

ADAPTING TO CHANGE – COMMUNITY RESILIENCE IN NORTHERN
NORWEGIAN MUNICIPALITIES

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Til tante Inger

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1. Introduction

Climate change is a major challenge facing society and adaptation to its impacts will be required (IPCC, 2007, 2013). In order for communities to prepare for, and adapt to, the challenges of climate change there is a need to address adaptation and community resilience through an approach which accounts for the interaction and complexity of multiple factors (Hovelsrud & Smit, 2010; McCarthy et al., 2005; O'Brien et al., 2004a), which pays attention to local contexts and perceptions of climate and weather (Cruikshank, 2005; Hovelsrud et al., 2010; Hulme, 2008; Strauss & Orlove, 2003), and which includes both subjective and objective dimensions of understanding processes of change (O'Brien & Hochachka, 2010).

In the context of climate change research very few attempts have been made to include subjective dimensions, such as values, culture, and place attachment, when seeking to understand both community resilience and adaptation processes (Adger et al., 2011a; Hulme, 2008). There is now increased attention being paid to these linkages (Adger et al., 2013; Fresque-Baxter & Armitage, 2012; O'Brien & Wolf, 2010; Wolf et al., 2013). Recent research shows that people's attachment to place is affected both through the impacts of climate change (Adger, et al., 2011a; Adger et al., 2010; Hastrup, 2009) and adaptation policies which have not taken place attachment into account (Agyeman et al., 2009). Engagement with climate change can partially be explained by place attachment (Scannell & Gifford, 2013). Nonetheless, little attention has been given to how place attachment may influence adaptation to climate change (Fresque-Baxter and Armitage, 2012).

This thesis examines two municipalities in Northern Norway in the context of changes in climatic, environmental, societal, and economic conditions, and the ways in which local dimensions of community resilience enable adaptation to these changes. Although the consequences of changes in climate represent a challenge for communities in Northern Norway, it is not a given that climate change - perceived, observed, or anticipated - will motivate adaptation. To reach a closer understanding of community resilience and local adaptation it was thus necessary to investigate a range of other motivating factors. This thesis shows that particular attention to what matters to people, including their place attachment and discourses for development of place, must be taken into account in adaptation processes.

The Arctic has been at the focus of climate change research and reports because of the magnitude and rate of climate change impacts recorded in this region (ACIA, 2005; AMAP, 2011). In addition to rapid climatic changes the Arctic is also facing rapid changes in environmental, societal, and economic conditions (ACIA, 2005; AHDR, 2004). These changes will vary in time and space, and the consequences are expected to be significant for many Arctic communities (AMAP, 2011; Arctic Council, 2013; Chapin et al., 2004; Hovelsrud & Smit, 2010). Understanding how communities in the Arctic respond differently to these changes is important, and provides the context for selecting fieldwork areas in Northern Norway¹.

Both within and outside the Arctic there are numerous examples of observed adaptation to climate change (Adger et al., 2007). In general these are found to develop in response to multiple interacting challenges in government policies, local environmental, societal, political and climatic changes, but rarely as a response to climate change alone, either observed or anticipated impacts (Berrang-Ford et al., 2011; Ford et al., 2011; Tompkins et al., 2010). Framing adaptation in terms of responding only to climate change is therefore not well grounded empirically.

The main objective of this study is to analyse the factors that are important in contributing to the ability of communities in Northern Norway to respond to a suite of changing socioeconomic and environmental conditions, and to investigate the applicability of current approaches to climate change adaptation in this context. This is based on an awareness of the need to: i) frame adaptation in a manner which includes multiple and interlinked factors; and ii) to understand better how adaptation may occur, what motivates adaptation, and which actors and institutions are relevant for the activation of these processes.

The research questions driving the study are: i) What is motivating local communities' adaptation to changing social, political, economic, environmental, and climatic conditions, and what are the implications for understanding climate change adaptation? ii) What are the salient aspects of community resilience, and what are their relevance in the context of future challenges, including the impact of climate change?

The thesis consists of four articles (see table 1.1.). The fieldwork that provided the empirical basis for the research was carried out in the municipalities of Berg and Øksnes in Northern Norway, during the period June 2009 to July 2010. Each article answers one

or more of the research questions, from different points of entry, and each in turn investigates different aspects of change processes in the two localities (see table 1.2).

Table 1.1 Overview of articles

Article 1	Amundsen, H. (2012b). Illusions of resilience? An analysis of community responses to change in Northern Norway. <i>Ecology and Society</i> , 17(4), 46.
Article 2	Amundsen, H. (2013). Place attachment as a driver of adaptation in coastal communities in Northern Norway. <i>Local Environment</i>
Article 3	Amundsen, H. (2012a). Differing Discourses of Development in the Arctic: The Case of Nature-Based Tourism in Northern Norway. <i>The Northern Review</i> , 35(Spring 2012. Special issue: Tourism and Travel in the Circumpolar North), 125-146.
Article 4	Amundsen, H., Hovelsrud, G. K., and O'Brien, K. (under revision) The Arctic Challenge: climate change adaptation in Northern Norway. <i>Polar Geography</i>

The first article analyses the dimensions that are considered essential to community resilience (Amundsen, 2012b). One of these dimensions is people-place connections, including people's attachment to place. Here it is argued that it is necessary to pay attention to the contextual and subjective dimensions of community resilience. The second article presents an analysis of place attachment as a motivating factor for adaptation, and concludes that it is a strong and important motivating factor that may play a significant part in the development of local adaptation strategies (Amundsen, 2013). The third article analyses how tourism, as a strategy to overcome multiple challenges in the municipalities, can contribute to community resilience. The article also highlights definitions of place as an important factor in explaining local perceptions of tourism development (Amundsen, 2012a). Additionally, this article challenges the widely-held perception that local tourism development will lead to sustainable local communities. The fourth article discusses the application of critical realism to address the challenges of climate change adaptation, and gives four insights that help contextualise climate change adaptation and support a non-reductionist and integrative approach.

Table 1.2 Summary of the findings by articles

FINDINGS				
Research questions:	Article 1: Illusions of resilience? An analysis of community responses to change in Northern Norway	Article 2: Place as a driver of adaptation in coastal communities in Northern Norway	Article 3 Differing discourses of development in the Arctic – the case of nature-based tourism in Northern Norway	Article 4: The Arctic Challenge: climate change adaptation in Northern Norway
What is motivating local communities' adaption to changing social, political, economic, environmental, and climatic conditions, and what are the implications for understanding climate change adaptation?	Six factors of resilience representing the ability to adjust to change: community resources; community networks; institutions and services; people-place connections; active agents; learning All six factors have implications for adaptation	Place attachment; underscores the importance of including locally relevant aspects for understanding current adaptation	Place identity; underscores the importance of including locally relevant aspects for understanding adaptation; locally acceptable development as an adaptation strategy;	Current perceptions of climate change requires attention to what matters to people Four insights for climate change adaptation: perceptions of reality; value judgements; non-reductionism; human agency and subjective perspectives
What are the salient aspects of community resilience, and what are their relevance in the context of future challenges, including the impact of climate change?	Six factors applicable to current situations; Learning is the most applicable to future conditions	The importance of place attachment and a quality of life for current adaptation processes; Future climate adaptation strategies for maintaining quality of life anchored in local processes	Engagement of resources for nature-based tourism development Tourism may not be sufficient for securing sustainable communities in the future	Understanding of interlinked factors and scales

This collection of articles contributes to the literature on climate change adaptation through an empirical study of the subjective dimensions of climate change adaptation, and stresses the importance of including multiple factors in the analyses of adaptation processes. The concept of community resilience is applied in order to analyse the factors that are important for communities and municipalities currently dealing with changing conditions. The resilience perspective emphasises that continuous learning is a vital component for the ability to adapt to changing conditions. Further, through a focus upon

aspects identified as being of concern to the people in the case study sites, additional factors that motivate and influence adaptation processes are identified. These factors all have implications for future climate change adaptation policy and planning.

2. Background

2.1 Fieldwork areas

Northern Norway is arguably a region that is more affected by changes in natural resources and environmental conditions than any other part of Norway. This is mainly due to several communities' continued dependence on fisheries as the main employer (Hovelsrud, et al., 2010; West & Hovelsrud, 2010). The selected study areas for this thesis are Berg municipality on the island of Senja and Øksnes municipality in the archipelago of Vesterålen in Northern Norway (see figure 2.1). The municipal borders determine the geographical study areas. There are several villages within the municipalities, all with their own history and identity, although there exists a certain degree of common identity within each municipality.

The two municipalities have been selected in order to understand how northern coastal communities are adapting to the challenges they are facing, and analyse the motivation for adaptation. Further, despite the context of being located in the Arctic¹, a region with large observed and projected climatic changes, these municipalities are not reporting adaptation to climate change directly, but to a range of interlinked challenges and changes. The thesis discusses the implications for climate change adaptation research in this light.

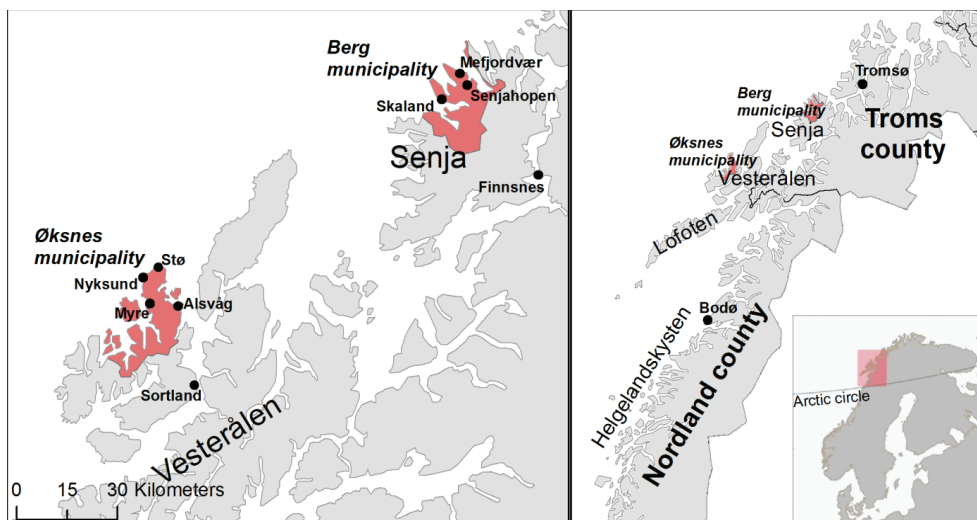


Figure 2.1 Map of study areas (Map source: Statens kartverk/Norwegian Mapping Authority, modified by Bård Romstad)

The two municipalities share a number of characteristics that include being coastal and geographically peripheral, and where natural resources are important for livelihoods and cultural identity. Fisheries are the most important sector in both municipalities and some of the best fisheries in Norway are found in the waters along their coasts. Both of these municipalities host major fishing ports, with active coastal fleets, landing facilities, processing industries, aquaculture and marine biotechnology. In addition tourism is a growing sector, and activities offered include hiking, kayaking, angling, bird-, seal-, and whale-watching, cultural activities, as well as the opportunity to experience active fishing villages.

The populations in both municipalities are relatively homogenous. The Sámi as an indigenous and ethnic group is not present in the two municipalities, however archaeological research indicates Sámi settlements in the areas in the Middle Ages (Svestad, 1995). Berg has recently settled more than 20 refugees from Africa, and Øksnes has also received refugees.

Historically, people living along the coast have engaged in both fishing and farming, and as such had livelihood flexibility to meet poor yields in one activity (Brox, 1966). Today most specialise within one sector. The main fishing season is the winter cod fishery, when

historically fishers from other areas of Norway would come to the region, a tradition that to a certain degree still remains.

Structural changes in the fisheries, such as in regulations, management, land-based industries, fishing equipment and boat sizes, have led to large geographical changes and a decrease in number of fishers in the two municipalities. People have moved from villages and settlements on outer islands to more centralised villages. Yet the fisheries remain the most important sector in both municipalities, with 14 per cent employed in fisheries in Berg, and 17 per cent in Øksnesⁱⁱ (Statistics Norway, 2004; West & Hovelsrud, 2008). In addition, the public sector is the largest employer, 37 per cent in Berg, and 28 per cent in Øksnes (Statistics Norway, 2011), which is a common characteristic of many small municipalities in Norway (see table 2.1).

As administrative units, municipalities are seen as important local institutions with significant social implications. As the local providers of public services such as health care, child care and education, social services, spatial planning and local infrastructure municipalities play a major role in achieving national welfare policy goals (Bjørnå & Aarsæther, 2010; Hovik & Reitan, 2004). Additionally, local governments may take on additional responsibilities regarding local development and facilitating business development. The support and active involvement of municipalities can be instrumental in ensuring the success of local business development and related job creation (Bjørnå & Aarsæther, 2010). The municipality is thus an important institution for initiating adaptation to enhance community resilience.

Table 2.1 Key statistics for the two municipalities

	Berg municipality	Øksnes municipality	Norway
Population numbers 2013	924	4472	
Population change since 1993	-310	-306	
Area	291,4 km ²	319,1 km ²	
Main livelihoods, % employed by sector	Public sector: 37% Fisheries ⁱⁱ : 14-40%	Public sector: 28% Fisheries ⁱⁱ : 17-35%	Public sector: 29,6%
Number of male per 100 female for age group 20-39	115,5	99,4	104
Age distribution:			
Children 0-17 years (%)	17,6	23,5	22,5
Elderly above 80 years (%)	7,1	5,1	4,5
Gross income per inhabitant above 17years of age (2008)	287 700	295 000	345 300

Sources: Statistics Norway (2011, 2013); Senja Næringshage (2009); pers.comm. public officer Øksnes.

2.1.1 Berg municipality

Berg municipality has a population of 924 people and a spatial distribution of 3 people per km² (Statistics Norway, 2013). Senja is the second largest island in Norway, located north of Vesterålen. The island is connected by bridge to the town of Finnsnes to the east, and with ferry connections to Vesterålen in the south and Tromsø in the north. The municipality has two main settlements, geographically divided by fjords and mountains, located in southern and northern part of the municipality respectively. A tunnel opened in 2004 has reduced the travel time between the north and south from 1.5 hours to 20 minutes.

The opening of the tunnel has had consequences for the provision of public services. Before the tunnel was built public services were provided in both parts of the municipality, such as schools, health care, nursing, library. Due to the shorter distances between the northern and southern parts of the municipality, coupled with a smaller population, the state government reduced transfers to support public services, and as a consequence it is no longer possible to provide the same level of local services in both north and south. This has led to the merging of some services and the localisation debates have divided the municipality. The primary school in Skaland was closed down from autumn 2009, although strongly opposed by the parents and villagers (Amundsen, 2012b, 2013). The closing of the school, one of two remaining primary schools in the municipality, was seen

by many as a step towards an even greater decline in population numbers, as it was expected that families would move away, and that it would be difficult to attract new families to a community without a local school. A group of individuals started an initiative that resulted in the school reopening as a private school after one year, and 19 out of the 27 children that geographically belong to this school transferred back. The reopening of the school is an example of the resistance to removing a key institution from the village, and an attempt to reverse the trend of population decline (Amundsen, 2012b, 2013).

The three most important sectors in the municipality are fisheries, tourism and mining, and Berg is also to some degree geographically divided in terms of livelihood. Livelihoods in the north have mainly been based on fisheries. Here the municipality has been actively involved in expanding and renewing the fishing harbour in Senjahopen, which has helped establish one of the largest fishing harbours in Northern Norway. The main source of livelihood in the south has been graphite mining and public administration. In fact, almost every family was directly or indirectly employed in the mine until a fire in 1985 led to dramatic changes. A new mine opened in its place, but technical challenges and international market conditions have created problems. At the time of the 1985 fire the mine employed more than 100 people, compared to 40 employees today. Population numbers in Skaland dropped after the fire, and have continued to decrease since.

Tourism is growing in the municipality, and there are five accommodation establishments, three restaurants, and one combined gallery and tourism information centre. A National Tourist Route on Senja opened in 2012 of which a large proportion of the route goes through Berg municipality. To date, two architecturally designed lookouts and one public toilet facility along the route have been built in the municipality, and more investments are expected.

Berg municipality has been successful in providing local public services and is a strong local actor as a collaborator with local businesses, local groups and networks. The municipality runs local development projects involving collaboration between local groups and individuals, so as to ensure that the municipality is a 'good place to live and learn'.

Inhabitants in the communities run many organisations on a voluntary basis; these include sports groups, community centres, and festivals. Although population numbers are less than 1000, membership in organisations counts approximately 4000. People help out at

*dugnad*ⁱⁱⁱ when asked, although it was noted that people are less willing to contribute than previously. Many are involved in activities in their local community and help out any way they can. The strong sense of community may be attributed to, until recently, the limited transport connection, thus the inhabitants are used to depending more on the community's own resources. At the time of the fieldwork in 2009, the tunnel had only been opened for five years, and the community-provided services and activities had not yet merged. For example, each part of Berg maintained its own sports team, despite a diminishing membership base due to population decline.

The main concern in Berg municipality is the continuous population decline (figure 2.2) and a negative perception of life in the municipality, especially in southern Berg, which may in turn cause even more people to leave. With diminishing employment, services and population, some inhabitants see no future in the community. People are also concerned that further public services will either be relocated to other parts of the municipality, or that the municipality itself will be merged with a larger one, which will most likely lead to the administration moving, thus causing a further reduction in locally available jobs.

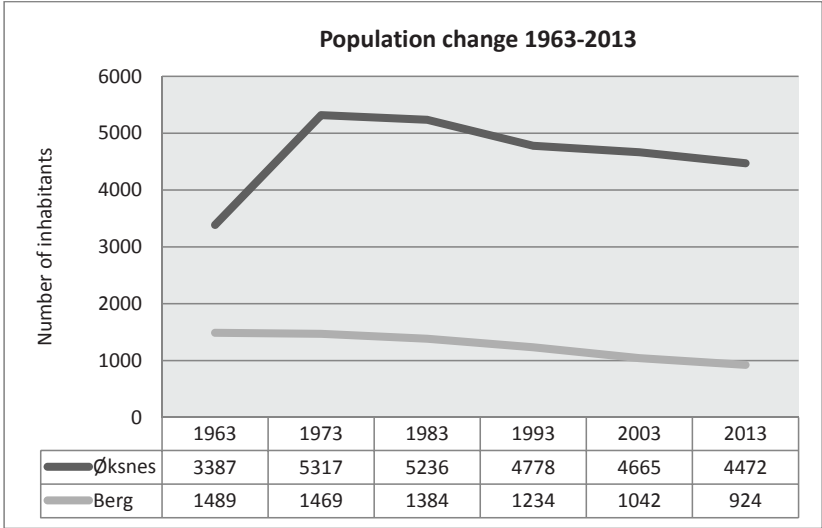


Figure 2.2 Change in the number of inhabitants in Øksnes and Berg municipalities

Note: Øksnes municipality was merged with a neighbouring municipality in 1963, leading to the significant increase in number of inhabitants. Source: Statistics Norway, 2013.

2.1.2 Øksnes municipality

Øksnes municipality has 4472 inhabitants of which almost 3000 live in the largest settlement, Myre (Statistics Norway, 2013). The municipality consists of approximately 20 islands. Historically, many people lived on the smaller islands to be closer to the fishing grounds, but today the total population on these islands is between 20 and 30 people (pers.comm).

The most important sectors of the local economy are the fisheries and fishing related industries, aquaculture, agriculture, tourism, and IT. The importance of fisheries for Øksnes municipality is evident from the presentation of the municipality on their webpage, which includes population numbers and geographical size; statistics for the amount of fish landed, harbour statistics, and number of aquaculture concessions. There is a brief mention of tourism and nothing about agriculture.

The fishing harbour in Myre is one of the largest in Norway. A large fish processing facility, A/L Øksnes Langnes Fiskeindustri (later Myre Gruppen), was established in the 1950s. It functioned as a significant institution in the municipality for decades, and one interviewee noted that the connection between the Øksnes Langnes Fiskeindustri and the municipality was such that “when the Fiskeindustri said ‘jump’, the municipality would do so”.

In mid-1980s Øksnes-Langenes Fiskeindustri went bankrupt, and this caused a major change in the local perception of job security within the fisheries, both at sea and on land. Attempts to restore the industry failed and the industry was finally closed in 2002, at which point the industry employed 160 people. In the words of one of the interviewees: ‘The largest employer here is the fishing industry. The bankruptcy destabilised the whole municipality’.

Smaller fishing businesses have been established in its place over time, and these have been largely successful. There are today five landing facilities in Myre, one in Alsvåg and one in Stø, a village to the north. In addition there are aquaculture processing facilities. The number of fishers in Øksnes^{iv} has fallen steadily from 455 fishers in 1990 to 290 in 2007 (Johnsen, 2009). The main company today is BioMar, which employs 90 people and produces fish feed for aquaculture.

There are several tourism localities in the municipality, particularly Nyksund, Øksnes Vestbygd and Stø. Nyksund was forcibly depopulated due to government policy in the 1960s. The majority resettled in Myre and many never returned. Nyksund was deserted until tourists and investors found renewed interest in the village. Around 20 people live there today and approximately 23 000 people visit during the summer months (Øksnes kommune, 2010). At the time of fieldwork, Nyksund had three accommodation businesses, three restaurants, a resident artist with an art gallery, a museum and concert venue, a blacksmith's workshop, a shop, a yoga centre, and an alternative school^v. The 13km road from Myre til Nyksund is narrow and picturesque, cut in between mountains and the sea, and is, according to interviewees, part of the experience of Nyksund. Interviewees in Øksnes were concerned that tourists should have an authentic experience, and comparisons with the Lofoten Islands were often brought up. Yet, there is no consensus on what 'authenticity' represents for the various tourism localities and businesses in the municipality. As an example, all three accommodation businesses had their own and different ideas of how the 'authentic' Nyksund should be promoted.

A certain geographical and cultural divide between the two largest settlements, Alsvåg and Myre, was mentioned in interviews. Alsvåg was identified as the cultural village, both in positive and negative terms. This is where the IT business is located, as well as the museum. Myre is the centre for the fishing industry and some claimed it was known for the fast money that young, single men were able to make on the trawlers. Myre is a relatively young settlement that grew quickly during the 1950s and -60s. To a degree people from the villages around Myre were forced to move there which effectively broke their connection to their home places and roots. This is reflected in the fact that they have not transmitted their history of the places to their children (pers.com). Many claim that there has been shame and sadness connected to these places, and that is the reason why they have been left derelict for a long time. Recently old houses on the islands have been restored and turned into second homes or into tourism businesses, reflecting a renewed pride in their own history and a desire to show visitors the historical culture of the places.

In addition to the structural changes in the fisheries and decline in number of employed in the sector, the municipality has suffered a strained economy, and consequently has been placed under financial administration by the national government since 2006. However, the period of job losses and population decline (figure 2.2) has now changed and population has been increasing in recent years. People are attributing this reversal to their

self-identified characteristics as enthusiastic, creative, optimistic, adaptable and resilient. One interviewee who had recently returned after living several years in southern Norway stated: ‘I believe very strongly that Øksnes will survive, and that is because we are adaptable.’

In Øksnes, like in Berg, people are actively involved in voluntary activitiesⁱⁱⁱ. Many sports activities and other social activities are provided on a voluntary basis. Some claim that this is part of the culture, reflecting the historical necessity to support and help each other in order to survive in difficult conditions. Aspects of food sharing were also brought up in one of the interviews, but it was described as a practice on the verge of disappearing with the eldest generation.

The shared and different characteristics of these two municipalities provided a good base for analysing adaptation in northern coastal communities. Population decline and dependency on fisheries is a commonality for these two municipalities, along with a growing local tourism industry. The various local contexts shape the interlinked changes and challenges that the municipalities are adapting to. In the context of climate change impacts, natural resource based communities are expected to be more exposed to changes, and analyses of responses to changes in the two municipalities show whether and how perceptions of observed climate change impacts affect local adaptation.

2.2 Interlinked changes in Arctic and Northern Norway

In the study areas covered by this thesis observed weather changes were not considered a concern or a challenge, but were instead viewed as being within the normal variability of weather and natural resource stocks (fish stocks). This can partially explain why climate change adaptation does not constitute a significant part of local future planning. In addition, there are other major changes, which are considered much more pressing (discussed in section 2.1). The Arctic is experiencing the intertwined double-exposure of globalisation and global environmental change (Leichenko & O'Brien, 2008). The consequences of linked social, economic and environmental changes, occurring on all scales, are affecting Arctic communities. Climate change has both direct and indirect consequences for ecosystems and human societies, and is likely to cause changes in both marine and terrestrial ecosystems, such as in the distribution and migration of key commercial fish stocks (ACIA, 2005). Large structural changes in Arctic communities, in

part due to a growing global competition combined with the considerable exploitation of natural resources, have implications for agricultural, hunting and fishing communities. Large demographic trends across the Arctic include a decreasing active workforce, an ageing population, decline in younger population groups, increase in higher education levels, and changing sizes of households (Rasmussen, 2011). In the Arctic one third of the population live in dispersed settlements of less than 5000 inhabitants (AMAP, 2011). However, there is also an urbanisation trend which corresponds to industrial development and increased public services in urban areas (Rasmussen, 2011). In the Norwegian Arctic, the private and public services sectors are larger than in the other Arctic regions (Glomsrød et al., 2009). Significant industrial development in the Arctic includes the petroleum sector and new opportunities in shipping likely to arise from less sea ice. Recently, there has also been an increase in Arctic tourism (Amundsen, 2012a; Hall & Saarinen, 2010b).

For communities in Northern Norway the consequences of climate change, and related or interlinked changes, are uncertain. The consequences of which are not the same across all communities and thus require different adaptation measures specific to local conditions (O'Brien et al., 2004b). Climate change is expected to have multiple consequences for communities in Northern Norway, and these are occurring at the same time as large social, economic and environmental changes, creating a complex set of changes for communities to adapt to.

2.2.1 Local development – trends, changes, and place identities

The processes of change that are observed in the two municipalities include: i) changes in fisheries and stock abundance; ii) demographic changes, including outmigration; and iii) changes in livelihoods, in particular from fishing to services, such as tourism. The municipalities regard themselves as being resilient in the face of these changes. Emphasising the dimensions that make the communities resilient, interviewees noted their institutions, their natural resources, their attachment to place and strong social networks, among other factors (Amundsen, 2012b). Notably, aspects of place attachment and identity were considered important. The observed processes of change have consequences for the perception of place, and of what belongs in a place. Perception and definition of place in both municipalities is strongly linked to nature and natural resource use, particularly fisheries. The consequences of climate change for the fisheries are complex and depend on a range of factors, both related to the resource itself and to the management

of the resource. For a community where a vibrant fisheries industry is an important part of how place is perceived and defined, significant changes to the fisheries will challenge the perception of place.

Questions concerning conservation of present activities and development of new ones are to a large degree dependent on the way in which place is defined (Massey, 1995). The main objectives of the local governments' development initiatives, for both municipalities, are to retain settlement and create jobs. Tourism and outdoor recreation sectors have been seen as promising means to achieve this, and have been developed partially with this in mind (Amundsen, 2012a). However, tourism could potentially cause conflict with people's perceptions of place. In a discussion over the direction of local development the ways in which the tourism sector should develop was disputed by different actors at different scales, and among people in the municipalities (Amundsen, 2012a). Analyses in nearby Lofoten found that close cooperation between fisheries and tourism could be problematic, since the fisheries sector was a strong and powerful actor shaping much of the discourse of and attitudes towards local development (Viken, 2001) (see related discussions in Benjaminsen & Svarstad, 2008; Daugstad, 2008). In contrast, other studies in the region have found that the seasonality of tourism and outdoor recreation activities and fisheries complemented each other, which reduced the potential for conflicts (Normann, 2007; Puijk, 1996). In the two municipalities studied in this thesis, no conflict between fisheries and tourism was found, but rather the discussions concerned the extent to which tourism should develop, as well as what kind of image to present when presenting the places to tourists, reflecting varying perceptions of place.

In addition to changes in fisheries and tourism that are already occurring, the two municipalities are located within the currently disputed Lofoten-Vesterålen-Senja region, in which petroleum exploration has been proposed. There are highly conflicting views amongst local residents regarding these developments. One of the reasons for the controversy is the narrow continental shelf on which the petroleum activities would have to take place, which overlaps with the fishing grounds. The risk of oil spill and its consequences on fish stocks is considered too high by many researchers, fishers and environmental authorities, while increased potential for job opportunities and local income are weighted higher by others (Dale, 2011; Kristoffersen & Young, 2010). At the time of the fieldwork in 2009, seismic testing was being carried out in the area, however uncertainty remained about future petroleum exploration and development in the region.

This study has not analysed the consequences of a potential petroleum industry for the case communities. The study has investigated how communities have engaged in local adaptation processes in order to adapt to the challenges that they currently perceive as important. A clear message from this research is that place attachment and place identities play a part in the shaping of the form and content of these adaptations. In developing the communities, it is important that the aspects that matter to people are included in the discussions so as to avoid conflict with people's perceptions of what their place is. The residents of both municipalities regard themselves as being resilient to both current and future changes, and are engaging the resources they have in order to adapt. In chapter 3 the theoretical framework will be presented which explains how these conceptualisations have been operationalized within this study.

2.3 Climate change impacts in the study region, Troms and Nordland Counties

Observed and projected climate change in the study region, Troms and Nordland Counties, is significant, and is expected to have implications for the communities and their livelihoods. The observed increase in annual mean temperature from 1900-2008 is 10 per cent, with the highest temperature increase during spring (March, April, May) (Hanssen-Bauer et al., 2009). The observed change in annual precipitation in Nordland and Troms between 1900 and 2008 was an increase by 19 per cent, with the largest increase during the winter months (December, January, February) (op.cit). Observations also show fewer days with snow covered ground in the study region (op.cit). Over the last 100 years, temperatures have fluctuated around the 'normal' (mean temperatures 1961-1990), with the exception of a warm period in the 1930s, but since 1985 the temperature has been warmer than the normal (met.no, 2013).

Changes in the climate are projected through the use of global climate models that use emission scenarios to project global trends for future warming. For the period 2021-50, the middle range scenario projects an increase of approximately 2°C in mean annual temperature, with most warming during winter and spring, and least warming during summer for Nordland and Troms (Hanssen-Bauer, et al., 2009). For the same time period and scenario, the models project an above national average in annual precipitation in the region (op.cit.). Towards year 2100 the increase in precipitation during the summer period is projected to increase by 13 per cent in the study region (Førland et al., 2007). The

models project an increase in extreme precipitation, and the precipitation that today is considered extreme will become more common in the future (op.cit). In addition to changes in temperature and precipitation, increases in the most extreme wind and storm events, increased sea level, and increased wave height (both for average and extremes) are expected for the Norwegian area of the Barents Sea region (Loeng et al., 2008).

2.3.1 Climate change impacts in central livelihoods of the study region

The impacts of climate change in the study region are, in particular, expected to affect the fisheries and the communities that depend on them (Hovelsrud, et al., 2010). With warmer ocean temperatures, certain fish species are moving northward (Perry et al., 2005). Thus, for example, observations show that the spawning grounds of cod (skrei) have moved from Lofoten northward to outside Vesterålen, and farther north along the coast of Troms and Finnmark (Loeng, et al., 2008; Sundby & Nakken, 2008). The ensuing consequences for the fisheries vary (Hovelsrud, et al., 2010). Some fishers experience an abundance of fish in their traditional fishing grounds, which has been the case for the study region of this thesis, while others have had to travel farther to catch the fish. For the coastal fishers who often fish alone in small boats, such changes could create new challenges. New fish species may also create new opportunities for fishers, however in some cases the presence of new species might create negative ecological impacts. Different types of equipment and quotas might be required to catch the new species (West & Hovelsrud, 2010). Fishers also depend on being able to deliver the fish to conveniently located landing facilities, and receive a good price for their catch.

The impacts of climate change for the tourism and outdoor recreation sector in Northern Norway are not expected by tourism businesses to be significant, yet indirectly they rely on good weather conditions for their operations (Rauken & Kelman, 2012). In general, it is assumed that tourism in northern Europe will grow as climatic conditions favourable to tourism are expected to shift northward (Berrittella et al., 2006; Hamilton et al., 2005; Wilbanks et al., 2007). Furthermore, tourism destinations in the Arctic are attracting tourists to what is perceived by some to be the last wilderness (Kaltenborn, 1998). In particular the tourism and outdoor recreation sector in Norway is expected to benefit from increased summer temperatures due to climate change (Nordisk Ministerråd, 2008). Nevertheless, other factors such as wind, fog and wave height will pose challenges. An indirect impact of climate change policy could be potential restrictions on individual air

travel in the future, which would affect the accessibility of Northern Norway for visitors from overseas.

2.3.2 Perceptions of climate change impacts in study region

Understanding how climate change is perceived and its consequences for society includes the cultural understanding of weather and climate (Crate, 2008; Hulme, 2008; Strauss & Orlove, 2003). The scientific distinction between weather and climate does not resonate with public perceptions, and in this respect consequences of climate change might be better understood by the public if they are framed within the more tangible concept of weather (Marino & Schweitzer, 2009; Rayner, 2003). Further, it has been argued that many societies today “have become separated from the need or desire to pay close attention to weather signs or weather lore” (Rayner, 2003, p.281) because the weather (and/or climate) is something that can be overcome by our modern lifestyles and technologies (domestication). This is slightly different in the study areas for this thesis, where people are accustomed to ‘a lot of weather’, in the sense that there is high natural variability in the weather, and people have adjusted their activities and livelihoods accordingly (Hovelsrud et al., 2013; Hovelsrud et al., In press).

Interviewees in the two municipalities were concerned with two aspects of climate change and tourism; that more unstable and unpredictable weather would make it more dangerous for fishing tourists to go to sea in small boats, and that changes in sea temperatures, nutrition and ocean currents would lead to a decrease in whale numbers along the coast. Whale safaris are a tourism activity that many of the other tourism actors rely on for visitors (Rauken & Kelman, 2012).

Other observed weather changes were not perceived as challenging for the communities and the majority interviewed attributed the changes to natural variations, and not to climate change caused by greenhouse gas emissions. Interviewees were asked about observed changes in the weather (and climate) and the consequences of these. In both municipalities more unstable weather, and warmer, wetter and shorter winters, with less snow, were noted. More unstable weather was also reported to lead to confusion due to alterations in the usual pattern of weather events. In 2009 the first snow came in beginning of October on Senja, which is very early, and simultaneous snow and sunshine does not normally occur until March^{vi}.

A wetter climate was perceived as more emotionally challenging.

‘It’s hard when we have periods with a lot of precipitation, like this autumn. It brings many negative things with it, I think it’s hard, and yes, I feel more tired when there’s a lot of rain. It’s like a wet, woollen blanket covering everything.’
(female, Senja)

Interviewees have observed an earlier spring with leaves sprouting by the 17th May, while previously the norm would be at midsummer (23rd June) or later. New bird species and an increase in moose were also observed. In Øksnes the moose arrived over the last 10-15 years and moose hunting is a relatively new activity in the area. The changes in fish stocks and presence of new fish species were considered part of the natural variation in the sea.

‘I actually think that this is nature adjusting itself. And we are a part of it, and we have to adjust in accordance with it. As long as we understand this and prepare for it, for this is not happening overnight. We cannot sit and call for public, state, oil, and all those things [to prepare for us]. I think these are natural processes occurring.’ (male, Øksnes)

In general, the perception of the observed changes in weather and climate was that it was part of natural variation, and that these changes could be adapted to. The area surrounding Myre is marshland and the main road to the settlement is built above the marsh. The potential vulnerability to flooding associated with sea level rise were discussed in interviews, but this was not considered a possibility in this area.

In Berg the main weather related challenge is winter closure of roads due to risk of avalanche or of avalanches blocking the roads. During winter, villages can be cut off for several days at the time. This was not considered a problem as this is expected and people are prepared for it, also because the villages are located by the fjords, they can travel and receive goods by sea.

2.4 Climate change adaptation research in the Arctic

Several recent studies have focused on the specific local conditions relevant for understanding climate change adaptation in Arctic communities. Studies in the Arctic have focused on indigenous communities and traditional livelihoods, researching the consequences of environmental change for local knowledge and human-nature relations and culture in local communities (Berkes, 1999; Cruikshank, 2005; Krupnik & Jolly,

2002). They find that communities are accustomed to respond to changes in their natural resource base and rely on harvesting flexibility, local knowledge and social networks (Berkes & Jolly, 2001). Due to recent changes in the climate, the communities are experiencing more unpredictable weather and changed ice conditions which reduces access to resources (Ford et al., 2006; Krupnik & Jolly, 2002). The rate and magnitude of these changes means that communities may not be able to rely on adaptation strategies they have used in the past, such as flexibility in hunting, food-sharing networks, and local knowledge of the environment (Berkes & Jolly, 2001). It has been found that communities in the Canadian Arctic are vulnerable to current and future climate change, linked to loss of traditional knowledge and land-based skills, less flexibility in harvesting, and weakening of social networks (Ford et al., 2007). Yet adaptive capacity in these communities may be enhanced by economic diversification, (Andrachuk & Pearce, 2010) and institutional structures and learning (Armitage et al., 2011).

The adaptive capacity in natural resource dependent communities in the Nordic countries depends on the specific context of institutions, governance, economic resources and infrastructure (Keskitalo et al., 2011). The region is found to have a high adaptive capacity, but with significant differences across communities and sectors (Juhola et al., 2012).

Taking a sector-based focus, research finds that Sámi reindeer herders in Scandinavia have several strategies to deal with extreme weather events (Vuojala-Magga et al., 2011), but that unprecedented changes in weather and climate, combined with land-use change and changes in management regimes are making the previous adaptation strategies less successful and affording reindeer herders less flexibility (Tyler et al., 2007). The richness of Sámi language terms for snow conditions is related to an in-depth knowledge of relevance to reindeer herding; a knowledge of significant importance in adaptation planning (Eira et al., 2013).

Studies in the Arctic seek to understand adaptive capacity and adaptation processes at the local level, in the context of the multiple factors affecting local vulnerability, including a changing climate. The understanding that various climatic and non-climatic factors interlink to create vulnerabilities, and that there are issues and challenges other than climate change impacts which communities in the Arctic must deal with, and which are perceived as more important by the local residents, has been established (Hovelsrud & Smit, 2010) (CAVIAR project^{vii}). This is the case for reindeer herding, noted above (e.g.

Tyler et al., 2007), and for the coastal fisheries where the prevailing fisheries-management regimes, and the number of fishers and boats, are the most important aspects for determining the flexibility of coastal fishing activities and livelihoods in local communities (West & Hovelsrud, 2010). Nevertheless, the combined effects of climate and other changes create complex challenges for communities, such as higher sea temperatures leading to changes in the movement of fish stocks (Perry, et al., 2005; Sundby & Nakken, 2008), entailing significant consequences for fishers and the fishing communities dependent on the fisheries.

Investigations of adaptation to combined exposure-sensitivities, in coastal communities in Northern Norway, found that for the municipalities the largest challenges were the combinations of changes in the socio-ecological systems (Hovelsrud, et al., 2010). In addition, climate change impacts and adaptation were often not on the municipal agenda, or they were placed lower on the list behind more pertinent concerns (op.cit.). As an example, a combination of the loss of birch forest, less flexibility in livelihoods, and loss of grazing areas has brought reindeer herders and sheep farmers in a coastal Sámi community to the limits of adaptation possibilities, despite a tradition of high adaptive capacity to historical variations in natural conditions and climate/weather (Rybråten & Hovelsrud, 2010).

The examples of adaptation to date are mainly reactive adaptation, taken in response to flood events and other extreme weather events (Amundsen et al., 2010; Berrang-Ford, et al., 2011; Dannevig et al., 2012). These are technological adaptation responses, such as flood protection, water management and avalanche protection (Hovelsrud, et al., 2010; West & Hovelsrud, 2010). Research into Norwegian municipalities has sought to understand the factors determining why some municipalities are taking on adaptation, despite lack of national guidelines. Results have shown that engaged individuals, in particular, have been instrumental for driving local adaptation agendas and the implementation of adaptation measures (Dannevig et al., 2013; Dannevig, et al., 2012). Analysis of the institutional organisation of adaptation in Norway found that rather than calling for national coordination, the county level could be more suited to coordinate adaptation between the local and the national level (Hanssen et al., 2012).

2.4.1 Key issues not included in climate change adaptation research to date

To date adaptation research carried out in the Arctic and Norway has had as a starting point the investigation of impacts and adaptation to climate change within a multiple-factors perspective, and has found that other changes and challenges are more pressing. There is thus a gap between the local perception of climate change impacts and the scientific observations, projections, and prescribed need for climate change adaptation (Amundsen et al., under revision). An even better understanding of the local challenges and their responses to change is necessary. Further, an attention to values, culture and place have been largely missing within the climate change adaptation literature, with notable exceptions (Fresque-Baxter & Armitage, 2012; Hastrup, 2009). Processes at the local level are to a large degree linked to local processes of place attachment, identity and development, and as such have considerable implication for the adaptation that is considered acceptable and thus likely to be implemented.

These gaps will be addressed in this thesis by framing adaptation within critical realism. Critical realism allows for a holistic approach to adaptation, including the most important processes and challenges in the study municipalities, and those not directly linked to climate change adaptation. This is a different starting point to the articles described above, as this thesis has shifted the focus from looking at how society will have to adapt to climate change impacts, to studying the adaptation processes themselves with a particular focus on community resilience.

The concept of community resilience defines the local ability to cope and adjust to challenges, and takes into account the interlinked set of factors that are of relevance for responding to challenges in the municipalities. Collectively, local processes, including culture and values, shape community resilience and determine the adaptive capacity of the municipalities to future climate change. As noted by Hulme (2008), climate is an object that belongs just as much to nature as to culture, which requires a wider framing of climate change than has been seen to date. Yet climate change impacts are real, in the sense that adaptation to the impacts is necessary now and in the future (Amundsen, et al., under revision). Understanding climate as both nature and culture signifies a stronger emphasis on ‘subjective’ dimensions of adaptation, such as values, culture and place attachment. This thesis represents a new approach to climate change adaptation by focusing on current adaptation processes and their motivations, and discussing contextual and subjective

aspects of these processes, in order to assess their relevance for climate change adaptation processes.

3. Theoretical framework

When studying i) how communities are responding to changing conditions, and ii) the applicability of current approaches to climate change adaptation, it is necessary to adhere to a philosophy of science that includes “the openness, contingency and contextually variable character of social change”, (Sayer, 2000, p.3) which critical realism offers. Climate change is a large and complex problem, and there is no one single research framework that captures all the multifaceted aspects. The inclusion of the ways in which cultural values and other subjective dimensions are both driving, and are affected by change underlines an increasing emphasis on approaching climate change adaptation from a broader perspective than has previously been the case (Adger, et al., 2013; Adger, et al., 2011a; Fresque-Baxter & Armitage, 2012; O'Brien & Wolf, 2010; Pelling, 2011). However, the knowledge of how local adaptation processes are to be understood in relation to other changes is still lacking because research-generated knowledge is limited with respect to the subjective dimensions of adaptation. In response to this limitation, this study focuses on the processes of change that are of relevance for community resilience and thereby offers a broader foundation for analysing adaptation.

3.1 Critical realism

One approach to a philosophy of science that directly incorporates subjective dimensions, such as values, culture and place, is critical realism. Critical realism positions itself between law-seeking (nomothetic) social science, and an interpretive approach, associated with constructivism (Sayer, 2000). In discussing the implications of critical realism for the social sciences, Sayer (2000, p.17) argues that “social phenomena are intrinsically meaningful, and hence meaning is not only externally descriptive of them but constitutive of them (...). Meaning has to be understood, it cannot be measured or counted, and hence there is always an interpretive or hermeneutic element in social science”. Furthermore, he argues that the social sciences have neglected to study people as “*beings whose relation to*

the world is one of concern. Yet social science often ignores this relation and hence fails to acknowledge what is most important to people” (Sayer, 2011, p.2, emphasis in original). This neglect can be seen in connection to climate change adaptation research, and is addressed in this thesis through an analysis of what is important to people in their places, and how connection to place motivates action, in the context of community resilience and adaptation to social, political, demographic and environmental changes.

This thesis is informed by the ontological and epistemological understanding of critical realism. Critical realism is based on three fundamental underpinnings: i) the ontological stance that the world is real and exists, also prior to our knowledge about it; ii) a relativist epistemology, in which knowledge is seen as socially produced; and iii) judgemental rationality, i.e. it is possible to make value judgements and prefer one belief over another (Bhaskar et al., 2010). Thus, an orientation anchored in critical realism recognises that there exists a real world irrespective of our understanding of it, but that our knowledge of it is incomplete and we can only know of it through causal mechanisms. Critical realists maintain that although we are limited in our understanding of the real world, some descriptions and explanations are better than others (Sayer, 2000). This approach allows for the analyses of the empirical findings from the fieldwork, particularly expanding the concept of climate change adaptation to include the aspects that matter to people. It also serves to reveal the most important factors regarding community resilience. Furthermore, through critical realism one can argue that the climate is changing regardless of how local communities are experiencing it, and based on this claim, one can argue for the necessity of adaptation (Amundsen, et al., under revision).

Critical realism is non-reductionist, signifying: i) that there are no single causal explanations for a particular phenomenon; and ii) that explanations are not a priori reduced to one level (e.g. cultural, social, economic). Accordingly, complex phenomena cannot be reduced to a single issue. Høyer (2010) argues that the policy areas of greenhouse-gas emissions, energy, and the environment are commonly reduced to a question of CO₂ emission reductions, while in reality each of these three areas represent complex sets of interlinked factors that must be addressed together in order to develop adequate policy measures. In the same way, this thesis maintains that climate change adaptation (both the motivation for adaptation and actual adaptation measures) cannot be isolated from other processes in social-ecological systems. This means that the understanding of adaptation should not be reduced to responding to climate change

impacts; and that adaptation strategies should include a mix of economic, technical, social, and cultural measures. It is not possible to develop climate change adaptation strategies without taking into consideration the implications of a wide range of processes and changes occurring at the same time (Amundsen, et al., under revision).

Bhaskar (2010) uses two concepts in particular to explain social events, including the four-planar and the seven-scalar social being. In all social events these four-planar dimensions are present: “that of material transactions with nature; that of social interactions between humans; that of social structure proper; and that of the stratification of the embodied personality” (op. cit. p.9). In addition, social events are explained by seven multiple and interlinked levels, these are: “the sub-individual psychological level; the individual or biographical level; the micro-level studied, for example by ethnomethodologists and others; the meso-level at which we are concerned with the relations between functional roles (...); the macro-level orientated to the understanding of the functioning of whole societies or their regions (...); the mega-level of the analysis of whole traditions and civilizations; and the planetary (or cosmological) level concerned with the planet (or cosmos) as a whole” (p.9-10). Together, the four-planar and seven-scalars provide insight into the interlinked and complex nature of society. Hence, understanding the social world in this way implies a strong interconnectedness between both dimensions regarding social structure, relations between humans, and between humans and nature; and between different levels.

This thesis is mainly focused on the micro, or community, level, and the geographical unit of analysis for this study is the municipality, taken to signify the geographical location, boundary and local government. However the interlinked aforementioned planes and scales are recognised. For example, the research shows that in both municipalities the concern for negative population growth, due to a combination of aging population, low birth rates, and out-migration, is not an isolated local issue. The decisions of inhabitants to out-migrate are made on the basis of internal and personal reasons, as well as locally-available resources, services and employment opportunities. The national government financial transfers are partially based on population size, and this affects the municipalities’ ability to provide services to their inhabitants, contributing to a downward spiral. Further examples of interlinkage include the connectedness of small villages to the global system through aspects such as trade, the Internet, travelling, and international agreements. By

integrating a variety of perspectives across scales into the analysis, such a framing sets the stage for taking a broad approach to adaptation.

3.1.1 Critical realism and adaptation

Ways in which a critical realist approach can contribute to framing and explaining climate change have recently been developed by Bhaskar and colleagues (Bhaskar, et al., 2010). For example, it is argued that “[t]o explain climate change, we need an epistemology that recognises social dimensions of knowledge, but also an ontology that asserts the reality of the material dimension of the problems” (Cornell & Parker, 2010, p.31). In other words, critical realism can account for both the ontological reality of climate change, and also the various types of knowledge represented in the social perception of climate change. This becomes particularly relevant at the local level where the scaling of climate change consequences interacts with social and ecological processes, and where perceptions of climate change differ from that of scientists (Amundsen, et al., under revision). Critical realism can also contribute to a more rigorous understanding of climate change through the understanding of emergent levels, by framing climate change as a challenge from the global level all the way through to the individual and psychological level. As an example, the international climate-policy frameworks are negotiated at the international level, but affect all scales with regard to the implementation of the policies. The importance of bringing in other scales in understanding local processes was pointed out by Keskitalo and Kulyasova (2009) through case studies of fishing communities in Northern Norway and Russia. They found that decisions and processes on levels other than the local have major implications for the adaptive capacity of the local fishermen in terms of the limitation of available adaptation options (op. cit).

As noted, critical realism supports a wider approach to adaptation through the concept of non-reductionism. An analysis of change responses to one factor alone, e.g. climate change, fails to provide a comprehensive understanding of the interlinked changes occurring simultaneously, which is in line with a critical realist approach (see e.g. Høyer, 2010). Furthermore, the responses that are suggested on this basis might fail to give the expected outcome, and may even result in unexpected or unwanted consequences. Coulthard (2012), for example, argues that adaptation measures designed at the systems level fail to acknowledge the conditions that shape well-being at the local level, and could as such do harm. A number of adaptation policies and plans in response to climate change impacts, such as sea level rise, are based on technical consideration of their applicability,

whilst failing to take into account emotional attachment to place and the knowledge held by the people living there, which could exacerbate the threat to the community (Agyeman, et al., 2009).

3.2 Adapting to change

The concept of adaptation predates concerns with anthropogenic climate change, and has most commonly been used in ecology. However, the concept has a long-term usage within the social sciences (see discussions of previous applications of the term adaptation in Orlove, 2009; Smit & Wandel, 2006). The social-science applications of the concept are more relevant to the approach taken in this thesis. Adaptation as “the *process of change* in response to a change in the physical environment or a change in internal stimuli, such as demography, economics and organization” (Denevan, 1983, p.401, emphasis in original) is a definition which emphasises *process* and a wide approach to change. However, it specifically separates ‘external’ physical from ‘internal’ demographics, economics and organisation. Processes across scales drive changes in demographics, and local economic systems are intimately linked to global economic systems, and as such are difficult to discern in reality. In this thesis, adaptation is defined as *the process of responding to interlinked changes in multiple factors that affect communities*.

The IPCC definition of adaptation is the one most commonly referred to within climate change adaptation research, and was developed by the IPCC based on reviews of relevant published climate change research. In the Fourth Assessment Report (AR4) adaptation is defined as “Adjustment in natural or *human systems* in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.” (IPCC, 2007, appendix 1, emphasis in original). This definition omits external and internal factors of relevance, such as local interlinked processes, values and culture. Among others, Orlove (2009) has criticised this definition and application of the adaptation concept, especially for its association with numerically measurable climate change impacts (see also Schneider et al., 2000). Orlove (2009) also criticises it for portraying climate change impacts as manageable, i.e. that communities can adapt to climate change consequences, arguing instead that some negative consequences of climate change are likely to be unavoidable. This links to both the perceptions of high adaptive

capacity and resilience (Amundsen, 2012b; Hovelsrud, et al., In press; O'Brien et al., 2006), and the emerging discussions on transformation (Pelling, 2011).

Research on climate change adaptation has developed from a range of social-science perspectives on human and ecological research, including socio-ecological systems and vulnerability research (e.g. Adger & Kelly, 1999; Chapin, et al., 2004; Turner et al., 2003a; Turner et al., 2003b). As noted adaptation occurs not only in relation to climate change, but to multiple changes, and thus a strict climate change approach has limited applicability. Hence when analysing adaptation strategies in local communities, it is evident that adaptation to the consequences of climate change is not an isolated challenge for local communities, and indeed in most cases is not even considered (Hovelsrud & Smit, 2010). This forms the basis for several studies of climate change impacts and adaptation and has been referred to as a 'multiple-factors approach' (Belliveau et al., 2006; McCarthy, et al., 2005; O'Brien, et al., 2004a; Smit et al., 2008; Wilbanks & Kates, 2010). When applying a multiple-factors approach to community adaptation research, the sole driver for adaptation is no longer simply climate change, but a number of interlinked locally relevant social, economic, political and other development factors (Hovelsrud & Smit, 2010). Some of the interlinked challenges facing arctic communities were noted in section 2.2.

Accompanying an increased policy focus on adaptation, growing attention has been directed towards maladaptation, which is the "action taken ostensibly to avoid or reduce vulnerability to climate change that impacts adversely on, or increases the vulnerability of other systems, sectors or social groups" (Barnett & O'Neill, 2010, p.211). Hence a limited framing of adaptation is in danger of suggesting adaptation strategies at odds with other local processes. This is exemplified by responses to water shortages in Melbourne which disproportionately affected vulnerable groups, cultural sites and had environmental consequences (Barnett & O'Neill, 2010). To avoid maladaptation, there is a need for a comprehensive approach to adaptation and to include what is of prime importance to people in specific localities.

Reported adaptation is, for the most part, not taking place as a direct response to climate change, but in response to multiple challenges (Berrang-Ford, et al., 2011; Ford, et al., 2011; Tompkins, et al., 2010). This could be explained by a mismatch in perception of climate change and the need to adapt (Amundsen, 2012b; Amundsen, et al., under revision; Hovelsrud, et al., 2013), in addition to a prioritisation of more pressing local challenges

(Hovelsrud, et al., 2010). Further, an attention to dimensions such as values, culture and place attachment has been largely missing within scientific debates on climate change adaptation. These dimensions are important to include because they shape our understanding of the world we live in and our responses to change. In developing adaptation strategies, and also researching local adaptation, it is important to identify what people value because “what people perceive as a desirable way of life, is a major determinant of what people do and the decisions they make” (Coulthard, 2012, referring to Gough and McGregor, 2007).

Gaining a deeper understanding of what climate change means for society is thus necessary (O'Brien & Wolf, 2010). There has been a tendency to approach climate change as a technical or economic issue, however “there is a need to shift attention away from an exclusive focus on economic and material values to a deeper understanding of what climate change means for society” (O'Brien & Wolf, 2010, p.239). To include cultural aspects in adaptation research is one way to improve our understanding of how society may respond to climate change and environmental change (Crate, 2008; Cruikshank, 2001, 2005; Hastrup, 2009; Heyd & Brooks, 2009; Strauss & Orlove, 2003).

Various approaches have been taken to include a qualitative dimension in resilience and adaptation research, including the concepts of well-being (Coulthard, 2012) and cultural values (O'Brien, 2009; O'Brien & Wolf, 2010). Aspects such as connection to place and perceptions of local changes and development of place have yet to be fully included within adaptation research (Hulme, 2008), however there has recently been an increased focus on place in the scientific discourse on adaptation (Adger et al., 2009; Amundsen, 2013; Fresque-Baxter & Armitage, 2012), including the importance of place attachment for engagement with climate change (Scannell & Gifford, 2013). I will return to discuss the relationship between place attachment, resilience and adaptation in section 3.4.

An attention to adaptation as a process and an inclusion of ‘subjective’ dimensions adds important perspectives to the discussions of climate change adaptation. In this thesis the ‘subjective’ dimensions are explored in particular by focusing on place attachment, and what that means for local adaptation and community resilience.

3.3 Community resilience

Resilience is generally taken to mean the ability of a system to sustain or absorb the consequences of a shock, while retaining the function and form of the system (Chapin, et al., 2004; Gunderson & Holling, 2002). The concept has been applied to the analysis of social-ecological systems (SES) both theoretically (Folke, 2006) and applied (Berkes & Jolly, 2001; Forbes et al., 2009). The properties of the resilience of an SES have been defined as: “(1) the amount of change the system can undergo and still retain the same controls on function and structure, (2) the degree to which the system is capable of self-organization, and (3) the community’s ability to build and increase its capacity for learning and adaptation” (Berkes & Jolly, 2001).

In this thesis, the focus is on social aspects of resilience, although it is recognised that the resilience of the ecosystem or nature cannot be seen separately. Communities are continually changing, and people and communities have always adapted to changing societal, environmental and climatic conditions. Furthermore this thesis maintains an underlying awareness of how changes in these aspects are combined locally to create new challenges. The concept of community resilience is increasingly viewed as valuable for the understanding of social resilience. In this thesis community resilience is understood as: *the ability of a community to cope and adjust to stresses caused by social, political and environmental change and to engage community resources to overcome adversity and take advantage of opportunities in response to change* (Amundsen, 2012b; Buikstra et al., 2010; Magis, 2010; Ross et al., 2010).

The relationship between resilience and adaptation differs depending on how the concepts are understood. As noted above, the meaning of the concept *adaptation* ranges from the initial application as “a process of change” to specific meanings relating to climate change as “adjustment in natural or *human* systems to a new or changing environment” (IPCC, 2007). Resilience denotes the ability to engage resources to cope and adjust to change, while adaptation is the process of change, through which the coping, adjusting and engaging of resources occurs (Nelson et al., 2007; Nelson, 2011; Pelling, 2011; Vogel et al., 2007; Walker et al., 2004). Adaptive capacity is understood as one of three fundamental characteristics of systems resilience (Adger et al., 2011b; Berkes et al., 2003) and thus has the ability to influence resilience (Folke et al., 2010). Conceptualising the relationship between resilience and adaptive capacity, Nelson et al. (2007) note that adaptive capacity is represented by available resources and is a precondition for adaptation.

One of three characteristics of resilient systems is developing the ability to build capacity for adaptation and learning (Berkes, et al., 2003). Hence to be resilient means continuous learning in order to build capacity to adapt to changing conditions. In this thesis, the relationship between adaptation and resilience is seen as dynamic, where one depends on the other. Adaptation is understood as the **process of responding** to changes in conditions that affect communities, while resilience is the **ability to adjust** to these changes and to engage available resources.

The SES approach has developed from the field of ecology and sees “the earth system as a system of interconnected relationships” (Berkes, 1999, p.3) or as “integrated systems in which people interact with natural components” (Liu et al., 2007, p.1513), and as constituting an inherent complexity (Høyer & Næss, 2008). There are continuous feedbacks between the components of the system. This approach aims to capture the dynamics of social and natural systems and the ways in which they interact (Berkes & Jolly, 2001; Folke, 2006; Turner, et al., 2003b; Tyler, et al., 2007). The SES approach calls for understanding the system as consisting of integrated and complex relationships. The SES and resilience theoretical approaches do not include static and equilibrium views of reality, but rather conceive it as a dynamic system subject to shocks and surprises (Zimmerer, 1994). Adopting this approach does not signify a deterministic view, i.e. that processes are outside the control of society; at least to a degree, changes and outcomes can be shaped and influenced by human action, and in particular, a community resilience approach can contribute to the understanding of these processes of human action. This interpretation of resilience is compatible with critical realism, which also understands the world as closely interlinked and existing of complex, open systems (Bhaskar, 2010).

The concept of resilience has many applications in many areas of analysis and understanding, including disaster management (Manyena, 2006; Norris et al., 2008), psychology and well-being (Buikstra, et al., 2010; Coulthard, 2012; Luthar & Cicchetti, 2000). Common to all the approaches and applications of resilience is the aspect of responding to adversity. Insights from this rich scientific literature are increasingly compared in order to broaden and deepen the application of the concept, for instance in the review by Brown and Westaway (Brown & Westaway, 2011) of the application of resilience to the areas of environment, well-being and disaster research. Their review draws from these diverse areas of research to argue in favour of the importance of

including subjective and contextual factors to resilience, and of understanding the inter-scale linkages between the factors that are relevant to resilience.

The definition of community resilience applied here links well with the recent focus on the social aspects of resilience (Brown, 2013). Few applications of this concept are yet to be found in the literature. However, recent research from Australia and the United States has explored the aspects that constitute community resilience (Buikstra, et al., 2010; Magis, 2010; Ross, et al., 2010). There are a variety of uses and definitions of social or community resilience. Social resilience is defined by Adger (2000, p.347) as “the ability of groups or communities to cope with external stresses and disturbances as a result of social, political and environmental change”. Ross et al. (2010) employ a similar definition, but adds an aspect of positive adaptation: “Resilience refers to the capacity of an individual or community to cope with stress, overcome adversity or adapt positively to change” (Ross et al, 2010, p3). Magis (2010) focuses less on external stresses to the social system, and more on the capabilities of the system, and defines community resilience as: “the existence, development, and engagement of community resources by community members to thrive in an environment characterized by change, uncertainty, unpredictability, and surprise.” (Magis, 2010, p.401). A stronger presence by the social sciences in resilience research has added new perspectives, such as the importance of culture, well-being and community (Brown, 2013; Buikstra, et al., 2010; Coulthard, 2012; Ross, et al., 2010).

The pioneering research of Buikstra et al. (2010), Ross et al. (2010), and Magis (2010) identifies and analyses the various components of community resilience in the contexts studied. This thesis draws on and contributes to the further development of this research through an analysis of empirical material from one village in the study region. The research resulted in the identification of six dimensions of community resilience in this particular context (table 3.1; Amundsen, 2012b). To a large degree this corresponds with the findings of earlier studies (Buikstra et al., 2010, Magis, 2010, Ross et al., 2010) but contributes additional dimensions and differing emphases, showing that each dimension may play a different role in any particular context.

Table 3.1 Dimensions of community resilience

• Community resources, and the development and engagement of these	Includes human, social, natural, political, cultural, economic resources, and the way in which these are made use of in a community
• Community networks	Family and neighbourhood networks and other more or less organised networks
• Institutions and services	Including formal and informal organisations, rules in use, norms, and values
• People-place connections	People's attachment to place that influences their local engagement. Places represent history, past experiences, culture, traditions and landscapes
• Active agents	Individuals who take on an active role and show strong engagement in community activities. The leadership portrayed by active agents is not necessarily linked to formal appointments
• Learning	Learning from experiences and acting on this knowledge, single and double-loop learning

(Source: Amundsen 2012b, Table 2)

The process of uncovering the dimensions of community resilience links with a critical realist approach which typically asks: “what was it about a certain context which allowed a certain action to be successful?” (Sayer, 2000, p.19). This is therefore a highly relevant and useful tool for focusing on which factors of community resilience are present in the municipalities today, which allow for adaptation to changes to take place.

3.4 Place attachment

Place attachment, place identity and sense of place have received increased attention within climate adaptation research, corresponding with a renewed interest in the study of place in the social science literature in general, with links to the 1970s and human geography's focus on place as meaningful spaces (Relph, 1976; Tuan, 1974). Three key understandings of place can be given, based on use of the concept in the literature: place as i) location ii) locale and iii) sense of place (Agnew, 2005). The three understandings of place are not mutually exclusive, and a place is commonly seen as a combination of all three. Place understood as a location signifies the spatial area, or physical location. Place as locale includes not just the spatial location but also the activities occurring there. The third understanding, sense of place, is the broadest, comprising a range of meanings. Feld and Basso (Feld & Basso, 1996), p.11) define sense of place as “the relation of sensation to emplacement; the experiential and expressive ways places are known, imagined,

yearned for, held, lived, contested, struggled over; the multiple ways places are metonymically and metaphorically tied to identities.” Agnew (2005, p.89) considers it the “identification of a place as a unique community, landscape and moral order”. Sense of place can be seen as an umbrella term for the subjective meaning of place, attachment to place, place identity, belonging, awareness and knowledge of place (Cresswell, 2004). People are understood to have a relational connection to place, including those who are physically located in a place, and those who have relational connections but are not located in the place at the moment (Massey & Jess, 1995).

In this thesis place is understood as a combination of all three of the interpretations presented by Agnew (2005); the physical location, the activities at the locale, and sense of place. These three dimensions can be integrated through the concept of place attachment; used to describe how individuals connect with place including social networks, belonging in a community and physical space. The place concept captures aspects that people value, that are important to them, and place attachment is an expression of this emotional connection with place.

Physical aspects such as nature, landscape, climate and weather are important aspects of the place definition (Rose, 1995). Additionally, places encompass past experiences, history, culture, tradition, and community (Cresswell, 2004). Places are represented in a specific way, based on history, traditions, and people’s perceptions, and are dynamic and change over time. Various groups in a community commonly hold different perceptions of place. Jess and Massey (1995, p.134) state that within any given place there are a number of different and often conflicting perceptions of place and argue that this is because ‘the identities of places are a product of social actions and of the ways in which people construct their own representations of particular places’. Hence there are negotiations over place in most communities, there are different ways of participating and contributing to a place (Massey, 1995), and there are discussions over how places should adapt to challenges. In meeting challenges and enhancing well-being, the notion of place attachment has been seen (and shown in this thesis) to motivate people to engage and act, and has thus gained the interest of climate change adaptation researchers.

While much of the literature focuses on the loss of place as a negative consequence of climate change and climate change adaptation (e.g. Adger, et al., 2011a; Adger, et al., 2010; Hastrup, 2009), this study focuses on place attachment as a driver of adaptation

(Amundsen, 2013) and as a dimension of community resilience (Amundsen, 2012b). Attachment to place offers an interesting starting point to study adaptation, as it has been found to affect the willingness to engage in activities to maintain attributes of place that are valued (Kaltenborn, 1998; Stedman, 2002). Other studies found no connection between place attachment and action among farmers, but found connectedness to nature as the important factor leading to pro-environment action (Gosling & Williams, 2010). Research in psychology has found that place attachment is one of three important predictors explaining engagement with climate change, the others being gender (female) and locally relevant information (Scannell & Gifford, 2013). Place attachment is also considered an important focus for responding to climate change impacts upon public health (Hess et al., 2008). Attachment to place changes over time and increased expressions of place attachment are often seen at times of threats to place, which could trigger adaptations (Devine-Wright, 2013). In the two municipalities studied in this thesis, changes other than climate change impacts were seen to threaten the well-being of these municipalities and trigger adaptations (Amundsen, 2012a, 2012b, 2013). In particular population decline from outmigration was seen as a threat, which possibly strengthened place attachment in these two municipalities.

Place attachment, as one of the six dimensions of community resilience, is important for the two municipalities studied here as a motivator for local adaptation (Amundsen, 2012b; see also: Berkes & Ross, 2013; Hess, et al., 2008; Ross et al., 2010). In the municipalities, people are strongly linked to their places, reflected in their willingness and commitment to respond to the challenges they are faced with. There was a local understanding of the importance of place attachment for community resilience, and that engaging in community activities led to stronger connections to place. This has been supported by similar studies, for instance in Australia, where an emotional connection to the land was identified as fundamental to community resilience (Ross et al., 2010).

Place attachment and place identities can also serve as a barrier to taking up new ideas and for changing practices (Dale et al., 2008; Marshall et al., 2012). How a place is perceived and ideas for place development are issues that are often discussed in communities. Different groups within a community perceive place and define place in a number of different ways. Pertinent questions include what belongs in a place and what does not, and can often lead to a definition of insider and outsider (Cresswell, 1996). This is illustrated

by an example from London where a neighbourhood resisted the establishment of McDonalds because they did not perceive that it belonged in that neighbourhood (Massey, 1995). Similar negotiations over place are ongoing and pertinent in the study communities. Currently there are discussions over the development of oil and gas activities, and whether these resources should be extracted outside the coast; there are discussions concerning the consequences for traditional livelihoods in the communities; and there are discussions concerning the development of the local tourism industry (Amundsen, 2012a).

While the ability to adjust and engage available resources can be objectively measured to a certain degree, the ability also depends on aspects such as perceived resilience, a factor that could have implication for adaptation (Amundsen, 2012b; Hovelsrud, et al., 2013). The perception of being resilient, as is the case in the two municipalities studied in this thesis, as well as in comparable municipalities in Northern Norway (West & Hovelsrud, 2010), could lead to complacency regarding the need to adapt (Amundsen, 2012b; O'Brien, et al., 2006). However, a critical realist standpoint frames climate change as a real issue that requires adaptation. The climatic consequences of anthropogenic emissions assessed in the most recent IPCC report (IPCC, 2013) will be substantial, and will have major consequences for human society (IPCC, 2012), even if certain sectors of society are currently either unwilling or unable to comprehend the implications. For the municipalities studied in this thesis, climate change will not only affect the resources upon which they are dependent (e.g., fisheries) to a greater or lesser degree, it will affect whole systems, not least because of increasing interconnectedness in a globalised world (Leichenko & O'Brien, 2008). In the context of resilience thinking, to manage change implies adaptation, constantly responding to change, and learning. This highlights the importance of focusing on community resilience in order to explore the components that contribute to shaping such resilience, and also analyse how the components function and interact in order to respond to changes. In the two municipalities studied here, place attachment is identified as one important dimension of community resilience (article 1/(Amundsen, 2012b), as a motivating factor for adaptation (article 2/(Amundsen, 2013), and as important in local discussions of tourism development (article 3/(Amundsen, 2012a). Furthermore, critical realism provides insights for adaptation research on how to approach the mismatch between perceptions of climate change impacts and the need for climate change adaptation (article 4/(Amundsen, et al., under revision). (Summary of articles to follow in chapter 5).

4. Methodology

In this thesis, multiple qualitative methods are applied to the study of adaptation processes and community resilience. Through an open, flexible and inclusive approach, aspects not expected or known during the research design phase, such as the importance of cultural values and what matters to people, were easily include into the research.

In this study the methods of in-depth, semi-structured, open-ended interviews, participant observation, document analysis, discourse analysis, and automatic media search have been employed. The research was carried out by a desk study, Internet searches, and fieldwork with multiple visits. The various stages of the study were organised as follows: i) desk-based study; ii) scoping visit; iii) main fieldwork period; iv) primary analyses; v) third field visit; vi) analyses of interviews with the help of NVivo text analysis programme.

Integration of both quantitative and/or qualitative methods in one study is usually labelled 'mixed methods'. The rationale for using more than one method is commonly discussed in the literature as a means to add new perspectives and offer a "richer and more comprehensive picture of the issue under investigation" (Foss & Ellefsen, 2002, p.242). One frequently stated rationale is that society and social phenomena are complex and that one method is not sufficient to represent this complexity (Greene et al., 2001, p.26). Or as Teddlie and Tashakkori contend: "Mixed methods research can answer research questions that the other methodologies cannot" (2003, p.14 quoted in Bryman, 2006, p.118). Onwuegbuzie and Leech (2005, p.384) argue that "mono-method research is the biggest threat to the advancement of the social sciences", and particularly point to the benefits of mixing quantitative and qualitative methods. In this thesis only qualitative methods are employed and they are combined rather than integrated. I therefore use the term multiple methods in order to distinguish my methodological approach from 'mixed methods'.

Triangulation of results, which has its original use in the natural sciences, is an often stated or expected outcome of applying multiple methods. Triangulation is employed to signify that the same result can be elicited from the use of several methods and through enhancing the validity of the findings (Fielding & Fielding, 2008). In my research, the purpose of applying multiple methods is not to triangulate the results, but to provide a broader insight into the cases than would otherwise be possible.

By employing multiple methods I am able to investigate and highlight different aspects of the study and arrive at a richer and more in-depth understanding of the complexities within the communities. This study is undertaken within specific geographical contexts, and understanding places requires comprehensive methodological approaches that involve getting to know the place and the complex interlinkages of activities (Berg et al., 2013; Meløe, 2012). Combining methods “seeks elaboration, enhancement, illustration, clarification of the results from one method with the results from the other method” (Greene et al., 1989, p.259). Hence the methods applied in my study complement each other, allowing me to provide a thicker description and a broader insight into the cases than would have been discernible solely from one method. It is the complexity of the adaptation phenomenon that is being researched and the ability to answer a composite set of research questions that are the motivating factors for using multiple methods in this thesis.

The selection of the fieldwork municipalities was initially based on the geographical region selected in the project of which this PhD-thesis is a part, ACTOR (Arctic climate change, tourism and outdoor recreation; a project funded under the NORKLIMA programme of The Research Council of Norway). This region includes the sailing route of *Hurtigruten* (Coastal Liner) through Vesterålen, and the National Tourist Route through the outer parts of Senja^{viii}. Through the desk-based study and a scoping visit to Senja and Vesterålen during summer 2009, it was decided to select one municipality in Senja and one in Vesterålen. The decision to select Berg municipality in Senja, and Øksnes municipality in Vesterålen was based on their similarities and differences, as well as initial contacts made with key informants during the scoping visit (see also section 2.1).

The municipalities were visited three times over a period of one year. In addition, Berg municipality was visited again in July 2010. The second field visit lasted one month in each municipality October-November 2009, and this is when the majority of the empirical material was gathered. Field visits of altogether four months between June 2009 and July 2010 gave the fieldwork an ethnographic character and allowed for participant observation.

In-depth interviews were carried out with a total of 41 people in the two municipalities. This included a variety of actors within the community to ensure a broad participation and representation of views; bureaucrats and officials in municipalities, fishers and fishing industry employees; local politicians; representatives of fisheries’ organisations, and

tourism industry actors (in a wide sense, including elderly ladies selling their handmade knitting products to tourists).

The interviewees represented various professions and positions of responsibility within their municipality, such as local government officials, fishers, shop owners, representatives from the tourism industry, chairmen of local sports, recreational, and civil society organisations, local investors, and individuals with a strong local engagement. Altogether 25 males and 16 females, including two married couples, were interviewed. In Berg municipality an equal number of males and females were interviewed, whereas in Øksnes municipality, more than half of the interviewees were male. (See list of interviewees in appendix.) The interviewees were selected on the basis of the desk study, i.e. on the basis of their positions as local officials in the municipality, tourism industry, and representatives for interest organisations, such as the Fishers' Association (*Fiskarlaget*) and The Coastal Federation (*Forbundet Kysten*). Additionally, both municipalities have a number of committed individuals (*ildsjeler*^{ix}) who are involved in local development on a voluntary basis, and several of these were contacted and interviewed. Regional tourism actors were also interviewed. In Øksnes, attending a two-day meeting for the tourism industry led to many new contacts with key informants. Finally, some interviewees were included in the study through 'snowballing'; where interviewees suggested new people to be included in the study, whom might otherwise have been left out. The initial contact with the majority of interviewees was made by e-mail, accompanied by an information letter about the project, including information about anonymity and how the material would be used (see appendix). Informants identified through 'snowballing', as well as those encountered at various meetings, did not receive this information in advance.

An interview guide was used to ensure that the same topics were covered in all the interviews. However, for eight of the interviewees from the tourism sector in Øksnes, where the goal of the interviews was to gain a good understanding of issues particular to the tourism industry, some different questions were asked and the complete interview guide was not followed (see interview guide and questions in appendix).

The topics for the interview guide encompassed the interviewees' activities and relation to their place, observed changes in social, economic and political spheres, weather and climatic conditions, tourism development, and potential responses to changes and visions

for the future. Interviewees were asked directly about their attachment to place, the community activities they took part in, their relationship to the natural environment, and in particular what made the community a good place to live. Interviewees were asked about their local connection, what they valued about the place, and their connections to nature. They were also asked about what changes they had observed, and were prompted to talk about social, economic, political, weather and climatic conditions. They were challenged to explain what the consequences of these changes might be, and how they envisaged the future for their places. With respect to observed changes in weather and climate, weather rather than climate was discussed (Hovelsrud, et al., 2010; Marino & Schweitzer, 2009; Rayner, 2003; see also section 2.3.2). Changes in weather and weather conditions were asked about and potential consequences from a warmer climate were discussed, such as changes in vegetation and in seasons, and new species observations.

The development of the interview guide was informed by the approach used in the CAVIAR^{vii} project, and the framework developed for that project (Ford & Smit, 2004; Hovelsrud & Smit, 2010; Smit et al., 2010). The framework emphasises an analysis of multiple factors facing the community, both current and in the future, the community's exposure-sensitivity to changing conditions, and current and future adaptive strategies to the changing conditions. The purpose is to analyse the current and future vulnerability of a community, and current and future adaptive capacity (Hovelsrud & Smit, 2010).

The interviews lasted from 30 minutes to two hours, depending on the time available or the interest of the interviewees. All interviewees, except one, were willing to have the interview audio recorded, however due to technical problems three further interviews were not recorded. All the interviews were transcribed.

The third field visit took place during May-June 2010 to follow-up the second and main field work period from October-November 2009. Follow-up meetings with key informants took place in both municipalities, and initial analyses were presented and discussed. Additionally, eight representatives from the tourism industry in Øksnes municipality who had not previously been interviewed were interviewed using a separate interview guide, which covered questions concerning their business, collaboration across the region and with national actors, and future outlook (see appendix). This guide was developed based on experiences and analyses from the previous field visits. The third field visit also gave an opportunity to observe how the local development projects were advancing. In addition,

Berg municipality was visited one more time during July 2010 to help as a volunteer at a festival. Through participating, a better insight into the actors involved in running activities in the community was gained.

The lengthy stay in the fieldwork areas allowed for participant observation of daily life and community activities. These included local events, activities and the voluntary engagement in the villages. Participant observation included attendance at various seminars, gatherings and meetings in relation to village development processes and projects, as well as taking part in everyday activities in the municipalities. Whilst doing fieldwork, a number of informal gatherings and conversations with local officials and others took place. These are not part of the formal empirical material but helped contextualise information gained through the interviews.

Various internet searches of municipal, regional government, as well as tourism industry websites were conducted as part of this study. The information sources included policy documents, project proposals and documents, statistics, and a continuous newspaper search over two years. An automatic newspaper search from September 2009 until June 2011 using *A-tekst* (newspaper archive) searched for keywords *turis** and ‘name of localities’, to cover news stories related to the village in general, to tourism specifically, and to follow local developments. Documents collected include planning documents for the municipalities; tourism industry plans; Innovation Norway documents; Governmental documents and strategies on regional development in Northern Norway; various relevant Government white papers; and tourism promotion material. The documents and newspaper articles provided insight into recent processes of change, the relevant actors in the village, and how changes have been dealt with.

In order to analyse the data, I made use of text analysis software QSR NVivo to organise, code according to themes, and analyse the data. NVivo is a programme that allows for the structuring and analysis of text through coding, word frequency searches, and various visual and model presentations of the data. It is a tool that aids the researcher in interpreting the data (Bazeley, 2002). The transcribed interviews were imported to NVivo and coded. The codes were made based on the interview guide, but as the analyses of the texts developed, new codes were added (see table 4.1). This was because codes emerged out of the material, which had not necessarily been strongly emphasised in the research design. To give an example; local people’s relation to nature emerged as an important

component from the initial analysis of the interviews. The interviews were reviewed for keywords and recurring themes through querying frequency, as well as coding according to themes that interviewees discussed. Examples of these were societal trends, local champions, ideas about the future, and changes in available resources. Through the analyses and literature review, six dimensions of community resilience, presented in article 1 (Amundsen, 2012b), were found to be applicable to the context of one village in Senja.

Table 4.1 Codes developed in NVivo for the analyses

Main code	Sub-code
Changes in climate & weather	Changes in nature, environment, resources Consequences Responses
Fisheries and related industries	
Tourism	Barriers Collaboration Current status and recent developments Development, funding, projects Perception of tourism Potential for tourism
Dimensions of community resilience	Active agents Community resources Community networks Diverse and innovative economy Institutions People-place connections Reflexivity and learning
Local champions/ildsjeler ^x	
Place	Image of place Use of place
Politics	
Quality of life	
Trends in society	Consequences Demography Employment and economy Local services
Future	Challenges Oil development Opportunities Responses and processes for future

The empirical material and analyses form the basis for the four articles that constitute this thesis. The three first articles draw on the empirical material from fieldwork and the desk study, but not in exactly the same manner. The articles draw directly on the interviews,

and quotes are used in the text to illustrate the most salient points. The first article analyses interviews and other empirical descriptions gathered through observation, as well as policy and local development project documents. Newspaper articles were also included in the analysis (Amundsen, 2012b). The second article focuses on place attachment and makes use of interview material, observations, and my own experiences from 'being there' (Amundsen, 2013). The third article makes use of a combination of analyses of interviews and local and national policy documents, in particular as pertaining to the tourism industry and discourses of local development (Amundsen, 2012a). The fourth article draws on critical realism and adaptation research in Northern Norway to provide insights that can help make climate change research more locally relevant (Amundsen, et al., under revision).

4.1. Reflections on the methodology

The methodology applied in this research was chosen in order to understand processes occurring in specific geographic places. As noted, places are complex to study and require a variety of methods (Berg, et al., 2013), including getting to know the place through being there and walking the landscape, both alone and with informants (Setten, 2013). By making use of multiple methods, the interlinked aspects of how people are attached to place and to their environment, and how they are shaping their environment and places, can be uncovered. Places are also created through the researchers' descriptions and analyses (Berg, et al., 2013). Feminist geography in particular discusses aspects of positionality and the situatedness of knowledge, and that the researcher shapes to a large degree the outcomes of research, as she defines the research agenda and questions asked, selects the means of coding and organisation of the data and draws conclusions (Rose, 1997). I have been aware of the need for self-reflection in both the field work context and when conducting the analyses. I have also discussed preliminary analyses with key informants in an iterative process in order to ground truth my interpretations of the results. In another effort to check my own interpretations and analyses I have also considered how my analyses corroborate with similar studies.

This study has relied wholly on multiple qualitative methods. One limitation of this type of empirical data is that it says nothing about statistical significance and it is thus difficult to generalise. Instead this methodology provides in-depth information about the

study areas. Qualitative research methods often rest on the assumption that the data collected is deeper, rather than broader as provided by a quantitative approach (Kielland & Nilsen, 2013). By using semi-structured, open-ended interviews rather than surveys or questionnaires, I have been able to collect more in-depth empirical material. The questions asked, in interviews and surveys, could have been similar, but the interview situation provides a direct contact with the interviewees and allows for opportunities to elaborate and follow-up questions. The problem with bias is potentially the same for interviews as with surveys, as those likely to be interested in responding are those interested and engaged in the topic of the research. As such, aspects of subjectivity are not overcome by using quantitative methods, since the questions asked, both in qualitative and quantitative studies influence the research results (Mendoza & Morén-Alegret, 2013).

Gaining access to information, either through interviews or participation in activities did not represent major challenges during the field work. Except for a few people who were either not able to or not interested in meeting me, I was well received in both municipalities.

When using multiple methods the data material is rich and comprehensive and it is a challenge to present the data within the restrictive word limits of publications, (Alexander et al., 2008). Additionally, results from multi-method studies are often complex, and possibly heterogeneous, which make them difficult to present (Greene, et al., 2001). Heterogeneous results also make it difficult for users and/or stakeholders to relate to the results, or to make use of them. This PhD project is presented as a collection of articles on various themes from the case municipalities, and they cover different aspects of the research material. Presenting a PhD study in a monograph would have allowed more scope to both include, and elaborate upon, the empirical material collected during this project. The rationale behind presenting the PhD results as a collection of published academic articles is to make my research easily and quickly available.

The risk of bias, and potential shortcomings of the methods applied, relate first to the representativeness of informants. The selection was initially based on informants' local roles and responsibilities (professional, voluntary or elected roles) within their municipalities and visibility in e.g. local media, and secondly through 'snowballing'. Hence the selection is slightly biased towards people with strong voices, which in some instances represented the same, or similar, views, opinions and ideas for community

development. Attempts were made to include a larger group of informants, but not everyone that was approached was interested in participating in the research project. A few did not find time or did not want to talk to me, but this is a common issue when undertaking interviews. Typically those who were willing to participate were also highly engaged in local activities (i.e. through their roles and responsibilities), and with considerable knowledge of local adaptation processes. Thus the final sample of interviewees is acceptable because it was representative of the breadth of opinion about the direction of local development, and is comprised of those engaged in adaptive processes in the municipalities. Additionally, local changes, including adaptation, are in many communities driven by engaged individuals (*ildsjeler*) (Dannevig, et al., 2013), and it is appropriate to interview those who are driving the changes, if we want to understand how changes in communities come about. These people value the place so much, care so much and the place matters so much to them that they go ahead and act.

The potential second bias follows on from the first (because several committed or engaged individuals were interviewed) is that the interviewees are likely to have a more positive outlook on the future for the municipalities than other individuals. The analysis based on the interviews is therefore likely biased towards a particular, and positive, perception of the communities. However, the realities of population decline and major changes in the fisheries are indisputable. Potential bias was balanced by observations from spending time in the municipalities, and taking part in activities and visiting various places where a larger selection of the population are, such as local shops, cafés, sports facilities, pubs, and libraries.

My experiences of being in the field are somewhat mirrored by Pini (2004) in her research in rural Australia, although she was seen to be ‘one of them’ as she herself grew up on a farm. She found that people she encountered in the field assigned various roles and identities to her, such as ‘nice country girl’ and ‘farmers’ daughter’. By introducing myself as representing CICERO, a climate change research institute in Oslo, I was automatically associated with a number of views about climate change. Furthermore, while some people expressed a certain degree of respect towards a PhD student at a university, others were not certain what a PhD was. On one occasion I was thought to represent the bureaucracy in Oslo, which is perceived to make ignorant decisions that negatively affect rural communities, and particularly in the area of natural resource management. Being a young female researcher in male-dominated communities never

caused any unease, but on several occasions I was subtly and humorously made aware that the communities needed educated young women to move there. For many people in the north, southern Norway, and especially Oslo, represents the power elite that is not sensitive to the realities in the north, and as a consequence does not take their needs into account. This could be seen as part of a centre-periphery debate, and the misperceptions go both ways. Being a southerner in the north thus triggered some judgements and prejudices, but through spending time in the communities the perception of difference and otherness was reduced. On the whole, I was very well received in both municipalities and people were forthcoming and hospitable, interested in my research and willing to contribute. Prior to undertaking the fieldwork I had no personal connections to either of the two municipalities, but subsequently I have maintained contact with one of the villages. I have visited this village on several occasions after completing the fieldwork in July 2010. For ethical reasons, only material collected up to this date is included in the analyses, which means that information and insights gained at a later stage have not influenced the analyses, to the degree that this is possible. This is important, because when visiting the village as an individual, and not a researcher, I am perceived differently and I also have gained access to information and social arenas not available to me as an outside researcher.

5. Summary of articles

This thesis comprises of four articles, which are all summarised in this chapter. The ways in which these link and respond to the research questions are presented in table 1.2.

Article 1: Illusions of resilience? An analysis of community responses to change in Northern Norway

This article analyses how one village on Senja is responding to multiple socio-economic challenges. Six dimensions of community resilience were identified. These, to a large extent, correspond with those found in the research of Buikstra et al. (2010), Magis (2010), and Ross et al. (2010). The dimensions identified in the village are community resources, community networks, institutions and services, people-place connections, active agents, and learning. The dimensions are activated through processes and activities in the village, which ensure the village's well-being and viability. These processes and activities are initiated in order to increase optimism and well-being, under the expectation that this in

turn will lead to the establishment of new jobs, increase the number of inhabitants, and ultimately enhance resilience.

The six dimensions are interlinked in the way in which they contribute to community resilience. For this village, people-place connections are important in general, and in particular as a driver of adaptations. The people-place connection is expressed by many of the active agents, who are using their attachment to place to improve well-being, to foster innovation, and to ensure that the village is an attractive place to live. Place attachment is thus partially what motivates active agents to act, yet they cannot act without the foundation of the whole range of community resources, institutions and community networks. As an added dimension, learning is central to be able to respond to future challenges, especially because many of these are unknown. Reflexivity in responding to these challenges may therefore contribute to the enhancement of future resilience.

The article contributes to the growing literature on community resilience. Community resilience is defined as the ability of a community to cope and adjust to stresses caused by social, political and environmental change and to engage community resources to overcome adversity and take advantage of opportunities in response to change (Buikstra et al., 2010, Magis, 2010, Ross et al., 2010). Community resilience depends on the ability to respond and adapt to the continuous changes occurring in communities (Magis, 2010).

A resilient community is expected to be well suited to adapt to current and future changes, including social, economic, environmental, and cultural changes. However, the reported changes in environmental and socio-economic conditions are unprecedented, particularly in the Arctic (ACIA, 2005; AHDR, 2004; AMAP, 2011). The projected systemic changes, including climate change, create potential future challenges to which communities will have to adapt. Factors that are important for community resilience today may or may not be relevant for resilience in the future. Although communities may perceive and exhibit resilience at the local scale, they are nonetheless part of a global system and have to respond to changes affecting them through this connectedness. Globalisation processes in particular can influence the resilience of communities (Leichenko & O'Brien, 2008). Anderies and Jansson (2011) argue that when viewed in isolation local communities may seem robust but nevertheless, their linkages to processes at the other societal levels, including the global, are influencing their robustness. It is therefore timely to ask, despite the historical and current resilience of a community, whether such resilience will be

applicable in the context of future global changes, particularly to the impacts of climate change.

This article concludes that there is a risk that community resilience may be an illusion, leading to complacency about the need for adaptation to multiple factors of change. Hence, the ability of communities to actively engage in reflexive learning processes will be of importance for both future resilience and adaptation.

Article 2: Place attachment as a driver of adaptation in coastal communities in Northern Norway

This article explores how place attachment affects adaptive responses to a changing social context through analysing adaptation in two coastal municipalities in Northern Norway. Place attachment (people-place connection) is one of the identified dimensions of community resilience from Article 1. Place attachment emphasises emotional ties to place, and is seen as contributing to well-being and resilience (Adger, et al., 2013; Amundsen, 2012b; Hess, et al., 2008; Ross, et al., 2010).

Changes in a range of interlinked factors, in social, economic, environmental and climatic conditions, require adaptation in many communities. The main challenge in these municipalities is declining populations and the consequences accompanying this trend, including livelihood uncertainties and decreased provision of public services. Climate change impacts are expected to present challenges and opportunities that will require additional adaptation.

Local communities do not necessarily differentiate between the suite of challenges they are faced with and are adapting to, including changes in social, economic and climatic conditions (Smit & Wandel, 2006). Hence climate change is but one challenge requiring adaptation in communities (West & Hovelsrud, 2010). Adaptation to the consequences of climate change is not, however, currently a concern in many local communities in the north (Hovelsrud & Smit, 2010). This article discusses the role of place attachment in motivating adaptation to multiple changes, and in doing so contributes to a growing body of literature within climate change adaptation on 'subjective' (values, culture, place) dimensions.

Field work in the two municipalities investigated dimensions of life quality, signifying what is valued about place and how place is made meaningful. A high quality of life was brought up in interviews as an important characteristic of the place and a reason for wanting to continue living there. A number of quality of life characteristics, such as social networks and close-knit communities, access to nature areas, natural resources, local activities, and connectivity and accessibility, were features many interviewees wanted to maintain.

The findings suggest that people are motivated to act based on their emotional connection with place, and that place attachment can be a powerful motivator for adaptation to a changing social context. Although climate change is not currently a primary local concern, place attachment is an important driver of adaptation to negative socio-economic trends, and motivates collective actions to ensure continued well-being in these places that may enhance communities' resilience to climate change impacts and help inform successful adaptation strategies. The empirical results of this study underscore the subjective dimensions in motivating adaptive responses to interlinked changes at the local level.

In conclusion, the article argues that place attachment may offer a better starting point for climate change adaptation than an emphasis on climate change impacts. The fact that climate change does not currently motivate adaptation in the two case municipalities is a highly relevant insight to the climate change adaptation research community, which often assumes climate change to be a primary driver of adaptation. Understanding what matters to people in particular places helps identify the adaptation priorities determined by communities, and the factors that motivate adaptation.

Article 3: Differing discourses of development in the Arctic – the case of nature-based tourism in Northern Norway

Tourism is seen as a sector with significant potential to help local communities respond to socio-economic challenges through job creation and new income sources. As such, the expectation is that it will contribute to the sustainability of rural communities, helping to turn the trend of negative population growth and confront challenges related to economic restructuring. This article discusses the various discourses of regional and local tourism development in Northern Norway based on analyses of documents, tourism marketing material, and interviews.

National policy documents designate tourism development as one of the pillars of the regional development strategy for Northern Norway. The optimism is due to tourism being the world's largest and fastest growing industry (e.g. Saarinen, 2003), and the Arctic is rapidly receiving increased interest as a tourism destination (Hall & Saarinen, 2010a). Consequently tourism is perceived as an attractive source of income and employment in the Arctic regions, and Northern Norway is no exception.

The tourism and outdoor recreation sector in Northern Norway is largely nature-based, and natural resource use such as fishing, bird- and whale watching, and hiking are activities offered by the tourism industry. The industry actors are typically small business with few employees and many operate only during the summer season.

The analyses of tourism development and activities in two municipalities in Northern Norway, presented in the article, reveal a distance between the perceptions of different actors on different scales about the tourism industry today, and its potential and direction for development. The national tourism authority is promoting Northern Norway internationally as a destination with "clean and fresh nature, a living coastal culture and opportunities for nature-based experiences" (Ministry of Trade and Industry, 2007, p.56); while local tourism actors are objecting to not being able to take part in defining the products that they are providing. Additionally, a concern over increasing tourism numbers and its effect on local well-being was expressed in interviews. Discussions concerning tourism development are intrinsically linked to livelihoods, history and culture, and about place identity and definition.

The article concludes that the high-level focus on tourism development at the national level has had few, if any, consequences at the local level. Crucially, the goal of ensuring sustainable rural communities has not been met. There are clear discrepancies between the way in which the local tourism actors currently operate and plan to develop, and the national tourism strategies and promotion of the region. The discourses represented in the strategies at the national level do not correspond well with local discourses. Tourism could be an important future source of income and employment, but if there are large discrepancies between the actors regarding the aim of tourism development and the product that should be provided, it is unlikely that the aim of sustainable communities through tourism development will be met.

There are lessons to be learnt from this with respect to climate change adaptation, as strategies and plans developed at the national level might feel irrelevant at the local level. Place identity is an important aspect of how communities perceive themselves, and hence influences how communities choose to develop, and define, to a certain degree, the possibilities for local adaptation.

Article 4: The Arctic Challenge: Climate change adaptation in Northern communities

The starting point for this paper is the gap between scientific findings and local perceptions of climate risks that presents a challenge for both adaptation research and local policy and practice. This gap is addressed by focusing on the process of adaptation from a critical realist perspective, and presents four insights that may influence the way that climate change adaptation research is carried out.

Critical realism provides a useful theoretical foundation for understanding the processes and perceptions underlying climate change adaptation. It offers an approach to understanding this through enabling the analysis of current and future requirements for climate change adaptation within the context of other relevant processes and situations. Critical realism, with its realist ontology, allows for recognising a phenomenon such as climate change beyond that which we may perceive or understand. Critical realism therefore provides a useful framework for addressing a phenomenon that is real even if it is not perceived to exist or is not considered to be an immediate problem by the local communities.

Critical realism allows for conceptualising climate change as a multi-faceted problem, and it supports a non-reductionist approach (Høyer, 2010). It permits attention to be paid to all dimensions of the human being and social life, from psychology to human interaction and agency, and dependent levels, which links the local with the global. By approaching humans in society in a holistic manner including the complexities inherent in human society, critical realism can explain and incorporate the subjective dimensions of adaptation. Critical realism can thus help to understand and address all aspects of climate change, including its physical nature, its causes and impacts, and possible responses (Frank, 2010).

In light of the overwhelming scientific knowledge of Arctic climate change, this paper discusses how research can address the finding that climate change is generally not perceived as a challenge that necessitates direct adaptation responses in communities in Northern Norway (Amundsen, 2012b, 2013; West & Hovelsrud, 2010). Four insights from critical realism help to understanding and contextualizing adaptation in the local communities. These are recognition of different realities; the possibility of making value judgements to argue for the necessity of climate change adaptation; the non-reductionism in terms of causalities and adaptation options; and the importance of human agency and a contextual approach in responding to change.

This article shows that the interconnectedness and complexity of the climate change problem requires an approach which takes into account what matters to people. Empirical studies in Northern Norway have shown that adaptation to climate change will not take the front seat if the communities have more pressing concerns and tasks regulated by law such as health care, schooling and caring for the elderly to deal with. Nevertheless adaptation to the impacts of climate change may occur even if the communities are not attributing the changes to be driven by anthropogenic causes. In a critical realist perspective adaptation is shaped by all dimensions of the human being, from psychology to human interaction and agency, and dependent levels which links the local with the global. This makes it difficult to analyse on the one hand, but opens up for a better understanding of such processes on the other. The insights presented in this article highlight how the application of critical realism provides a tool to understanding and linking the causalities, and ultimately address the necessity for mitigation. The application of critical realism to the plethora of existing adaptation studies from Northern Norway help us unpacking the complex realities behind such inertia.

Understanding how climate change matters to individuals and communities calls for understanding perceptions, values, and the factors that contributes to resilience. We conclude that the Arctic challenge applies as much to the adaptation research community as to communities in the Arctic.

6. Conclusion

This thesis presents a critical assessment of community adaptation, and identifies the need to broaden the understanding of the concept of adaptation to include subjective dimensions, such as place attachment and identity. Grounded in critical realism, this thesis has shown that the complexity of the climate change problem, in particular perceiving and acting on climate change, requires a new approach which takes into account what matters to people. Empirical research on climate change adaptation is challenging due to the fact that climate change impacts are perceived to be distant in time and space, and climate change is not the only issue facing communities. Currently few observed weather observations have been directly attributed to climate change and hence triggered adaptation, and there is uncertainty regarding exactly what proactive adaptation should target. I have argued that climate change adaptation research must recognize the subjective aspects that underpin adaptation and community resilience. This thesis asserts that in order for a community to prepare for and respond to the consequences of climate change evident in the plethora of scientific findings, it is first necessary to understand what is motivating current adaptation. This includes understanding dimensions that are important for current resilience, and considering their implications for future resilience and adaptation in a changing climate.

The research undertaken for this PhD-project expands on previous work on place attachment by finding that place attachment is an important driver of adaptation processes. In addition, the thesis links these adaptation processes to discussions of local development, particularly prospects and trends in local tourism. The example of tourism as a focus for local development demonstrates that local needs must be taken into consideration for nationally determined objectives to be met. This disconnection between national and local interests is applicable to other policy areas than tourism, including climate change adaptation. Further, this thesis emphasises the relevance of place attachment for community resilience. A strong attachment to place motivates actions that enable people to continue living in the communities. These are new and critical dimensions for understanding and analysing climate change adaptation, that underscore the need for linking climate change adaptation with wider local adaptation processes.

In the two municipalities studied, people perceive themselves to be resilient and able to adapt to the challenges they are faced with, simply because they always have adapted, and the climatic changes they have experienced to date are considered to be within the range of natural variability. In the context of climate change adaptation, the perception of being resilient and able to withstand future changes could be part of the explanation for why there are as yet relatively few examples of adaptation to climate change. Resilience is not a static property, and even if a community is considered resilient today, the same status cannot be assumed in the future. In open complex systems various structures and mechanisms combine to create different outcomes depending on contexts. The changes that are being adapted to today are unlikely to be the same ones that will require adaptation in the future, and to address new challenges, continuous learning processes are important. Both local and national perceptions of resilience and adaptive capacity in the context of climate change impacts may be misplaced, and engaging more with local communities in order to capture what is of prime importance to them provides a better starting point for developing successful strategies.

One implication of these findings both for adaptation research and for communities is that new approaches are needed to overcome disconnects between scientific results and national government policies on the one hand, and local needs, capacities and aspirations on the other. Critical realism provides an overarching theory to guide a more holistic approach to adaptation, in which an attention to the interconnectedness of levels and processes are included. The climate is changing and adaptation is required, and future adaptation needs to be understood in the context of interacting processes of change. National climate change adaptation policies and strategies need to connect with local concerns, and develop in conjunction with other local adaptation processes and challenges. Furthermore, future research projects need to take into consideration that place attachment and other subjective dimensions are of key importance. Understanding the process of adaptation in communities can contribute to enhanced community resilience in the context of a changing climate.

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ⁱ Definitions of which areas constitute the Arctic vary, such as the areas north of the Arctic Circle, or determined by the treeline, or as areas of continuous permafrost (ACIA, 2005, p. 2). Northern Norway refers to the three northernmost counties on mainland Norway, Nordland, Troms and Finnmark, and almost all of this area is above the Arctic Circle. In this thesis, the Norwegian Arctic constitutes these three counties and Svalbard. ACIA 2005. *Arctic Climate Impact Assessment*, Cambridge University Press.

ⁱⁱ These statistics are disputed, as parts of the fisheries are not included in the statistics. In Øksnes, the local figures for fisheries employment are 35% (pers. comm., interview) and 30-40% in the

Senja region (Senja Næringsshage, 2009. Senja som fiskeriregion - Berg, Lenvik, Torsken og Tranøy kommuner. [*Senja as fisheries region - Berg, Lenvik, Torsken and Tranøy municipalities*]. Finnsnes: Senja Næringsshage as.)

ⁱⁱⁱ Dugnad refers to voluntary activity. It means participating in organised, but voluntary, community work and completing tasks together, e.g. building, rehabilitation and amelioration of communal areas.

^{iv} Fishing as main source of employment (more than 20 weeks of fishing per year and an income above a given level (blad B)

^v Livskraftverk – practical secondary school up to two days a week. Fisheries and sheep farming, production, cooking, etc.

^{vi} Due to the polar nights when the sun is not above the horizon for two months from end of November to end of January

^{vii} The CAVIAR project (Community adaptation and vulnerability in Arctic regions) was an International Polar Year (IPY) project with 26 case studies across the Arctic. The various cases used a common framework for analysing adaptation and vulnerability in communities. I was one of the members of the research team.

^{viii} The ACTOR project study area also included Svalbard. Svalbard was ruled out as a fieldwork area for the PhD-project, because of its distance from the two other regions, as well as the very different composition of the community in Longyearbyen.

^{ix} *Ildsjel* literary means *souls of fire*. It is attributed to individuals who have a burning commitment to their community.



Research

Illusions of Resilience? An Analysis of Community Responses to Change in Northern Norway.

*Helene Amundsen*¹

ABSTRACT. This article contributes to our understanding of community resilience. Community resilience is the ability of a community to cope and adjust to stresses caused by social, political, and environmental change and to engage community resources to overcome adversity and take advantage of opportunities in response to change. Through an analysis of local responses to multiple challenges, six dimensions of community resilience were found in one village in northern Norway. These dimensions; community resources, community networks, institutions and services, people–place connections, active agents, and learning; are activated in processes and activities in the village to respond to current challenges. Although this corroborates findings from other community resilience research, this research suggests that community resilience is both complex and dynamic over time. Although communities may consider themselves resilient to today’s challenges, the rate and magnitude of expected systemic global changes, especially climate change, means that future resilience cannot be taken for granted. This work concludes that there is a risk that community resilience may be an illusion, leading to complacency about the need for adaption to multiple factors of change. Hence, the ability of communities to actively engage in reflexive learning processes is of importance for both adaptation and future resilience.

Key Words: *adaptation; climate change; community resilience; adaptation; local development; northern Norway*

INTRODUCTION

Community resilience is the ability of a community to cope and adjust to stresses caused by social, political, and environmental change and to engage community resources to overcome adversity and take advantage of opportunities in response to change (Buikstra et al. 2010, Magis 2010, Ross et al. 2010). Community resilience depends on the ability to respond and adapt to the continuous changes occurring in communities (Magis 2010). The concept is analytically useful because it captures the collective dimension and the dynamic properties of the way in which communities are adapting to changes. Here, community refers to a group of people in a geographical location, such as a village.

The adaptive capacity of a community is directly related to its resilience, as one of three fundamental properties of a resilient system (Adger et al. 2011, Berkes et al. 2003). A resilient community is expected to be well suited to adapt to current and future changes, including social, economic, environmental, and cultural changes. However, the reported changes in environmental and socioeconomic conditions are unprecedented, particularly in the Arctic, according to a number of reports (Arctic Climate Impact Assessment 2005, Arctic Monitoring and Assessment Programme 2011a, Arctic Council 2004). Furthermore, in the context of climate change, the Arctic has been highlighted as a region particularly vulnerable to climate change (Anisimov et al. 2007). Therefore, despite the historical and current resilience of a community, it is timely to ask whether such resilience will be applicable in the context of future global changes, particularly to the impacts of climate change. Furthermore, there is also a question of how we

comprehend and analyze resilience in this context. Although communities may perceive and exhibit resilience at the local scale, they are nonetheless part of a global system and have to respond to changes affecting them through this connectedness. Globalization processes in particular can influence the resilience of communities (Leichenko and O’Brien 2008). Anderies and Jansson (2011) argue that in isolation local communities can be robust, but their linkages to processes at the higher levels, including the global, have consequences for their robustness.

In analyzing the factors that influence community resilience, our work is a contribution to this emerging research field. The study is based on empirical findings from a coastal village on the island of Senja in northern Norway, an example of a community actively seeking to overcome major challenges. The findings expand on current community resilience research (Buikstra et al. 2010, Magis 2010, Ross et al. 2010) by showing that reflexive learning is an added important dimension. This is particularly true with respect to future community resilience.

COMMUNITY RESILIENCE

The concept of resilience has multiple applications, including in disaster management (Manyena 2006, Norris et al. 2008), psychology and well-being (Buikstra et al. 2010, Luthar and Cicchetti 2000), and social–ecological systems (Gunderson and Holling 2002), with responding to adversity as the common focus. The insights from this wide scientific literature are increasingly compared to improve the application of the concept; for instance, in the review of the application of resilience to the areas of environment, well-being, and disaster

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Table 1. Three approaches showing factors important for community resilience.

Social networks and support	Community resources (natural, human, cultural, financial, built, political, social capitals/resources)	People–place connections
Positive outlook	Development of community resources	Knowledge, skills, and learning
Learning	Engagement of community resources	Community networks
Early experiences	Active agents	Engaged governance
Environment and lifestyle	Collective and strategic action	Diverse and innovative economy
Infrastructure and support services	Equity	Community infrastructure
Sense of purpose	Impact	
Diverse and innovative economy		
Embracing differences		
Beliefs		
Leadership		
(Buikstra et al. 2010)	(Magis 2010)	(Ross et al. 2010)

research by Brown and Westaway (2011). Their review draws from these diverse areas of research to argue in favor of including subjective and contextual factors to resilience, and of understanding the interlinkages between the factors that are of relevance for resilience. Various approaches have been taken to include subjective dimensions within the resilience and adaptation research, including well-being (Coulthard 2012) and values (O'Brien and Wolf 2010). This new focus on subjective and contextual aspects of resilience is relevant for the people–place connections of our work.

Here, we take the social–ecological systems approach as a starting point, where the resilience concept is commonly defined as the ability of a system to sustain or absorb the consequences of a shock while keeping the function and form of the system (Chapin et al. 2004, Gunderson and Holling 2002, Walker et al. 2004). The concept has been applied to analyzing social ecological systems (SES), both theoretically (Folke 2006) and applied (Berkes and Jolly 2001, Forbes et al. 2009). One principal assumption is that the only way to build a sustainable society is through the understanding of social and ecological systems as inseparable (Berkes et al. 2003). The properties of the resilience of an SES have been defined as “(1) the amount of change the system can undergo and still retain the same controls on function and structure, (2) the degree to which the system is capable of self-organization, and (3) the community’s ability to build and increase its capacity for learning and adaptation” (Berkes and Jolly 2001:2). An SES approach takes a nonlinear view of systems development, exemplified by the adaptive cycle of the four phases—exploitation, conservation, release, and reorganization—through which the system either returns to the state it started from, or have flipped to a new cycle (Gunderson and Holling 2002). In the working of this cycle, particularly (3) above (learning and adaptation) is important for our work.

The meaning of adaptation ranges from the general definition as a process of change to a specific definition in relation to climate change as “adjustment in natural or human systems to a new or changing environment” (Intergovernmental Panel on Climate Change (IPCC) 2007), as discussed by Orlove (2009).

The IPCC definition reduces adaptation to a response to external climate stimuli, which does not take into account the multiple impacts of other factors (McCarthy and Martello 2005, Wilbanks and Kates 2010). A much broader definition is used in cultural geography, where adaptation has been applied to understand how cultures, individuals, and societies are responding to changes (Denevan 1983). From this understanding, adaptation is here defined as the process of responding to interlinked changes in both internal and external factors that affect communities. Local communities are continuously responding to the challenges and opportunities that they perceive and experience, and adaptation to climate change cannot be separated from adaptation to other challenges or ongoing processes (O'Brien et al. 2004a, Hovelsrud and Smit 2010, Wilbanks and Kates 2010).

To uncover the aspects that constitute community resilience, Buikstra et al. (2010) identify 11 components of community resilience in a rural community in Australia based on individuals’ perceptions of resilience. Ross et al. (2010) develop six indicators of social resilience at the regional level in Australia. These two sets of components overlap somewhat with the dimensions of community resilience developed in a study in the United States (Magis 2010). Table 1 below gives an overview of the three sets of factors as presented in these studies. The factors of community resilience that they identify are similar, but with some differences. Whereas Magis (2010) focuses on resources and action, both Buikstra et al. (2010) and Ross et al. (2010) emphasize social values in the community. This difference can mainly be attributed to the various methods used; the Magis (2010) study is mainly based on expert evaluation, whereas both Buikstra et al. (2010) and Ross et al. (2010) present perceptions of inhabitants.

These dimensions of community resilience overlap with the factors which are important for adaptive capacity, and which are enacted through adaptation. Focusing on institutions, Gupta et al. (2010) found six dimensions relevant for adaptive capacity of institutions, including learning capacity, leadership, and resources, which are all noted in Table 1. Nelson et al. (2007) attribute adaptive capacity mainly to

Fig. 1. Location of Senja: i) detail of the island Senja, and ii) location of Senja in northern Europe.



Map source: Statens kartverk (Norwegian Mapping Authority); adapted by Romstad.

resources, whereas Buikstra et al. (2010), Magis (2010) and Ross et al. (2010) all include a broader range of dimensions in their conceptualization of community resilience.

ARCTIC CONTEXTS

The aims for this research were to gain an understanding of the factors important for community resilience in a specific village, and to analyze this in the context of local adaptation to future global changes, particularly climate change. This particular work is included within a larger research project aimed at understanding how communities are adapting to changing social, political, economic, environmental, and climatic conditions, and what this means for our understanding of climate change adaptation. The larger project covers two municipalities in northern Norway, but for this particular study, one village was selected to focus on current processes of adaptation.

The village of Senja is located in the Arctic (Fig. 1). Arctic communities are expected to be significantly affected by climate change, directly and indirectly through processes at different temporal and spatial scales, and must respond to corresponding challenges and changes (Arctic Climate Impact Assessment 2005, Arctic Monitoring and Assessment Programme 2011b, Chapin et al. 2004, Crate 2008, Ford et al.

2006a,b, Hovelsrud and Smit 2010, Keskitalo 2008, Krupnik and Jolly 2002, Arctic Council 2004). The specific local conditions relevant for understanding climate change adaptation are addressed in Hovelsrud et al. (2010) who investigates adaptation to combined climatic and nonclimatic exposure sensitivities in coastal communities in northern Norway; Keskitalo (2004) analyzes the vulnerability of forestry sector in northern Sweden; Ford et al. (2006b) assesses the vulnerability of communities in the Canadian Arctic; and Tyler et al. (2007) analyzes reindeer herding and the consequences for Sámi communities. These case studies increase the understanding of adaptive capacity and adaptation processes at the local level. It follows from these empirical studies in communities across the Arctic that the wider and indirect implications of climate change combined with other challenges at the community level must be taken into account when investigating adaptation (see also Adger 2006, Belliveau et al. 2006, McCarthy and Martello 2005, O'Brien et al. 2004a, Wilbanks and Kates 2010). Research find that local communities do not differentiate between the suite of challenges they at any time are faced with and adapting to, including social, economic, and climatic (Smit and Wandel 2006). Hence, climate change is but one challenge requiring adaptation in communities (West and Hovelsrud 2010).

Norway as a country is perceived to be resilient to climate change given a range of factors, such as the economy and available resources, but when focusing on certain sectors, regions, communities, and social groups, this picture becomes much more nuanced (O'Brien et al. 2004b). Cases from northern Norway support this. For instance, fisheries emerge as a statistically insignificant sector with respect to the regional employment statistics. However, in some municipalities, the fisheries directly employs up to a third of the workforce and is thus the single most important sector (West and Hovelsrud 2008). It has also been found that the combination of exposure sensitivities that communities are subject to together creates a more complex picture to adapt to, than focusing on one single factor (Hovelsrud et al. 2010). Yet the complacency regarding the ability to adapt is persistent, and there are few reflections on the limits to adaptation (O'Brien et al. 2006).

For northern Norway, climate models project higher average temperatures throughout the year, with most warming in the winter; and shifts in the seasons, with winters arriving later in the year. Increased precipitation has already been observed and by the year 2100 precipitation during the summer period is projected to increase by 13%, along with an increase in extreme precipitation (Førland et al. 2007, RegClim 2005). However, compared with the other challenges facing the village of Senja, such as demographic changes, changes in the climate may seem insignificant. In addition, people in the region are accustomed to adapt to significant variations in the weather. Nevertheless, the direct and indirect consequences of climate change are expected to add an additional dimension to adaptation challenges in the region (Hovelsrud et al. 2010, West and Hovelsrud 2010).

The Norwegian government seeks to ensure equity and equal living conditions across the country, to maintain the current population structure and settlement patterns, and "to facilitate real freedom of choice in respect of where to live" (Government of Norway 2009, Kommunal-og Departementet 2009:6). The aspects that determine where people settle in Norway include "quality housing, the availability of efficient services, proximity to family, community feeling and positive environmental benefits" (Kommunal-og Departementet 2009:6). The policy vision is to ensure the viability of small communities, or "lights in all the houses" (Pedersen 2008). The municipalities, i.e., local governments, play an important role in achieving national policy goals as they are the local providers of public welfare services such as health care, child care, education, social services, spatial planning and local infrastructure, and as such represent a significant societal pillar (Bjørnå and Aarsæther 2010, Hovik and Reitan 2004). Some municipalities are more proactive than others, and take on extra responsibilities regarding local development and facilitating business development (Bjørnå and Aarsæther 2010). Furthermore, the municipalities have been singled out

by the national government as arenas for climate change adaptation within their current areas of responsibilities (Amundsen et al. 2010).

In Norway, the centralization of population from the periphery to larger centers and from the north to the south has been the demographic trend for several decades, resulting in an increasingly elderly population in rural communities as the younger generation migrates to towns and cities (Granås and Nyseth 2007). To understand how these trends are affecting community resilience, there is a need to look at how communities are actually responding to change, and we have chosen the village of Senja in northern Norway for this purpose.

METHODS

A mixture of five qualitative methods was applied in this research. Mixed methods in qualitative research (Alexander et al. 2008) was seen as the most appropriate way to gain insights into the social processes in the village. The methods employed in this study include in-depth, semi-structured interviews, document analyses, participant observation, and media searches. The main data collection took place from June 2009 to July 2010 during four field visits, of which the longest lasted one month.

In-depth interviews were carried out with 10 individuals in the village, who represent local civic organizations, local officials, tourism actors, engaged individuals, and industry. Interviewees were selected through a desk study by identifying key individuals and individuals holding key positions in local institutions such as the local government. Five of these were approached prior to visiting the village and agreed to be interviewed. Further interviewees were selected through snowballing methodology, i.e., key individuals were asked to name others who would be relevant to meet. Interviews were either audio recorded and transcribed, or recorded by note writing. An interview guide was used to ensure that the same themes were covered in all the interviews. Interviewees were asked about their attachment to place, what they valued about the place, the community activities they take part in, their relationship to the natural environment and, in particular, what makes it a good place to live. Further they were asked about what changes they have observed and were prompted to talk about social, economic, political, weather, and climatic conditions. They were challenged on what the consequences of these changes might be and how they envisaged the future for the village.

The four visits to the village allowed for participant observation of local events, activities, and voluntary engagement in the village. Participant observation included attendance at various seminars, gatherings, and meetings in relation to village development processes and projects, as well as taking part in everyday activities in the municipalities.

During fieldwork, a number of informal meetings with local officials and others took place, which helped contextualize information gained through the interviews.

Various internet and archive searches of municipal websites and regional government websites, as well as tourism industry and activities were undertaken as part of our work. The information sources include policy documents, project documents, statistics, and continuous newspaper search over two years, from September 2009 to June 2011, by A-tekst (a newspaper archive service). The documents and newspaper articles gave insight into recent processes of change, the relevant actors in the village, and how changes had been dealt with.

The data were analyzed with the help of the text analysis software QSR NVivo8, by coding according to themes. NVivo is a program which allows for structuring and analyzing text through coding and word-frequency searches. The data from the interviews were grouped, coded, and analyzed. The codes were made based on the interview guide, but as the analyses of the text developed, new codes were added. Through the analyses and literature review of community resilience research (Buikstra et al. 2010, Magis 2010, and Ross et al. 2010 were found particularly relevant), six dimensions of community resilience, presented in this article, were found to be particularly applicable to this village.

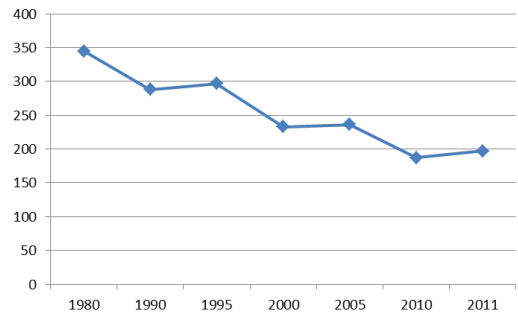
COMMUNITY RESILIENCE IN A VILLAGE ON THE ISLAND OF SENJA

The local context is necessary to understand how a community is dealing with challenges. Aspects of well-being and viability of the village were the main concerns among interviewees. This is comparable to research findings from other Arctic communities and in Australia (Hovelsrud and Smit 2010, Petheram et al. 2010). The main challenge for the village in this study was seen as population decline given a combination of outmigration and negative birth rates. The village has a population of 197, and the municipality as a whole has 907 inhabitants (Statistics Norway 2011). Since 1980, the population in the village has decreased from 350 people to 197 people in 2011 (see Fig. 2). The village is relatively homogenous; however, since the completion of the fieldwork this has slightly changed with the settlement of 20 refugees from Africa. The Sámi as a cultural group is not present in this village, although archaeological research indicates Sámi settlements in the area in the Middle Ages (Svestad 1995).

These demographic and related challenges led the local municipality to initiate a local development project, funded over three years (2007–2010) by the Ministry of Local Government and Regional Development. The aims of the project were to create new developments and a positive outlook in the municipality, in particular to attract new or returning inhabitants; to create new jobs; and to portray an active and forward looking society (Berg kommune 2007).

These aims are interlinked, as people in the village are leaving or not returning after acquiring higher education because they cannot find employment relevant to their qualifications.

Fig. 2. Population numbers for the village of Senja, from 1980–2011.



†Note: no data was available for 1985.

‡Source: Statistics Norway.

This municipal project and other activities in the village exemplify the application of dimensions of community resilience. This Norwegian study draws on Buikstra et al. (2010), Magis (2010) and Ross et al. (2010), representing pioneering research that identifies and analyzes the various components of community resilience. The analysis of empirical material from this Norwegian village resulted the identification of six dimensions of community resilience in this particular context, which to a large degree correspond to the findings of earlier studies (Buikstra et al. 2010, Magis 2010, Ross et al. 2010), but with both added dimensions and with varying significance. This shows that each dimension may play different roles in different contexts with implications for adaptation policies and approaches.

The six dimensions found to be relevant for community resilience in this village are listed in Table 2 and elaborated on in the text below. These corroborate both analyses of the empirical material from the village and the above-cited literature (Buikstra et al. 2010, Magis 2010, and Ross et al. 2010).

Community resources

Resources are the foundation of community resilience. The available resources, whether human, social, cultural, political, economic, or natural, (Flora et al. 2004) and the ways in which these are engaged in a community, affect community resilience (Magis 2010). The village of Senja is “resourceful” with respect to human engagement and creativity, natural resources, natural environment, available jobs (low unemployment), organized activities for children and adults, cultural events, and public services.

Table 2. Dimensions of community resilience.

Community resources, and the development and engagement of these	Includes human, social, natural, political, cultural, economic resources, and the way in which these are made use of in a community
Community networks	Family and neighborhood networks and other more or less organized networks
Institutions and services	Including formal and informal organizations, rules in use, norms, and values
People–place connections	People’s attachment to place which influences their local engagement. Places represent history, past experiences, culture, traditions, and landscapes.
Active agents	Individuals who take on an active role and show strong engagement in community activities. The leadership portrayed by active agents is not necessarily linked to formal appointments.
Learning	Learning from experiences and acting on this knowledge, single- and double-loop learning.

The villagers are engaging the human resources that are available to them and take on responsibilities to increase well-being and social cohesion. As one interviewee noted, “There are a lot of things that are sad here, but at the same time you can see that people have such a strong will, people are really strong.” A small population requires active involvement from a large proportion of the inhabitants and people contribute in the manner they are able when an event, activity, or festival is organized.

The natural resources in the village are particularly important in terms of employment. As one interviewee stated, “Of course we are dependent on exploiting the resources we are endowed with. It forms the basis for employment.” The most important industries in the municipality as a whole are coastal fishing, mining, and tourism. In this village, employment in the graphite mine represented secure employment for a relatively long period of time. At the time of a devastating fire in 1985, the employment in the mine was 125 people. Today a new mine is in operation; however, it employs only 27 people. This considerable change in the key industry has had profound consequences for the way in which inhabitants view their future opportunities in the village. However, given the village population of 197, the mine remains an important employer. The village previously had fisheries and fish-landing facilities, but the last professional fishing boats in this fjord were in the late 1970s. Today there are aquaculture installations. A major fishing harbor is located in a neighboring fjord. Currently the main employer is the public sector, and there is an emphasis on further developing tourism, which in particular promotes the natural environment (Amundsen 2012).

Interviewees noted that although they are rich in resources, they are struggling with population decline and low birth rates. The population trend presented in Fig. 1 clearly shows the downward trend in number of inhabitants. This was seen as the key factor that might reduce community resilience. Therefore, the village is promoting their resources to attract new inhabitants.

Community networks

Social networks were found in the study of Buikstra et al. (2010) to be the most prevalently mentioned dimension of community resilience. Ross et al. (2010) refer to community networks as activities and processes which support and build collaboration between people, and include community groups and level of volunteering. Here, community networks point specifically to ways in which various community groups and informal groupings constitute a support network that active agents know they can draw on to realize their ideas. Networks and social relations were noted as important for well-being. In the words of one interviewee, “It’s the social relations that keep you in a community and contribute to well-being.”

Many individuals in the village are strongly engaged in addressing the challenges of demographic change and local development. Community projects were established in two villages in the municipality, which were supported by the larger municipal project. Activities included marking hiking trails providing historical information for both residents and visitors, to strengthen local identity and attachment to place; building a marina for recreation and tourism purposes; and building a shelter (“gapahuk”) in the hillside above the village, where residents gather for a coffee or other social activities. These activities have largely taken place on a voluntary basis, but with support from the municipality. The voluntary engagement may ensure the continuation of activities after the completion of the financed municipal project. Although the continuation of activities is not dependent on external funding, the loss of a paid position for local development in the municipality reduces the ways in which the local government can contribute in the process. However, population numbers have continued to decline despite these initiatives.

Community resilience was tested in the village when the local school was closed. However, it was noted that: “When things like this happen, things that could be considered a crisis, it has the effect of uniting people and this gives an opportunity to develop with more strength.” The renewed strength to take action resulted in the establishment of a network that was

appointed by the villagers to take forward their ideas for community development. This network was formed with the particular aim of improving or developing the village with respect to both concrete and visible infrastructure projects, such as building the marina, and initiating and supporting cultural activities. The network was also supportive in reopening the school.

Institutions and services

The concept of the “institution” is one with myriad usages; in this context, institutions include formal and informal organizations, and rules in use, norms, and values (North 1990). Some of the key institutions in the village are public institutions such as the school, nursery, post office, and local government administration offices; commercial services such as a grocery store; and community values about the importance of contributing to voluntary activities, such as what is termed “dugnad,” or voluntary community work.

In the context of this village, service functions such as the post office and the grocery store, have a broader importance than the actual services they are providing. They are important aspects of the social fabric; they are meeting places, and there is a sense that without them, it would not be possible for the village to thrive. The fact that there is a distance of 65 km across a mountain to the next town also underlines the importance of these institutions and services to the village.

“Dugnad” is a particularly important informal institution, and tasks undertaken on “dugnad” typically include the amelioration of green communal spaces, and the renovation of community buildings such as a sports club house and a nursery. Participating in “dugnad” is expected of villagers, and more than the job that gets done, it is about building networks and social relations whilst contributing to the village. The village prides itself on high involvement of residents in volunteering, and one example is the organization of festivals, with themes such as music, art, fish, sports, and outdoor recreation. The uniqueness of place is used to attract both performers and audiences, as in many other communities in rural Norway (Førde and Borch 2010). These festivals make the residents proud because they are well organized, and are run on a voluntary basis, drawing on community networks to realize them.

Despite a high level of voluntary engagement, several interviewees questioned whether “dugnad” as an institution was disappearing. One individual in the village noted: “We have a lot of fun when we get together for a dugnad. It is a little difficult to get people to come, increasingly so. But this year we’ve had several dugnad at the sports club house and other places, and people have been very involved and a lot of people have participated.”

Villagers were concerned that the loss of any of the key institutions and services would signify the end of a thriving

village. The prime example was losing the local school, which the villagers themselves then reopened as a private school. Interviewees considered it likely that without the school, the nursery would be the next institution to disappear, which, in turn, would make it unattractive for families to settle in the village. In a similar position is the local store, run by a couple who are intent on doing their part to keep key institutions in the village.

As a formal institution, the active involvement of the local government, referred to by Ross et al. (2010) as “engaged governance,” is instrumental in achieving outcomes from local development processes. The municipality contributed resources to initiate and facilitate local development activities, and provided legitimacy to these processes in the capacity of being a formal institution. For instance, in the process of reopening the closed school, the local government made the old school buildings available cheaply for the organization which reopened the private school in its place.

People–place connections

In the village of Senja, attachment to place is considered a strong driver of adaptation (Amundsen 2012). As Geertz (1996) states, places are usually meaningful to people living there. In the same way as Ross et al. (2010) found that people in their case communities were strongly linked to their place, people in this village are strongly attached to the village and this is reflected in their commitment to respond to the challenges facing the village. This attachment includes the natural environment, the other residents, and cultural and historical connections to the village. Several of the activities that have been initiated to try and turn the demographic decline aim to increasing well-being and a sense of place. The aim is to make it possible to continue living in the village and to make it a good place to live. Their strong sense of place is exemplified in many of the initiatives undertaken by the inhabitants, such as reopening the school and engaging in voluntary activities. There is an understanding among local actors that place attachment is important for community resilience, and in agreement with Ross et al. (2010), enhancing community resilience means strengthening people–place connections.

Active agents

The “active agent” label was applied by Magis (2010) and includes individuals taking leadership based on the belief in the ability to create change. In Buikstra et al. (2010), this dimension is termed “leadership.” Interestingly, this dimension is not prevalent as a dimension of community resilience in the study by Ross et al. (2010). Active agents are individuals who have the ability to act and make things happen, and the term refers to both formal and informal leadership roles, as well as to key individuals who do not assume leadership but are instrumental in creating change through their involvement in activities.

Active agents in Norway are referred to as “ildsjel,” a word which literally means “soul of fire.” It is attributed to someone who has a burning commitment for their community. These are individuals who are strongly engaged in activities locally, and initiate and carry out activities for the benefit of their community, ranging from starting up festivals, to building community buildings, and starting up businesses. Their importance is often significant, and “ildsjeler” have been identified as one of four factors driving municipal climate adaptation in Norway (Dannevig et al., *in press*).

Initiatives are taken forward by active agents, and collaboration between various actors help realize the ideas. In the village of Senja, the building of the marina for leisure boating can be attributed to one person alone, who drew on his connections in the local government, businesses, and community. He was also instrumental in transforming the closed village school into a private school; is ensuring that the local grocery store continues; and is running a combined gallery and tourism information center. Therefore, in assuming leadership, he is maintaining or developing some of the key institutions in the community. His imaginative visions for the community are based on a positive attitude and he argues that someone needs to be in the forefront with ideas and activities, and once people see that ideas become reality, they will follow and the positive outlook in community will increase. He stated: “I see myself as a village optimist, what I do here is because of my love for this village.” Buikstra et al. (2010) also find that a positive outlook is important for generating positive development. As such, optimism is both a driving factor and a sought outcome.

Within a small village such as this, several tasks are carried out by a select few, which increase the potential for fatigue among the most involved individuals. One interviewee stated that “People are pulling up their sleeves and try to make the most of the resources we have available. But the thing about small places is that it is very person dependent. It is vulnerable. Even if there are only a couple of people who do not have the energy to contribute, who you have been used to depend on, it gets harder for the rest.”

Learning

A continued willingness and ability to learn is key component of resilience, particularly as future challenges may be different from past experiences (Adger et al. 2011, Berkes and Jolly 2001, Brown and Westaway 2011). Learning is understood as a continuous process informing adaptive management, using feedback from social–ecological systems (Berkes et al. 2003). Additionally, organizational and institutional learning at all levels and between levels are necessary to enhance resilience (O’Brien and O’Keefe 2010).

Buikstra et al. (2010) include formal and informal learning, and learning from experience, in their dimensions of resilience. Learning from experience and applying knowledge

gained from experience is seen as important to building resilience (Lopez-Marrero and Tschakert 2011, Buikstra et al. 2010). Learning includes single- and double-loop learning. Single-loop learning is learning that takes place within the current discourse; whereas double-loop learning challenges the existing discourse and results in a change or transformation of it (Argyris and Schön 1978). Learning is also key in adaptive management, defined as “processes informed by iterative learning about ecosystems and earlier management successes and failures” (Tompkins and Adger 2004).

For learning to lead to change, reflexive capabilities of individuals and societies are necessary (Woodhill and Röling 1998). Society develops and responds to challenges through critically evaluating its own processes, and through having an insight into its own roles. Recent literature points to the importance of reflexivity in learning, including the continuous ability to learn (Adger et al. 2011). In this context, reflexivity involves the capacity to reflect on systems-level changes and their causes, and how these may affect the village. Reflexivity is present in the village in the sense of appreciating the necessity to enhance future resilience by acting to turn the negative demographic trend. One interviewee pointed to reflexivity as a necessary factor for successful developments in the village. He noted that development is linked to the ability to reflect critically on one’s own role and to actualize it. This includes a self-awareness and self-inquiry that allows for learning and development through a process of trial and error. Success in overcoming challenges related to demographics in this village would be an expression of resilience related to a mindset of self-awareness and self-inquiry and the ability to critically reflect on these issues. Such a mindset enhances resilience to future changes at a deeper level than the other dimensions of resilience noted above.

Tschakert and Dietrich (2010) argue that learning tools, such as experimentation and innovation, must be improved to enhance resilience. Renewal, innovation, and creativity were seen by interviewees as factors needed to overcome the problem of demographic decline. Several open meetings were held in the village to encourage innovation and ideas for local development. One interviewee observed: “We need people who show initiative and have the will to try, to dare trying out new things and approaches.” The closure of the local school was seen as a local crisis, and in reflecting on the process of reopening the school, one interviewee saw it as a test of community resilience and adaptability to change. When analyzing how the village dealt with this crisis, it was assessed by interviewees that the community grew stronger through their responses.

The dimensions of resilience presented in Table 2 above are enacted in this village through activities undertaken to respond to the demographic decline and, conversely, these activities are undertaken with view to enhancing and strengthening

community resilience. Importantly, these dimensions are interlinked in the way in which they contribute to community resilience. For this village, people–place connections are important, and are an important driver of adaptations. This people–place connection is expressed by many of the active agents, who are drawing on their attachment to place to improve well-being, to foster innovation, and to make the village an attractive place to live. Place attachment is thus partially what motivates active agents to act, yet they cannot act without the foundation of the whole range of community resources, institutions, and community networks. As an added dimension, learning is key to responding to future challenges, particularly given that many of these are unknown. Reflexivity in responding to new challenges and surprises may also contribute to enhancing future resilience.

COMMUNITY RESILIENCE AND FUTURE CLIMATE CHANGE

The village of Senja is located in a region that experiences significant variability and fluctuations in the weather, and fierce storms are not uncommon. Concerning climate change, the expectation of warmer summers and shorter winter seasons is welcomed by many. Hence, climate change is not regarded a significant challenge by the interviewees in this community, although some individuals express concerns. Given the unresolved challenge of demographic decline, climate-change adaptation becomes secondary to this more prevalent challenge. The focus of the interviews in this village was mainly on current challenges and, as such, weather and climatic conditions did not receive much attention. This was also because the observed weather was perceived to be more or less within the natural range of variability. The sentiment is that “we can adapt—we have always adapted” (see West and Hovelsrud 2010). There is evidence in the literature that communities that are accustomed to large variations have a larger range of adaptation options available and are more resilient (Denevan 1983, Forbes et al. 2009). Thus, a community which perceives itself as resilient today expects to be resilient to future changes, through assuming that resilient communities also have a high adaptive capacity to meet future challenges. Yet the question is whether the ways in which communities have adapted in the past can be transferred to future challenges, especially with a view to the large systemic changes and the consequential impacts that are projected (IPPC 2007). Climate change will have to be adapted to in combination with related challenges, and there are significant uncertainties related to these cumulative impacts that future societies will be required to adapt to (McCarthy and Martello 2005, O’Brien et al. 2004a, Wilbanks and Kates 2010). In light of this, it is questionable whether the dimensions that are important for community resilience today will be relevant for future resilience, and it may not be the case that resilient communities will be better at adapting to climate change.

There are two aspects that are particularly important with respect to understanding resilience today and in the future. The first is to analyze whether current resilience lead to complacency, creating a barrier to proactive adaptation to climate change. O’Brien et al. (2006) question complacency in the context of climate change impacts in Norway, and argue for a systemic and contextual approach to adaptation planning which can highlight particular vulnerabilities necessitating proactive adaptation. Communities in northern Norway are accustomed to relying on learning from experience in adapting to challenges. However, it is unknown whether the resilience that these communities are used to relying on prevents a proactive approach to adapting to future challenges. Hastrup (2009) argues that in addition to a practical flexibility to avoid a future threat, conceptual flexibility is needed, i.e., a perception that threats are dynamic and variable. In the context of climate change, this can be seen in light of perceptions of change and how it affects communities. Climate change is difficult to comprehend as a threat, since to many it is incomprehensible what impacts a changed climate could have on their community.

The second aspect of understanding resilience is whether the dimensions of community resilience that are found relevant today may or not be relevant in the future. Values change, new institutions arise, and goals of communities may be different. For future resilience, it may not be sufficient to have strong institutions, a seemingly stable natural resource base, a close-knit community with strong community networks, and engaged individuals. It is likely that dimensions other than those found relevant today may become more prevalent for future resilience. Dimensions of community resilience, such as a diverse and innovative economy (Ross et al. 2010) and livelihood flexibility (Hovelsrud et al. 2010), were not prevalent in this study but may become important for future resilience.

The three properties of a resilient SES are: (1) the amount of stress the system can undergo while still retaining the same function and structure, (2) the ability to self-organize, and (3) the capacity to adapt and learn (Berkes and Jolly 2001). In particular, the ability to self-organize and the capacity to adapt and learn are properties which can have implications for future community resilience. Goldstein (2008) gives an example of how a community self-organized when faced with a disaster, and depicted their ability to create new organizations when established organizations were slow in terms of responding to the disaster at hand. Goldstein notes that, although the created network was abandoned after the governmental agencies entered the scene, the learning which ensued and the awareness of the community’s ability to self-organize when needed were important long-term outcomes.

Learning, and particularly reflexivity in learning, that is, the ability to assume and appreciate one’s own role in causing and

responding to changes, is a crucial dimension of community resilience. Learning may prove to be particularly relevant in adapting to challenges which depends on processes of multiple factors at interlinked scales. As noted by Anderies and Jansson (2011), local communities are affected by processes at national and global scales because of interlinked systems. Projected changes in climate, combined with increased connections with global processes, affect the room to maneuver locally, and these global interlinkages affects independence. As a way to overcome this, Adger et al. (2011) suggest continuous learning and a consideration of the interlinkages of various scales in developing policy responses. This is likely to be important in responding to future challenges and building future resilience.

CONCLUSION

These reflections contribute to the understanding of community resilience. Resilience is receiving increased attention, especially in the context of preparing for and responding to climate change, and it seen as critical for communities to stand better prepared for future challenges, including climate change. The specific context of a coastal village in northern Norway creates a particular kind of community resilience, yet the findings from this research are applicable to communities elsewhere, exemplified by the many overlapping dimensions of community resilience found in studies undertaken in Australia (Buikstra et al. 2010, Ross et al. 2010) and the Unites States (Magis 2010).

Six dimensions of community resilience were found to be relevant to the village studied in northern Norway through an analysis of responses to the local challenges. These dimensions—community resources, community networks, institutions and services, people–place connections, active agents, and learning (Table 2)—are activated in processes and activities in the village to respond to current challenges. These processes and activities are initiated to increase optimism and well-being, with the expectation that this, in turn, will lead to establishment of new jobs and increase the number of inhabitants, and ultimately enhance resilience. Many of these local activities are interlinked and seek to strengthen the identity of the place and make inhabitants more aware and proud of their place. It is the combination and interaction of the various dimensions of community resilience together which shapes community resilience.

The uncertainties about direct and indirect consequences of changes in climate and other factors make it difficult to define which dimensions will be important for resilience to future changes. The dimensions discussed here may or may not be relevant in adapting to future changes. Thus, it is important to enhance the understanding of resilience to include dimensions such as people–place connections (Ross et al. 2010), and other subjective factors (Brown and Westaway 2011), and to include reflexivity and learning in seeking to enhance resilience and in developing adaptation policies.

Transformation, i.e., the alteration of the system and moving to a new state, is increasingly discussed within the context of climate change impacts (Armitage and Plummer 2010, Nelson 2011, Olsson et al. 2004, Pelling 2011, Walker et al. 2004). Transformation is integral to the concept of resilience and the adaptive cycle (e.g., see Folke 2006, Gunderson and Holling 2002), and there is a recognition that the current changes in the SES are of such a magnitude that transformation (on a large scale) is necessary or even inevitable (Pelling 2011). A related discussion concerns how current or perceived resilience might cause systems to remain in an undesirable state (Nelson et al. 2007). In the context of climate change adaptation, the perceived current and future resilience could potentially explain why there are few examples of proactive adaptation to climate change (West and Hovelsrud 2010). Therefore, whether resilience is necessarily positive in the context of large systemic changes needs to be discussed (Nelson et al. 2007). It could be asserted that transformation is needed, more than adaptation (Pelling 2011). In fact, a deliberate transformation that actively seeks to create alternative futures, beyond the current approach of developing adaptations to projected changes, has been suggested (O'Brien 2012). A focus for future research could be an investigation of how learning processes can contribute to such a deliberative transformation.

A perception of current resilience can lead to complacency, resulting in inaction or maladaptation. Although communities may consider themselves resilient to today's challenges, projected systemic changes brought about by multiple interacting processes, and in particular, climate change, makes it difficult to assume resilience in the future. In an interlinked world, changes affect all levels, from small villages to the global. For the village discussed here, the globalized commodity markets of minerals and fisheries and the consequences of changes in these are well understood locally. Other changes, such as global environmental change, are not felt or are unknown and represent something intangible which is difficult to respond to and prepare for. It is not uncommon to be in a reactive "wait and see" mode (Gupta et al. 2010), as such reflexive learning emerges as crucial. Unless communities actively engage in reflexive learning processes about the causes of systemic changes and the links between local and global processes, there is a risk that community resilience becomes nothing more than an illusion.

Responses to this article can be read online at:
<http://www.ecologyandsociety.org/issues/responses.php/5142>

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Differing Discourses of Development in the Arctic: The Case of Nature-Based Tourism in Northern Norway

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Abstract: Tourism is one of the pillars of the Norwegian national government's regional development strategy for Northern Norway and the government sees tourism as a sector with significant potential for job creation and income. National level strategies are taken up by national public bodies, and some funding has been made available to follow up the recommendations of the strategy. This article presents the various discourses on regional and local tourism development in Northern Norway based on analyses of documents, tourism marketing material, and interviews. One of the national aims for tourism development is creating sustainable rural communities to turn the trend of negative population growth and challenges related to economic restructuring. Analyses of tourism development and activities in two municipalities in Northern Norway show the distance between the perceptions of different actors on different scales about the tourism industry today, and its potential and direction for development. The considerable focus at the national level to use tourism development as a tool to sustain communities across Norway is evident through their project of national tourism routes. The local tourism actors are objecting to not being able to define the product that they are providing. Furthermore, local actors strongly object in the instances where the nationally defined needs of tourism hinder industrial developments that would provide much needed income to the local economy. There are clear discrepancies between the way in which the local tourism operates and plans on developing, and the national strategies and promotion of the region.

Introduction

Tourism is typically cited as the world's largest and fastest growing industry (e.g., Saarinen, 2003), and the Arctic is receiving increased interest as a tourism destination (Hall & Saarinen, 2010a). Consequently, tourism is perceived as an attractive source of income and employment in the Arctic regions. It is noted that "tourism is increasingly considered as being a tool for providing economic growth, employment and welfare in peripheries," but

simultaneously there are concerns whether new tourism developments can avoid the cycle of failure that many other places have experienced (Müller & Jansson, 2007a, p. 3). Northern Norway is by no means an exception to this increased focus on tourism development. The Norwegian government has expressed a renewed interest in development of Northern Norway, represented through the government strategies for regional development in which tourism is stated as one of the pillars (Ministry of Foreign Affairs, 2006, 2009). The national government frames the region as “Norway’s most important strategic focus area in the years ahead. Tourism has a natural place in this context” (Ministry of Trade and Industry, 2007, p. 56). However as this article will show, there is an uneven spatial distribution of both economic resources and marketing when these strategies are put into practice.

There are two factors in particular that are instrumental in describing the challenges facing coastal municipalities in Northern Norway: demographic change with an aging population and out-migration; and economic restructuring with traditional livelihoods, such as fisheries, employing fewer people (Nyseth & Granås, 2007). These factors are not unique to Northern Norway and are similar to those described in, for example, Swedish mountain regions (Lundmark, 2005). These challenges can partially explain the increased focus on tourism development and the anticipated benefits.

As argued by Hall, the development and definition of place is intrinsically linked to tourism, as tourists and tourism actors define and recreate local communities in their image (Hall, 1997, 2003). In the context of local development, Nyseth and Granås (2007) discuss the new developments of place reinvention in northern communities, which are undergoing large changes in understanding and sense of place, especially due to the loss or weakening of the key industry in one-industry towns and municipalities. These reinvention processes are linked to tourism development, as new place images are used in tourism marketing.

This article focuses on discourses of tourism development in Northern Norway, with a particular focus on how the aims and objectives expressed in the various plans and strategies correspond with local perceptions and aims for local development. Fieldwork in two municipalities, Øksnes and Berg, which included interviews with local and regional tourism actors, informs the local perspective and discourses. These two municipalities were selected on the basis of their geographical locations on the ocean side of large islands, their similarities in landscape and culture, and their differences, especially with respect to available tourism facilities and services. The tourism industry within Øksnes municipality in Vesterålen is relatively developed with a variety of facilities and services. The tourism industry in

Berg municipality on Senja is relatively small, but is expected to grow due to the planned National Tourism Route along a large proportion of their roads. These two municipalities offer examples of nature-based tourism, different from fishing tourism, which has been somewhat covered in the Northern Norway tourism literature (Borch, 2004, 2009; Førde, 2009; Midtgard, 2004; Viken, 2001). Only one tourism business in the two municipalities provides fishing tourism.

The main conclusion in this article is that the focus on tourism development at the national level has had little effect at the local level; especially, the aim of ensuring sustainable rural communities has not been met. Furthermore, the discourses represented in the strategies at the national level do not correspond well with local discourses. Tourism could be an important future source of income and employment, but if there are large discrepancies between the various actors regarding the aim of tourism development and the product that should be provided, it is unlikely that the aim of achieving sustainable communities through tourism development will be met.

Tourism in Northern Norway

Northern Norway refers to the three northernmost counties on mainland Norway, and almost all of the area is above the Arctic Circle. Definitions of which areas constitute the Arctic vary, such as the areas north of the Arctic Circle, or determined by the treeline, or as areas of continuous permafrost (ACIA, 2005, p. 2). For the purpose of this article, the Norwegian Arctic denotes the three northernmost counties and Svalbard. The focus in this article is two municipalities within the counties Nordland and Troms.¹ Compared to other Arctic destinations, Northern Norway is easily accessible, through air, sea, or road, and the time and cost of travel are not prohibitive although Norway is seen as a high cost country to travel in. A majority travel by car, while both coach and cruise tourism are also common (Jacobsen, 2006). Although the extent of tourism facilities has increased, there is a lack of infrastructure to host large-scale tourism.

The tourism and outdoor recreation sector in Northern Norway is largely nature-based, and fishing, bird- and whale-watching, and hiking are activities the tourism industry offers. Cultural tourism linked to traditional nature-based activities is also important, for example, coastal fishing villages, museums in old industrial sites, handicrafts, and various festivals. Tourism and outdoor recreation is an important sector in Northern Norway, and accounts for 6.0% and 6.7% of total production for Troms and Nordland respectively, which is above the national average of 5.5% (Auno & Sørensen,

2009). Furthermore, when including direct and indirect impacts, the multiplying effect of tourist spending added an additional 30–40% output value to the economy (Dybedal, 2003). The numbers of visitors in these areas fluctuates from year to year, and the general trend shows increasing numbers of visitors since 2003, unevenly distributed throughout the region (NHO Reiseliv, 2009). During the period 2006 to 2010 there has been an increase in nights spent in tourist accommodations—9.9% in Troms and 8.9% in Nordland (NHO Reiseliv Nord-Norge, 2011). Senja is mainly visited by Norwegians (Jacobsen, 2006), whereas in Vesterålen around 50% of the visitors are foreign nationals (Jacobsen, pers. comm.). Tourists visit mainly during the summer season, which is a challenge to year-round employment among tourism actors. However, a growing number of tourists travel to the region during winter to experience the polar nights and the northern lights (aurora borealis). The increase in nights spent by foreign nationals from the 2005-06 winter season to the 2009-10 winter season was 71% (NHO Reiseliv Nord-Norge, 2011). Increasing tourist numbers during winter is a priority for tourism authorities, but currently these represent small numbers compared to the summer season. One way in which this is attempted is by marketing the region as the land of the northern lights comparable to the Finnish claim to Father Christmas (Mikalsen, 2009).

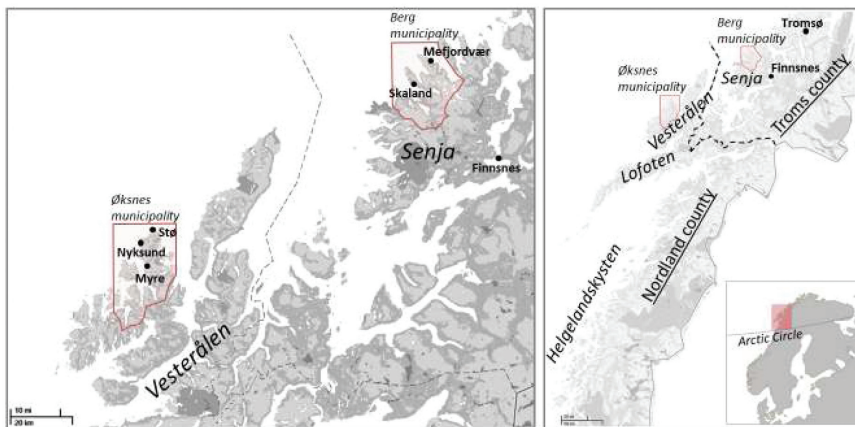


Figure 1. The left-side map shows the location of the two municipalities and some localities within them; the map on the right shows some of the Nordland and Troms counties and some places of interest within them.

Vesterålen is an archipelago north of the more well-known Lofoten islands, and has not had the same growth in tourism as the archipelago in the south, despite close similarities in landscape, culture, and history

(Kobro, 2010). Øksnes municipality has a population of 4,432 people and an area of 319 km² (Statistics Norway, 2011). Most people, approximately 2,850, live in the administrative and service centre Myre (Øksnes kommune, 2010a). Øksnes has two key destinations that are attracting a large number of visitors—whale-watching in the small fishing village of Stø, and the previously deserted fishing village of Nyksund. Local business people have invested in a whale safari at Stø and have been successful in attracting tourists to the municipality and the village. In Stø, locals have established a shop in the whale safari centre where they sell their own handicrafts and artwork to tourists. Nyksund was a deserted fishing village for thirty years, and has twenty inhabitants today (Øksnes kommune, 2010b). The village draws visitors for its location and specific history. There are three accommodation businesses, restaurants, a shop, a yoga business, art galleries, and a museum with concert venue. During the summer season an estimated 23,000 people visit the village, a significant volume for a village of twenty people (Øksnes kommune, 2010a).

Senja is a large island located north of Vesterålen connected by bridge to the town Finnsnes to the east, and with ferry connections during the summer to Vesterålen in the south and Tromsø in the north. The National Tourism Route on Senja, which is under development, will follow the western, outer side of the island and large proportions of the route go through Berg municipality. To date, two architecturally designed lookouts along the route have been built in the municipality.²

Berg municipality is home to 907 people in an area of 294 km², which gives a population density of 3 people per km² (Statistics Norway, 2011). The main focus for tourism in the municipality is nature-based activities, especially hiking (Berg kommune, 2004). Senja is marketed as “the fairy-tale island”³ partially attributed to the legend of the Senja Troll. The largest tourist attraction is thus an 18 m tall troll couple, which includes exhibits of local tales and performances for children (music performed by the Trolling Stones). The Senja Troll attracts 60,000 visitors during the tourism season (pers.comm.), which makes it one of the largest tourism attractions in the county. In the municipality there are four accommodation establishments with restaurants, and one combined gallery and tourism information centre that was recently established.

The municipality has a history of mining and a local interest group is working to establish a museum in the old graphite mine (Troms Folkeblad, 2010). Berg municipality has a growing number of tourists travelling through the municipality (as noted by interviewees), but is in the early stages of providing activities and services for tourists. However, being located along

one of the planned National Tourism Routes has secured significant and visible investments, especially the lookouts. More tourists are expected to travel along this route, both by car and bicycle, and this is expected to lead to an increased demand for accommodation and other services.

Tourism in both Øksnes and Berg, and elsewhere in Northern Norway, has traditionally been limited to the summer season, which means that employees in the tourism sector are not employed year-round, and hence many do not live in the municipalities throughout the year (Ministry of Trade and Industry, 2007). Berg municipality has tried to initiate collaboration between the fishing and tourism industries, to encourage employees to work in tourism businesses in summer and in fisheries during its busiest period in the winter, but so far they have had little success with this.

Methods

The empirical material in this article is based on desk study, relevant documents and texts, and fieldwork in the two municipalities in Vesterålen and Senja. Field visits of altogether four months between June 2009 and July 2010, of which the longest field visit lasted one month in each municipality, gave the fieldwork an ethnographic character and allowed for participatory observation. An interview guide was used to ensure the same topics were covered in all the interviews. This research is part of a larger project on processes of change in the two municipalities, with a particular focus on the role of tourism. Interviewees were asked about tourism development, local perceptions of tourism, and their perception of the potential for tourism. The tourism actors were asked particular questions concerning their businesses, and about their relationships with other tourism businesses and with governmental bodies on all levels.

Interviewees were selected through a desk study by identifying key individuals in the municipality and, in particular, the tourism sector through printed and Internet tourism marketing material. The interviewees were contacted prior to our visiting the municipalities and they agreed to be interviewed. Further interviewees were selected through snowballing methodology; i.e., key individuals were asked to name others who would be relevant for us to meet. Interviews were either audio recorded and transcribed, or recorded by note writing.

In-depth interviews were carried out with altogether forty people in the two municipalities. The interviewees represented various professions and positions of responsibility within their municipality, such as local government officials; fishers; shop owners; representatives from the tourism

sector; chairmen of local sports, recreational, and civil society organizations; local investors; and individuals with strong local engagement. Specific tourism interviewees included the public officials responsible for tourism in the local governments and almost all tourism actors—twelve tourism actors in Øksnes municipality and three of four full-time tourism actors in Berg. Tourism actors here refer to those representing businesses listed in tourism brochures and promotion material. Some interviewees hold two jobs but are categorized as tourism actors for the purpose of this article, as they were interviewed in their capacity as tourism business owners.

Other sources of information include policy documents, project proposals and documents, statistics, two years of newspaper articles, and tourism promotion material both printed and online. An automated online newspaper search from September 2009 until June 2011 searched for keywords *turis** and “municipality” to cover news stories related to the municipalities in general and to tourism specifically. The documents and newspaper articles gave insight into recent processes of change and the relevant actors in the municipalities and developments in the tourism sector.

The data was analyzed with the help of the text analysis software QSR NVivo8 by coding according to themes. NVivo is a program that allows for structuring and analyzing text through coding, word frequency searches, and various visual and model presentations of the data. Responses related to changes in the municipalities and who and what act were grouped, coded, and analyzed. The interviews were reviewed for keywords and recurring themes through querying frequency, as well as coding according to themes that interviewees discussed, such as perceptions of tourism development and the local potential for tourism.

Actors Involved in the Tourism Development and Marketing Process

A variety of actors at all levels, national to local, are involved in developing and marketing tourism, as well as providing tourism services. At the national level, the responsibility for tourism is placed within the Ministry of Trade and Industry, and their strategy for tourism development defines the national focus for the sector (Ministry of Trade and Industry, 2007). Tourism is noted as an important focus by two additional ministries, the Ministry of Foreign Affairs and the Ministry of Environment. In total, nine ministries have tourism as part of their mandate and within their area of responsibility (Ministry of Trade and Industry, 2007). Innovation Norway (IN) is a national and regional organization owned jointly by the Ministry of Trade and Industry and the County councils. IN’s main role with respect to tourism locally is perhaps the *visitnorway* web portal. Another main task

includes promoting Norway as a tourism destination domestically and abroad. Of private organizations, the Norwegian Hospitality Organization (NHO Reiseliv) and their regional office in Northern Norway are the most important. They offer training and support for their members, and lobby the authorities on behalf of members.

The county governor offices and county councils provide infrastructure necessary for tourism. County councils can also take a more active role, exemplified by Nordland County and the Directorate of Cultural Heritage's project "Our Valuable Coastal Culture," which offered financial support to heritage restoration projects with tourism or cultural purposes (Riksantikvaren, 2010). This project funded a plan for development of Nyksund given its cultural heritage and importance for tourism in Øksnes municipality. The project allowed for business and property owners in Nyksund to receive funding for developing their businesses and facilities for tourism. The culture administration in the municipality and the museum in Øksnes were instrumental in securing funding for this project.

Regional tourism organizations are important for promoting the region. In an attempt to promote Northern Norway in a more comprehensive manner, the newly established Northern Norway Tourist Board (owned 51% by Finnmark, Troms, and Nordland County Councils with the remaining ownership distributed among actors) takes over responsibility from the regional tourism organizations, such as Visit Vesterålen and Midt-Troms Tourism Board. One destination organization that covers the whole of Northern Norway is thought to have the potential to create a stronger profile and marketing power for the region. The regional tourism organizations provide information material with details of available tourism facilities and activities. Their guides present accommodation, places of interest, activities offered, and selected events and festivals.

At the local level, the municipalities have the ability to support the tourism sector through facilitating local infrastructure, spatial planning, and including tourism development in strategic plans (Bjørnrå & Aarsæther, 2010). Tourism development is part of the strategy for local development in both municipalities investigated in this article (Berg kommune, 2004; Øksnes kommune, 2010b). Various local government bodies—including the culture department and the business department—are supporting the sector through funding for product development, marketing (e.g., on the municipal website), facilitating business development, and organizing or supporting festivals and other cultural events.

Tourism is currently a small, but significant sector in these two municipalities. It is expected to grow over the next few years, which

will provide income and employment. The tourism businesses in these municipalities are typically family owned and run, and are operating on the margin (noted by interviewees). The tourism sectors within the two municipalities are at various stages of development. In Vesterålen, the oldest established businesses have more than twenty years of experience, while there are fewer actors in Senja and they have less experience and few established networks for collaboration. In Vesterålen, a network of fourteen local tourism actors, of which five are located in Øksnes municipality, has been established with a common web portal (www.hildreland.no)—they promote each other to their guests and offer packaged tours to groups.

Discourses of Tourism Development

Discourse analysis provides a tool for differentiating various perceptions of tourism and of place. Narratives and discourses differ within communities and can be seen as social constructs of values and received truth claims (e.g., Castree & Braun, 1998; Cruikshank, 2005). Adger et al. (2001, p. 683) defines discourses as “knowledge regimes” and as “a shared meaning of a phenomena,” representing a specific way to understand an issue. As an analytical tool, discourse analysis highlights the variety of perceptions among the actors at different levels—national, regional, and local (Peet & Watts, 1996). Analyzing discourses includes investigating both context and content (Apthorpe & Gasper, 1996; Gottweis, 2003; Hajer, 1995). The context of a discourse is the environment or structure in which it is represented and the social relations emerging from it. Discourse analysis is taken to represent: “a shared way of apprehending the world. Embedded in language, it enables those who subscribe to it to interpret bits of information and put them together into coherent stories or accounts. Each discourse rests on assumptions, judgments, and contentions that provide the basic terms for analysis, debates, agreements, and disagreements, in the environmental arena no less than elsewhere.” (Dryzek, 1997, p. 8). Analyses of the prevailing discourses of tourism show a great variety in perceptions among local actors, as well as with the aims and objectives presented on a regional and national level. The content of the discourse is explored through analyzing policy documents and interviews with tourism actors. Discourses are represented through written and unwritten representations of tourism.

National Discourse of Tourism Development in Northern Norway

The main objectives of the national tourism strategy, listed below, frame the development of tourism in terms of a focus on the industry itself, on rural communities, and on sustainability aspects of Norway as a destination.

There are three main objectives of the national tourism strategy:

- Greater wealth creation and productivity in the tourism industry
- Sustainable rural communities through year-round jobs in tourism
- Norway—a sustainable destination. (Ministry of Trade and Industry, 2007, p.11)

The Norwegian government aims in particular to promote Northern Norway as a nature-based tourism destination. This is exemplified by the campaign “*Norway – powered by nature,*” aiming to sell “fresh and strong experiences in beautiful and pure nature, experiences of authentic local culture and life, and experiences that gives energy, harmony and richness” (Tuftin, 2008). In various government strategies, plans, and documents, there is an explicit focus on tourism development in Northern Norway (Ministry of Foreign Affairs, 2006, 2009; Ministry of Trade and Industry, 2007). In the “Holistic management plan for the Barents Sea and Lofoten” (Ministry of Environment, 2006) it is noted that tourism is an important industry in the region (i.e., from Lofoten to the Barents Sea, which includes Vesterålen and Senja) with significant potential for development resulting in increased income and number of employees. Additionally, it is noted that the tourism in this region is dependent on the natural environment, particularly a clean one. Likewise in the specific tourism strategy, *Valuable Experiences* (Ministry of Trade and Industry, 2007), Northern Norway is especially noted as a geographical region of importance for developing the sector, and its attraction is “clean and fresh nature, a living coastal culture and opportunities for nature-based experiences” (p. 56). It is stated that the region has underdeveloped potential for tourism development, while recognizing that tourism in Northern Norway requires “more with respect to knowledge and accommodating than in other less weather exposed tourism destinations” (Ministry of Foreign Affairs, 2009 p. 26, author’s translation).

One particular project relevant for tourism development initiated at the national level is the National Tourism Routes project, which is the responsibility of the Norwegian Public Roads Authorities (NPRA). Eighteen stretches of road have been selected as designated National Tourism Routes and are in the process of being developed with specific road standards and facilities for motorists such as lookouts. The aim of the tourism route project is to “make Norway a more attractive destination and strengthen businesses and settlement in rural areas” (www.vegvesen.no/nasjonaleturistveger). Interestingly, the aims for the project go beyond creating facilities for tourists, to include settlement and business development in rural areas. This

emphasizes the strong focus at the national level to use tourism development as a tool for sustaining communities across Norway.

Local Level Discourses on Tourism

Plans for tourism development are included in the strategies for business development in both Berg and Øksnes municipalities, and tourism development is included in local development plans. The municipal strategy for tourism development in Øksnes is to focus on local food, nature, and the cultural heritage of their coastal culture (Øksnes kommune, 2010b). Similarly, Berg municipality has joined a project with the regional tourism office to mark hiking trails and set up information boards to make hiking more accessible. Despite the municipal focus on tourism, actors complained that “the politicians do not understand the importance of tourism. They believe tourism is positive and talk about it, but have few actions to show” (tourism actor, Vesterålen).

Tourism businesses in these two municipalities are small actors who experience that Innovation Norway (IN), the national authority for tourism, has little to offer them. Small tourism businesses seldom have the resources to write proposals for project funding, and often find that their business does not fit the call. One tourism actor stated that “I wish IN would provide more than grand words. They are good at marketing, but they cannot control the product they are promoting. If we close down, what do they have to promote then? A hotel, they have people who can sit in offices and write proposals and receives funding. We, who are running small businesses, are too small to be supported by IN” (tourism actor, Vesterålen).

Initiatives by IN are thus seen as irrelevant for many local tourism businesses. The marketing strategies of the local tourism businesses mainly rely on web-based marketing and booking, and representation within the regional tourism office’s information material. The local tourism actors find that they need support if Northern Norwegian tourism is to grow and develop into a business that fits with IN’s image and year-round undertaking. They find that this is not provided through the national marketing or other national measures. The reality for these small tourism businesses is operating at tight margins, and their main concern is with the practical issues facing the day-to-day running of their business.

The promotion of Northern Norway as an image of pure and largely untouched nature is in some instances at odds with planned and desired industrial developments. Along the planned National Tourism Route in Senja, the local power company and the municipality are planning a wind farm,

and the geological structures of the seabed was mapped by the Petroleum Directorate during the summers 2007–2009 to search for petroleum resources. However, landscape architects at the National Public Road Authority object to the developments on the grounds that they will obstruct the untouched landscape (public official, interview). Refraining from developing their power supply in the municipality because of tourism development would be unacceptable for local inhabitants. “We cannot prevent developments because of the status as National Tourism Route. The list of developments along the route that the National Tourism Route doesn’t want is long. One of them is a wind farm; another is reopening the nickel mine. But we cannot live off those who drive on our road. Some ideas are not connected with our realities here” (public official, Senja).

The majority of interviewees stated that they believe that people in the community are positive about tourism development, and some claimed that this was a change from a more negative view ten to fifteen years ago. Common concerns about tourism were that it is not possible to make a living from it, especially not as a year-round source of income. Secondly, people are concerned that a large growth in tourist numbers would take up too much space. Hiking is an activity that is promoted on Senja and a brochure of marked hiking trails and new hiking maps has been published (Midt-Troms Friluftsråd, 2010). This is expected to increase the number of hikers on the island, but also to ensure that they keep to the marked routes and leave other areas for the locals to enjoy. A typical comment among many interviewees was “People are welcome to come here to use and enjoy our nature, but we cannot let them have everything. Some areas we want to keep to ourselves” (entrepreneur, Senja).

The concern over tourism numbers was often brought up by interviewees in a comparison with the Lofoten Islands. The nature and coastal history of both Vesterålen and Senja are comparable to Lofoten but only Lofoten has a highly developed tourism sector, in the sense of both tourism facilities and volume. Some interviewees described feeling inferior to Lofoten’s tourism industry, in terms of quality, professionalism, and resources. Others described Lofoten as an example of undesirable tourism development, and they argued that the product that they could offer, of, as they saw it, more authentic experiences, was increasingly sought after by tourists. For one interviewee, tourist numbers in her village are beyond her acceptable threshold and she admitted leaving the village during the summer season. She called for a planned and restricted development of the local tourism, initiated collectively by the villagers, the municipality, and tourism actors.

The whale-watching business in Stø, a small fishing village of less than 200 inhabitants, has been highly successful, but there were some discussions over the number of tourists the village could possibly welcome without overwhelming the roads and services available. Interviewees in this particular village stated that they found it interesting to meet visitors from all over the world in their own village, although they insisted that fishing is the activity that matters in the village.

Hence, discussions concerning tourism development are intrinsically linked to livelihoods, history, and culture of the communities. Fishing is the main sector and main source of income for both municipalities, and they have a rich culture and history related to the coastal fisheries, which also forms part of the tourism product they can offer. However, as seen in other places, fishing tourism might be at odds with the tradition and culture of fisheries (Petrzelka et al., 2006; Viken, 2001). In the two municipalities there is only one business that targets fishing tourism specifically, and local fishers did not perceive this as a problem. During a visit to the fishing tourism business, a conversation with a group of foreign fishing tourists revealed that they had spent their ten days stay in the village fishing and sleeping. They admitted to not having ventured out into the village during their stay. In this example, the village provided the setting but was otherwise unimportant for the tourists, which has also been experienced at other fishing industry sites (Nordstrand & Johnsen, 2008).

There was a strong sense in both municipalities that fisheries should remain the main livelihood. One fisher stated: "Tourism is something we aim to develop, that's ok, but we shouldn't allow ourselves to blindly focus on it. Tourism is not the sector that will keep the wheels running here. Sometimes we hear that the fishers could earn ten times more if they took tourists out fishing. Well, that's possible, but I don't think so" (fisher, Senja). Several of the tourism actors interviewed had been approached for fishing tourism, but did not accept bookings. As one interviewee put it "I don't want them here as my guests. I'm afraid they'll destroy the buildings. And they represent something I don't agree with. I don't like that the fishing culture that I value is tarnished by people who come here and take those resources" (tourism actor, Senja). One major concern regarding fishing tourists was safety at sea and many tourism actors in these two municipalities did not provide rental boats for this reason. It was argued that the tourists did not have sufficient experience and knowledge of the local weather and sea conditions to travel out in small boats, and interviewees shared several examples of fishers preventing tourists from leaving the harbour when bad weather was approaching.

The major issue for the communities in these two municipalities are out-migration, and a more positive outlook may have consequences for migration and contribute to sustainable communities (noted by interviewees). Being proud of one's place is seen to be important for settlement, and increased tourism could contribute. One inhabitant stated that: "It was an eye opener for me when I realized that this is a place where tourists are willing to pay thousands of kroners to spend their holiday. We have everything we need for a great holiday here, a boat, a cabin, nature. I think everyone who lives here should think about this; to be a tourist in their own municipality to see it from a different angle, because we are so incredibly lucky to live here" (engaged individual, Vesterålen).

Discussion

One of three aims of the Norwegian national tourism strategy is to achieve sustainable communities through year-round tourism (Ministry of Trade and Industry, 2007). This aim may seem somewhat naïve given that tourism research has, for a considerable time, pointed to the cyclical nature of tourism and the potentially-limited positive local consequences of tourism (Butler, 1990). However, the perceived economic and employment benefits of tourism development in peripheral regions is linked to a trend beyond Northern Norway (Müller & Jansson, 2007a), as well as to a general renewed focus on "reinventing the north" (Nyseth & Granås, 2007). This optimism is also starting to gain a foothold in the two municipalities where, until recently, tourism was not regarded as a sector with the potential to provide income and create jobs. Noticeably larger tourist volumes contribute to this change in perception.

Local perception of one's own place as nothing special in the context of tourism, coupled with an incomprehension that tourists would want to pay to visit their community, may be part of the reason for the limited potential that inhabitants expect from local tourism development. Interviews in this study show how the perception of place is slowly starting to change through the local development processes, and there is more pride in the community and the qualities it has to offer (Amundsen, submitted). As one interviewee stated: "There are some qualities here that we ourselves don't consider an attraction but which are special experiences for visitors, such as wind and waves." This does not imply that nature is unimportant to inhabitants, as interviewees noted the beautiful nature and expressed a strong attachment to place (op.cit.). However, there are differences in which aspects of nature tourists value compared to what inhabitants value (Kaltenborn & Williams, 2002). "Overabundance of natural beauty" has been used as an explanation

for why Norwegians in rural areas fail to see the tourist appeal of their own place (Hammer, 2008). For the two municipalities in this study, this could to some extent hold true. However, tourism volumes in Northern Norway are currently not at a level where every village can live off tourism, and furthermore, interviews with local actors show that a large-scale development of tourism is not what they want for their village. Hence tourism development needs to be balanced with other societal structures, industries, and identities, so that traditional livelihoods, cultural history, and sense of place are not lost in the process.

These two municipalities have historically depended on natural resources, particularly fishing and mining, which today are declining in terms of employment. The decline of the key traditional livelihoods is experienced in numerous communities in the North. Many villages and towns are built around one industry and are currently struggling with a restructured local and global economy (Nyseth & Granås, 2007). A recent study of a number of communities in Northern Norway analyzed why some communities survive and some perish (Førde & Borch, 2010). Through analyzing innovation and the role of the social entrepreneurs, they found that important factors are the establishment of networks and the combination of tradition and innovation as well as drawing on local nature and culture. In view of this, tourism is a growing industry that has not yet secured much employment but where there is an expectation of further growth. Although tourism does have both direct and indirect consequences for the local economy, the focus on tourism in small communities has not led to secure jobs in tourism (Müller & Jansson, 2007b).

The tourism sector is more advanced and has a broader range of facilities in Øksnes compared to Berg. This is also reflected in the structures that have been established to support local tourism. Innovation Norway has regional offices in all three counties in Northern Norway and keeps four employees in their Nordland office and two each in Finnmark and Troms. Particularly Lofoten, and to a certain degree Helgelandskysten, are household names and marketing resources are focused on these. This is reflected in tourism information material, level of available services, and available project funding.⁴ Hence there is an unequal power distribution between different destinations, exemplified by Nordland tourism strategy's failure to give much attention to Vesterålen (Vesterålen Online, 2010). This spatial differentiation may not in itself be negative, it could be positive that tourism development is concentrated in certain areas where the level of services can be high due to tourism volume, particularly relevant where there are small populations (Müller & Jansson, 2007b). However, if the second objective

of the national tourism strategy—sustainable rural communities through tourism employment—is to be fulfilled, a much larger number of villages and municipalities must benefit from the increased attention given to tourism development in Northern Norway.

The discourses on tourism development vary between the national and local levels. The division of responsibility between public bodies and the tourism actors may be part of the cause of the differences, as well as the already mentioned uneven spatial distribution of resources available, such as IN funding. The tourism industries in Øksnes and Berg municipalities are small- to medium-size businesses and have few, if any, links to policy development at higher levels. The policies developed at the national level and the marketing of their region are in many cases not in accordance with their own perception of place. Place identities are always contested, and whereas local place definitions are deeply embedded in past experiences, history, culture, tradition, and community (Cresswell, 2004), the definition at the national level is more linked to physical aspects such as nature, landscape, climate, and weather. Benjaminsen and Svarstad (2008) found that representations of place and ideas for local development created by outsiders or at the national level often meet local opposition because local people perceive this as a threat to their place and feel powerless faced with a nationally directed development. In this study, this is exemplified by the planned wind farm and criteria of the National Tourism Route on Senja, where industrial developments do not fit with the representation of pristine nature along the route. One interviewee stated that that this kind of development would demonstrate a forward looking community that focuses on modern sources of energy. Wind farms have become tourism attractions in other places where tourism facilities have grown as a consequence (Nash et al., 2007). Tensions between definitions of what should be offered to tourists and how local places should develop thus involves a range of perspectives and actors and it is likely that this continues to be a source of dispute.

Perceptions of how to develop tourism vary widely locally, both among various tourism actors and among the local population in general. Increased tourism development, as promoted by national actors, might not be what local people want at all for their communities, and this may well be the main reason for the apparent failure to meet the objectives set in national strategies. Additionally, the tourism sector is made up of a great number of actors with very different aims and ambitions for their business (Müller & Jansson, 2007a). One tourism actor stated that he was running a tourism business only to be able to live in the village himself and give others a place to stay while renovating their own homes in the village. Another tourism actor

stated that the one thing that would improve the running of the business was chartered international flights at the local airport.

The debates among both local communities and local tourism actors concerning tourism volumes and tourism activities show the importance of balancing the local sense of place with tourism products. The local coastal culture that, for instance, could be offered as a tourism activity does not translate through solely renting boats. Furthermore, local actors want to offer active villages that uphold both traditional livelihoods and necessary public services such as schools. And likewise part of the tourism experience for many tourists is linked to experiencing a vibrant village; otherwise the villages become spatial localities with no sense of place. The aim of sustainable communities is difficult to achieve through tourism development if public services are moved out of the villages. Thus, in the context of these two municipalities, tourism is part of local development and linked to changes in other local factors and conditions, particularly changes in public services and demographics.

Conclusion

Tourism is the fastest growing industry in the world (e.g., Saarinen, 2003), but it is also an industry with large fluctuations and where shifting trends could mean “make or break” for small businesses. Global economic fluctuations influence tourists’ ability to travel to expensive destinations such as Northern Norway. But as shown by the municipalities in this study, destinations are also affected by national structures and strategies that are designed to support tourism development. There is an uneven spatial distribution of available resources and it is also difficult for these small places to be promoted within national structures, which are organized top-down rather than bottom-up. These are important barriers for developing local tourism. Local actors are also worried that the balance between sustaining, developing, and innovating within their cultural traditions and the kind of tourism, activities, and volumes that ensue could lead to undesirable developments such as their perceptions of tourism in the Lofoten Islands.

Tourism has long been regarded a sector with much potential for increased employment and income in the periphery (Hall & Saarinen, 2010b; Müller & Jansson, 2007b); for Northern Norway this is expressed in numerous strategies found at the national to the local level (Ministry of Trade and Industry, 2007; Øksnes kommune, 2010a). Municipalities in Northern Norway are facing negative population growth and structural economic changes, and tourism is seen as one option to turn these trends. However, it is unlikely that tourism alone can make a large difference towards these

negative trends. The significant focus on tourism development in national strategies has had little effects in the municipalities. In particular, the national goal of ensuring sustainable rural communities is not met through the current tourism development.

There is a disconnect between national level strategies and aims for tourism development and local perceptions. The aims for tourism development among local businesses studied in this article are to ensure that their business provides a stable source of income through welcoming more visitors, improving their facilities, and expanding the activities they offer. Collaboration and networks among the businesses are beginning to form in Vesterålen and Senja, and are thus able to provide a more diverse product to tourists. The local governments welcome tourism development and hope that it will contribute to sustainable communities but are not active in developing the sector, as opposed to strategies of other municipalities in the region (Bjørnrå & Aarsæther, 2010).

The local tourism businesses are dependent on national tourism authorities for marketing their products. However, they object to too much control from the national level, especially given the mismatch of perceptions of the tourism product that is to be promoted. The national level represents Northern Norway as “clean and fresh nature, a living coastal culture and opportunities for nature-based experiences” (Ministry of Trade and Industry, 2007, p. 56). Place identities are always contested, and whereas local place definitions are deeply embedded in past experiences, history, culture, tradition, and community, the definition at the national level is an outsider view, associated with physical aspects such as nature, landscape, climate, and weather. The local tourism actors are objecting to not being able to define the product that they are providing. Furthermore, local actors strongly object in the instances where the nationally defined needs of tourism hinder industrial developments that would provide much needed income to the local economy.

Northern Norway has increasingly been the focus of national interest through the two national strategies for the region where the main stated objective is developing the possibilities in the region (Ministry of Foreign Affairs, 2006, 2009). The national focus on Northern Norway has led to a debate over who gets to define the region and how it should develop, and tourism will be a part of these debates. The grand words of the strategic plans have led to some increased investment in industry, including tourism, but no large changes for the region have materialized from these strategies. The one large expected development in the region is petroleum development, and its implications for tourism are unknown. The future for municipalities in the region in general, and tourism specifically, could be greatly affected by this

industrial development. This article has not covered this topic, as it is yet unknown whether there is petroleum off the coasts of the two municipalities in the study, and there are great uncertainties regarding when a potential petroleum exploration will commence and how it will be organized (e.g., offshore or land-based facilities). As such, future research could focus on the relationship between tourism and petroleum development in Northern Norway in the context of definition of place and local socio-economic processes.

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Notes

1. Hence the county Finnmark is not included in this study. Secondly, the High Arctic Norwegian destination on the archipelago Svalbard is also left out of the study.
2. www.nasjonaleturistveger.no/en/senja
3. For instance on www.visitsenja.no
4. For example, Our Valuable Coastal Culture, Nordland County Council initially funded projects located in Lofoten and Helgeland.

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