

Master of Science in Energy Management

Ormen Lange and Snøhvit:

Just a fairytale, or a regional savor?

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Acknowledgement

During this semester, I have been writing my master thesis, as a part of my master program, Energy Management here at Bodø Graduate School of Business. My semester has been busy, filled with challenges and many difficulties. However, I have also had time to enjoy the days where the sun smiles to me. I give a sincere thanks to everyone that has helped me through this process. However, special thanks go out to my supervisor Jan Oddvar Sørnes. You have been great help to me, with constructive feedbacks in addition to keeping me motivated to the end. This is the main reason why I could finish this thesis with these remarks.

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Abstract

This master thesis explores what the actual ripple effects from Snøhvit and Ormen Lange have been, and looked upon the lessons learned from this. My theoretical foundations are based upon theories about ripple effects and cooperation. A ripple effect is: *“Indirect effect that spreads out from the direct or main effect to reach areas or population far removed from its intended or original purpose or target”* and cooperation is competitors cooperating to achieve a mutual goal. In addition to this I will, on the basis of my study of Aukra and Hammerfest and with primary and secondary data, end this thesis with an estimation of potential ripple effects in the Lofoten and Vesterålen if this region is opened up for oil and gas activity. The theoretical directions are chosen based on hypothesis I had and on my main problem statement

“What are the actual economical ripple effects of oil and gas activity for local municipalities- a case study of Aukra and Hammerfest?”

My empirical data consists of data from interviews with the Mayor of Aukra and former Mayor in Hammerfest, in addition to interviews with informants in the Lofoten and Vesterålen region. My findings can be briefly summarized like this:

- Both municipalities have large property tax income
- They are experiencing an increase in population and local youth are staying behind
- Aukra has developed a beneficial cooperation with its neighboring municipalities through GassRor IKS
- Hammerfest and Aukra both experience more activity in its own municipalities
- Local suppliers are included in delivery of industrial equipment
- Lofoten and Vesterålen is today in a situation where they need new legs to stand on
- There is a high degree of transferability from Hammerfest and Aukra to Lofoten and Vesterålen region

Sammendrag

Denne masteroppgaven tar for seg hvilke økonomiske ringvirkninger småkommunene Aukra og Hammerfest har opplevd etter utbyggingen av Ormen Lange og Snøhvit. Oppgavens teoretiske rammeverk er basert på ringvirkninger, delt opp i direkte, indirekte, induserte og katalytiske effekter. I tillegg har jeg inkludert teori om ”coopetition” hvor konkurrenter samarbeider om og nå et felles mål. Som en sekundær problemstilling vil jeg undersøke hvilke ringvirkninger man kan forvente å se i regionen Lofoten og Vesterålen hvis det blir åpnet opp for olje og gass virksomhet. Mine empiriske funn er basert på intervju med ordfører i Aukra og tidligere ordfører i Hammerfest. For Lofoten og Vesterålen har jeg kontaktet ordfører på Andøy og direktør for interesseorganisasjonen LoVe Petro.

Hovedkonklusjonen til oppgaven er at Ormen Lange og Snøhvit har hatt store ringvirkninger for kommunene. Kommunene har opplevd en ”knoppskyting” og vekst som har medført at det igjen er stor optimisme i hele regionen. Aukra har utviklet et fruktbart samarbeid hvor inntekter fra anlegget på Nyhamna kommer hele regionen til gode. I forhold til Lofoten og Vesterålen er det stor grad av overførbarhet mellom disse to eksemplene og denne regionen. En åpning av feltene kan medføre at regionen snur sin negative trend og i stedet får en positiv utvikling med lokal verdiskapning.

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Abbreviations

LNG- Liquid Natural Gas

LoVe – Lofoten and Vesterålen

LUN- Leverandørutvikling Nord-Norge (Supply Development Northern Norway)

NCS- Norwegian Continental Shelf

NOK- Norwegian krone

NPD- Norwegian Petroleum Directorate

R&D- Research and Development

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1. Introduction and problem statements

1.1 Actualization

Today, politicians and environmentalists are discussing whether to open up the areas outside Lofoten and Vesterålen for oil and gas activity. Arguments are based on success stories as Hammerfest and Aukra, while others are discussing the potential environmental damage such activity could have to these pristine surroundings. In my thesis I will present the story of how a land based processing plant changed the everyday of two municipalities. Ormen Lange and Snøhvit are two gas fields where the gas is transported to an onshore plant at Nyhamna in Aukra and Melkøya in Hammerfest. For Hammerfest municipality it was a desire to cooperate with neighboring municipalities so that this could benefit the whole region. Seeing however, that they were all at different “planets” this did not succeed. As for the impact the plant has had for the municipality, I can say in short that we are talking about 135 million NOK a year in property tax income. This newfound revenue has opened up for changes beyond what would otherwise be possible. An important ripple effect from Snøhvit is that the local youth are staying behind and are eager to be a part of the development in the municipality. As I once was told, Northern Norway is the main exporter of two things, fish and youth. Snøhvit with its belonging processing plant at Melkøya has generated workplaces, increased the business activity, brought back positivity, and given the municipality believe in the future. The productive age group between 20 and 40 is staying behind or moving back to seek the opportunity that lay within in the municipality. For the future Hammerfest are hoping to agree upon different cooperation terms with its neighboring municipalities that will benefit the whole region.

Aukra has agreed upon a cooperation with its neighboring municipalities Eide, Molde, Fræna, Midsund and Møre and Romsdal county. Together they established a inter municipal company GassRor IKS and the cooperation has its out spring as they all cooperated in getting an onshore processing plant at Nyhamna. Since Aukra get property tax income, they pay 10% of this to the fund and the other municipalities pay 25 NOK per inhabitant. Money from this fund is used so it benefits the entire region, for instance the “Haukabø project” and an expansion at Molde Airport. As Hammerfest, Aukra is also collecting property tax income

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from this plant, and it was estimated to be around 135 million NOK this year. It has allowed them to take certain actions in their own municipality, like building schools, focusing on culture etc in addition to giving back to the entire region. The municipality's cooperation stretches towards a common goal of Aukra becoming a gas hub for future projects. It is a good cooperation that has brought back the positivity in the region and turned around a tough situation.

For Lofoten and Vesterålen the situation today is precarious and the region is experiencing depopulation, economically the municipalities are struggling and their two main industries are fish and tourism. For the last 20-30 years as these two industries have been the backbone in the region, the municipalities have struggled. An opening of the areas outside the coast of Lofoten and Vesterålen could change this situation as it has for Aukra and Hammerfest. The counter forces are strong and different interest organizations have announced their dissatisfaction. They are against oil and gas activity as they fear the consequences of potential leakages, that it could destroy the rich wildlife in the area, and that it might have impact on the fish stocks. Instead of drilling for oil and gas there should be other activities in the region that are more environmental friendly and still benefits the region economically (Folkeaksjonen, 2010). In this debate, the fairytale in Aukra and Hammerfest is used as an argument for having oil and gas activity. For the municipalities it could mean a chance to realize projects that have been put on hold, it would stimulate to increased business activity in the region and increase the living conditions for the residents in the region (www.lovepetro.no). Those against feel the risk is great but those pro reassures skeptics with arguments of increased safety for potential oil leakages. In addition, the focus is on the tremendous ripple effects this region can experience, and mayors in these municipalities are highly aware of this. If these areas are opened, there needs to be something left for the municipalities as well. It has been talks among the municipalities as to how a property tax income should be divided. An agreement to split the income between all parties is one opportunity that has been mentioned. However, as I illustrated in my thesis, something needs to be done in Lofoten and Vesterålen, otherwise the development in this region will come to an abrupt hold. In addition, the Norwegian petroleum industry is at a road section where reduced activity on the Norwegian Continental Shelf (NCS) can contribute in a reduction of

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work places. Today there are 140 000 people employed in relation to the petroleum activity, of these 90 000 person-years are directly related to activity at the NCS. Without access to the areas surrounding LoVe, companies would need to move their activity to other countries, resulting in 35 000 petro related workplaces being shut down (Lederne, 2010).

So for whom is this interesting and who can see upon this as beneficial? First of all this thesis will be interesting for all those engaged in the debate about oil and gas activity, and with special focus on the LoVe areas. As I have mentioned above there are a great deal of focus on this subject but little research. With my research, I hope to be able to contribute in this debate and show the beneficial ripple effects a land-based plant brings with it. In addition, I have during my period of writing this thesis, gotten an indication or request from one of my informants whom consider this a beneficial study and would like to use this for social benefit. It is also a contribution for local politicians as this thesis includes “lessons learned”, with other words what the municipalities can extract of experience from these fields and what they have learned as they went along. For Lofoten and Vesterålen this is also relevant as it shows how a good and strong cooperation can benefit an entire region.

1.2 Problem statement and personal motivation

The problem statement for this thesis is “*What are the actual economical ripple effects of oil and gas activity for local municipalities-a case study of Aukra and Hammerfest?*” Based on my conclusions and on in-depth interviews, I will round of the conclusion part of this thesis with an answer to the following sub-problem statement as well: “*What could be the expected economical ripple effects for Lofoten/Vesterålen in case of oil and gas extractions?*”

For a long time I have actively been seeking more information, and hence followed this debate closely in the media. During my stay in Moscow, my thinking process towards formulating a problem statement for the thesis started. As I came back and had some talks with my supervisor, we concluded that this was a theme, which needed more research. Since the whole debate about this area is a very complex one, I decided to pull out the part about the success stories in Aukra and Hammerfest, as there is much talk, but little written research

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about this topic. The ripple effects in Aukra and Hammerfest in addition to an estimate of the potential ripple effects for the municipalities in Lofoten and Vesterålen are how I decided to limit my thesis. I consider this as a broad enough research question for my thesis, in terms of the possibility to answer it, but also in relation to the complexity of the thesis. This is, as I see it, an important supplement to the existing debate, as this is a thesis that sheds light on how a poor municipality can change the trend and execute different measures that benefit a whole region.

1.3 Theoretical basis and structure of the thesis

My thesis deals with ripple effects from oil and gas activity and is a case study of Hammerfest and Aukra. For my theoretical approach, I have chosen to present some information about these fields, as they are unique, from a technological point of view. To best answer my research question, I have used two separate reports done by Møreforskning (2007) and NHO (2006), where potential ripple effects were estimated, before the opening of the fields. This made a good basis for my thesis and I measured the estimations with my actual findings. NHO (2006) and Møreforsknings' reports reveal positive estimations for Aukra and Hammerfest. Both municipalities will gain property tax money, as there will be a land based processing plant in these municipalities. Construction of these plants will in turn generate more workplaces, during the operation phase there will be more overall life in the city. Local suppliers will notice a significant difference in workload, and will be included for supply of industrial equipment. For the general resident, different projects will be initiated, this in order to improve the life quality in the municipality. My research is based upon these reports, but I have also clarified different ripple effects in order to better systematize my findings. As cooperation to eliminate competition is important and is accountable for the municipalities in Lofoten and Vesterålen, I also chose to include the theory about cooperation by Brandenburger and Nalebuff (1996).

For the structure of my thesis, it starts with an introduction, and then I will present my theoretical basis for the paper before moving on to the method where the process of information gathering, and which design my research is, has been described. Next chapter is

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then my empirical findings, which contain my findings regarding Aukra, Hammerfest and Lofoten and Vesterålen. This chapter is however presented as a story about the municipalities, where I have divided the information into different sub-points. By doing so I feel there is generated more excitement about the subject as it is more friendly for the reader. I also feel that one can relate more to the information provided in this chapter. It also works to some extent as an analysis, but in chapter 6, analysis, some of my findings are analyzed more thoroughly towards my theory. During my conclusion, the problem statement for this thesis will be answered, and I will give a prediction as to which potential ripple effects the municipalities in Lofoten and Vesterålen could expect, should there be any oil or gas activity in the area. I will finish of the thesis by presenting its contributions, limitations, and further research that can be done within this chosen theme. For each main chapter I will start with an introduction as to what it will contain, and end it with a short summary of what has been discussed in the chapter. Again, this contributes in keeping it more reading friendly and structured.

Further research in this area I have chosen to put my focus on will be to see what the future ripple effects in Aukra and Hammerfest are. Ormen Lange and Snøhvit are still fairly new projects in the municipalities and some ripple effects might not be as visible yet, but this thesis still provides a good impression of what Aukra and Hammerfest has been a part of. In the future, there might be more gas projects on the Norwegian Continental Shelf that these municipalities will be included in, and for Hammerfest, the Goliat project has high expectations related to more activity in the municipality. For Lofoten and Vesterålen it still remains to see if the government are willing to open the area for such activity, but if this is done it would be interesting to see what lessons the municipalities in this area have learned from Aukra and Hammerfest and the ripple effects they experience in comparison.

2. Context

I will use this chapter to present some background information that concerns my thesis. I will start with information about how the municipalities gain their income, this in order to show the structure and show how important property tax income is. Further, I will present some

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information about the property tax; what it is the rules and regulation for collecting it, and finally I will present a suggestion for change that was put forward last year. After this a short presentation of the gas fields Snøhvit and Ormen Lange will be given, as well as information about the inter municipal cooperation GassRor IKS. I round off this chapter by talking a little bit about the areas outside Lofoten and Vesterålen, what to expect of recourses, what it takes from the involving parties in order to collect property tax and how to divide the incomes from a property tax.

2.1 How the municipalities gain their income

In this chapter I will put some focus on how the municipalities gain their incomes, this to see just how much the property tax from the oil and gas facility actually means for the mentioned cities. In Norway, every municipality in the country gets support from the government to necessary things like schools, roads, activity houses, cultural events and so on. There are different criteria for how the funds are divided, but I will speak more about this later.

Municipalities get support from the government and among the income given are financial allocations and tax incomes. Together these to income sources consists of about 76% of the communities total incomes. The remaining 24% of communal income consists of fees (about 15%) and earmarked funds from the state (about 7%) and the remaining 2% are other sources of income (NFU, 2002). By financial allocations, it is meant the sum of money that the state sets aside for each community based on different criteria and principles. The government uses a cost key to determine how the funds are divided among the different municipalities. Funds granted by the state needs to be used within the frames that the they specified themselves. This was an arrangement that was introduced in 2000 as a trial within 20 different municipalities in Norway. It was supposed to replace the old system with earmarked funds. Every year these allocation funds are stated in the state budget and paid out 10 times a year. When it comes to financing the communities, financial framework is the very backbone. Instead of having earmarked money where the communities are left without any option on where and how to spend the money this system allows for a higher degree of individual freedom. With the earmarked funding, the state has already put a standard for where the

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money should be used, when they instead could come to greater benefit somewhere else in the community system. Therefore, the purpose with financial allocation is that it should be less micro management by the state (Government, 1999).

2.2 Property Tax

My problem statement deals with property tax and the ripple effects of this sum of money, mainly in a social economic way. I will therefore in this chapter present some information about how this property tax works, and at the same time I will touch upon a heated theme today, namely the one about moving the borders for the areas one can claim property tax.

First of all, a municipality can claim property tax from fixed real estate in the specified county. By fixed real estate, I mean constructions with belonging site like private houses, but they can also claim tax from facilities constructed by companies. The plant located in Hammerfest is a good example on the last one, but also in Aukra, there is a land based processing plant. With other words, Shell and Statoil need to pay tax for these onshore plants, as they are considered property. In addition to this, there can be claimed property tax from pipelines, windmills, or other types of facilities connected to the offshore industry. Therefore, the amenities connected to Ormen Lange and Snøhvit comes in under this definition. For Aukra and Hammerfest, the law on property tax is very convenient as it gives them the possibility to gather big tax incomes. Offshore companies like Shell and Statoil on the other hand are not at all happy for these law statements as it costs them a large amount of money each year. However, for the mentioned municipalities, these incomes are highly attractive and important as they had a low level of income previous to this. A problem with the property tax law is that it has no clear defined borders for how long out to sea the municipality can claim property tax. Therefore, it is determined from case to case, making it somewhat unstable in terms of what to expect. However, there has previously been assumed that the perimeter for where one can collect property tax goes at the border for the private property. Nevertheless, for plants out to sea that has connection to onshore facilities, the municipalities can claim tax. The only precondition is that the plant constitutes a big part of the onshore one. Shortly said,

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the border for how far out to sea one can collect property tax varies from municipality to municipality, as there is no standardized rule for this (<http://www.regjeringen.no> 2010).

I mentioned in the introduction of this chapter that I would talk a little about a new law that has been proposed, and is being welcomed by the oil and gas companies but that the oil and gas municipalities are protesting against. Last year the Treasury Department suggested that the border for how far offshore the municipalities could collect property tax should be moved to 4 (7.4 km) nautical miles from land, instead of 12 (22.22 km), as practiced among many communities today. An argument used pro this suggestion is that tax objects in a distance of 7.4 to about 22km from land has little or no connection to the communities. If this suggestion passes, it will have an impact for municipalities like Aukra, which now can afford different constructions and services, that otherwise would not be feasible. It is therefore no surprise that they are fighting a determined battle to keep their property tax money. At the same time the communities feel that a constriction of their opportunities to claim this tax is provoking as it inhibits their determination over own area. For offshore companies like Shell and Statoil a passing of this would be a big victory, as they already feel unfairly treated by the property tax. In some cases, oil companies are paying double tax to Norway, one to the government for drilling and one to the local community as property tax. An important point to think about is whether these companies will look towards new technology to take in use in order to go free of this property tax. The technology for this has been mentioned, but at the same time companies involved in this business does feel some responsibility in giving back to the community, but everything has its end (<http://www.rbnnett.no> 2009).

In 2008, Hammerfest Municipality had a council meeting in order to discuss this matter, and their conclusion was that they would keep their current premises for claiming property tax. A change like the one proposed would mean a loss of income of about 7 million NOK a year. Isolated this might not seem that high, but Hammerfest has great mortgages connected to Melkøya. In order to take advantage of the ripple effects from Snøhvit, the council has invested 250 million in total since 2003. Therefore, the loss they would experience is equal to the amount they are paying for a loan of about 100 million. Hammerfest has also invested

over 500 million in addition; this to make sure the city got the public infrastructure that is expected from all citizens. Since these loans already are active, Hammerfest feels that a sharpening of the property tax law is unfair towards them. Hence, if this proposal were to become a reality they feel that the government should be the one to compensate for the loss. If they would be rejected such a compensation, the result would be cut backs in the municipality. Besides this, the municipal council possesses the opinion that any pipelines that is located offshore, but at the same time is connected to an onshore plant have a natural connection to this processing plant, and hence it is natural to claim tax for this. Every city or municipality who is in the same position as Hammerfest does this practice. Aukra is also very negative towards the proposal of reducing the area for where municipalities can claim property tax. For Aukra the economical consequences would not, isolated, be tremendous, but it will have great effects for other municipalities within Møre and Romsdal county. As I will touch upon later in this thesis, Aukra are involved in cooperation with its neighbors, and shares some of its revenues from Ormen Lange through the foundation Gassror IKS. This new law proposal will probably strike this foundation the hardest and hence have impact for the whole county, as less revenue is being added. For the municipalities involved, one of the important aspects with the law proposal is the principle of which rights they would have to drive management within their own territory. During my thesis, I will further present an overview of just how important this tax money is for the communities. January 2010 this law was taken in effect but it does not strike Hammerfest and Aukra in any particular way, as most of their property tax income is from an onshore processing plant.

2.3 The Snøhvit field

I will in this chapter present some facts about the gas field Snøhvit as this is one of the fields my thesis is based upon.

In 1984, Statoil discovered the gas field Snøhvit, which is located just outside the shipping channel to the Northern Norwegian city Hammerfest. From the field was located until production started it took 18 years (the field was opened up for production in 2002). During this process, different environment organizations like, “Bellona”, and “Nature and Youth”, tried to stop the field from being put into production, but without too much luck. Snøhvit

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consists of several fields located in the area and includes Snøhvit, Albatross, Askeladden, etc. The field has an estimated 193 billion cubic meters of natural gas, 17.9 million cubic meters of condensate (equal to 113 million barrels) and 5.1 million tons of floating wet gas (NGL). What makes this field so special is that it is the first construction on the Norwegian continental circle without any installation on the surface. The whole construction is located at the sea bottom at depth of about 250- 340 meters. Transportation of gas is done through a 143-kilometer long pipe system that goes ashore at Melkøya (www.statoil.com).



Figure 1. “The Snøhvit field outside Hammerfest in Finmark” (www.regjeringen.no 2006).

When there is no installations at the surface it enables local anglers to still perform their daily work, as these installations are trawler friendly. Therefore, neither fishing equipment nor the gas installations will take damage if they were to encounter each other. At Melkøya where the LNG plant lays, the gas is treated before being exported, and it is Europe’s first production and export terminal for cooled natural gas (LNG). As a curious; Snøhvit (Snow White) got its name from one of the main characters in a German folk tale by the Grimm brothers, with the same name (www.energilink.tu.no).

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2.4 Ormen Lange Field

The Ormen Lange field is one of the largest and most demanding industry projects that have been executed on the Norwegian Continental Shelf. Its reservoir covers an area of about 40 kilometers and in addition, it is between eight and ten kilometers wide and is located about 3000 meters underneath the sea surface (www.energilink.tu.no). Hydro was in 1999 offered the license for the construction of the field, and Shell has the license during the operating phase. Ormen Lange, which was discovered in 1997, had production start September 2007 and was Norway's first deepwater field. It is estimated that the gas in this field will be enough to provide Great Britain with gas equivalent to 20% of their need for gas for 40 years. At plateau production, this field is producing around 20 billion standard cubic meters of gas, each year. It is equivalent to Norway's yearly energy need. Therefore, this field is not only important for Norway, but due to geographical proximity, also important for Great Britain. In international context, the field is the third largest in Europe. It also contributed in Norway being the second largest gas exporter in the world. As Snøhvit, Ormen Lange is a deepwater field where everything is located at the sea bottom (800- 1.100 meters depth) and shipped ashore to a processing plant at Nyhamna in Aukra municipality. From here the gas is exported the 1200 kilometers through the world's longest subsea pipeline (Langeled) to Easington, south in England. The field consists of 24 wells divided on 4 different subsea templates (as seen in figure 2). These wells are the world's largest gas wells (www.shell.no).

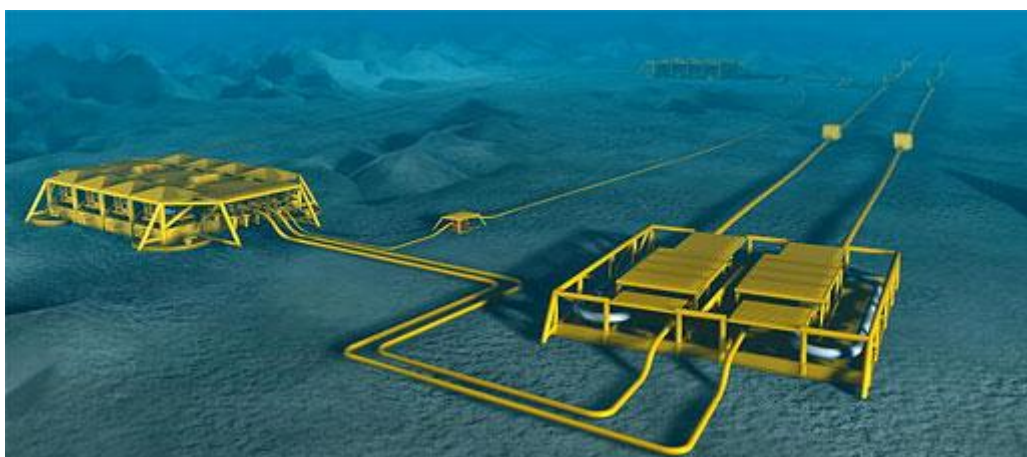


Figure 2: “Underwater installations at Ormen Lange” (www.hydro.com 2007)

For phase two of Ormen Lange there will be done more constructions that includes more installations at the sea bottom, in addition there will be drilled for new gas wells and there

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will be mounted a compression solution in order to prolong the fields existence. A compression is necessary, as the pressure in the wells will decrease as the gas is extracted. The underwater compression solution will according to Shell (2010) be a pilot study to see how this solution works with regards for the future, and will be done in the period 2010-2012. As a curious I can mention that Ormen Lange got its name from King Olav Tryggvasson Viking boat which he used during the battle at Svolder at year 1000 (www.energilink.tu.no).

2.5 Lofoten/Vesterålen

I will first present some facts about the field in order to point out the potential resources in this area. Afterwards I will present a report from a council meeting, which took place in 2009, where the attending parties discussed how to split the income from a potential oil and gas activity. In this chapter I will also present some different requirements that have to be the basis before the different municipalities can collect property tax from oil and gas installations.

2.5.1 Resources located in Lofoten and Vesterålen

According to a report published by OLF (2005), it is expected that around 20% of the undiscovered resources in the Norwegian Sea lie in the areas surrounding Lofoten and Vesterålen. The majority of resources located here is gas, and the share is 60%. When presenting these figures, it is Nordland VI and Nordland VII that are the ones whom are considered highly relevant, in terms of where one can locate oil and gas. Based on previous seismic studies, the resources are estimated to be about 250 million cubic meters of oil equivalents. To put this number into perspective; this is equal to about 40% more than the total resources connected to Snøhvit. With the 2005 oil price, this would correspond to about 540 billion NOK.

2.5.2 Distribution of potential property tax income

In 2009 Lofotrådet had a council meeting where one of the cases discussed was how the income from a potential oil and gas development in the area should be divided.

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The money from Snøhvit goes solely to Hammerfest and the other municipalities in Finnmark County do not get anything. Different municipalities have expressed a desire to find an agreement for dividing the property tax income. In comparison, Aukra are dividing their income with Eide, Molde, Midsund, Fræna and Møre and Romsdal County through their fund Gassror IKS. For Lofoten/Vesterålen (LoVe) this is the type of solution they want. One of the advantages, as they see it, by standing together is:

- a) The municipalities stand stronger against the oil and gas companies to demand transport of oil and gas ashore. An important point taken into consideration that oil and gas companies might work to find technology making it possible not to transport the oil and gas ashore to land based plants, in order to avoid property tax.
- b) The debate as to where the plants should be localized becomes easier and they will create solutions for cooperation. Fighting over where to localize such facilities gives oil/gas companies an advantage, but cooperation makes it more difficult for these companies do what they want.
- c) Another important point in the matter is the value creation for all involved municipalities. For the Hammerfest region there is a large distinguish between the different cities. Sharing the incomes guarantees an even growth in the region.

LoVe consists of 12 municipalities, but there are big differences between them, both in population and in terms of economy. Røst is the smallest with just 662 inhabitants and Vestvågøy is the largest with 10710 inhabitants. In addition, only one third of the municipalities have implemented property tax. Claiming property tax is a complex case with many different factors to take into consideration. Other municipalities like Aukra and Hammerfest that is collecting property tax does so for processing plants and for facilities that transports the oil/gas ashore. For LoVe, a decision for possibly claiming tax for other land-based business connected to this industry is also a factor to take into consideration (Lofotrådet, 2009). Property tax can be introduced for three levels:

1. Only for work and estate
2. Areas developed as a municipality
3. For the whole community

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A requirement for sharing of property tax is an introduction for work and estate. At the same time, all involved municipalities should have somewhat of an equal tax level. If this is agreed upon, all involved parties should settle on a time for when everyone should have reached this point. One of the more crucial areas is how the tax incomes should be divided, and there are several options as to how this should be done. Basically the council has considered four different criteria in a distribution key, a flat distribution with the same amount per involved part, distribution per inhabitant, distribution based on area and finally a model consisting of several of these combinations. The municipal council agreed on a solidarity dividend of property tax from a potential oil and gas installations in LoVe. In order to take part in the sharing agreement it is a requirement that the municipality has implemented property tax on work and estate. For those parties how have not done this by now, it would be required that this should be implemented by 2012, though under the condition that a land-based plant is constructed (Lofotrådet, 2009).

In this chapter, I have presented different context information before moving on to my theoretical data. The chapter started with information on how the municipalities gain their income before presenting information about property tax. Municipalities with a land-based plant receive property tax for these installations and it makes out a great amount of their total income. The newly passed law makes it tougher for municipalities that previously had income generated from pipelines and offshore installations. Further, some information about the gas fields Snøhvit and Ormen Lange have been presented. Snøhvit is located right outside the shipping channel of Hammerfest and Ormen Lange is located nearby Aukra. Ormen Lange is one of the biggest gas fields in Norway while Snøhvit provided us with the first LNG plant in Norway. I round off the context chapter with some information about the potential outside the highly debated coast of Lofoten and Vesterålen, and how they should distribute potential property tax incomes. As there are still many uncertain factors all municipalities agree upon a sharing the incomes, under the condition that everyone introduces property tax on work and estate.

3. Theory

My theory is included based on an inductive approach. Before collecting relevant theory, I had an opinion or a hypothesis as to which type of ripple effects Aukra and Hammerfest municipality had experienced. It was clear to me that these municipalities collected income from property tax and that this had great impact for them. In addition, I have gained information during this course that the oil and gas business employs many people and that such activity had to involve many workplaces. Therefore, even though I knew there were some ripple effects from Ormen Lange and Snøhvit, it was necessary to divide between different types of ripple effects and include some theory about coopetition. In this chapter, I will present the theoretical foundation in my thesis. I will put forward a theory about coopetition by Brandenburger and Nalebuff (1996) and as my research question deals with ripple effects, I have chosen to include some information about the different ripple effects. After that, I present different ripple effect estimations done by among others NHO (2006) and Møreforskning (2007), which is the very foundation in this theory chapter.

3.1 Coopetition

I will present some information about a concept called Coopetition, which is cooperation and competition. Brandenburger and Nalebuff (1996) are reckoned as the founders behind this word and way of thinking. Hammerfest and Aukra are very different, among others, because Aukra is cooperating with its neighboring municipalities, and Hammerfest does not have a cooperation like this, yet.

Coopetition is, as mentioned in the introduction to this chapter, a good combination between competition and cooperation and is a tool used in order to change a business' situation into its favor. In order to be successful in a long-term perspective, it is important that you, as a company, are able to compete profitably within your business area. However, this is not always enough as unforeseen situations can occur. To be able to cope with this you can be active in influencing and molding that area of business. For doing this, it is important to have a good strategic framework, and this is where coopetition comes into play. It is a dynamic tool that emphasizes cooperation between companies that could be seen upon as competitors.

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According to Brandenburger and Nalebuff (1996), the idea behind coopetition is that businesses work better together, and can achieve more by doing so than they could ever do by operating alone. When different companies operate in the same market, as competitors, they generate an advantage for the consumer, and the businesses must compete in having the best product and to the most reasonable price. Neither party is served with a situation like this, but when they start cooperating, they will control the market, and hence create a far larger and more valuable market than they do as competitors. Coopetition makes it possible for there to be multiple winners in the marketplace. It is not necessarily the case that there could only be one winner in a market, it is not a war.

Coopetition applies for my research question as I am looking at different ripple effects, and cooperation between different municipalities is considered a direct impact due to oil and gas development. In my thesis, I am exploring Hammerfest and Aukra, which are fairly small municipalities compared to the biggest in Norway. In order to be chosen as the location for the land-based processing plant, they had to “beat” other municipalities in the fight that also wanted to take part in this opportunity. Instead of putting focus only on its own municipality they could look at the possibility to cooperate with neighboring municipalities in order to stand stronger in the fight for the plant and at the same time eliminate some competition. As I will present later on in my thesis this is the foundation for the municipalities in Lofoten and Vesterålen, if there is to be any oil or gas activity in that area.

3.2 Ripple Effects

My problem statement deals with ripple effects for Hammerfest and Aukra from the property tax gained from the plants located in these municipalities. In this chapter, I will present what is meant by ripple effect and how I look upon this in my thesis.

Business Dictionary.com (2010) defines ripple effects as an *“Indirect effect that spreads out from the direct or main effect to reach areas or population far removed from its intended or original purpose or target”*. So a ripple effect is a definition of how one action affects other

aspects. The effect spreads further to other areas that one might not have foreseen. However, I will also define what is meant with direct, indirect, induced, and catalytic impacts.

3.2.1 Economic impacts; initial and ongoing

According to Henriksen and Sørnes (2010) economic impacts could be divided into two groups, initial and ongoing impacts. For oil and gas projects, this is usually linked towards the construction phase and the operating phase that comes afterwards. An initial impact, for instance construction of a land based processing plant, will only occur once and will disappear when the project is finished. Henriksen and Sørnes (2010) also refer to indirect impact as an ongoing impact. It will start as soon as the construction phase is finished. Ongoing impacts will repeat themselves and often continue for years. When a construction, like at Melkøya and Nyhamna, is finished it requires upgrades, modification and regular maintenance. These activities will continue for the whole operating phase. Initial and ongoing impacts are often recognized by four broad categories; direct, indirect, induced and catalytic impacts (Henriksen and Sørnes 2010).

3.2.2 Direct Impacts

By direct effect is meant changes that an industry experiences, and that eventually leads to a final demand change (McDonald et al., 2007). With other words, direct effect is something that is affected directly by an action taken. So in the case of Snøhvit and Ormen Lange this is consequences related directly to the operations on these fields. Often this is the easiest to identify, as they are normally located close to the source that triggers the effects. Direct effects could for instance be related to salaries paid to the workers or taxes (for instance property tax). These effects could be measured in numbers, and I will present a more thorough overview of this later in the thesis. In other words, Ormen Lange and Snøhvit are the projects that trigger the ripple effect.

3.2.3 Indirect Impacts

Such effects have connection to the direct ones and come as a consequence of demands created by the direct effects (McDonald et al., 2007). When talking about the fields in Aukra and Hammerfest, this has connection to for instance maintenance and general repairs done on the facilities. Indirect effects are the increased activity for additional businesses that supports the direct industries. Activity like geological services, trucking, snowplowing, local supplies (e.g. food or band ages) would fall in this category. Such needs are generated as consequence of the field's construction. Therefore, they are linked up to the direct effect but are not a direct effect of the building of the platforms (McDonald et al., 2007).

3.2.4 Induced Impacts

“Induced effects are the increases in household income expenditures generated by the direct and indirect effects (e.g., food and beverage stores, motor vehicle dealers, etc.)” (McDonald et al., 2007:25). With other words, it could be linked up to a general increase in purchasing capacity for the general citizen in Hammerfest and Aukra. The increase is due to higher employment rate and hence people will use more money, but at the same time there will be a need for local labor for maintenance on the facilities and also for the construction there would be a need for materials and local knowledge. Shortly said, you could see an increase in demand of goods and services that would affect not only Hammerfest but also Norway in general. Employers at Snøhvit and Ormen Lange would perhaps spend some of their earnings in local grocery stores or retailer stores, and some spend their income in other parts of Norway, hence benefitting the country as a whole. Another aspect of induced impacts would be the service industry, which could experience a boost, as they now had to house and transport more people etc. Another important induced effect is that such activity might contribute in raising the education level, as residents would like to get a job at these plants. Within the municipalities, there becomes an increased positivity.

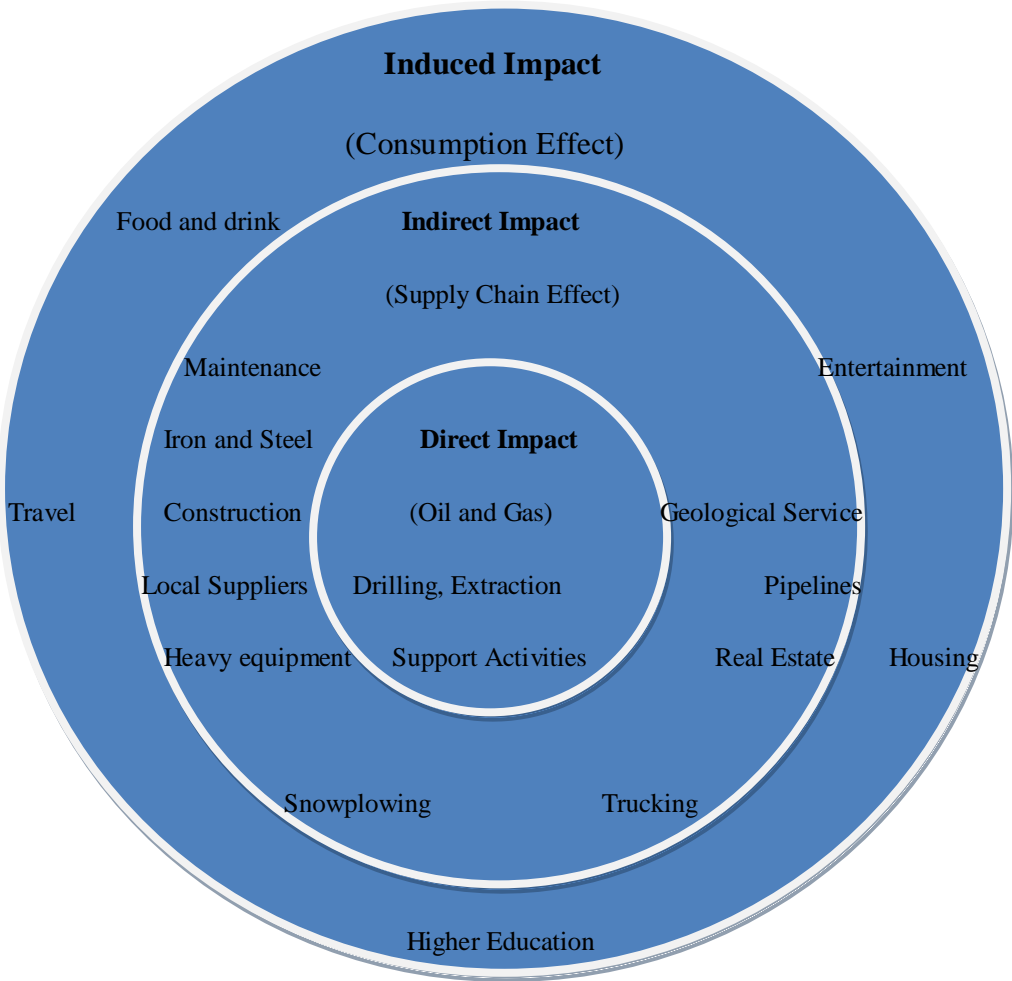


Figure 3: “The Oil and Gas industry has an impact on the broader economy through indirect and induced spending” (Pennsylvania Economy League of Southwestern Pennsylvania, LLC, 2008:15)

Pennsylvania Economy League of Southwestern Pennsylvania, LLC (2008) summarizes different ripple effects in the model shown above, which I have adjusted for my chosen municipalities. This model is used as a way of indentifying the different economic ripple effects for an oil and gas project. By using this it gives the researcher a possibility to see which industry collect the most indirect and direct effects. In my thesis, this model is used in order to illustrate the different ripple effects from oil and gas activity. It summarizes the different ripple effects in a good way and gives examples of different ripple effects from such

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activity. When structuring my findings it will be beneficial for me to look at this model as many of these pointers will be presented later on in this thesis.

3.2.5 Catalytic Impacts

What Pennsylvania Economy League (2008) does not mention anything about in their model, is the catalytic impacts that arise as well, in such a situation as with Snøhvit and Ormen Lange. According to Cooper and Smith (2005) a catalytic impact or economic spillover effect as it is often referred to, deals with how the different effects influences other business communities, that might experience a boost. Explained in other words, what is not influenced by direct, indirect, or induced impact is a catalytic impact.

3.2.6 Multiplier model

In this paragraph, I will present some information about multiplier model, which is often used to define a ripple effect in economic terms. I chose to include this in my theory chapter in order to give an overview of this method, but my focus is also on its limitation, and a reasoning for why this model is not used, will also be given.

When discussing different ripple effects it is common that researches involve multiplier effects as a tool to measure different impacts. By multiplier effects, it is meant different quantitative data that is collected and treated by statistically models. Henriksen and Sørnes (2010) have a good example of what a multiplier model is: *“If a company sells a service for 100 NOK, they in turn buy services from their sub-suppliers for 80 NOK, which in turn buy services from local businesses (food and hotel) for 60 NOK. In this very simple example the initial 100 NOK paid have resulted in income for local businesses of 240 NOK. If this where all that took place, the multiplier would be 2.4 meaning that 1 NOK spent will create 2.4 NOK”* (Henriksen and Sørnes 2010:13). In this model, the researcher inserts the different impacts (as described above) and winds up with a number that represents the multiplier effect of the original activity, and that is why it is called a multiplier model. As Henriksen and Sørnes (2010), I doubt that such an approach really catches the complexity and

unpredictability that ripple effects involve. Based on this, my thesis will not include a multiplier model. First of all the world is too complex than just a multiplier effect, it does not capture the entire story behind a ripple effect. Why it has happened and on which basis as well as it does not necessarily show how it influences peoples' daily life. As I will show during my thesis, different municipalities experience different challenges during a project. A multiplier model fails to capture this, and their way of solving these challenges will influence the ripple effects shown in the municipality.

3.3 Early estimations about Snøhvit

This sub-chapter contains information about ripple effect estimations done previous to the construction at Melkøya. As my main problem-statement involves the actual impacts from Snøhvit, this report is a good illustration of what has actually happened in contrast to what the expected ripple effects would be.

In 2006, NHO on their yearly conference presented a report about the estimated ripple effects Snøhvit would have on Hammerfest and Finmark as a County. Because the first gas came ashore during 2008 and the first LNG ship left the port that same year, there was no way of presenting actual data. However, I choose to include this here in my thesis, as it will give an interesting picture of how the development has been in relation to the assumptions. The estimations was done with regards to how this project would contribute in stimulating the value creation, the effect it had towards higher employment rate in other business areas like construction, retail trade and different service oriented businesses. According to the report from NHO, the estimated time of operations on this facility is 28 years and during this period it was estimated an production of 159 billion Cm³ gas, in addition to other types of petroleum products. A production like this would generate high income, and the estimated yearly income was 8.4 billion (2005 NOK) with a reasonable gas price. In comparison, the initial investment in the development phase was 58.3 billion with yearly operating costs at an estimated 750 million NOK. It is interesting to see that from the yearly operating costs, local/regional delivery was estimated to 240 million NOK. This is one of the ripple effects from the field where local businesses harvest from the construction of such facilities. In terms of added value creation, this was estimated to 7.7 billion where 6.5 billion was transferred to the Petroleum fond. According to the model used by NHO (2006), one expected an increase of

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employment of about 680 person-years. From this number we can extract and see that the employment effect in Finmark would be around 400 person-years and about 230 employees at the Melkøya plant. As an effect of increased municipal and state tax revenues, it was expected to be an increase of employment in the public sector (NHO, 2006). During the construction, the field would need about 1200 people, on the facility itself (www.norskolje.museum.no). If one look at the social economic aspects of this report for a regular production year, it stated that required tax and wage-tax constituted 240 million, inclusive the property tax. Just to get the big picture of how important the oil and gas industry is in Norway, the tax contribution from Snøhvit generates additional incomes for the public sector of about 500 million. So it was estimated that Hammerfest would get 100 million annually in property tax, and for a municipality that in 2003 had 436 million in revenues (so the property tax equaled a 20% increase in revenues) these additional money is very important(NHO, 2006).

Ripple effects are also measured in population, and there were certain expectations for this factor after the construction at Melkøya. According to statistics from SSB (2009), Hammerfest experienced a growth in population after Statoil started working with Snøhvit and Melkøya. Statistics show that Hammerfest experienced a decline in population the last couple of years, where the inhabitants were moving away from the city. However, there were one exception in 1999 were they experienced growth in population. Besides that, Hammerfest has had a more or less stable growth since 2002, when Statoil started building Melkøya and initiating the necessary constructions on the sea bottom, in order to extract and transport the gas. It is clear that the decision to focus on this major gas field has had, and will have great impact on the city. Now there is more of a reason to stay and move to the city, since Statoil have created a lucrative workplace. During our Arctic Study tour last year, I met a representative from Statoil, whom were working in Hammerfest with the Snøhvit project. She told us that she herself was from Hammerfest, and was pleased to see that the city now had interesting work opportunities. She also mentioned that several employees in Statoil took advantage of the possibility to move back to their hometown of Hammerfest in order to work on the project. At the same time as people moved back to the city, the need for more business grew and this affected other branches of business in the city. Local taxi companies and hotels

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also experienced a growth in revenue before and after (www.grunder.no, 2004). In the period from 2002 up to 2005, Hammerfest experienced an increase in Norwegian citizen moving north to the city of 77. To put things into perspective, there was a decline of 575 from the population in the period of 1995 to 2001. Even though there could be different reasons for this, there is no doubt that the Snøhvit Field has generated more life in the city, and would continue to do so. In 2003, companies experienced a growth in operating income anywhere from 7% to 179%, depending on the number of employees. Companies with 5- 10 employees experienced the highest growth. This growth is according to, www.grunder.no (2004), most likely connected to the building of Melkøya, and the constructions on the sea bottom.

3.4 Early estimations for Ormen Lange

As previous sub-chapter, this will include early estimations done by Møreforskning (2007). In my analysis, these estimations will be compared to the actual effects.

Møreforskning (2007) constructed a report of the estimated effects from the gas production at Ormen Lange. As with the NHO report about Snøhvit, this is also just estimations as the report was conducted previous to the production at Ormen Lange. Yearly estimated production on the field was about 20 billion cubic meters of gas, which equaled the same as Norway's yearly total energy demand. In terms of cost for the construction of the field and the belonging facilities, the estimated costs were around 38 billion NOK. From this number, the Norwegian part consists of 26.5 billion (equal to 70.5%), the share for Mid-Norway equals to 4.3 billion (11.5%) and for the region of Molde the share is 1.2 billion NOK (3.2%). For the employment increase, this adds up to about 500 person-years for Mid-Norway. The Ormen Lange contract had a total value of about 53.3 billion NOK. During the operating time it was estimated a need for 200 workplaces in Mid-Norway. In addition to this, Aukra would get 80 million a year in property tax, which equals 110 person-years. If one takes into consideration all the possible ripple effects, this project would contribute to around 500 person-years during its operating time.

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So in general it was expected that the construction of pipeline systems, and the plant at Nyhamna would increase the local production with for instance more deliveries from local sub-contractors, which in turn would have impact on local employment rate. When people get jobs, they will in return have more money to spend, with other words an increased purchasing power. For the municipality Aukra, Ormen Lange meant property tax income. As mentioned, the estimated property tax would be around 80 million a year, meaning Aukra could contribute in increased turnover in public and private sector. This income would generate the need for more workplaces in the municipality (Møreforskning, 2007).

In the case of population, it is interesting to notice that Aukra has experienced a growth every year from 2000 and up to 2007. A total of 82 persons have moved to the town, but the majority moved after the construction start of the sea and land facilities in 2004, counting 66 persons. The other neighboring municipalities have also experienced a growth since the construction start. However, the total population growth in this region cannot be said to been big. In terms of the property tax, it was expected that it would contribute in a stimulation of local workforce. Like mentioned previous, it was expected that Aukra would get 80 million yearly in property tax, that again would constitute 110 person-years. One could probably also see that the municipality will use a part of this income to finance construction and maintenance of roads, both within Aukra, but also in the region as a whole. Much of the financing would most likely come through the inter municipally company GassRor IKS (Møreforskning, 2007). As this fund is cooperation between different municipalities one would most likely see different constructions around the region, like Eide, Fræna, and Molde, that again will benefit everybody.

When talking about ripple effects it is easy to keep focus on economical impacts, but the impacts from an oil and gas installations stretches farther and also touches the human aspects in that municipality. It is not always about money and income because it influences people in areas like, health, life quality, family life, employment of women, commitment etc (Henriksen and Sørnes 2010). In my empirical findings, I will present an overview of how Snøhvit and Ormen Lange have influenced their municipalities in this area.

In this chapter, I have presented relevant theory for my thesis. My focus has been on coopetition, which is when competitors cooperate to achieve a common goal and eliminate competition. Cooperation has been important for many municipalities in order to stand together against the oil and gas business. Businesses competing in a market serve the consumer, but by cooperating they can control the market and it would be beneficial for them. Ripple effects have been thoroughly put forward in this chapter. When discussing ripple effects, it is common to distinguish between indirect, direct, induced, and catalytic impacts. These impacts are summarized in figure 3. Multiplier effect has been presented in this chapter as well, which is a model where the researcher collects different quantitative data and treats it in statistical models. Finally, I have presented two reports estimating the different ripple effects that Aukra and Hammerfest would experience. Of common ripple effects, I can mention property tax income, increased population, and different projects being realized. Aukra has however has been able to cooperate with its neighboring municipalities and has fund, GassRor IKS, that benefits the entire region.

4. Method

In this chapter, I will present the choice of research design and method, in addition to this give a detailed description of the data collection, and how the collected data will be processed. By now, I have presented a theoretical chapter and the theories presented here will be linked up to a methodological approach. The chapter will start with different definitions of the terms used in this chapter.

4.1 Definitions

I start the method chapter with briefly defining some main method concepts that I will use in my thesis, method, and qualitative approach.

4.1.1 Research Methodology

According to Johannessen et al., (2005) the word method has its origins from the Greek word *methods*. In this word lays the meaning of following a certain road towards a specified goal. Social science methodology embraces the way we approach in order to gain information about reality, and how to analyze the collected data so we understand what it tells us. This is important as it gives a new insight in social relations and processes. What it all comes down to is collection, analyses, and interpretation of data, and is an important part in empiric research.

As a researcher, there are also certain aspects you need to keep in mind when executing data collection. In addition to selecting your research design, method, choosing informants you always has to be aware of every day generalization. Everybody has a general theory or opinion as to how things are and work in everyday life. Johannessen et al., (2005), who are referring to Neuman (2003), mentions three different problems associated with every day generalization, overgeneralization, selective observation and jumped conclusions. In the position where I am as a researcher, having to conduct a thorough research of ripple effects, it is important to stay neutral during the whole process. Therefore, I will base my conclusions solely on what my informants are saying and hence try to stay neutral, because one cannot establish scientific knowledge on generalizing.

4.1.2 Qualitative Methodology

According to Business Dictionary (businessdictionary.com 2010), the term qualitative refers to the quality of a thing or phenomenon. Such aspects are abstract and do not necessarily require to be measured or quantified. So a qualitative approach is done when the researcher has little information about the subject that is to be researched. It makes it possible to achieve comprehensive characterizations by using few sources, this in contrast to quantitative that uses numerous sources. If the purpose as a researcher is to obtain new perspectives on a certain case or understand why something is happening, or why it is done in a specific way, then using qualitative data performance is the most common approach (Johannessen et al.,

2005). According to Smith et al., (2008) one could combine both quantitative and qualitative methods, but in my thesis I will stick to the qualitative approach.

4.2 Research Methods

Above I have given a short explanation of different methodological terminology that will be used during my method chapter in this thesis. In the following chapter, an explanation for my choices done in this thesis will be given. I will argue for my chosen methodology and research design. This chapter will also include how I have gone about collecting data, before it is round off with how the analysis and the issues regarding validity and reliability will be carried out. Finally, I would like to point out that all my choices in this thesis is done with regards to my desired goal with this research, but also in correlation with the preferred theory presented in chapter 3.

4.2.1 Qualitative Method

In previous chapter, I discussed my choice of method and ended up with a qualitative approach for my thesis. It is mainly the research question and the purpose behind the research that determines which method to use. Nevertheless, as a researcher I also need to distinguish between my desires and what is possible for me to carry through. Since this is a student project with a limited amount of time, it would be necessary to consider this when choosing my method. However, if the purpose is to find the underlying cause of something and figure out how things work, or why a person does a specific thing, than qualitative approach is the best. If you would like to gain knowledge of how often a defined phenomena occurs, then quantitative approach would be more appropriate (Johannessen et al., 2005). With my thesis, I am aiming to plot the actual economic ripple effects for Hammerfest in connection to Snøhvit, and for Aukra in relation to the Ormen Lange field. Based on this I will give a prediction of what the municipalities in Lofoten/Vesterålen could expect in terms of economic ripple effects, if there will be oil and gas extraction in this area. For such a problem statement, qualitative is the best as I am trying to understand the consequences Snøhvit and Ormen Lange has had for the concerning municipalities.

Since these fields are not that old, there has not been conducted much thorough research in the field of actual economical ripple effects. My research will therefore contribute in shedding some light on this topic. At the same time, this report could be used in other contexts like the LoVe areas, to show people the story of two municipalities who are living with a gas field in their backyard. According to Johannessen et al., (2005) exploratory design is used to indentify interesting research questions that could be used in the future. If you take into consideration the ongoing debate about oil and gas extraction in the Northern Part of Norway this could be used as a foundation in this debate. It could also be followed up the next years in order to even more thorough spot the economic ripple effects for Aukra and Hammerfest.

My underlying desire is correlated towards my choice of paradigm. By paradigm I mean the philosophical position the researcher takes prior to the study. The two main positions one are distinguishing between are, positivism, and social constructionism. Positivism means that the research should be done through objective methods, meaning the researcher should not interfere. Social constructionism is the counter answer towards positivism, and they mean the researcher should interfere as we share our experiences through communications (Smith et al., 2008). In order to address my problem I will use social constructionism as a research paradigm. As a social researcher, I am interested in gathering information and appreciating the meanings that my informants place behind their experiences, so it would not be “interesting” for me to measure how often a certain pattern occurs. Even though I feel that this paradigm is the most appropriate for me, it is important to remember, as Smith et al., (2008) points out; a researcher might not stand clear in one paradigm. A researcher might just find him/herself standing with a leg in positivism despite being convinced of being a social constructionist. Moreover, it could very well be like this for some aspects of my problem statement as well.

4.2.2 Case Design

I have chosen an explorative case design as my research design for this thesis with a narrative approach. When conducting a research with this design it is because you want to study one or few cases thoroughly over time through detailed and comprehensive data collection. Case design is often characterized by a qualitative approach like observation or open ended interviews, but it is also possible for a researcher to use quantitative data and techniques like statistics and structured surveys. For me this fits very good as I have a qualitative approach to my thesis with in-depth interviews as my main source of data collection, but quantitative statistics like overview of the population in Hammerfest and Aukra will also be used. There are in general two trademarks with a case: a delimited focus on that one particular case and a thorough description of it. Therefore, the case is researched in a detailed matter in order to gain the most amounts of data about a defined phenomenon (the case). According to Yin (1994 in Johannessen et al., 2005), case research can be used for studies that are explorative, descriptive, explanatory, understanding and evaluative. This thesis has an explorative case design with at narrative approach. I wanted to explore what were the actual ripple effects in Hammerfest and Aukra in relation to Snøhvit and Ormen Lange. To be able to answer my research question I needed to perform in-depth interviews to really explore what had been the ripple effects. It provided me with much information about these two municipalities, but LoVe was also on my agenda and hence this also required an explorative approach. There is not much research on this topic, as it is a fairly new phenomenon, and that is what triggered me to go for this theme and the reason why I choose exploratory. By narrative, it is meant how I present my findings. My findings from the interviews are presented as a story, where the story of Hammerfest with and without Snøhvit and the problems they have had is presented as is the case with Aukra as well. By doing so, it is easier for the reader to see what has happened but it is also a good way to present my empirical findings. I am not looking for a generalization, but to explain which ripple effects these municipalities have encountered, and present which ripple effects LoVe can expect to encounter if these areas are opened up for oil and gas exploration.

4.2.3 Data Collection

In order to be able to link my empirical findings up towards my theoretical framework it is important that I find the right sources of informants. Since my choice of design for this thesis is case design, there are certain guidelines as to how my data should be collected. As mentioned previously the purpose with this type of design is to collect as much data as possible. One of the ways to gain this information is by the use of in-depth interviews (Johannessen et al., 2005). By this time I had already found my theory and sat down with it to create some good questions for an interview guide and decide upon who to interview. When deciding who to interview it was important to me that the informants had been involved in the decision making or somehow involved in the process of getting Ormen Lange and Snøhvit to their respective municipalities. My choice for Hammerfest was former Mayor Kristine Jørstad Bock, who was a part of the municipal council from 1999 and Mayor in the town from 2006 up to 2009. For Aukra, I chose present Mayor Bernhard Riksfjord, who was deputy Mayor from 2003 up to 2007, before being elected Mayor in 2007.

4.2.3.1 Interview guide

Creating an interview guide was something that I used my time on doing, as it was necessary that the questions were carefully thought through in order to obtain the most amount of information. I decided to use a semi-structured interview guide which would allow the informant to talk more about each question and allowing me as a researcher to instead come with follow-up questions. My interview guide is included in appendix (1, 2, and 3), but has the following structure:

Introduction- Here I presented myself and my thesis, and what my focus was on. At this stage, the informant was presented with his/her option to abort the interview at any time.

Background Information- The informant was asked to talk about how their municipality got a plant and why they were chosen. In addition, I added some questions about cooperation as background information. For LoVe I had to make some different questions and my focus here

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were chances of the area opening, different distribution keys and present situation in the municipalities (depopulation, bankruptcy and so on).

Actual Ripple Effects- At this stage in the interview I wanted to know more about how they had sensed the presence of an oil and gas company in their municipality. This is where the actual ripple effects were presented and the most important information for my thesis. Since the areas outside LoVe are not yet opened, I asked about expected ripple effects, and if they looked towards Aukra and Hammerfest when discussing whether or not these areas should be opened.

Future- In order to round off the interview my questions involved the future for the municipalities and the ripple effects they expected to see in the future, but also future oil and gas projects were involved at this stage. For the future it was interesting for me to see what they expected would happen if there would be no oil and gas activity outside the coast of Lofoten and Vesterålen.

4.2.3.2 Interviewing

As I stated earlier in this chapter, my choice of data collection was qualitative through in-depth interviews with several informants. My questions were based on an interview guide I had made it is what one call a semi-structured guide where the order of the question could vary. During the interview, this guide was followed but also the informants got to speak freely in order to get a good flow on the interview. As I chose a narrative approach, it was important that my informants were allowed to speak freely without being interrupted. By doing so, it was easier to catch the narratives presented to me. Face to face interviews were my preferred choice of method, as it was easier to interpret my informants' facial expression, but also it is easier to create an atmosphere. When conducting such interviews, the person being interviewed, might feel more relaxed with the situation and it is easier to get a good conversation flowing. However, this is not always possible, and as a researcher it is necessary to think of other ways to conduct the interview. In total, I had four interviews, but only one of

them was conducted face to face. Since I applied for support from the school, it was possible for me to travel to Hammerfest and conduct the interview with Kristine Jørstad Bock face to face. The three other interviews were conducted by phone, due to different circumstances like financial matters or ashes from the Icelandic volcano. Common to them all was that I used a recorder to tape the interview, with permission from the informants. This approach secured that no information was lost in my note taking, and at the same time, it made it easier to pay attention to the interview. In addition to recording the interview, I also took some notes to make it easier when transcribing it, and in case the recorder would malfunction.

4.2.4 Analysis

According to Yin (1994 in Johannessen et al., 2005) there are two ways of analyzing a case study: analysis based on theoretical assumptions that a researcher had in the beginning of the study (descriptive) or in an exploratory matter. As my thesis is not based upon a specific theory that I want to test but rather a story, my findings will be analyzed based on an exploratory case study with a narrative approach. Meaning my analysis will be done on the basis of data. Further, it will contain an interpretation of my findings that will be related towards my chosen theory.

When I finished my interviews they were transcribed into a written form, and this can be done by either including everything that is said or single out what is seen as important. As one of the aims with a qualitative case design is to retrieve as much information as possible, I chose to include everything my informants said during the interview. Choosing this approach is very time demanding and takes a lot of resources but it provided me with the most amount of information to work with. According to Johannessen et al., (2005), transcribing a whole interview is done at a 4:1 ratio in average, meaning a one-hour interview takes in average about 4 hours to transcribe. Before starting on the analysis, I have chosen to take the data from my interviews and present them as a story, explaining what has happened in the municipalities and why. My story is told on the basis of different criteria and for Hammerfest and Aukra they were:

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1. The conflict and its solution (relating to cooperation between municipalities)
2. Property Tax
3. The municipality before, present and future

For my interviews concerning LoVe I had to create some other criteria to structure my findings.

1. Introduction
2. Cooperation
3. Property Tax
4. Lofoten and Vesterålen present and future (with and without oil and gas extraction)

These criteria were chosen in order to better give a whole picture of what these municipalities have been through and what they might expect will happen. It includes the process of getting a land based processing plant, how to best benefit from it without it striking residents, how or if the revenues were to be divided with neighboring municipalities. As somewhat of a summary, I include the situation of the municipalities previous and present, this in order to better describe the impact these plants have had. Information of what the future holds is important in order to show the reader that these are long-term impacts, and the municipalities will experience new ripple effects as time goes by. For LoVe, I tried to illustrate the current status in the region and the potential impacts oil and gas activity can have in these areas. Since there has not been made a decision in the opening matter, both scenarios were included in the future aspects. In addition, these pointers fit in with my theory and my context information. As I have presented cooperation as a way of creating an advantage, it was important for me to include what my researched municipalities have done in that area. Property tax is a heated debate and one of the few ways for the municipality to collect income from such plants, so I wanted to show how these municipalities have handled this and what it has meant for them. After deciding for these criteria, I had to systematically read through the interviews and accurately divide the interview on the basis of my criteria. During this process, I discovered that more information was needed from my first interview, and this was collected through an e-mail with some few follow-up questions. The stories are presented with a

narrative approach in chapter 5, Empirical Data. By narrative approach, it is meant an analysis of how one describes or account for events. Among others, it is useful in the analysis of interview data and deals with understanding of stories. According to Smith et al., (2008:183) narratives *“usually tend to focus on the sequential patterning of events and the role of various actors within them”*. My findings comes from interviewing different people that either have been involved in the land based plant process, or have knowledge about the LoVe areas and the municipalities in that region. In my narratives, the focus has been to present a description of the events that have occurred in the municipalities. Therefore, it is a story of origin describing how things began, to how it is today, and the cause and effect relationship in that process. What type of challenges the municipalities have encountered, how they have solved these, and the reason behind their choices are important factors that contributes in molding these three stories. I kept focus on creating a story with a certain level of unpredictability where my role was the “storyteller voice”, and made sure to keep the thread. Narrative stories usually tend to have structure called BME, (beginning, middle, and end). This was taken into consideration when structuring my stories, and I started with a presentation of the arise of different problems, before moving on to the middle section with property tax, and end with the present situation. My story also contains ante-narrative, which has its origin in the word “ante” or “bet” and in qualitative method is seen as prediction of the future (Boje, 2008). I end my stories with what the informants think the future holds in store for the municipality. The reason behind my choice is that a narrative approach has strong pedagogical effects. It is much easier to catch the reader’s attention when findings are presented in the shape of a story, instead of just an information listing. Therefore, it describes my findings for these cases in a good way. In addition, it gives me great pleasure to express myself in a narrative way as I feel it is easier to put across my findings in a sensible manner. As one of the strong aspects of narratives is how you can captivate the reader, its weak point is that it often leaves some missing premises, and it is then my responsibility as a researcher to fill this by interpreting my informants’ answers (Bourmistrov and Sørnes, 2007). As my stories progress, it reveals more and more information, almost as a layer on an onion. What my stories reveal is the importance of individual incidents, and what they meant for the municipalities.

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When the stories about Aukra, Hammerfest, and LoVe were finished, I decided to focus on some pointers from the story and use it in my analysis. Before choosing my pointers it was necessary to read over my stories several times in order to find what data was relevant in order to answer my problem statement. As my problem statement and my thesis deals with ripple effects in Aukra and Hammerfest it was this type of data I searched for in my stories. Therefore, data that did not have relevance to this, but was important in order to create a narrative approach, was singled out and excluded from the analysis. For my analysis, I connected my chosen pointers up with my literature base and looked at what one expected of ripple effects and what the actual ripple effects had been so far. This was done by dividing it up into direct, indirect, induced, and catalytic impacts.

4.2.5 Validity and Reliability

Validity and reliability are terms often used in a quantitative setting where the researcher can perform different tests to check the quality of the research's result. Reliability relates to the data of my research, how it is collected, and how it is processed. For instance a researcher could repeat the same test on the same group, but at two different times, for instance with a couple of weeks in between (Johannessen et al., 2005). In a qualitative study, this is far more difficult as it is not so easy to create the same atmosphere or come up with the same questions, this as it is the conversation itself that controls the interview. With other words, it would be highly unlikely for another researcher to duplicate my research. However, there are certain measures I can do in order to strengthen my reliability. During the chapter I have given a thorough presentation of my choice of informants, how interview was conducted, my interview guides (which is also found in appendixes (1, 2, and 3) and how my interviews were structures. Basically it is a description of my entire research process that allows other researchers to trace my decisions throughout the process.

Validity can be divided into credibility (definition-based validity) and transferability (external validity). In terms of credibility in a quantitative study, this relates to the researcher measuring what he thinks he is measuring. Based on this statement, one could say that a qualitative study is not valid, as it cannot be measured. According to Pervin (1984 in

Johannessen et al., 2005), validity could, in a qualitative study, be measured to which a method examines what it got intention to examine. Put another way, if my findings really reflect what my intention with the research was, and if it represents reality. There are different ways I can increase my chances of presenting trustworthy results. Persistent observation is briefly that the researcher spends enough time with the subject so to easier single out relevant information. Before the interview process started, I collected data in the shape of news articles, technical reports etc, in order to better understand what Ormen Lange and Snøhvit was about. Also with regards to the areas surrounding LoVe, I trawled through different news articles and research papers, in order to gain as much knowledge as possible about the case. By doing this, it definitely helped me create good questions and during my analysis single out relevant information, hence contributing in strengthening the validity of my findings from the research. Method triangulation involves the researcher talking to several informants about a topic in order to create some diversity. In the case of LoVe I talked with most of my informants about this topic, what to expect, different effects from law regulations etc. This helped me strengthen the validity in my paper, as I got a broad picture about these areas and what the future might have in store for it. I could perhaps have talked to more informants about Aukra (Ormen Lange) and Hammerfest (Snøhvit) to get even more information. This was not done because of the time limit on this thesis, but also because I felt that Kristine and Bernhard were good representatives for their municipalities as they had been involved in the process. To make up for not talking to more informants I added some secondary data to supplement the information they gave me, for instance in form of different statistics.

By transferability, it is meant if a result from a project can be transferred to a similar phenomenon. In a qualitative study, like mine, it is about generality and transferring knowledge that can be used in other studies. My problem statement deals with ripple effects in Aukra and Hammerfest from their gas plants, but I will also use this knowledge to estimate potential ripple effects outside LoVe if there is to be any oil and gas activity there. I think that these two municipalities are good examples for the impact such activity can have and my findings can contribute in shedding light for the ongoing debate about LoVe. Part of this thesis is with other words based upon transferability and this contributes in strengthening my findings. However, it is worth mentioning that not all of my findings could be directly transferred to other projects, but rather they will work as an indicator. Ripple effects of oil and gas activity in a municipality depends on many factors such as amount found, what is found

(oil or gas), tax rate in the municipality, if a land based plant is constructed etc. Nevertheless, my findings will be transferable as an indicator for future research projects.

4.3 Ethical considerations

During my research for this thesis, I will need to collect information through communication and interaction, mostly with different politicians. Informants should give a clear consent before I refer to them in my thesis, and they should at any time during the interview, be able to cancel the interview without any consequences. When I contacted my informants, they were informed of the possibility that my thesis could be published internally at campus but also in other ways that would allow the public to read my thesis and my findings. Hence, I asked them for permission to use their name in the thesis, which was not a problem for any of them. However, I was prepared if the situation came up that confidential information would be given, and had worked through different guidelines to follow for such a scenario.

Confidential information could be seen upon as written documents handed out by my informants, my notes from the interview and the audio recordings I took from the interview. Before the interview started the informants were informed about the background for my thesis and that I were to transcribe the findings myself so no one but me would gain access to potential confidential information. According to Johannessen et al., (2005), information that could be traced back to the source of origin is by law required to be handled confidentially. As my informants did not demand anonymity, I am mentioning them by name in paper. Before contacting my informants, I had already thought through my ethical responsibility as a researcher, and this might have helped me appear more serious when talking with them.

So as a summary I have in this methodology chapter explained how my information was gathered, which design was chosen and on which basis. This thesis has the form of an explorative case design with a narrative approach. My underlying objective is to study a phenomenon and see what has happened in Aukra and Hammerfest, and for that, a case design is a natural choice. In accordance with the form of case design, my information was gathered from in-depth interviews with four different informants. By choosing this way of gathering information, I was able to let my informants speak uninterrupted on each question. Sometimes during the interview, my informants gave some interesting information, and hence I had an

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opportunity to follow up that thread. After my interviews, I sat down with the tape recorder and my notes, and transcribed everything before later presenting the information as a story based on different criteria. I also explain my choice of using narratives and on which basis I wrote the narrative stories. From the stories, some pointers were withdrawn and analyzed towards my theoretical chapter with focus on direct, indirect, induced, and catalytic impacts. Further, in this chapter I have discussed the validity and reliability of my findings. As my research process is thoroughly described in this thesis, it enhances the reliability of my findings, even though I could have talked to more informants to cross check answers even more detailed. As for the validity, it is strengthened as my questions and my thesis was based on knowledge from different articles, so I was familiar with the research topic. In addition, my findings can be transferred for other projects as well. The chapter is round off with an insight to my ethical responsibility as a researcher. Among others, the informants were given the possibility to remain anonymous, cancel off the interview and given assurance that the information would only be handled by me. I also informed them about the possibility that this thesis could be published and be open for everyone.

5. Empirical Data

5.1 Hammerfest

I entered the plane this early spring morning in 2010 my destination was Hammerfest. I had arranged with an interview with former Mayor in Hammerfest, Kristine Jørstad Bock. She sat as mayor for this municipality from 2006 to 2009 and before this, she was a part of the municipal government. With her young age, she was more or less handed the whole Snøhvit project into her lap, contributing in turning Hammerfest into a municipality with a bright future. At the moment she was in maternity leave, but still spoke warmly of Hammerfest and the changes it had gone through since the finding and development of Snøhvit, in addition to the construction at Melkøya.

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5.1.1 The Conflict and its solution

For Hammerfest this was like winning the jackpot in the lottery but as reflected in other stories, such a winning sometimes comes with a backside, jealousy. In Finmark County, there had for many years been a recession and politicians and the administration from the County had schooled themselves in recession, including Hammerfest. While they used a lot of time and effort to work Snøhvit through, they felt that the neighboring municipalities did not support them. They were not ready to think several years ahead, and at the same time, they needed to think of their own interests like keeping elementary schools. So cooperation became more difficult seeing that the different municipalities found themselves on different planets. I mentioned jealousy as the backside of this, and the other municipalities wanted a LNG plant themselves and if they could not get that, it could just be the same. Again, this contributed in creating larger distances between the different parties. However, this was just the start of many different problems that were to come.

In order to collect property tax from a LNG plant it is necessary that the municipality also has introduced property tax on work and estate. In short, that means if you got a fish use, which Hammerfest, as a fisher town, had a lot of, it cannot be excluded from this tax system. As Bock clearly pointed out, it was not Hammerfest's intention to take all the money and keep it to their selves. This was an opportunity for Finmark County to grow, but it required something from the rest of the municipalities. So they got a proposal that if they wanted to take part in this "fairytale" they to, needed to introduce property tax on their local companies. For instance in Hammerfest, Larsen Maskin are imposed to pay property tax but Kvalsund Maskin in Kvalsund do not pay property tax to the government. This proposal came as result from the surrounding municipalities wanting a fund. However, if there is one thing Finmark has enough of it is funds. Hence, Hammerfest was skeptic towards yet another fund, what was the money to be used on, who is going to manage it, who should sit in the board, etc. But then Hammerfest thus, came with the solution that if everyone introduced property tax and took a determined percentage rate from this, than one could have cooperation. This was rejected first from Kautokeino, as they saw their future within mining, and later the rest followed and the debate rather died out.

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In the beginning, there was a conflict between Hammerfest and other municipalities in Finmark, but a large part of the conflict had its roots towards the others not knowing what these 135 million NOK that Hammerfest got, was. It was property tax and Hammerfest tried to include others as well, but they were left with the feeling that Snøhvit should be “shining knight” that would save the whole of Northern Norway, and that was not the case. Kristine explains with great intensity in her voice that Hammerfest more or less had enough with themselves. They had never foreseen the impact and the significance this field would have for the city. Moreover, she tells me how Statoil contributed in lending them money, educating the politicians and just simply getting them started. She gives the picture of how a big oil and gas company took control and helped a municipality that did not exactly know what they had just been handed. Hammerfest does have a large administration in comparison to the other municipalities, and due to this, they wanted to contribute with their competence and knowledge. An example is the municipal lawyer who has earned a good knowledge on property tax at sea and is combining this with the pipelines going through Kvalsund and Måsøy municipality. So he is trying to give them advice towards these pipelines and explaining to them that they would need to introduce property tax in order to claim any money from these pipelines. However, these are small municipalities and they got other areas to take into consideration before introducing such tax.

5.1.2 Property Tax

As previously mentioned, in order to collect property tax from a LNG plant one must have introduced such tax on work and estate. For property tax, the highest rate one can claim is seven per thousand, and a valuation committee does it. A municipality every facility is valued each year by this committee and from the value of the facility, it is calculated seven per thousand in tax rate. For every rule, there is an exception; if the plant lies in an area with few inhabitants or in decentralized districts, for instance islands with only 40-50 residents, the municipality has the chance to remove the property tax for plants and houses. To get the maximum out of this facility Hammerfest decided to increase the property tax rate to seven per thousand. The reason for the increase was that the ruling government Bondevik¹ had expressed a desire to change the property tax regime, and the municipal council interpreted it as this change was near. For Hammerfest, this meant that they now only had a couple of years

to get the millions they knew such a facility would provide. However, this fear was unjustified as a little research quickly discovered that there was no one who wanted a change in the property tax law. So the decision was made on the wrong premises, as there was not done enough research to uncover the reality. Just to elaborate further, the day when the government starts any changes with the property tax, it will disappear that day. Therefore, they did not picture getting these incomes for longer than five years. Understandably enough, when Hammerfest increased the property tax rate to seven per thousand the business community was not at all pleased with this. Other businesses in neighboring municipalities did not have to pay anywhere near this rate and some did not even have to pay at all. So, it was a great deal of dissatisfaction within Hammerfest, both in the business community but also in the municipal council. In fact, the discontent was so great against the opposition that one started threatening with a lawsuit. On the other hand, this was not convenient for anyone and at least not the general resident in Hammerfest, hence the politicians together with the business community had to rethink the situation and come up with a solution that would work for all parties. After a little back and forward they came to the solution that the municipal council would give back to the business community by giving a defined amount of money each year. This was the start of their business fund, which Bock spoke warmly about.

The business fund was a compromise between the council and the business community in the debate about the property tax raise. As Kristine explained, it was not justifiable not to go through with the rate increase to seven per thousand. This would need to be seen in connection to the potential tax amount they would lose from the LNG plant. It was crucial that the compromise they came up with would not interfere with the law as to collection of property tax money, and the municipality stands free to have a fund. The way the fund works is that the business community can apply for support. Each year it is set aside 1 million NOK in the budget and it is then up to the executive committee to grant money. In addition, there are no guidelines as to who can apply, which is a big contrast to the money administered in the business division. One of their requirements is that the applicant needs to have 50% equity and the application itself need to fulfill a certain structure. For Hammerfest's business fund, there are no rules and requirements and it is utterly up to the executive committee to prioritize who will be granted money. Before the finance crisis, local companies had more than enough

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with distributing their merchandises and hence the municipal council did not hear much from them and the whole million were not used and instead put aside for next year. Sometimes they will get applications for many good projects that could and should be realized, and in such cases, the executive committee stands free to grant more money than this million. For some politicians, including Kristine Jørstad Bock, it is an opinion that this number should have an additional zero behind it. Hammerfest still has much that needs to be done on the infrastructure side and even though it sounds somewhat dramatic they need to weigh different actions like renovation of public buildings, better nursing homes, infrastructure up against each other.

Kristine explained to me that it is not just the business community that were handed certain compromises when the tax rate was increased. When negotiating the different terms with Statoil they made it clear that Hammerfest would give a deduction for residences each year. By doing so according to the law, Statoil could not drag them to court. As an example of the deduction given she said, based on the house they lived in, they paid at the highest 9000 NOK a year but as a result of the deduction they now only needed to pay 2400 a year, a difference of 6600 a year, and the deduction is increasing each year.

It seems that the municipal council learned from their mistake in the starting phase, when they added property tax on seven per thousand. In recent times, there has again been conversations about doing something with the property tax, where one party has expressed a desire to remove this tax completely. Such a process is not done “over the night” and will require some time and there are several parties that would demand some sort of compensation for such a change. Wise from experience, the municipal council in Hammerfest are aware of the necessity to keep a good dialog with central authorities and enlighten them of the situation with the property tax. It is the only way for the municipality to collect the local tax from this plant, and if the tax is to be removed, then the environmental impact assessment must clarify how one should tax such a plant so that the municipality will not miss its income. Yearly Hammerfest has property tax incomes of about 150 million and of these 135 million makes out the property tax income from Snøhvit. From this year though, there are new regulations as

to how the municipalities can collect property tax, and it is now the baseline that counts. Since most of the plant is located onshore this would not strike Hammerfest the hardest, it will “only” mean that they lose a couple of millions.

In terms of lessons learned for property tax, it is the consequences of such a tax. When this tax was introduced, with the highest rate, they had to initiate certain actions as a compromise with the business community. For Hammerfest, this was not something that they expected, not to the extent it really was. At the same time they are more prepared if the plants for Goliat or Troll2 would be constructed there, for instance in terms of what to expect from tax revenues. In addition, they now possess more knowledge, and would require an arrangement that allows them as a municipality to get taxes from this local plant(s), regardless of what happens with the property tax.

5.1.3 Hammerfest before Snøhvit

Before the construction of Melkøya and the LNG plant located there, Hammerfest was just another municipality in Finnmark and the condition was just as the coast of Finnmark has been the last couple of years. For the entire county it had been a recession for many years and because of this, the politicians in different municipalities had adapted this way of thinking and they were good at it, and it contributed in making the entire process with Snøhvit harder. Hammerfest in particular was a worn down town, where the decrease in population was great each year, and especially the crucial age group between 20 and 40 moved from the city as they saw no future in staying. As for childbirths, the number of new births was low and “no one” had more than two children, with the result of continually closed kindergartens. For the remaining kindergartens, there were so few children in them, so that the parents could choose which days and at which time the children could attend. The ever so important business community was poor on capital as there was a low degree of activity in the market. A pinpoint of the low market activity is that in 1999, only one new resident was built that entire year. To say it short, this was a town, which struggled for survival, and the situation was “to be or not to be”. When the discussions about Snøhvit and a LNG plant started, Hammerfest knew that this could be their ticket out of the devastating situation the city now

was in. Therefore, they worked for years to get Snøhvit and the reality was that there existed no plan B if they failed to get it. Even the general “Hammerfesting” says that the city before and today is unrecognizable, and they think with horror on what would be left of and in the city had they not been handed Snøhvit.

However, things were not all black before Snøhvit and one of the good things for Hammerfest was that it was ranked the equality municipality in Norway and they preserved this for three or four years. However, this again has connection to the low activity in the municipality when it came to politics or different volunteer offices. This was yet another thing they lacked, commitment. In order to get people to for instance be a board leader of a local football club, they needed more or less to be forced into the position. Most people looked at these types of commitment as time consuming and felt that they had little to gain by using their time on it. The same could be seen within politics; this was a municipality that experienced tough times and with low incomes. It is not easy to find the surplus energy or the motivation needed for such jobs when times are tough. As with many other small municipalities in Finmark, the housing market did not work properly. So many people living in Hammerfest could not afford to move even though they wanted to. If they sold their house, they would get below real market price for it. Therefore, if they then moved to cities like Tromsø, Bodø, Bergen, and so on, cities where the housing market worked they would not be able to afford it as they got such a low price for their own house/apartment. However, all of this changed when Statoil came to town and started the construction with Snøhvit and Melkøya.

5.1.4 Hammerfest present with Snøhvit

In the beginning, the municipal council did not have any direct strategy debate nor worked strategically with the issue of how to distribute the new property tax income. However, since the opening of Snøhvit, Arbeiderpartiet has had the majority of the votes allowing them to realize their own thoughts and ideas. For them it was important to invest in the future, and develop Hammerfest for the future. Following priorities were made:

1. School

2. Culture center

When this would be done, the initial money would have been spent and it is up to other politicians to focus on the content in the school. In addition, municipal council has devoted some money to kindergartens and creating a general higher living quality that makes people want to stay or move to Hammerfest. By looking at what the persons recently moved to the city missed and the reason behind their spouse not moving with them together with the kids, they started working on a strategy to turn this around. Those moving from cities like Bergen and Stavanger to Hammerfest with two or three kids expected a house and peace of grass in front of the house. In addition to this, they expected room for their kids in the kindergarten and it is of utmost importance that the children got the opportunity to attend a good school. If the children enjoy themselves at school it takes more before the parents move again. Since the quality of the school is so important, the municipal council has used a part of their property tax income to educate the teachers and especially within the subject of mathematics, but also within language. For the pupils this means additional math lectures, but also a fruit arrangement.

Since the start of Snøhvit, Hammerfest has experienced a yearly growth of about 1-2% and that within the productive age group between 20 and 40. Such a development is unique in a North-Norwegian context, and only Bodø and Tromsø can show to such a development. When it before was normal not to have more than two children, today most people got two children but also three or four children. Residents in Hammerfest are giving birth to more children than they did 10 years ago, and this is a sign of the ever-growing positivity in the city. With this increase in population comes a challenge connected to kindergartens for everyone. Hammerfest has said that they are aiming for the lowest prices for kindergartens, which again demands much as there will be a greater influx. During the tough times in the late 90's the politicians did something smart, instead of selling or shutting down kindergartens they simply closed departments that were not in use. These closed departments were turned into playrooms for the children, and they called it storage. Times got brighter after Snøhvit, and the need for more room in the kindergartens became a reality, and now the politicians' long-term thinking paid off. Since the buildings still stood there, it was just a matter of turning the light back on and hiring more employees to run them. If these buildings instead had been

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sold, things would have been a more difficult. Today the situation has actually come to a point where the municipality needs to take into use barracks as kindergartens. Hammerfest is now “struggling” with situations that larger cities experience.

Everyone in Hammerfest has experienced some sort ripple effect, one way, or another from Snøhvit. There are now more pupils in the class, the merchant’s got new and more customers, real estate agents got more work to do, as more houses are sold and artisans have more to do, as new projects are started. Local suppliers were included in relation to delivery of industrial equipment through Petro Arctic, which is an interest group consisting of Statoil and Eni and the unions members¹. It works towards for instance local contractors and sub-contractors, and tries to include them in different projects, like Snøhvit LNG. Looking back at it there is a feeling that local suppliers could have been included to a greater extent. However, the participation was greater than expected, many billions more than expected. For the next project, Petro Arctic is prepared on a completely different level to deliver more. In this situation, there is a difference between Statoil and Eni, where Statoil has its own suppliers in Stavanger and Bergen, that they use “worldwide”, and that they also use in Hammerfest. Eni does not have their suppliers as close as Statoil, and could go into the local pharmacy and ask them for 10 000 band-aids to the oilrig. When looking at the situation like this, the municipality is beneficial with having foreign actors operating there. At present time, suppliers in Hammerfest are prepared and certified for the next project to a greater extent than what was the case when the Snøhvit constructions started. Businesses in the municipality no longer have to climb the ladder to take down and hang up their signs due to owner change related to bankruptcy, as were the case in for instance the fish industry. The economic situation in the municipality was like a rollercoaster ride, and the effects even struck local grocery stores like Rema 1000. With the LNG plant, came optimism, jobs and because of that, people had more money to use and the optimism in the town grew.

¹ www.petroarctic.no, 2010

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Previously to Snøhvit, the housing market in Hammerfest made it difficult for people to move from the town and sell their houses, as they would get below real market value for it. Times have changed, and the situation for those owning houses before Hammerfest, is best described as winning the lottery. Houses were cheap but now they have taken a real market value and this is due to the continuously increase of residents in Hammerfest but also that it is now an attractive place to live. However, in relation to people moving back to the city or to the city for the first time, the problems (in terms of cost) is not for those who are moving from larger cities like Bodø and Tromsø. Prices in Hammerfest are still cheaper than those cities, but the problem are for those living in municipalities as Vardø. What comes in to play than, is commuting and the necessity to open for good ways to conduct this, as there today are slim chances for that. Nevertheless, this municipality has also experienced a great deal of attention from Norwegian media as well as foreign media, and this has without doubt contributed in placing Hammerfest on the map, in a good way. An important thing for the general resident here is that they are getting much attention not due to crisis, catastrophe or depression but because they are contributing to the community and the common society.

Today people are lining up to take part in volunteer office and other different positions, and when people needed to be forced into this, the situation now is that it is “their turn”. Also within politics, Hammerfest has experienced a huge change and the amount of people applying for different political positions are big. Such activity contributes in attracting the “good heads” and raises the competence and level of knowledge within an organization or a political party. As a natural ripple effect of getting such a plant in the city, many of the local youth thrive to acquire the needed competence and education in order to work with Snøhvit. So the municipality has been able to sharpen the high school education and given it a whole other focus and the industry that the youth sees as new is experience a bloom. Some critics might put focus towards a relative low growth of local youth working with Snøhvit. However, it is important to remember that these kids were in their early teenage when this plant came to town, and it takes time to get the proper education. In addition, here parents got a job to when it comes to enlighten their children of the opportunity that exist within the municipality. Youth with some practical experience from Melkøya are highly appreciated by local business community as they are in possession of high level of knowledge. Today, Hammerfest has a

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level of qualification and knowledge that is beyond anything they could have foreseen and this knowledge is drawn into different boardrooms throughout the city. Companies are surrounded by persons with high education, and this helps the companies to focus more on innovation and entrepreneurship. It has taken time for the municipality to gain this competence and attract people with knowledge and competence. People that have been working on a defined project in Hammerfest might not want to move and hence will try to apply for a different department within the company. For some this is a possibility, but for many this is not an option as their competence is a little too special. On the west coast of Norway it is easier to provide such transfers and this is something Hammerfest are working towards as well, and the pattern is that development is heading the right direction. For the future, it is very important that the municipality is able to keep the group between 25 and 50, and they are working on this “stone by stone”.

5.1.5 Hammerfest in the future

In the future Hammerfest is prepared for other fields that might open up and they are hoping to be able to take part in this, as they got to be a part of Snøhvit. Troll 2 and Goliat are the two fields they are hoping to be a part of. Both these projects will contribute in new large activity in the city. A participation in these fields will generate more income in the shape of property tax or other taxes, depending on what happens with the property tax. Besides Troll 2 and Goliat, it is expected that there will continually be search for oil and gas without great standbys, as this will hurt the local business community to a big extent. This is because there is a lack of other projects when there is no search activity and no projects that need realization. Hammerfest is not ready today for two great scale projects like Goliat and Troll 2, but within a couple of years the municipality will have enough resources and capacity for two such projects. Hence, this will most likely be the dominating industry in the Hammerfest region.

Today there is no opportunity for employees at Melkøya to commute to their respective places within Finmark, for instance to Måsøy, Hasvik, Nordkapp. It is easy to understand that if you need to travel for 15 hours on a Friday to see your family, and come back Sunday evening, then you will not stay long in your job. Then during wintertime, you got the possibility that

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the road might be closed and then you need to stay home instead of spending time with your family. If however, there is more activity from fields like Goliat, you might get more people from these municipalities working in Hammerfest and it is then possible to open up a better rout for commuting. Nevertheless, it is important to take it step by step, but there is certain impatience in Northern Norway and many expect to see a “little Stavanger” right away, but these things take time.

One of the most crucial areas Hammerfest will be working on in the future is feeling of well-being when living in the city. One of the things valued by those moving north from south is outdoor recreation, hunting, fishing, skiing and the proximity of school, work, and kindergarten. Some days might be longer than others, and the possibility to go home, eat dinner, and be back to work within a short amount of time is highly valued. Another factor that generates a well-being in the everyday is the possibility to exercise, and for instance play football with “the guys”. A problem is that the offer on sports halls is completely full and there is no more capacity. When you are in your 30’s, you no longer play organized, for instance in a club, and would like to play during the afternoon after work around 8-9 in the evening. The sports halls are however, filled with kids until 9 in the evening and they usually start around 4. Situations like this do not contribute to well-being in the municipality, and when you in addition do not have the chance to come home from work, and take your kids to practice, it does not improve your feeling of well-being. Here they got a lot that needs to be done, but also on the reputation site, for instance was Hammerfest looked upon as one of the more violent cities in Norway. When working towards creating a good atmosphere in the city and getting new residents to move there with their family, such reputation is very negative. If the municipal council manages to create a good reputation for the city, this will spin them into a good circle. Media is a good tool to create publicity and Hammerfest has had it fair share of media covering this success story. In addition, the story of Snøhvit and Hammerfest has reached to countries like Alaska, Greenland, and there have been representatives from these countries in Hammerfest. What they want is to learn how they too can get money from oil and gas companies, as they are more used to these companies sticking the entire profit in their own pocket. In this area, Hammerfest has been in the very forefront and the developments done are an example to follow.

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It is clear that Hammerfest has really experienced a new growth after Snøhvit and has been able to turn around a situation characterized by recession times. They learned how to cooperate with Statoil and Eni, in order to create a coexistence with a LNG plant and the fish industry. Today this municipality appears totally changed, the population is growing, the schools are better, there is no longer an uncertainty in the city, and businesses does not go bankrupt. As for lessons learned, the municipal council has more knowledge towards managing the property tax income. A correct distribution of the money has been crucial for the new positivism that exists in there. Focus on schools and the well-being of living in the municipality, has been the most important factors so far. In addition, the municipal council is ready for new projects, and through Petro Arctic they are ready to take on Goliat and Troll 2 within a couple of years. Since they have been through this process once, they are prepared and know what to demand from the oil and gas companies. Uncertainty and “lack of knowledge” is gone, and been replaced by a growing knowledge and competence that will help Hammerfest maintain its status and keep growing in the future.

5.2 Aukra

5.2.1 The cooperation between Aukra and municipalities in the region

In the start up when discussions started as to where the Ormen Lange gas should be brought onshore, there were many actors that registered their interest, 14 in total. Gradually this number decreased to 11, 7, and so on. In the end, there were only 3-4 places left, and Aukra came to an agreement with the surrounding municipalities that Nyhamna was the only place left in their region, and they would all work towards getting that as delivery point for the Ormen Lange gas. So other municipalities and the business community gave their support to Aukra in order to get the gas to Ormen Lange. It was a laborious process for the decision makers, as there had been many initial candidates. As the process progressed different criteria were emphasized, like cost, health, environment, shortly put; the positive and negative consequences such a plant would have for the different municipalities that get the plant, and plusses and minuses were handed out. Based on these criteria, several places fell off and were no longer in the running of becoming a gas municipality. Aukra was not one of these and was still involved as an actual candidate, and as time passed they had more plusses than any of the

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other municipalities on criteria like accessibility, price, health, total costs and mostly any other criteria as well. April 2nd 2004 when the resolution was made in the Norwegian Parliament, it was unanimously passed by the partnership, consisting among others by Statoil, Hydro, Shell, and Exxon Mobile. For those who fell off during the process, there ruled certain “dissatisfaction” regardless of where in the process they fell out. However in the Møre and Romsdal region it was a great support to go for Nyhamna.

Aukra and the surrounding municipalities in the region agreed to go for Nyhamna as the place for the land-based plant, and now there is cooperation between these municipalities. GassRor IKS is a cooperation between Eide, Fræna, Misund, Molde, and Aukra and the collaboration was formalized by a resolution taken by the involved municipal councils towards such a cooperation agreement. This agreement creates more activity in the involved municipalities within industry and trade, and it generates great positivity within the whole region. Those living in any of these municipalities, experience this as everyone wants to pull in the same direction, as it will attract activity to the region. GassRor IKS is an inter-municipal company that works as fund, and there is an agreement of cooperation behind it. All the involved parties shall work and act as a team to generate industry development and work with transport projects. In some cases, these are projects that there have been talks about previously, but with new income from Ormen Lange, these projects could be rushed forward or mapped. If they should be able to go through with their plans, they need money and that is where the second part of this cooperation comes in to play. Aukra, which receives property tax money from the plant at Nyhamna, deposits 10% of the property tax income, and for the remaining municipalities that do not have incomes from this plant, deposits 25 NOK per capita. By doing this, Aukra is contributing to the whole region benefitting from their fortunate situation with Ormen Lange. GassRor IKS consists of representatives from all the involved parties, that means five mayors and Aukra got two representatives, but there are also other persons involved in this inter-municipal company. In addition, a board distributes payouts based on the decision of the board, the representatives, or both. The board manages, and got the daily operations of the fund.

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Aukra has learned that cooperation can give great benefits and they did not have to stand alone in the fight for getting the Ormen Lange gas but instead had support against other rivals. By looking at the whole region instead of focusing only on Aukra they are working towards the future and making this municipality an important area for oil and gas. In terms of cooperation, they have experienced it much as a cooperation within a family, they do not always agree on everything but it is still very positive and constructive.

5.2.1 Property Tax

In order to receive property tax from Ormen Lange and its onshore plant, it was necessary to introduce property tax on work and estate in the municipality. By the municipal council, it was decided that the tax should be claimed by the highest rate in order to get the most from it, meaning seven per thousand. Each year there is a valuation committee, who values the plant and the belonging pipelines, and based on this, the property tax is calculated.

As mentioned shortly in previously chapter Aukra is contributing yearly with 10% of their property tax income to a fund, GassRor IKS. Other municipalities as Molde pays 25 NOK for each resident living there, meaning around 625 000 (25*23 000). Aukra, in comparison, pays yearly from 10 to 13 million NOK, depending of their property tax income, so they are the definite largest contributor. When this tax was introduced, local business communities were at first against this action and they feared for their own businesses. It is a relative small municipality and hence the activity in the area was not that large before Ormen Lange and an enforced tax like this could have consequences for them. However, after some time, more and more of the business community turned, and became positive towards the tax. Instead of focusing merely on their own business, they managed to see the big picture. Aukra was in a unique position to get their feet up from the mud and develop into a municipality with high activity a place where people want to live. With other words, they saw the social benefit this property tax would have on the municipality, and were fine with it.

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From this year, there are new rules regarding property tax, and it is the baseline that counts. This means the outermost islet that sticks up, either with ebb or flow. Aukra and other municipalities can collect taxes for installations all the way out to this bottom line. For Aukra, in relation to Ormen Lange, this will not have such big consequences, seeing that most of what they get taxes from is located onshore. Other municipalities like Sandøy, will miss income of around 6-8 million each year, as they no longer will be entitled to collect tax from the “Langeled” pipeline crossing there. For future projects, there would be a need for some sort of compensation, if this were to have a big impact on the tax income.

For this year, Aukra budgeted with property tax income of about 137 million NOK, and the gas plant located at Nyhamna makes out the majority of this income. It is mainly other work and estate that is taxed, in addition, and there it is collected property tax of about 2 million NOK. As a comparison could be mentioned what previously was named STX, but now is Aker Aukra, which is an industry company with 150-160 employees, so a decent sized company. In year 2008 they had a property tax rate that made out 124 900 and another example is Aukra Auto, the local bus company paid 14 700 in property tax. Ormen Lange’s significant value for the municipality is clear, as the income from this plant make out almost the entire budgeted tax income.

For Aukra it was a new existence getting that high property tax income, and they introduced a maximum tax rate at seven per thousand. Since the plant is located onshore, they will not be struck that hard from the new regulations but for future projects, it will be natural to cover their selves so that they will not miss out on attractive property tax income. In addition, they have managed to get the business community to think of the social benefit for the entire region from this property tax. GassRor IKS is a good example of the benefits that profit the entire region with several municipalities involved.

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5.2.2 Aukra previous to Ormen Lange

Before Ormen Lange, which was discovered in 97-98, almost no one knew where Aukra was located. When talking about Ormen Lange the first thing that came to most people's mind was the Norwegian king Olav Trygvasson and his ship Ormen Lange. As time passed by, and the construction started, people realized just how big this actually was and the significance it would have. However, Aukra was an ordinary little municipality that few had heard about, besides the surrounding municipalities.

It was of great importance for Aukra to get the Ormen Lange field and become the place for the land-based plant. Economically this was a municipality that was really pressured and there were little activity in the town. For instance within the shipping industry it has been some rough years where there has been an uneven distribution of contracts. Some companies have more to do and some got few contracts. So the optimism was not very good in the municipality. In general it was not easy to do business there and the municipal council experienced a decrease in population as many of the local youth moved either south or to larger nearby cities like Molde. The municipality simply did not have much to offer the local youth in terms of job opportunities and other incentives to stay in behind.

As the years went by, and they finally were chosen as the location to bring gas onshore, things started rapidly to change. At one point, there were done some archeological investigations at Aukra with a cost of 80 million NOK without value added tax, and the geologist came from all over the world. Such an activity demands housing for everyone, food and other supplies and was a big boost for the local industry. The supply industry experienced a bloom, as all the newly arrived in relation to Ormen Lange needed everything from food, milk, hotels. Transport companies like taxicabs, busses, and airline companies now had much more to do, and everyone in Aukra experienced the sudden entry of people. Everything was because of Ormen Lange, but this was just "the tip of the iceberg".

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5.2.3 Aukra present with Ormen Lange

October/November 2007 there were made a resolution to open and start the production at the plant located at Nyhamna, and this was the start of the production from Ormen Lange and a new era for Aukra.

In Aukra today, within the political and administrative environment, business community, and different industry forums, the perception is only positive, and the general resident in Aukra is positive to the change that has come. When such a construction is done, (it was one of Northern Europe's largest industry developments) it generates optimism and contributes in some inclusion of local industry and local suppliers. In addition to this, it generates money, in the shape of property tax income. With the tax money, it is possible for the municipality and the business community to implement certain projects, which in turn will generate a higher well-being for the residents in Aukra. At the same time, it creates a better work environment for local business community as they have more contracts and are busier with new exciting projects. For those working within in the municipal council, it makes the everyday easier as they got capital and a steady income to budget with. In terms of keeping election promises, or being able to do something within the needed areas, it is easier when you got the necessary funding and it is more satisfying as a politician to be able to go through with this. At the same time, the municipality is experience a growth in population and locals are returning to work and live there.

Aukra transfers 10% of their property tax income to GassRor IKS, and through this fund, they have done a range of different actions that benefits the whole region. Among these projects is a tunnel project called "Haukabø project", which is a tunnel that will replace a dangerous part of highway 662 between Molde and Hollingsholmen ferry quay in Aukra. GassRor IKS financed 52.5 million 2006-NOK of this projects total estimated cost of 125 million, 2006-NOK.² It is a big project and regardless of which municipality in the region the residents live in, it will bring positivity and increase the well-being for the regions residents. The project

² www.vegvesen.no (2007)

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was actually pushed forward and the tunnel was opened up last year. If not for the income from Ormen Lange, this project would most likely not have been realized for many decades. Another project, that has been pushed forward and realized with Ormen Lange money, is the expansion of Molde airport. Among other things, they expanded the runway but other measures at the airport were also done. Again, had it not been for the money collected through property tax at Ormen Lange this is yet another project that would not have been realized for some decades. Høgskolen i Molde has also benefited from this much welcomed cash flow, and has been handed some funds in order to expand and purchase different equipment needed. In the other municipalities there have also been some smaller projects done.

Since Aukra “only” transfer 10%, it still got remaining 90% to spend in their own municipality. One of their prioritized areas of spending money has been within schools as this is important for the future, and it has been passed a resolution to build a whole new school at Gossen and an expansion of the school at Julsundet (which is the school at the mainland). In addition to this, there will be made investments within healthcare and kindergartens. It has been made a municipal decision that Aukra is going to have a higher operating level than comparable municipalities.

Aukra has also been placed on the map since the construction with Ormen Lange, and they had numerous newspapers and television channels visiting the municipality. During the last year or two there has been around 14 different international television companies, representing for instance England, Germany, Poland, Australia, and Brazil. They are interested in seeing how Ormen Lange has affected Aukra and the significance it has had for the entire region and large newspapers like Le Mans has also been to Aukra. So the interest has been big, not just on a national level, but also international. Aukra has become a part of Ormen Lange and everyone’s eyes have been directed towards this municipality, in a positive way. The general feedback from these media is that Ormen Lange is a very positive and good project.

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5.2.4 Aukra in the future with Ormen Lange

Bernhard Riksfjord spoke with great enthusiasm when I asked him about Aukra in the future. Together with the other cooperating municipalities in GassRor IKS, they will work for Aukra and it being a gas hub. In addition, they will work to improve the activity in the region, and if more fields in the Northern Sea are opened and brought ashore at Nyhamna, it will generate more activity in the industry and trade. To achieve this, it is important that not only Aukra business community support this, but also business communities in Eide, Molde, and Fræna.

Riksfjord has no doubts that Ormen Lange is a project with enormous potential, this is an industry development that individually will last for 30-40 years, and there are few other industries where one speaks about 30-40 years right away. It being hotel, shipping, or agriculture. Hence, it is a general agreement among residents and local business community that this needs to be taken advantage of, and make it happen. After all, it benefits Møre and Romsdal County, the region and Aukra municipality.

Since the construction of the LNG plant, Aukra has experienced a growth in population and seen former residents move back. In the future, it is expected that this even growth will continue upwards, but it is important to keep in mind that this region is like a circle. Since the distance between municipalities as Fræna, Molde and Eide, is not that great, some might settle down in these areas, and hence commute to Aukra and work on the LNG plant at Nyhamna. This again creates more positivity, when people are able to commute from their home municipalities where they might have the family, and to Aukra. So some are just commuting, while others settle down in the municipality, and there are people coming long ways, but also there are residents that lived nearby and found a reason to move back to region. The development has been utter positive, and the trend is expected to increase, which in turn generates a positive development in most areas.

Aukra has already, through GassRor IKS, pushed forward different projects like “Huakabø” tunnel and the expansion at Molde Airport. This has all just been a beginning and a pinpoint

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of what will come. Remember, these projects have been realized and the opening of the plant was done in 2007, so these projects have been completed within a three-year period. Aukra's goals or objectives for the future is to further develop the industry, meaning flight industry, supply industry, construction and so on. So, the possibility for each one is present, whether you are a small or a big company.

During the process from an unknown municipality to a place with the whole world's media attention, Aukra looks back at this fairytale and reflects about some valuable lessons learned. Everything happened relatively fast and it was a large-scale project with geologists visiting the town and doing exploration, and the supply industry experienced a bloom. Nevertheless, this made the municipal council more prepared for what were to come. As Aukra has a stable income to budget with, they now have more responsibility in terms of distributing this money in a proper way. Building the tunnel, expanding Molde Airport was measures that gained priority. At the same time health care, kindergartens, schools and general well-being for the residents in the municipality, was also prioritized. Aukra has a clear strategy for what they want to do with their property tax income, and they stand strong together with other municipalities through GassRor IKS, and are ready for new projects in the Northern Sea. All involved parties has gained an unique knowledge, and even though there are new rules as to property tax claim, they will still find a solution that will secure new funding for many years to come. This industry has placed Aukra on the map and they are an example to follow, both in terms of what they have managed to do in the municipality, but also in terms of cooperation.

5.3 Lofoten and Vesterålen

Since part of my conclusion is based upon an estimation of the areas outside Lofoten and Vesterålen, I decided to interview two different informants about this topic. In my book, there were two names, Jonni Solsvik, Mayor in Andøy and Ørjan Robertsen, executive for an interest organization called LoVe Petro. As I could not meet them here in Bodø I was left with one choice, call them.

5.3.1 Introduction

Today there is a heated debate about these areas, should they be opened up for oil and gas activity, or should they remain closed. Some parties in this debate do not really acknowledge that municipalities like Aukra and Hammerfest have experienced positive ripple effects from oil and gas activity. Solsvik explained with frustration, that it is almost unbelievable that one cannot agree upon the fact that petroleum activity in these areas has contributed to large-scale ripple effects, both indirect but also direct impacts. He went on by mentioning ripple effects for instance in the shape of property tax but also increased activity. Back to LoVe, as I said there are great forces pulling in separate direction, but on the basis of the information available and the knowledge we are in possession of, Jonni considered the chances of this area being opened up for such activity as very great. Ørjan Robertsen mentioned that a poll done amongst the residents in Lofoten and Vesterålen in 2007 showed that over 60% of those asked were positive towards oil and gas activity in the region, but in 2005, only 32% of the participants were positive. Such a drastic change in perception is due to competence. In 2005 this topic was not frequently debated, and this lead to uncertainty when faced upon the question of yes or no, and when you do not have knowledge about the topic it leads you to answer “no” or “I don’t know”, as a safety precaution. Lofoten and Vesterålen Petro have been active in explaining others about this topic through presentations for schools, associations, businesses, or municipal councils. It is important that an environmental impact assessment is conducted in order to highlight the potential regional ripple effects. As for the chances regarding oil and gas activity in this region, it is hard to estimate, but there is good probability that these areas will open. Part of what Lofoten and Vesterålen petro does is to include decision makers on a study tour to Aukra and Hammerfest so they can see the positive ripple effects with their own eyes.

5.3.2 Cooperation

For the conserving municipalities, this is a unique chance to change the path they are on and instead head for the road that leads to a brighter future. But how can these municipalities to a certain extent control their own faith. Cooperation is the key word in this setting. Ever since the debate started, the involving parties have clearly expressed a will to cooperate with each other. One of the things that are important for them deals with where the potential oil or gas is

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transported. If these areas are to be opened, there must be a land-based plant to where the oil or gas is transported. Under no circumstances is it appropriate to settle for any other solution, and the municipalities will not stand behind an opening if there are no land based plant involved. Therefore, this cause is an ultimatum from them towards operators at the NCS, and all the municipalities are behind this. Any findings that make production a realization, needs to have a belonging plant onshore. Solsvik says that it seems as if the business community is aware of this and agrees with it. As he points out, the distance from the recourses to shore is different here than what is the case for Aukra and Hammerfest.

Since there is an agreement of cooperation between the municipalities it also requires a distribution key in relation to the property tax that a land based plant will generate. As of today, this is an ongoing process and Andøy has expressed a political will to share the income if it turns out to be of such a character as with Ormen Lange and Snøhvit. Just how the distribution key will look like, has not yet been clarified. During such a project (constructing a land-based plant and preparing for oil and gas extraction) there will be big differences on the challenges the different municipalities will face. The one that gets chosen to be host of everything, will have large challenges related to development of infrastructure as there probably will be several thousand people involved in this project. For the other municipalities this is not challenges they will face, and do not have to worry about such. One thing is what they agree in between, but such an arrangement of cooperation has its juridical relation as well. So when the times comes, if it comes, it is important that the involving parties are able to work out an agreement that satisfies juridical relations, and that is correct in connection to the different challenges the municipalities in the region will face. However, already now there is a political agreement that it if for instance this activity would lead to a land based plant, like the one at Nyhamna and Melkøya, and Andøy got it with all the tax money included. It would not be fair towards the other municipalities in the region if they sat with these great incomes by themselves, and none of the neighbors got any benefit of it. Scenarios like this are something they will get back to if it becomes a real situation.

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In 2007, there were a conference in Stokmarknes municipality where the chief executive officer of Statoil, Helge Lund, attended, and these demands were more or less rejected by him, as that was not the time and place to discuss these matters. LoVe Petro arranged another conference June 2009 at Svolvær, and this time Helge Lund signed all the demands they had regarding a land-based processing plant, operating organization, and a supply emergency phase. It seems as oil and gas companies are more aware that there needs to be some regional ripple effects to ground, in order to be let loose in the area. If it is technological possible with such a plant, this will remain a requirement from the regional council. However, there is one more factor, which is crucial in this matter, the Norwegian Parliament. Since the government is paying for 78% of the total cost, they get the final word in this matter. In relation to the Goliat project, the surrounding municipalities and the host municipality expected a land based processing plant. The industry presented their choice in the matter to the Norwegian Parliament, (which was an offshore-based solution) and they decided that even if spending 10 billion more on a land based plant could be seen as good regional policy, they chose not to do this. At Aukra, the oil and gas companies also proposed an offshore solution, but in this matter, the Parliament decided that there would be a land based processing plant instead. Therefore, it is important to remember, that even though the municipalities stick together in the question of a land-based solution, it is still the Parliament, which decides what concept to follow.

As for lessons learned, it would be of great benefit to look towards municipalities like Hammerfest and Aukra, and especially Aukra. Through GassRor IKS, they have shown how different municipalities within the same region can cooperate with each other to achieve a goal that benefits all. At the same time the way the involved parties in Lofoten and Vesterålen stick together in the question about land based plant, goes to show the power you get when cooperating. After all, their support in this matter is a crucial factor for opening these areas for such activity. If they were split in this question, it could be easier for oil and gas companies to negotiate different terms with different municipalities, were the result might not be as beneficial for the region.

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5.3.3 Property Tax

For a municipality with oil and gas extraction within their municipal borders, property tax is an important source of income. As I mentioned previously, it is not at all a real opportunity to allow anything but a land based plant. A demand like this is also important in the sense that there are new rules for collecting property tax. It is now the baseline, which counts for collecting property tax. One can however wonder why this change was passed, because during the time it was the opposition in the Lofoten/Vesterålen debate who had control. Jonni claims that this could have a negative impact in the quest for opening up this area for petroleum activity, as it becomes less attractive to start activity since it could have an impact on the property tax collection. In addition, this is a very unwise timing for companies to reduce the incentives, meaning incomes, which lies within the municipalities to open the area.

Today Andøy as well as other big municipalities in the region, like Vågan, Hadsel, and Sortland, do have property tax. For Andøy the rate is four per thousand and according to Jonni Solsvik, it is not an option to adjust this rate to seven per thousand in that municipality. He believes that one should be very careful with using property tax as an instrument. Instead, it should be as low as possible and that is based on principle. Even though property tax is a god means to get money from a business community, it still strikes residents in the municipalities in the shape of taxes on houses. For elderly people with old houses this results in high taxes. So it is an unsocial tax that strikes differently and uneven. However, Andøy has introduced property tax for other reasons than to tax local businesses; it was a matter of trying to maintain the social care offer in the municipality. However, there are possibilities to create certain exceptions so that only the business community and not the residents are influenced by the tax. For instance, the municipal council at Andøy negotiated different deals with the business community in order secure incomes without making residents suffer. This has been done with different wind power companies, in relation to a wind park. Another way to improve the conditions for locals when having such a tax in the municipality is to give a deduction for residents each year, like they do in Hammerfest. By introducing such a deduction, they can keep property tax on work and estate without the residents suffering. It is reasonable to say that the municipality that gets the land-based processing plant would try to get the most from it, and hence adjust its property tax rate to seven per thousand, but

introduce different measures to shield the residents. This is what has happened in similar municipalities and there would probably not be anything A-typical here.

A paradox is that there is done an intention agreement among the municipalities in the region that all potential incomes should be shared, but in order to make this valid it needs to be made a decision in each municipality and it needs to be equal for everyone. It is a requirement that property tax has to be introduced on work and estate in order to claim property tax from oil and gas installations. Today, there are several municipalities that have not yet introduced such tax, for instance Bø municipality. If they choose not to do so they will not get any income from a potential land based plant either. So if Bø gets chosen as the place to transport the resources they will not have any money to share among its neighboring municipalities. So this is an important case that still needs to be dealt with and it is necessary to get this written.

So, what does introduction of property tax mean for the business community? First of all, it means greater expenses for them and a lower surplus by the end of the year. For the municipality it means an opportunity to spend money in needed areas like healthcare, infrastructure, school, and living quality for the municipalities' residents. With other words, it could be bad for business but good for the residents. In Hammerfest, a business leader is part of the society and benefits from the ripple effects the town is experiencing. For him the activity is good for business regardless of what he is doing, if he sells milk, bread or is a distributor. Increased activity and competence affects business positive and most likely gives them a different bottom line, making them less concerned about contributing to the society through taxes. Solsvik was clear on one point, incomes like this should to a large extent be used to facilitate for the business community in the region. So the money these companies pay should also be used in a way that benefits them and by doing so the business community in the region will not suffer. Instead more business will appear, creating more activity and a focus towards infrastructure. One might just say that it is a good compromise or compensation for the business community, that otherwise might suffer from paying property tax. As for what they can expect in terms of property tax income from potential oil and gas extraction, it depends on what is found in the area and how much. In addition, it would be very reasonable

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to set off money to a business community fund, as Hammerfest and Aukra are doing. As for the amount, it should be at least 10% of the property tax income. By introducing such a fund, one could stimulate to business activity by giving them more muscles. Therefore, the prospect is good and everything is in line for this to be a new Norwegian fairytale.

In terms of lessons learned, the municipal councils in the region needs to, and also do, look towards other projects as Ormen Lange and Snøhvit. By studying and interacting with those involved in these projects, politicians in Lofoten and Vesterålen could learn much. Jonni has a pretty clear attitude towards property tax, but is open for changes that erase the unevenness in terms of how this tax strikes residents, for instance in the shape of deduction. Besides this, they have already started the process of how this money should be distributed between the municipalities in the region. Aukra is a good example as to how property tax from a gas plant can benefit a whole region as several municipalities give a contribution through GassRor IKS. Hammerfest has its business fund where they place one million, and the business community can apply for support. However, this is perhaps a bit weak as it makes out no more than one percent of total property tax income. As Robertsen focused on, and as Kristine told, such a fund should have another zero behind it. Since they have not yet introduced property tax as a mean to collect the most amount of money from oil and gas companies, there are not so many lessons learned yet. However, they could look towards Hammerfest and Aukra and at the same time speak with the municipal council in these municipalities, and by doing so learn from their success and mistakes.

5.3.4 Lofoten and Vesterålen present

In Lofoten and Vesterålen, the municipalities have long tradition with fishing and it has been an important source of income for hundreds of years. Precisely this point concerns environmentalist, that oil and gas activity will, among others, have an impact on the wildlife located in these areas. But however big of a industry fishing used to be, it is not enough to keep the local youth in the municipalities any more, and it is not enough income from it for the municipal council to keep providing social healthcare without raising taxes. It is clear that something needs to change. According to Solsvik, the situation in this region needs to be seen

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in a bigger context though. For 40 years ago Nordland County had about 236 000 residents and Rogaland County had much the same as this. As of today Nordland has about 235 000 residents while Rogaland has around 420 000 residents. Lofoten and Vesterålen Petro has projected the development up to 2025 and has calculated with a net depopulation of around 7-800 work places. And as Ørjan outlined, when speaking of industrial jobs you can multiply with 3 in order to see the real ripple effects. Therefore, within a short time period the region is risking loosing an excess of 3000 residents. What is so remarkable is that Nordland is the only region in Norway that has experienced depopulation. One of the reasons behind the large-scale growth that Rogaland County has experienced is oil and gas development. Today Stavanger is the “oil capital” in Norway, and it has experienced a bloom as several oil and gas companies have their main offices in this city. For the region of Lofoten and Vesterålen, the problem is that the group who are moving away is between the ages of 20 and 40 years, and that is a very productive age group that is needed to turn around the poor development that the region is suffering from. By loosing this age group one are risk getting an increase of elderly men in the region. Bø municipality is a good example of this, as they have lost around 30-35% of their population the last couple of years and is in possession of the oldest population in the country. The municipal council there has expressed a concern that when you need care assistance there are no one left to execute this. Even though some municipalities do have a positive and economically favorable activity, this will not last, unless action is taken. For the last 20-30 years, the fishing industry and tourism have been the cornerstones for this region’s economy. The trend has been negative and these industries are not economically favorable to support the region and does not generate attractive workplaces for locals, and hence the depopulation.

Today Lofoten and Vesterålen Petro are involved in different projects, both relevant today, but also projects were the involved parties are preparing for future involvement. When speaking of these projects, it is not only the region of LoVe that is relevant, but more worldwide, after all the oil and gas market is not only in Norway. Arena Alert is a national innovation project where The Research Council of Norway and Innovation Norway are involved, in addition, to 10-12 companies from the region. Arena Alert is working toward delivery of standby equipment, and internally they got 4-5 projects with R&D activity. For

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instance they got a new boom that can withstand the current conditions and the special conditions located outside the coast of Lofoten and Vesterålen. This project alone is estimated to 17 million, and in the whole project there has been invested 60 million. It is a 3-year project where 8-10 companies went on a one-week study tour to Brazil based on an analysis done by Innovation Norway. So, there is a continually focused work on getting the companies restructured and getting them in as suppliers, it is all about creating new jobs.

5.3.5 Lofoten and Vesterålen in the future

Two scenarios emerge, and that got the potential to change the current situation when speaking of Lofoten and Vesterålen in the future. One scenario holds oil and gas extraction with a land based plant and the second scenario is Lofoten and Vesterålen if the area remain closed for oil and gas development.

5.3.5.1 LoVe with oil and gas extraction and a land based plant.

As of today, there is no oil and gas development in this area so the ripple effects mentioned will only be estimations, some done based on what Hammerfest and Aukra has experienced since gas development started in those areas. If the Norwegian government decides to open up the mentioned areas, it would be a need for geologist to take samples and estimate where potential findings might be, in addition to other services as well. The Norwegian Petroleum Directorate (NPD) has estimated the resources in this area to be around 1.2 billion, and so there is a resource foundation based on this. Such activity requires much from local business community in terms of providing food, services as tax-cabs and hotels. In addition, construction of a land-based plant will require much workforce, which again means that local suppliers might be included into this, and locals might also be hired to work with the construction. If one look at the constructions done at Nyhamna and Snøhvit, this were large-scale projects, that required several thousand person-years of labor. Already in this face, one could expect high level of activity in region. So if the findings in this area is around the same as Ormen Lange, and LoVe get the same activity there might be direct effects of a couple of thousand work places, and for direct effects one can multiply an industry job with 2-3. This will lead to the ripple effects in the region becoming potentially big. In terms of property tax

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income, all involved parties would most likely see a change in the number of projects initiated in the region. Take for instance Andøy municipality that has introduced property tax in order to be able to maintain a good health care offer. If these areas were opened up, the municipal council in these areas would suddenly have more money to spend on necessary areas. Because of this, there would probably be growth in population for these areas, as this industry attracts many people. For locals it means that the municipality now has a future, a place, or industry for them to work in, and be part of. Both Hammerfest and Aukra experienced growth in population and spotted that more of the locals stayed behind as others also returned to the municipalities.

Today the municipalities have however not created any specific means or goals they want to achieve or solve if they get property tax income. Robertsen has previously been on a study tour with members of the presidency and with Mayors, to Aukra and Kristiansund, with the aim of giving them better insight of the challenges and possibilities they face. Many of the participants got an awakening as they experienced this first hand with their own eyes. As I mentioned, none of the municipalities in Lofoten and Vesterålen has yet clearly stated that if they get oil/gas activity this is our possibilities, clarified them and acknowledged which measures and preparations needs to be done today, in order to accomplish them. It seems as if they only see the numbers from other places, like Aukra and Hammerfest, without reflecting what it means for their municipality. The reason behind this is probably that they are striving with today's situation and most of the municipalities in Lofoten and Vesterålen use all available income in the daily run, and at the same time are so focused on getting the ends to meet that progressive thinking is to a little extent practiced.

Even though they will try to create migration, it is also not realistic to expect that the petroleum activity will be based solely on local residents. It is a very limited potential in the business community in Northern Norway and in Lofoten and Vesterålen. Some sort of commuting is to be expected, and as residents at Andøy today commute to Stavanger, so can the region expect people from south to commute to them. However, the municipalities in Lofoten and Vesterålen must strive for local activity. Even though this is estimations and the

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ripple effects depend on many factors, it is not possible to close your eyes for what has happened in Aukra and Hammerfest. In addition, one can see the potential that has been realized in both Helgeland and Finmark, which is very positive. Around 4000 new jobs have been provided, in relation to this and that is part of the reason why Lofoten and Vesterålen Petro, together with the regional council, is demanding a land based solution. Within offshore activity, people are commuting from all over the country and with the arrangements today one can live everywhere. On offshore facilities, there are deliveries and workforce from about every municipality in the country in the country. As Aukra and Hammerfest is an example of, when getting land-based solutions, local workforce will become a reality over time. Therefore, the focus is on the operating phase and it is work opportunities on the plant itself but also within the more long-term areas like maintenance and modification.

Today there is a focus in the region to include local suppliers in delivering industrial equipment to a potential land based plant but also to be included in other types of similar projects. In order to achieve this, they got something they call LUN (supply development Northern Norway). It involves companies like Statoil and Innovation Norway, in addition to 85 companies from the Northern part of Norway. In addition, around 40 companies from Hålogaland participate, as a motivation for the local companies to get to know the industry and what it takes to become a part of it. This could be seen as a phase 1 in the process of including local suppliers. In phase 2 they gathered around 30-40 different companies and executed a GAP analysis in order to reveal what measures needed to be done internally, being competence or other restructuring for them to become suppliers. Now they are working on phase 3, which deals directly with contracts and already they see the fruits from this work as companies in Lofoten and Vesterålen are part of a company called Hålogaland Oil and Energy. Together with them, they have now delivered their first tender for a long term contract For the companies in this region, cooperation is important in the future because most of them are small businesses and if they are not able to do this their chances of succeeding are slim. This is a factor they are aware of, and a survey done amongst 80 companies showed that they rated cooperation the number one factor for succeeding.

5.3.5.2 Lofoten and Vesterålen without oil and gas extraction

It is important to be realistic and have a sober view on things. When judging the consequence of not opening this area, history is an important factor to consider. For the last 20-30 years the fishing industry and tourism has been the dominant and carrying industry in this region. History has shown that during these 20-30 years, the region has been characterized by a negative trend with depopulation among a productive age group, and the municipalities have been forced to increase taxes in order to maintain a certain welfare level. However, as Solsvik said, the opposition party described these challenges very well: Without income from petroleum, included undiscovered areas, it would mean a reduction in today's welfare level or increased taxes for the Norwegian population. What makes this somewhat paradoxical is that they are against opening up the areas outside Lofoten and Vesterålen today. They have with other words, described the scenario without oil and gas extraction very well. If the potential recourses available outside the coast are not taken into use, the negative development will continue and the challenges will accumulate.

In Lofoten and Vesterålen, more legs are needed to stand on, and the fish farming sector has reached its potential employment wise, even though politicians and protestors are saying that it is important to keep the fish and tourism industry. However, the politicians still remain to do anything specific in order to give the municipalities an incentive to keep this industry instead of oil and gas. Both in 2008 and 2009, the business committee participated in meetings and expressed concerns about the developments in the region and they were clear that something needed to be done. Especially those against oil and gas development stated an agenda to get fishing and tourism back on its feet. By today, none of these oppositions has lifted a finger for the mentioned industry. The knowledge of the present situation is there, but eyes are closed, and without oil and gas development, this region is heading for a dark future.

As for lessons learned, the regional council is looking at projects like the ones at Aukra and Hammerfest when taking a stand in the debate against oil and gas development in the region. For the residents there are two major concerns:

1. The risk that this will harm their basis nutrition, among it fishing

2. Will it create new jobs

When discussing these questions, Hammerfest and Aukra are the tangible examples, and hence the stories presented when Lofoten and Vesterålen Petro holds their lectures about possible developments. As these results cannot be denied, members of the presidency are included on study tours in these areas. When they saw the ripple effects from oil and gas activity in Aukra and Kristiansund, they almost did not believe their own eyes. It exist a positivity and a belief in the future that one could only dream of. For instance in Kristiansund for 15-20 years ago, the city were compared with Ravensburg. It was a clear decline in the city with an unemployment rate of about 14%. Fish and shipyard industry used to be the basis in the city, but today there is a bloom in the entire city, and they are keeping the youth and the business community is at a whole other state that it used to be. This story, and that of Hammerfest, is important to promote, and that is why decision makers are invited on such tours, so they can better relate to what has happened. It is definitely some transfer values from these areas and to Lofoten and Vesterålen. First of all, there will be a supply base and established emergency for this. If there are findings in the same size as Hammerfest and Aukra there are a significantly amount of work opportunities as a ripple effect. To elaborate, it is estimated around 800 jobs at the supply base and 500 at the land based processing plant, adding up to 1300 in total. There are forces working towards enlightenment and the regional council seems to have taken lesson from what has happened in Aukra and Hammerfest, and are aware of the potential economic ripple effects an opening could contribute to. In addition, it has been a realization that fishing and tourism are no longer capable of turning this around and that the region needs new legs to place its future in.

6. Analysis

I have given an introduction to my problem statement and the reason behind my choice of problem statement. Further, I have presented a theoretical foundation, with explanations of different ripple effects, in addition to estimated ripple effects for Hammerfest and Aukra. I have also explained and discussed my choice of methodology. My main problem statement for this thesis is “*What are the actual economical ripple effects of oil and gas activity for local municipalities-a case study of Aukra and Hammerfest?*” In addition to this I got a sub-

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problem statement which is: "What could be the expected economical ripple effects for Lofoten/Vesterålen in case of oil and gas extractions?" In this chapter, I will give an argumentation for my choice of literature and compare it with my findings.

6.1 Economic impacts; initial and ongoing

Initial impacts within oil and gas activity are usually those linked towards the construction phase (Henriksen and Sørnes, 2010). In case of Snøhvit and Ormen Lange the construction of the land-based plants at Melkøya and Nyhamna are initial impacts. If there will be an oil/gas activity in LoVe, a construction like this would also be seen as initial. In addition, suppliers of material, those working with the construction become a part of the initial impact. Suppliers in both Hammerfest and Aukra experienced inclusion of delivery of industrial equipment. LoVe Petro is working towards and expecting local suppliers in the region to stand for delivery of equipment, but also to be a part of the construction team.

Ongoing impacts are those that start as soon as the construction is completed, and often relates to upgrades, maintenance and modifications (Henriksen and Sørnes, 2010). For Snøhvit, local suppliers are involved in delivery of everything from food to band-aids. In Aukra, local businesses are involved in all from plowing the area during wintertime, to catering of food. In LoVe, one will see much of the same tendencies where the local business community will be involved in areas where it is possible. Often these to impacts are divided into four broader categories, direct, indirect, induced, and catalytic impacts. I will go more thorough into the different ripple effects in Aukra and Hammerfest by using these categories.

6.2 Ripple effects for Hammerfest from Snøhvit

I have presented a story or a description of the municipality Hammerfest where I have accounted for different aspects of its cycle in relation to Snøhvit LNG plant. Before moving on, I will divide the different impacts into four categories: *direct*, *indirect*, *induced*, and finally *catalytic impacts*.

6.2.1 Direct Impacts

Direct Impacts are those connected directly to the source, in this case the LNG plant Snøhvit, located in Hammerfest. Since my thesis among other things deals with property tax, it is natural to include this into my analysis. One of the major expectations for the municipality was the property tax, both in terms of how to introduce it but also how much they would get from it. An early estimation was that Hammerfest would collect around 100 million NOK yearly in property tax from the plant at Melkøya (NHO, 2006). For the municipal council it was important to secure a good income, and as mentioned in my empirical findings, due to different circumstances a property tax rate of seven per thousand was introduced. For the last couple of years the property tax income from the LNG plant at Melkøya has generated 135 million NOK. In comparison, their budgeted income from property taxes was, according to Kristine, 150 million. Out of these 150 millions, “only” 15 millions come from other work and estate. With other words, the municipality’s total income from the LNG plant constitutes 90 % of total property tax income. NHO (2006) estimated that there would be an increased employment in the public sector, due to municipal tax revenue. As estimated, this income has allowed the municipality to spend money in much needed areas, like school where they have introduced additional math lectures and the teachers have been educated within the field of mathematics. In addition, other parts of the public sector has been improved, for instance within health care. This incomes income is also used to create a better well-being for the residents living in the municipality, by increasing the living quality. Due to the increasing child birth in Hammerfest, the municipal council needs to re-open kindergartens and this was possible due to the 135 million the collect in property tax. As Henriksen and Sørnes (2010) pointed out, ripple effects also effects areas like life quality and family, which has been very important for the municipal council in Hammerfest.

Property tax could be seen upon as, either a consequence of Norwegian tax policy, or as a ripple effect. For municipalities, property tax is the only way to collect income from oil and gas companies operating within their municipal borders. Hence, property tax could be seen as a consequence, as they introduce this tax in order to get money. If the municipalities had other

ways of harvesting economically from such plants or pipelines in the area it could be seen upon as more attractive as they did not have to tax other parts of the industry or private housings. On the other hand, this is a ripple effect in the sense that it is generated as a direct impact, from the oil and gas companies' entry. Both Hammerfest and Aukra introduced property tax at a rate of seven per thousand, in order to get the maximum from these plants connected to Snøhvit and Ormen Lange. Had it not been for their fortunate situation, economically speaking, the property tax would perhaps not have been introduced. If it were to be introduced, despite not having a plant like this, it would be in order to maintain a welfare offer, which is the reason why Andøy has property tax in the region. Therefore, municipalities like Aukra and Hammerfest introduce property tax solely to get income from these plants. Had there been another possibility to get income they would use that instead and hence that would be a ripple effect and there would not be property tax in the municipality. Today the situation is not like this, making property tax the only way to get something in return for these plants. Property tax is than introduced with that in mind of getting something in return, and it is still up to each municipality to choose whether to go for this tax. However, this is not a lucrative option and is not done.

Based on this it is my opinion, as are Cooper and Smith's (2005), that property tax is a ripple effect of the oil and gas business' entry in the municipality. It is not a consequence of Norwegian tax policy, as this tax is introduced with the purpose of getting these incomes from the oil and gas companies. A tax like this would probably not been introduced otherwise, unless the situation demanded it, like the situation at Andøy. If there were other opportunities available, these might be preferred instead, and would then be a ripple effect. My point is that no matter how you look at this, the property tax was introduced to get tax money, as that was the option available. These municipalities had an opportunity, and as an impact of the plant construction, they gained these incomes.

Cooper and Smith (2005) mentions employment of own staff as a direct effect and according to the estimations done by NHO (2006), it was expected that Snøhvit would generate around 230 new workplaces at Melkøya, where the LNG plant is located. A direct ripple effect like

this can be seen upon as rather important for a municipality, especially one that is already experiencing depopulation. Today Melkøya plant holds, according to Kristine, 220 workplaces and has become an important employee in the municipality. It has opened up for locals to return home in order to work on the “island”, and in addition new residents are moving to the city as it holds exciting work opportunity and is a city under continually growth. Estimations for the needed amount of employees at this LNG plant are not as hard to predict, in contrast to the more general ripple effects Snøhvit has had. However, the estimation of 230 new workplaces at Melkøya was fairly accurate. It has served Hammerfest good that estimations were so close to how it turned out to be, this in the sense that it had generated a positivity within the municipality and a positivity that is important to keep.

I mentioned in chapter 3.1, cooptation as a key phrase for success in today’s market. A municipality cannot be seen upon as a business in that context, but they still have something to gain from cooperating with its competitors, in this case other municipalities. Brandenburger and Nalebuff (1996) define cooptation as a mix of cooperation and competition, and it relates to business units cooperating with its competitors. In terms of Hammerfest, it was of great importance for them to be handed Snøhvit, and be the municipality where the gas would be brought ashore. It was a hard fight, as there were several municipalities that wanted to take part in this. To stand a greater chance of succeeding getting Snøhvit, a possibility could be to cooperate with neighboring municipalities. As the municipal council in Hammerfest was trying to work Snøhvit through, they felt an absence of support from other municipalities. Cooperation between the different municipalities was experienced as difficult, since they found themselves on different planets. However, Hammerfest tried to include them in different ways as this was an opportunity for Finnmark County to grow. A requirement from Hammerfest municipal council was that those parties involved needed to introduce property tax on work and estate, in order to take part in future projects. This was not wanted from the other municipalities. Hammerfest is open for a cooperation with its neighboring municipalities for future projects, as this will eliminate competition and they will stand stronger against other municipalities. However, as with any cooperation it is based upon different compromises. In Hammerfest, it is introduced property tax on work and estate and hence the municipal council states this as a requirement for a cooperation between

neighboring municipalities. Companies in Hammerfest need to pay a property tax and hence companies in the cooperating municipality should do the same. Further, the municipal council in Hammerfest has proposed that all involved parties gather a defined percentage from their property tax income, and place it in a fund that will be used to the best for all parties. However, this is not an option for many of the municipalities as they see their future in other types of business like mining, and hence rejected this proposal. Therefore, the debate as for cooperation is presently dead.

6.2.2 Indirect Impacts

As I mentioned in my theoretical chapter, indirect impacts can be seen upon as effects that come as a consequence of the direct impacts (McDonald et al., 2007)

According to NHO's (2006) report, one of the trends that would turn for Hammerfest is decrease in population. When this report was presented, there had already been a change of circle and the influx to the municipality had started growing. However, this was because of the construction start with the LNG plant at Melkøya. Since the construction started, to the present day, Hammerfest has experienced a yearly growth in influx of about 1-2% and that is within the productive age group between 20 and 40. Such a development is unique for a Northern Norwegian municipality, and only Bodø and Tromsø can show to such a development. In addition, residents in Hammerfest are giving birth to more children than they did 10 years ago, and this is a sign of the positivity that exists in the city today. Table 1 is a graphical illustration from Statistics Norway (2009) showing the growth in population since the construction started at Melkøya early 2000. For the future, the grey area, one can see that the population growth in Hammerfest is expecting to rise. Snøhvit and other projects that might come in this area will have some influence with this.

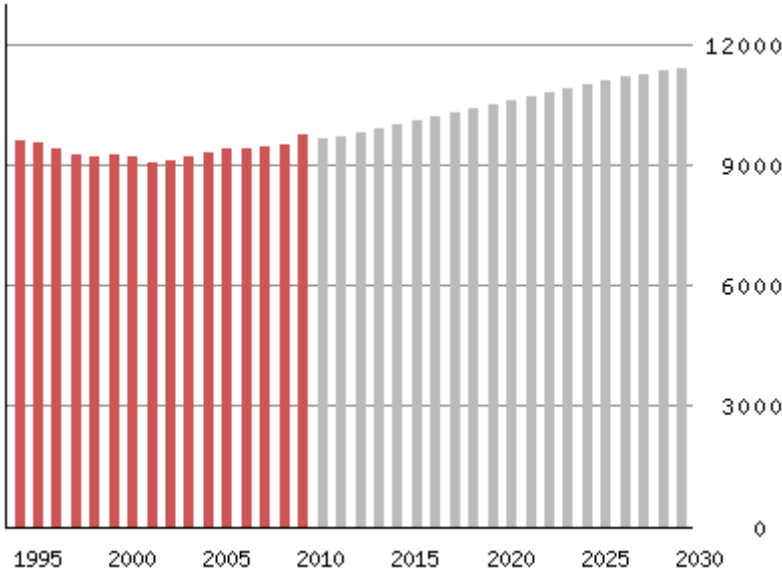


Table 1: “Population in Hammerfest 1995-2010 and estimated 2011-2030” (www.ssb.no, 2009).

During the construction of this LNG plant, it was expected that local suppliers would be included both in the delivery of equipment but also with the construction of it. Local/regional delivery was estimated to 240 million NOK. Kristine did not have an exact number by hand, but local suppliers were included through an interest group called Petro Arctic. Even though they felt that the contribution could have been bigger, they still contribute with more than expected and with several billions. It is hard to estimate correct numbers for such a construction. However, what Hammerfest is experiencing today is that for instance Statoil has its own suppliers for different things like band aids, whilst the Italian company Eni has its suppliers further away and hence they could go to the local pharmacy and ask for 10 000 band-aids. The local business community did show that they are capable of delivering supplies for projects this size, and hence they will be included to a larger extent for future references.

Pennsylvania Economy League of Southwestern Pennsylvania, LLC (2008), mentions real estate as an indirect effect of oil and gas industry. In Hammerfest, there was boom in the prices after Snøhvit. Finally, people selling their houses could now get market value for them, in contrast to the situation previously. As a consequence some left the city and moved south

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as they now could afford housing further south, but the main reason behind this increase was that the municipality had become an attractive place to live, it could offer something.

6.2.3 Induced Impact

Induced impacts are the general increase in purchases of goods and services in the town as a result of the direct and indirect impacts.

One of the induced ripple effects that NHO (2006) did not mention is the one concerning higher education. As this field has generated more life in the city, it has also contributed in stimulating the local youth. According to Bock, a trend in Hammerfest is that more of the local youth want to stay behind in the town and work on at the LNG plant at Melkøya. In order to do this they would need to take a higher education, and acquire the necessary competence. In addition, the municipal council has invested money to sharpen the high school education, which is an important factor to motivate and prepare the youth for higher education. Besides, youth with work experience from Melkøya are highly appreciated by the local business community as they come with a high level of knowledge. What has happened in the municipality has affected everyone and left an impression among the youth, and a determination to be a part of it in the future as well. Parents have also enlightened their kids about the opportunities that Hammerfest can offer through this project, and it is important that parents contribute in this process.

One of the things one was estimating from this “fairytale” was an increased activity in the city. General businesses were expected to experience a business bloom, according to NHO (2006). Already in 2003, companies experienced a growth in operating income, anywhere from 7% to 179% (www.gründer.no, 2004). Previous to Snøhvit, the municipality was characterized by low business activity and companies struggled due to the ever-increasing depopulation and the unpredictable changes in the economic situation. This scenario has been replaced with a much more colorful one, where local businesses no longer have to take down their signs due to bankruptcy. Business is blooming in the town today, and the above-mentioned services got more to do now, than what the case was before, so the growth has

been tremendous. A project like Snøhvit, that has generated 230 new jobs just at Melkøya, has become an important contributor to the bloom in business. When the residents get a job and have stable income, they have more money to purchase goods and services for. It is an induced effect as Statoil provides them with money, and they go and spend that money within the municipality hence contributing to local growth.

6.2.4 Catalytic Impacts

As mentioned in chapter 3.2.5, catalytic impacts are what do not get affected by the other types of impacts (direct, indirect, and induced), hence often referred to as spillover effect. Previous to Snøhvit, “everyone” had a general idea or opinion as to what the opening of this field would mean for the town and for the region as a whole. One of the things expected was an increased attention for the municipalities. Such attention would bring with it more activity, and hence local service industry would have more to do. Hammerfest has experienced a growth within areas like Hotels and taxicabs. Kristine explained to me that the municipality had seen a tremendous interest from foreign media that wanted to cover this story and see what had happened. First of all, airplane companies would see a change in the demand for travels to Hammerfest, and local taxicab companies found themselves with much more to do, as with the hotel industry that housed all of them. Henriksen and Sørnes (2010), mention commitment as a ripple effect. Commitment could be looked upon as a catalytic impact, as it is not related to the plan itself, but is more a spillover effect. In Hammerfest, residents are lining up to take part in volunteer office and other positions. The state of mind is that it is “their turn”, whereas people almost had to be forced into such positions previously. More residents are getting involved in politics, and in board positions resulting in attracting the “good heads”. This again, raises competence level of an organization or a political party, which again benefits the municipality.

6.3 Ripple effects for Aukra from Ormen Lange

I base my findings from an interview done with the Mayor at Aukra municipality, and on secondary data that have been published in recent time. In chapter 5, empirical findings, I have presented the story of Aukra before and after Ormen Lange including the different

problems they have encountered on the way. In 2007, Møreforskning constructed a report about the expected ripple effects Ormen Lange would have for Aukra and for the Møre and Romsdal region. I have chosen to base my findings upon this report, as my intention and desire is to see what the real ripple effects have been in comparison to what was expected, and to see what kind of ripple effects one did not expect but still have happened.

6.3.1 Direct Impacts

Direct impacts could be related directly to the construction of the plant at Nyhamna, and as they are located close to the source, they are often the easiest to indentify. Møreforskning (2007) published a report where they expected that Ormen Lange would generate a need for 200 workplaces during the operating time. Aukra would in addition collect 80 million NOK yearly in property tax income from the plant at Nyhamna. According to a news article from Steinulf Henriksen (2010), there were around 4000 people working at Nyhamna during the construction period. Today, around 500 people are working at this plant, which is more than double of what was expected from Møreforskning (2007). Ormen Lange has with other words contributed in becoming a central and vital area for generating jobs.

In terms of property tax income, Aukra has budgeted 137 million NOK in tax income, and of this number no more than 2 million NOK, is related to other work and estate. Aukra, a municipality with only around 3000 residents, is expecting to receive at least 135 million NOK in pure property tax income from Nyhamna, meaning more than 98% of their property tax income is due to this land based plant. With this however, comes great responsibility for the municipal council to distribute and spend the money wisely. Some of the income has been used on health care and other areas, to improve the life quality of the residents. This is in accordance with Henriksen and Sørnes (2010), who state that such activity also influences areas like family life and life quality. Since it was a cooperation in the region to get Nyhamna as the chosen location for this gas, Aukra contribute with 10% of its income to an inter municipal fund called GassRor IKS. Through this fund, they have realized different projects that will benefit the region as a whole. Aukra also uses some of this funding within its own

municipality and the focus there is building and renovating the schools and focusing on health-care and kindergartens.

Coopetition, meaning cooperation with competitors, have been practiced in Aukra municipality. With the word competitors, I mean in this case other municipalities that were aiming and are aiming towards getting oil or gas installations in their town. When Aukra announced their interest in getting a land-based plant in relation to Ormen Lange, there was 14 other municipalities in the region that also were part in the process. As the process went on more and more municipalities fell off, and Aukra came to an agreement with neighboring municipalities, to go for Nyhamna as the place for this plant. As part of the agreement, they decided that some of the property tax income for the plant would be shared between different municipalities. By agreeing on this cooperation, they eliminated the competition between them and could concentrate on making Nyhamna as attractive as possible for the oil and gas companies. Agreeing on cooperating worked and Nyhamna in Aukra was chosen over other municipalities, and it was the start of a good cooperation. A cooperation that is working very well, is the inter municipal fund GassRor IKS where the money in this fund is distributed in a way that benefits every party. Aukra and GassRor IKS, is a very good example of how coopetition can be used in other ways than just for businesses. In addition to working Ormen Lange through, they are also cooperating for the future and for Nyhamna to be a central part in future gas projects. So basically instead of competing with each other, Aukra and the neighboring municipalities, found a way to cooperate with each other and hence standing stronger in terms of other municipalities but also when negotiating terms with oil and gas companies.

6.3.2. Indirect Impacts

Aukra is a small municipality with only 3000 residents, and the situation was not good, with a dark future ahead. People were moving away, some to larger nearby municipalities like Molde, and some moved further away. According to the report done by Møreforskning (2007), one could expect a growth in the municipality due to Ormen Lange, and already during the years 2000 to 2007, it experienced a growth in population. Part of this growth was

most likely due to the construction of the gas plant at Nyhamna. According to Mayor of Aukra, they are experiencing a steady growth in the population and the growth is expected to last, see table 2.

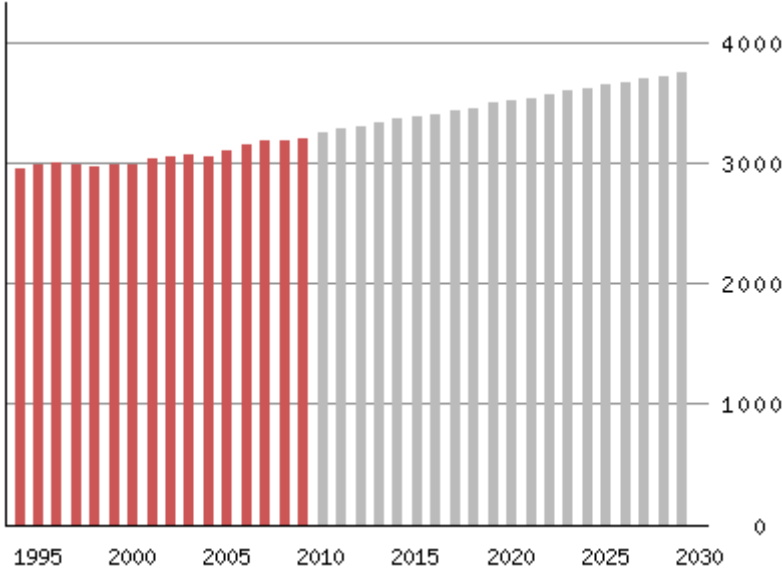


Table 2: “Population in Aukra 1995-2010 and estimated 2011-2030” (www.ssb.no, 2009).

Another expectation one had to this project was involvement of local suppliers both in terms of maintenance and in terms of general deliveries like food, but also in construction of pipeline systems and with the plant itself. Even though it is not local contractors that contributes with the most in terms of such deliveries, Bernhard said that they were included to some extent. This is very positive for the community, as there was a lack of activity from before and such an inclusion contributes in generating jobs for more people. In addition to this, an area like Nyhamna needs snowplowing and this winter was extreme with large amount of snowfall so there were more than enough for them to do. Therefore, the local business community is positive to what has happened despite having to pay property tax, since what is happening helps them to a more active business and makes it possible for the municipality to implement different projects.

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6.3.3 Induced Impacts

I mentioned that there are 500 persons working at Nyhamna, and in addition, there has become an increased activity in the municipality due to contracts related to Ormen Lange. Since they got more to do, they also earn more money and hence they get a higher purchasing capacity, which again means that they do purchase more goods and services. Previously business had little to do, there were big difference between the different companies, and that came especially clear within the shipping industry. In addition, general business units struggled with what was a critical economical situation within the municipality. When Nyhamna was chosen as the place for the land-based processing plant, this was one of the things one where hoping would change, and it did. Those working at Nyhamna got more money, the municipality got more money so they could push forward different projects, and then local contractors got more money and Aukra winded up in a good circle.

6.3.4 Catalytic Impacts

A project like the one in Aukra, with Ormen Lange and the gas plant at Nyhamna, will generate more life in a municipality and this could have an impact on local service industry. Møreforskning (2007) did not have any estimation as to the catalytic impacts this project would have for the municipality or the region. Riksfjord however, spoke about the lift local business units like taxicab companies and hotels experienced in the wake of Ormen Lange. Just like Hammerfest, they too, have had many different foreign media come to the municipality in order to make reportages about what has happened. This means more people in the municipalities and higher activity. When foreign media travel here, they often stay for several days meaning they need a place to sleep and hence areas like hotels and so on experience more activity than before.

According to the report from Møreforskning (2007), Aukra would most likely use some of its income to finance construction and maintenance of roads, within its own municipality but also in the region. Most of the financing for such projects would come through GassRor IKS. Since this fund is a cooperation between several municipalities, one could expect there to be different constructions around the region, for instance in Eide, Fræna and Molde. I mentioned

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a little bit about GassRor IKS that realized different projects that benefitted the whole region. Two large scale and important projects were:

- Molde Airport
- Haukabø tunnel

At Molde Airport, they expanded the airports' runway and made other different measures at the airport. The "Haukabø project", it is a tunnel that replaced a dangerous part of highway 662, between Molde and Hollingsholmen ferry quay in Aukra. This was a project with total estimated cost of 125 million 2006 NOK and it brings positivity to the whole region. For this project, 52.2 million came from GassRor IKS (Statens Vegvesen, 2007). Another factor to consider is the positivity that exists within the business community and in the municipal council. As this grows, residents are becoming more interested in taking on different type of volunteer work. Henriksen and Sørnes (2010) refer to this as commitment, and it is considered a ripple effect from oil and gas activity.

6.4 Estimated ripple effects in Lofoten and Vesterålen

In this sub-chapter, I will present an analysis based on my findings from Aukra and Hammerfest, from interviews done with the Mayor in Andøy and the director of LoVe Petro. My findings will be analyzed towards my theoretical chapter. Figures and numbers are estimated on the basis that LoVe will experience same size in findings as for instance Snøhvit. In chapter 5.3, I have presented the story of Lofoten and Vesterålen.

6.4.1 Direct Impacts

There is a strong driving force in region to get a land-based plant if the area is opened for oil and gas activity. A land based-plant would bring with it new workplaces which is considered a necessity, as the region is struggling with few work opportunities. If the findings are the same size as Ormen Lange and Snøhvit, construction of a plant could involve as much as 4000 new jobs. According to Smith and Cooper (2005), employment of own staff is considered a direct effect, and for LoVe there is an estimated workload at 500 persons at the

land based plant and around 800 jobs at the supply base, adding up to 1300 man years in total. A land-based plant will not be affected by the new law regulations and therefore will generate property tax income for the chosen municipality. It could be in the area from 100 to 130 million NOK, which would make it possible for the region to initiate different actions that will benefit the region. It has been talks about everything from a business fund to focus on school and culture. This region has learned from Aukra, as it has a sharing agreement for the incomes. Every municipality should “get a piece of the pie”. In addition, they are cooperating on the demands that there must be a land based solution, and not an offshore solution. How the distribution key will look like are not yet clarified, but is a general understanding that the chosen municipality will need to take different actions as to infrastructure, meaning it needs more money than the rest.

6.4.2 Indirect Impacts

LoVe is experiencing depopulation, and the age group between 20 and 40 are moving from the region and the work possibilities are slim. With oil/gas installations comes more activity, and history has shown that with time, a municipality with such a plant will experience growth in population. Another indirect effect mentioned by Pennsylvania Economy League (2008), is the inclusion of local suppliers in delivery of industrial equipment. LoVe Petro are working with different projects that will make local suppliers able to meet such a challenge, and it is expected that they would be included. It is also a goal that local companies should be included in the construction of a plant as well, which is done through LUN. In addition to delivery of industrial equipment, it is estimated that local suppliers will contribute with everything from food to band-aids.

6.4.3 Induced Impacts

Even though my informants could not give any clear estimation as to the induced impacts, in the shape of numbers, it would be normal to draw a parallel to Aukra and Hammerfest. In these municipalities, it was an increase in activity, and as people could afford more things, they bought more in the local stores, generating a high induced impact. According to Robertsen, local business community would be less concerned about the property tax. For a

business leader the increased activity is good for business, regardless of what he is doing, as he will experience a different bottom line. So all those employed in relation to the oil/gas field will use their income to pay for different merchandises and by this generating an induced impact.

6.4.4 Catalytic Impacts

Ørjan told me that the municipalities in the LoVe region have not created any specific means or goals they want to achieve or solve if they get property tax income. The municipalities' possibilities from oil and gas activity, has not been clarified and acknowledged, hence estimations about this are uncertain. However, it is reasonable to believe that there will be done large-scale changes to infrastructure, both for the municipality with the land-based plant, but also in the region. Aukra used part of its income to finance a tunnel construction and expansion of Molde Airport. In Lofoten/Vesterålen, one would also see different projects being initiated, in order to improve needed areas. Another factor is commitment amongst residents in the region, and with the positivity oil and gas activity brings with it, there would probably be a higher level of commitment towards different volunteer offices. It could be everything from board leader of a football club to entering politics. If this area opens up, it is going to attract much press attention from around the world, which in turn will contribute to a boom for different service industries, as journalists need housing and transportation. Hammerfest and Aukra municipality both experienced much attention from worldwide press, and with LoVe being known for its nature and wildlife, it could be compared to other areas making it more attractive for media.

In order to summarize what has just been presented in the analysis chapter, I would say that both municipalities have experienced ripple effects, to some extent fairly the same ones as well. Hammerfest has had direct impacts from Snøhvit in terms of property tax incomes that have turned its economical situation right around, they have tried implementing cooperation between municipalities and learned more about this. As for Aukra, they have cooperation

through GassRor IKS, where they share some of the property tax income. Both municipalities have experienced indirect ripple effect in terms of population growth, and inclusion of local suppliers. Induced impacts relates to those working at Melkøya and Nyhamna spending their money locally, so that the business community experience a growth. Of catalytic impacts, Aukra realized two projects, Haukabø tunnel, and expansion of Molde airport. For Hammerfest, local hotel chains and taxicabs, experienced more customers as there have been more activity, for instance from journalists. In the region of LoVe, there will be more activity and increase in population if these areas are opened. For the residents it means new and better job openings, better health care, and a higher living quality. The municipalities will gain property tax money, making realization of different projects an alternative.

7. Conclusion

My thesis has explored the actual economic ripple effects that the municipalities Hammerfest and Aukra has experienced after they got a land-based processing plant. In addition, I have explored the current situation for the region of Lofoten and Vesterålen. What they are going through, but also what the future holds for them, with or without oil and gas opening. Based on this I will present my main conclusions.

7.1 Hammerfest

Hammerfest has gone through a tremendous change as a municipality, and Snøhvit is the main reason behind this change. The first clear impact from Snøhvit is the property tax, through this tax they get around 135 million annually, and is able to realize different projects. Main areas of concern have been improvement of living quality and improvements in the school, but also a new culture house has been constructed. In terms of cooptition, Hammerfest has fallen through and has not been able to obtain a cooperation with its neighboring municipalities.

An important factor behind this is that the municipalities found themselves on different planets, hence making cooperation more difficult. With the new bound optimism in the municipality, the town managed to hold on to its residents. It has a yearly growth in influx of about 1-2% within the productive age group between 20 and 40. The ripple effects have also

stretched to include local suppliers, that have been involved in delivery of industrial equipment through Petro Arctic but also bakers, pharmacies etc have experienced a growth in business. Therefore, the business community in Hammerfest has fewer bankruptcies than it used to, and those working at Melkøya are using their income in the town and stimulating to a higher activity. As this LNG processing plant, is such a large-scale project, it has drawn attention worldwide and foreign journalists have been flocking to the town. Especially hotels and taxicab companies have experienced this attention, and are busier than ever. It is safe to say that the ripple effects experienced are enormous and it is hard to estimate and comprehend this until it actually happens. Hammerfest has gone from a municipality with great economical problems and high depopulation rate to a town that is seething with life and there is firm belief for the future.

7.2 Aukra

Aukra is collecting property tax of at least 135 million annually, from the gas plant at Nyhamna, and for a municipality with only 3000 residents this is a large sum. As Aukra cooperated with its neighboring municipalities in order to make Nyhamna the location for the processing of Ormen Lange's gas, they created a fund. GassRor IKS is an inter municipal fund where the involving parties set of money, and Aukra sets off 10% of its tax income from Ormen Lange. Through this fund, they have been able to realize different projects as expansion of Molde Airport and construction of the Haukabø tunnel. It is a great example of how cooperation can benefit the whole region, instead of all the municipalities competing against each other. However, the property tax is also spend within Aukra by renovating schools, focusing on health-care and on kindergartens. Since the construction of the land based plant started, the municipality has experienced a growth in population, and there has been generated more workplaces for those living there. The purchasing capacity of the general resident is increased, contributing in more money spend within the municipality, leading them into a positive circle. Ormen Lange was a large project, and the ripple effects from it have left its mark on the municipality. From being a place that no one had heard of, where the residents moved and local industry struggled, it has become a town that spreads optimism throughout the entire region. Local industry is involved in Ormen Lange, and in different constructions around the region, people are moving back to the town and it has been put on the map by

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several foreign media. It has been a big change but Aukra has managed to deal with this project in a very good way that benefits many parties.

7.3 Lofoten and Vesterålen

The last part of my problem statement deals with what type of ripple effects Lofoten and Vesterålen could experience if the region is to be opened for oil and gas activity. My estimations are based upon my findings in Hammerfest and Aukra in addition to primary and secondary data.

First of all the municipalities in the region are demanding a land based processing plant, and states this as a requirement for them to be positive towards an opening. With such a solution, there would be a supply base and there will be established emergency for this. If the findings are the same, as for Snøhvit and Ormen Lange, one could quickly see around 1300 new workplaces related just to this. In addition, the companies in the region are working towards a supplier role, where they can deliver industrial equipment for such a construction. LUN is a good example of what is being done for the companies to get to know the industry. Cooperation is not only a key phrase for the municipal councils, but also for local companies as they stand a better chance if they stick together, which they are aware off. In the case of direct effect as work opportunities, there is a big potential, but there is also need for labor when maintenance and upgrades needs to be done. Therefore, there is a possibility of a couple of thousand new jobs. If the Parliament complies with the regions desire to have a land-based solution this means property tax income. These incomes could stretch all the way up to the same level as in Hammerfest and Aukra. Today, there is a general agreement that all such income should be divided between the municipalities, so no matter where the plant is located, all parties will benefit from it. For the municipalities, this means money to place in needed areas like health-care etc. As a compromise towards the business community, there might be a business fund where the municipal council gives back to them, as the property tax will affect them. History has shown that the petroleum industry attracts people, and it is likely that the productive age group between 20 and 40 will remain in the region and contribute to a bloom. There is definitely a transfer value from Hammerfest and Aukra to Lofoten and Vesterålen,

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even though much depends on the findings, this region will experience ripple effects and improve its current situation. An important factor the regional council needs to acknowledge, is what has happened in other places and see what challenges they have encountered and learn from their experience.

8. Contributions, limitations and further research

8.1 Practical contributions

By writing this thesis, I hope to shed more light on a topic that is often discussed, but where there is little written information available. I therefore see my paper being highly relevant for today's ongoing discussion of Lofoten and Vesterålen, at the same time it has originality towards it, as there is a lack of research on this topic. Further, I hope that others will be motivated to continue spotting the ripple effects in Aukra and Hammerfest, and if LoVe is opened, someone will feel a call to plot the actual ripple effects in this region.

My findings have shown that Aukra and Hammerfest have experienced ripple effects that has turned their situation around and made possible new projects, that otherwise would not have been realized for decades. For the regional council in LoVe, this could be interesting reading as this is a written research of the ripple effects a land based processing plant can have.

8.2 Limitations

This thesis is a case design where I have chosen to study one topic but several cases. By choosing this design, much time has gone by to interview people from all cases, and this might have an impact on my result, as only one informant from Aukra and Hammerfest have been interviewed. If my focus had been on just one of these municipalities, I could have spent more time with informants from that municipality. However as part of my research was to estimate potential ripple effects in the LoVe region, based on this, I chose to include both municipalities, as they might look the same, but got different stories to tell. Even today,

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Ormen Lange and Snøhvit could be seen upon as fairly new projects, so there could still be different ripple effects that have not unveiled themselves yet.

8.3 Further research

For those continuing on my study there are several things that could be focused on. As I mentioned in my limitation, it could be an advantage to talk to more people in both Aukra and Hammerfest, which have been involved in the process of getting the land-based plant to their municipality. By doing so, one could reveal more information that could be useful and uncover more ripple effects. In addition to this, one could perform a quantitative survey in the respective municipalities, and see how the general resident feel about the land based plant. In addition, the focus could be on how they see their hometown now and before the entry of the oil and gas companies.

For future research, it could be interesting to see if new ripple effects have emerged since my research was done. In addition, if the government decides to open the areas outside Lofoten and Vesterålen for oil and gas activity, it could be interesting to see the immediate ripple effects in the region. Another point is to see how the municipalities are working together, and to which extent there will be a population growth, or if there instead would be more commuting from cities like Bodø. If the area remains closed, it could be interesting to see what effects this will have to the region. Will those against oil and gas development have created other legs for this region to stand on, or will today's situation worsen.

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10. Appendices

Appendix 1: Interview guide for Aukra

Fortid: Varaordfører i kommunen fra 2003-2007 og ordfører fra 2007

1. Hvilke tanker gjør du deg omkring samarbeid med nabokommuner? Positive og negative sider.
2. I forhold til etablering av Nyhamna: Hva var bakgrunnen for enighetene omkring samarbeidet om Nyhamana som leveringssted for gassen fra Ormen Lange.
3. Nabokommuner: Hvordan er samarbeidet med nabokommunene? (Muligens referere til artikler fra nett hvor Eide har vært noe misfornøyd med avtalen omkring Gassror IKS)
4. Hvor stor del av kommunens inntekter utgjør eiendomsskatten fra Ormen Lange?
5. Gassror IKS: Kan du fortelle litt om Gassror IKS (Hvordan er det sammensatt, hvordan bestemmes fordelingen av kapitalen i fondet?) Eventuelt hvor stort fondet er? Organisasjonskart for fondet?
6. Jeg har forstått det slik at det i 2009 ble fremmet forslag om endring av reglement for innkreving av eiendomsskatt langs kystgrensene. Hva er konsekvensen av et slikt forslag for Aukra og nabokommunene?
7. Hva har vært de lokale ringvirkningene av eiendomsskatten og fondet, samt Ormen Lange som helhet?
(ansettelser i offentlig sektor, tilflytting, lokalt næringsliv)
8. Hvordan var situasjonen før Ormen Lange?
9. Hvordan ser du for deg fremtiden med Ormen Lange?

Appendix 2: Interview guide for Hammerfest

Fortid: Hva var din posisjon da Snøhvit feltet ble konstruert?

1. Var det på noe stadium aktuelt å samarbeide med nabokommuner i forhold til ilandføring av gass fra Snøhvit feltet?
2. Nabokommuner: Hvordan er forholdet til nabokommunene når dere har en relativ høy inntekt som en følge av eiendomsskatten fra Snøhvit?
3. Hvor stor del av kommunens totale inntekter utgjør eiendomsskatten fra Snøhvit.
4. Hvordan distribueres pengene?
5. Jeg har forstått det slik at det i 2009 ble fremmet forslag om endring av reglement for innkreving av eiendomsskatt langs kystgrensene. Er dette et forslag som er realisert? Hva er konsekvensen av et slikt forslag for Hammerfest?
6. Ble lokale leverandører inkludert i levering av industrielt utstyr?
7. Hva har vært de lokale ringvirkningene av eiendomsskatten og fondet?

(ansettelser i offentlig sektor, tilflytting, lokalt næringsliv)

8. Hvordan var situasjonen før Snøhvit og Melkøya?
9. Hva ser du for fremtiden?

Appendix 3: Interview guide for LoVe

1. Hvordan anser du mulighetene for olje og gass utvinning i LoVe områdene?
2. Hvilken fordelingsnøkkel kan man forvente i forhold til inntekter fra en slik aktivitet?
3. Sett i lys av Aukra og Hammerfest, hvilke ringvirkninger tror du man kan forvente med olje/gass utvinning i dette området? Da særlig tatt i betraktning eiendomsskatten som kan innkreves.(Blant annet om lokale leverandører vil bli inkludert i forhold til levering av industrielt utstyr?)
4. Har kommunene klare formeninger om hvordan pengene skal distribueres? Hvilke områder som er prioritert?
5. Et av kravene for å kreve eiendomsskatt fra olje/gass anlegg er jo at man må ha eiendomsskatt på verker og bruk. Hvilken eiendomsskattesats ser du for deg som mest realistisk? (7 promille?) Hvordan tror du lokalt næringsliv vil ta i mot en introduksjon av eiendomsskatt? Er det eiendomsskatt på Andøy og i andre kommuner? (er det aktuelt med noen form for kompensasjon gjennom næringsfond for lokalt næringsliv?)
6. Hvordan tror du det nye reglementet om bunnlinjeprinsippet i forbindelse med innkreving av eiendomsskatt vil påvirke dette området om det blir olje/gass utvikling her? Tror du det kan ha påvirkning på beslutningen om å åpne opp området?
7. Nevne noe om pendleruter? Om ikke alle velger å bosette seg i disse områdene, er det noen pendleruter du anser som sannsynlig?
8. Hva har LoVe områdene vært plaget med? For eksempel i forhold til samarbeid mellom kommunene, fraflytting, nedleggelse av lokalt næringsliv osv.
9. Ser dere til andre lignende prosjekter, eksempelvis Aukra og Hammerfest, når dere evaluerer et slikt prosjekt? Eller har dere andre eksempler som tas med i betraktningen? (Skarv kanskje).
10. Hva tror du vil bli konsekvensene om LoVe forblir lukket?