the ocean

marine life, which is a significant weakness. Moreover, Barlindhaug argues that the integrated management plan is not sufficient because the human dimension is left out. Oskal, from his perspective, explains that when the people and human dimension is not included, he does not see the governmental attempt as a holistic or integrated management plan.

## **6.7 Theory in Relation to Findings**

### **6.7.1 Stakeholder Theory**

All informants see themselves as stakeholders in the Arctic. This is in clear relation to stakeholder theory stating that all individuals or groups affected of something are stakeholders. The informants are all affected of what is happening in the Arctic either from an inhabitant perspective, economic interest perspective or from the nature's perspective. The nature does not speak for itself, and therefore has information come from nature's advocates such as OCEANA, WWF and Bellona. It is very interesting that the talk amongst indigenous people dispute the term in itself and argue that "rightholders" are more appropriate characteristic of their *interest* in the Arctic. WWF, UN agrees with this view. The stakeholder theory originally has a company in the centre and then all parties affected are seen as stakeholders. What is claimed to be the focus and the reason for interest in the Arctic is mineral extraction and utilization of the nature. This however, is most likely not the answer you would get from a petroleum company, but from the nature's advocates and others. In this regard, it is understandable that the Indigenous people feel degraded to a stakeholder. Why should mineral extraction or economic interest be in the focus? This is supported by Short, and brings us to the discussion of cooperation.

### **6.7.2 Communicative Arena**

The communicative arena is a critique of the focus on merely economic values in stakeholder communication. Moreover, the founders (Ingebrigtsen and Jakobsen, 2006) claim this can lead to short term solutions. Short term solution can be seen as the opposite of long term sustainability. The informants in the research emphasised sustainability and with that it is reasonable to argue that they meant long term sustainability. Secondary data on ecosystem

management includes at least a long term environmental sustainability. Analysis suggests that sustainability consists of economic sustainability and cultural sustainability as well as environmental sustainability.

*“We look at this as a trade off between short term economic gain and long term economic productivity. And we are consistently arguing for the latter.”* Short, OCEANA.

Through the communicative arena the aim is to move the discussion towards natural and cultural values as those are integrated with economic values. The communicative arena does not emphasise that the company or a firm is the centre of the discussion, it merely states that it is an area for discussion. This can be understood as none of the stakeholders are more important than others. If the Indigenous people are rightholders, they might be seen as more important than other factors. The communicative area seems to be a holistic approach where issues are taken to a higher level discussion. Moreover, communicative arena aim to balance the three values of economy, environment and culture. Several stakeholders referred to ecosystem management as a holistic approach and some referred to it as an aim to balance the three values. The Arctic Study tour is an example the author would like to highlight. This is a dialogue representing a wide range of stakeholders in the Arctic, who are, not necessary the most obvious stakeholders.

### **6.7.3 Cooperation and Competition**

The concept of communicative arena suggests competition must be exchanged with cooperation in order to achieve a broad focus as opposed to merely economic means (Ingebrigtsen and Jacobsen, 2006). For the reason that we see these communicative area's in terms of dialogue forums, it seems that the attempts are in line with the theoretical concept of this paper. The Arctic dialogues consist of participants from both private and public sector as well as key interest groups such as Indigenous people, NGOs, environmental organisations and international organisation such as the UN. The aim through dialogue is cooperation and discussion.

Holm, who participated on the Arctic Study Tour 2009 points out that: “People usually tend to jump right to conclusions before discussing the details of oil and gas exploration in

Norway” This explains by theory stating that importance of discussing before taking a decision.

#### **6.7.4 Business Cooperation and Competition**

Amongst the industry players there is also cooperation. This can be seen in the dialogue forums where they share information without strategic means. In the petroleum industry there is a fairly new expression explaining cooperation and competition that is; Coopetition. Coopetition expresses how petroleum companies go together and *cooperate* in certain aspects of a project and at the same time maintain *competition* in other aspects of the same project or issue. Dialogue between all stakeholders in e.g. the communicative arena may help the companies resolve problems or issues. This is most likely a result of increased focus and need for cooperation, at the same time as nature of the companies are competitors. According to Ingebrigtsen and Jakobsen (2006), the Norwegian Competition Authorities does not prohibit this kind of cooperation since the goal is to improve technical or economic progress.

#### **6.7.5 Governmental Cooperation**

The Norwegian government has for a long time had protection of the Arctic environment on its agenda (Støre, 2008). As the US, Norway believes that melting of the ice-cap will increase the maritime traffic and other activities in the Arctic (Støre, 2008. Clinton, 2009). Both USA and Norway believe that the climate change is a global threat and that it has widespread implications for communities. Norway also acknowledges that the climate changes have severe impacts on the ecosystem and the local inhabitants” (Støre, 2008). Clinton is also of the opinion that the climate changes will have implication for wildlife and that it “...jeopardizes stability and threatens food and water sources” (E&E Publishing, LLC 2009).

Politically, the ruling parties in the Norwegian government called Regjeringen are an cooperation between three different political parties. Regjeringen has targeted the high north as its main area of priority in the administration. The new Obama administration in the US has also expressed the high north as a great focus area. As a senator, Clinton travelled to both Alaska and Norway and says in the remarks of the opening of the 50<sup>th</sup> Anniversary of

the Antarctic Treaty she herself saw the challenging issues that the region is facing today, especially pointing out the climate changes.

The Obama administration recognises the profound implications the warming of Arctic already has on indigenous communities and will have on global commerce. Clinton sees the human activities in the Arctic as additional impacts on the environment (Clinton, 2009).

Geologically, Norway and the USA are amongst the five countries where landmasses converge on the Arctic. These countries therefore have direct interests in the Arctic. It is important to cooperate to ensure that any development in the Arctic takes into account the fragile ecological balance and sustainable development. This view is supported by Clinton (2009). The two countries already participate in several cooperation attempts such as the Arctic Council and EIA amongst others. The purpose of establishing the communicative arena is by Ingebrigtsen and Jakobsen (2007) regarded as a necessity to structure cooperative interactions within economic interest. When people from Norway and US meet in e.g. Arctic Frontiers, which can be considered a communicative arena, the three values of economy, nature and culture aim to be harmonised. This is because Arctic Frontiers aim to balance human use and ecosystem protection. For this reason, April 6<sup>th</sup> 2009, the Norwegian Foreign Minister Jonas Gahr Støre met the US Secretary of State Hillary Rodham Clinton for a special meeting about foreign policy, climate and transport in the high north amongst other issues. It is fortunate for the area that these countries are especially interested in governance of the Arctic. Since the informants think governments have a special position in Arctic governance, it is positive that countries such as US and Norway take initiative and cooperate.

The bilateral relationship between Norway and USA has always been cooperative, stable and good. According to Clinton (2009) the two countries share not only values, but common bonds of family and culture. After the meeting Støre told the Norwegian press that there is a great difference in regards of the political priorities the new Obama administration have (NRK, 2009). He also said that what the US regard as important is in line with much of what Norway think is crucial and important to care about. Støre also expressed that he is excited about what the relationship can lead to with the recognisably difference in the US policies. Perhaps these close ties and cooperation can lead to something fruitful in the Arctic? The

two countries also have interests in the Antarctic where cooperative scientific research is being conducted successfully.

### **6.8 A New Paradigm**

In the petroleum business, there is a perception that we have “a whole new world” in regards of how to do business, operate, and execute the core business. Perhaps the ecosystem-based approach can be related to a change of focus or a paradigmatic shift? Olsen et al. (2007) claim that the aim for the Norwegian ecosystem-based management plan for the Barents Sea fits well with the Johannesburg declaration on sustainable management (UN, 2002) as an “international paradigm shift”. The NPFMC claim on their web pages that ecosystem-based management represents a new paradigm which builds on existing process and emerging technology and research (NPFMC, 2009). And last, the WWF (2007) also call this a paradigm shift. Moreover, WWF explain the current management already accounts for several ecosystem management consideration and that this is an ongoing process. However, it demands throughout ontological and epistemological analysis and assessments to prove that ecosystem management plan is a new paradigm. This will not be included in this research, but with the above indicators it can definitely be said that this is a radical new way of thinking about governance. Another point to add here is that we, regardless of empirical research, see a move away from the economic scholar Friedman’s (1970) idea where the business of business is making business. The businesses focus on Corporate Social Responsibility (CSR) and stakeholders as opposed to shareholders are indicators of this. Another tangible indicator is BP’s name changed from British Petroleum to “Beyond Petroleum”. Perhaps ecosystem management can be related to environmental economics as opposed to traditional economics? This will be item for further research.

### **6.9 Ecosystem Management in the Arctic.**

This section is related to section 5.4 in the empirical part. The governmental positions are of special importance for the reason that the land owners or continental shelf owners are the states. This is supported by the informants. The paper has also touch upon the interest in the Arctic Ocean –the waters between the states and continental shelves. It is the states that have claimed rights, not private interests, and therefore should be the body to negotiate on an international level about out common resources. According Aamot, the governmental



bodies of all the different states have to set the rules of the game. He also think it is quite wrong to invite industry, NGOs or others to take part for the reason that this is the responsibility of nations and the population of different nations. The other informants also agreed that states are in the position which makes them natural governors, although it makes sense to include the people who live there. It is just like when the authorities in Norway want to build a new road, and it will cross your property: you get a say and in the matter the building goes through, you will be compensated. The informants in this research see the states as the body to initiate agreements in the Arctic.

Which states that should initiate and agree upon an ecosystem management in the Arctic is not easy. The most apparent countries to do this are either the states that have borders to the Arctic Ocean, or the global community. The Arctic countries have rights within their economic zone, but also on the continental shelf as long as it reaches out northwards. LOS gives recommendation on how far out the countries continental shelf reach northwards. The states boundaries in east and west of this will have to be determined between the bordering countries. Petroleum extraction will be done on the premises of the biology and governments. For the reason these minerals are extracted from the continental shelf, there will be a state or a government to decide this.

The ocean waters beyond the countries economic zones will be topic for international agreements. At the moment, much of the Arctic is covered with ice. However, this is changing as the ice is dramatically retrieving due to climate changes. Open sea will represent a huge economic potential in shipping. Since this is international waters, rules and regulations of how and when shipping may take place must be agreed upon. Barlindhaug suggests IMO regulations must be extended. The problem is, according to stakeholder theory, that the whole global community will be affected of a potential cut in the shipping costs by approximately forty percent. Shipping over the north-west passage will benefit exporting countries in east such as China (supported by Barlindhaug, 2009). Less expensive consumer goods will not just benefit China and other developing countries, but also benefit countries and consumers that do not have so much money. This suggests that the global community need to be involved in Arctic shipping regulations. On the other side, it is the neighbouring countries which might have other activities such as petroleum extraction and

fishing that will have to co-exist with shipping traffic. The neighbouring countries also have people and vulnerable nature that get affected of e.g. pollution from shipping.

### **6.9.1 LOS, Arctic Council, IMO or a New Framework**

How an ecosystem management should be agreed upon is not easy to analyse. The findings will therefore be touched upon to some extent, but not analysed extensively. Firstly, the ecosystem management plans that have been initiated by some countries are not entirely in line with what the global community and UN think it should include. Secondly, ecosystem management is very complex due to the interdependence of the various elements it includes. These elements are also changing in itself, like climate. Some stakeholders in the Arctic are uncertain whether all the scientific findings in the Arctic are correct. Most of the informants pointed out that the main challenge is to get all countries involved. Jonassen see the reason for this as the Arctic countries are at different stages in the journey towards a sustainable development. He also points out that it is not necessary wrong that some countries initiate this more than others.

Several informants pointed out the Arctic Council as a unique framework for governing the Arctic. The Arctic Council is presently the only summit where all Arctic states agree and all stakeholders have a right to say. However, other countries only have observatory rights and it is not a legally binding body. With shipping representing a huge economic potential for the global community it will be difficult to argue that only the Arctic Countries can take part in Arctic governance.

The findings suggest that some believe there is a framework for the Arctic where as others claim there is none. Despite this, it is reasonable to argue the current rules and regulations must be advanced to include the evolving complexity of climate changes and potential economic interests that will be increasingly focused on as the sea ice is receding.

How to advance rules and regulation, the US and Clinton believes that nations should look to the Antarctic Treaty as a model for how to work together and solve the complex issues that arises today with climate changes. Lorentsen in the Norwegian Fisherman's Association points out the CCAMLR (which regulate the ice edge of Antarctic) as a model of *how things*

*can be done* in the Arctic. On one side it is an idea to look at the process of *how* the international cooperation made it to such agreements, but the natural differences might possibly play a larger role than expected. The fact that there are no inhabitants in the Antarctic might have made this process easier. If the term ecosystem management includes the human dimension and one agree that is the way the Arctic should be governed it is a more complex problem. On the other side, if marine ecosystem management plans do not incorporate the human dimension, it would be more natural to look towards Antarctic. Anyhow, shipping and petroleum is not an issue in the Antarctic. WWF claim that these two agreements were the fore-runner to ecosystem management.

### **6.9.2 Cooperation Among the Arctic Interests**

April 6<sup>th</sup>, 2009 in Baltimore USA was the 32<sup>nd</sup> Antarctic treaty Consultative Meeting and the first-ever joint session where the two most important bodies in polar councils got together. The Antarctic Treaty Consultative Meeting and the Arctic Council are the major diplomacy bodies at the Poles (<http://www.state.gov/r/pa/prs/ps/2009/04/121151.htm>). This indicates that one tries to see the similarities and get synergies in the work of governing the two Poles. This is done, despite the fact that the two poles have major fundamental differences that distinguish them from each other. As described earlier, these are of economic interest, there is no people inhabiting the area and the South Pole is geologically a landmass where as the North Pole is ocean. On the other side, one can look at what triggers the world to come to the Antarctic treaty or the CCAMLR agreement covering the area up to the ice edge. It may also indicate what could be possible in an area where no one has been harvesting. Lorentsen support this view and says that one must look at the foundation of this agreement.

If the challenges of the 21st century are added from Antarctic, such as climate changes, economic interest of petroleum and shipping and human dimension, this could set the standards for further discussion of the Arctic with the Antarctic in mind.

### **6.9.3 What Trigger Cooperation?**

Many of the informants pointed out that it will take time before all the different interests will be able to agree upon something. However, history shows that when undesired

consequences occurs, extra motivation trigger the parties to move processes forward to achieve a more desired outcome. Oskal points out that something really drastic might have to happen before coming to this point. He says climate changes could be that factor. The focus on the Arctic can be seen as having accelerated in the same tempo as the Arctic ice-cap is receding. If the ice is completely gone, the possibility for requests of transport in the oceans is very likely to come. An example of something drastic happening is the Exxon Valdez oil spill accident in Alaska twenty years ago. This was an eye-opening experience of how extremely vulnerable the Arctic is and it triggered changes in risk analysis and oil transportation policies (Short).

## **6.10 Trustworthiness of the Research**

For this research to be acknowledged and recognized, it needs to be valid and reliable. The main problem about qualitative research is misuse of the information, not the method itself (Selnes, 1999). A reliable and non-reliable research may have the same methods but what makes them different is the way the information is being handled. This section reflects over possible ways the research have increased the validity and reliability.

### **6.10.1 Validity**

Validity is defined as “the extent to which account accurately represents the social phenomena to which it refers” (Hammersley, 1990:57). Here is an example of a question one can ask to check the validity: Is it measured, what was supposed to be measured? The research is in other words valid if the results can be linked to the social phenomena it is supposed to refer to. How the data is analysed and the perception the reader gets with the problem statement in mind, will therefore refer to the validity.

The formulation of the research question was inspired by a professor who explained how this is an evolving term “everyone” is talking about, but do not have a clear definition nor assessed impact. Several informants pointed out this topic to be very valuable to shed a light over. For the reason stakeholders are the key in this research, the theoretical foundation is all linked to stakeholder theory. The analysis is made in accordance with the theoretical framework which strengthens this paper.

Does this paper shed a light over how stakeholders in the Arctic perceive ecosystem management? Findings describe *how* the informants perceive the term. To increase the trustworthiness of the research, the author spend a good amount of time to read up on the context and talk to people familiar of this field. In qualitative research, misinterpretation and favouring data from the authors own opinions might happen. By stating my personal philosophical approach and being aware of this throughout the research, the author was critical to her own perception and evaluation of the data. Moreover, the author intended to keep an objective approach when analysing. As there are no similar researched in the same context, I devoted space to describe how the findings can be linked to theories and other research.

### **6.10.2 Reliability**

It is very important to ask questions about the reliability of the research methods. Lee (1998:148) claims that: "...Reliability refers to the shared systematic variance between a researcher's phenomenon of interest and its scored measurement". In other words is reliability the consistency of the measurement. Reliability is also tied up with the perception of the research being conducted in a trustworthy way and the possibility to repeat the measuring. A reliable outcome is dependent on the quality of the data and the researcher's ability to address the information gathered and use them further.

Is this research valid as knowledge for others? According to Thagaard (2003), explaining how the data is being developed through the research process, will increase the validity. To help the reader here, information that comes directly from the field and informants are marked and the remaining is contributed by the author (assessment, judgement). The transcribed interviews helped not mixing the origin of a statement. If the research is explain detailed enough for another person to conduct the same research with my description, the reliability is perfect. The author thinks the informants in this research contributed greatly to the papers' reliability. New knowledge, five years of higher education, conversations with supervisors and knowledgeable people, has influenced the author's judgement when analysing. Thagaard (2003) stresses that the researchers' ability to reflect over the context of information gathering and how he or she is in a position to influence the information will be

an argument to evaluate the reliability. Several methods (triangulation) have been used and this makes this paper more reliable than using only one method.

### **6.10.3 Generalization**

It would be tempting to generalize the results and say that the findings could be true in a larger setting or for all stakeholder groups that take part in this research. This is not right nor ethical, as one can not be sure that if one stakeholder's opinion is similar to an equivalent stakeholder. If another interviewee was chosen from the same background and perspective, he could have expressed himself/herself differently and it would have affected the outcome. However, what was found in this research will give an indication of what may be the reality in a larger picture.

## 7 CONCLUSIONS, CONTRIBUTIONS AND FURTHER RESEARCH

### 7.1 Conclusions

Stakeholders are extensively included and involved in the Arctic dialogue. Ecosystem management does not have one common definition. The interpretation of an ecosystem management approach in the Arctic is reflective of the varying perspectives of the stakeholders. However, empirical data gathered reflects more similarities than differences. After reviewing of the perspectives and needs of Arctic stakeholders undertaken in this research ecosystem management should include the following elements:

- Environment /nature
- Human activity /economic interests
- Human dimension /people
- Sustainability /sustainable development

All of the elements above are interconnected. The stakeholder model with an integrated perspective, the communicative arena, and UNs value sphere support the empirical findings in this research. Arctic Frontier's motto: "Balancing human use and ecosystem protection" is a good description of the findings gained through research.

The Arctic countries have a key stake in the region, but all countries and stakeholders need to be involved in Arctic governance because any changes in the Arctic effects the global community. "The changes underway in the Arctic will have long-term impacts on our economic future, our energy future, and indeed, again, the future of our planet" (Clinton, 2009). The ecosystem management plans Norway and the USA have implemented in *marine* environment in Arctic oceans have varies affect on stakeholders. The indigenous people in Norway among others do not see the plan as an ecosystem management because the human dimension is not sufficient included. The above conclusion states that ecosystem management is an all-encompassing approach and need to include the three elements of nature, economy and human. To say that the Norwegian ecosystem management plan is holistic, which it is called in Norwegian, is difficult.

Cooperation amongst states and stakeholders is essential to elevate the dialogue to a higher level, searching for the common good. The Arctic dialogue can be seen as a communicative arena aiming for this purpose.

Several petroleum industry advocate the focus of the Arctic dialogue is on environment preservation, whereas several indigenous peoples and nature advocates perceive petroleum extraction to get much of the focus. When the indigenous people are seen as stakeholders for petroleum extraction, among themselves, they discuss whether the term *rightholders* is a better description as opposed to stakeholders.

Capturing the Einstein quote in the preface: if we have created the problems we are facing now, it makes sense to develop a new way of thinking to solve the problems we face today (Jacobsen, 2007). Ecosystem management can be seen at least as a new way of thinking about governing our natural resources because it perceives the species as interdependent.

“The goal with science is in this order; wisdom, understanding of the nature and to live in harmony with it” (Jacobsen, 2007). Clinton (2009) concludes that we should be looking to strengthen peace, security, and support sustainable economic development, as well as protect the environment. To do so, political will amongst the states is needed. Luckily, this is a renewable resource (Al Gore, 2007. Solheim, 2009).

## **7.2 Contribution**

This study has done its outmost to contribute with scientific research of real life experience on what an ecosystem management approach mean and involve for the stakeholders in the Arctic circumpolar area. Research on this is quite limited. The author would like to emphasize that linking important concepts to practical life and how it affects people is needed. The paper, with a practical description of how the phenomena and the evolving term, contributes with greater knowledge within the Arctic context.

The empirical results elevate the focus in the Arctic from seeing Arctic stakeholders and important issues separately: to see Arctic elements interrelated, where no vital elements



should be left out. This may contribute to expand the ecosystem management plans that some countries have implemented in marine environment.

The most valuable theoretical contribution of this paper: is the connection of empiric data (including real life experience) and several existing theories and models. Empirical findings shows ecosystem management approach should include the elements of: nature, economy, and human. This finding has a theoretical link to the UN's value sphere because it consists of the same elements. The same elements represent the informants' perspective as a stakeholder. Empirical data show these stakeholders (with the three perspectives) meet to discuss. The model of Communicative Arena is where these stakeholders meet. The purpose of discussion and cooperation is to make decisions for the common good. Common good can be seen as the goal of a sustainable nature, but also a sustainable society and sustainable economic development.

The practical implication of this study is that informants have different ways of expressing themselves as well as different perceptions. Implication proved even greater when informants representing different perspectives (e.g. petroleum companies and indigenous people) were seen in relation. Although the indigenous people acknowledge that they are stakeholders in the Arctic, they perceive *the focus* of the Arctic different than other stakeholders. This reflects their discussion that "rightholders" would be more appropriate description than stakeholder. The implication of not using the same concepts makes is hard to relate to other information and theory. Stakeholder theory is an acknowledged theory, whereas there is no theory called rightholder-theory.

### **7.3 Suggestions for Further Research**

This case study has a broad context which makes the suggestions for further research many. The stakeholder groups in this research are complex because they are interrelated. It would be relevant to do a similar research with an even broader sample, including all the Arctic countries. That would increase the ability to generalize to a larger population.

The finding of indigenous people wanting to be described as rightholders indicate that they perceive the focus to be on *human economic interest* which in many cases has shown to be petroleum extraction. One direction of further research should be to describe *what* the focus in the Arctic are or what it should be. Who decides what the focus in the Arctic *needs* to be? How and by whom should the Arctic be governed?

An ecosystem management approach represents a new way of thinking about governance. Because, governance includes human economic interests, this term should be linked to new ways of looking at economic theory. What is the link to Environmental Economics, Circulation economics and does it distinguish from traditional economic theory?

What is the road to the goal from where we are today? One sound definition on ecosystem management might be one milestone, but who are in the position to decide this? How can governmental ecosystem management plans increasingly involve the human dimension? If the stakeholders agree upon this definition, the process will move forward in a peaceful way. This consensus of definition will be an important milestone in the work of Arctic governance.

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Yin, R. K., (2003). *Case Study Research, Design and Methods* 3<sup>rd</sup> ed. Sage.

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Jon Petter Gintal, Senior Advisor, Sami Council, Department for Rights, Industry and  
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Terje Jonassen, Communication Manager, Norske Shell, Norway

Oil Company Representative, Anonymous Oil Company. The person worked in USA

Tiel Smith, Land & Resource Manger, Bristol Bay Native Cooperation, Alaska, USA

#### **Other informants**

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Diana Evans, the chair of the Aleutian Islands Ecosystem Team, NPFMC, Alaska, USA

Helge Sørås, Retired, previously External Affairs Advisor with Eni Norge

Ray Koonuk, President of the Point Hope Whaling Captains Association in Alaska.

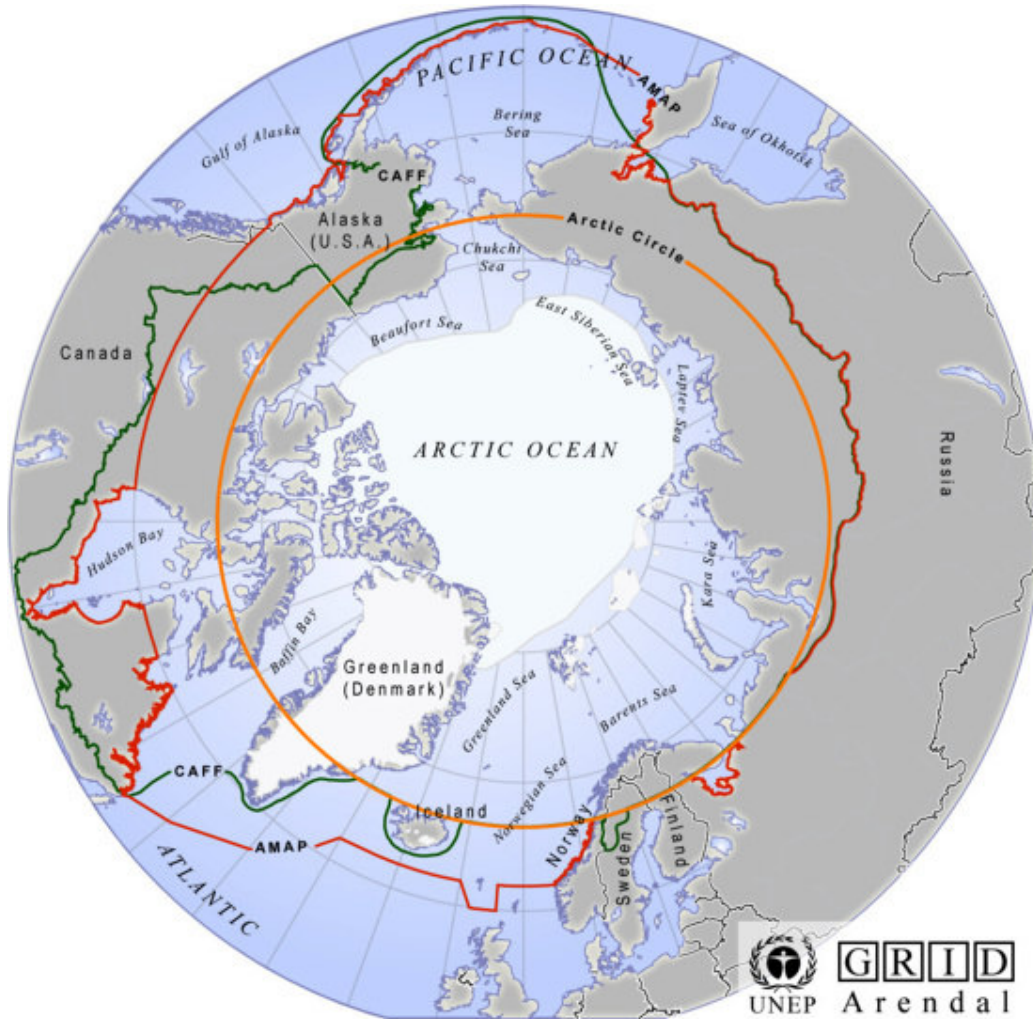
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## 9 APPENDIX

### 9.1 Appendix 1



Arctic, AMAP and CAFF, Hugo Ahlenius, UNEP/GRID-Arendal,  
<http://maps.grida.no/go/graphic/arctic-amap-and-caff-area>

Identifying and defining the Arctic is not necessarily obvious, as this map illustrates. The Arctic Council working groups on conservation and pollution operate with slightly different definitions due to both practical and political reasons.

CAFF: Arctic Conservation area

AMAP: Arctic Monitoring and Assessment Programme Working Group

## 9.2 Appendix 2

### Interview Guide to Informants

*The great dialogue of United Nation's "World Summit on Sustainable Development" was last held in Johannesburg, South Africa in 2002. Stakeholder participation was extensively discussed and the stakeholder participation in the process of environmental governance has since the last World Summit increasingly been referred to as "ecosystem management". What this term could practically mean for key stakeholders in the Circumpolar area / Arctic is the aim for this research.*

1. How do you describe/perceive the term: ecosystem management approach?
2. What do you think this could mean for the Arctic as a region?
3. Who do you see as the organisation/institution to apply this approach?  
Who should be involved in the governance of the Arctic with an ecosystem management approach?
4. What are the arguments pro and against this (an ecosystem management approach) to be the reality in the Arctic? -is it feasible/likely to happen?
5. How do you think ecosystem management approach affect you/would affect you as a stakeholder?
6. Do you see any attempts to introduce this ecosystem management approach?  
How do you see the indigenous people's role/ their interest in this in this plan?