

An Inuit community in a changing environment

Subsistence-hunting and gender-relations in Arviat, Nunavut.

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Preface

As students at the Faculty of Spatial Sciences of the University of Groningen, the Netherlands, we conducted this project in Arviat, Nunavut to reach the Masters degree in Cultural Geography.

We received support from many people and organizations throughout the process of planning and conducting the fieldwork and finally writing the thesis.

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Abstract

This research-project focuses on the consequences that the changing environment has on the subsistence-hunting and gender-relations of Inuit in the community of Arviat, Nunavut. This subject is important because the environment will keep changing, as it always has done. But some predict that the environmental change will happen in an even higher rate, which will put subsistence-hunting and gender-relations in the Arctic under greater stress (ACIA, 2005; Young and Einarsson, 2004). The main question asked in this research is: *What are the consequences of a possible changing environment on subsistence-hunting for both Inuit men and women in the community of Arviat?* The changing environment includes the physical as well as the social environment. Traditional Inuit knowledge (*Inuit Qaujimagatuqangit*) and the first hand Inuit perceptions are used as a primary source of information in this research. The techniques used during fieldwork in May 2008 to gather the information needed to answer the main question within this case-study were: the conduction of interviews (12 Elders, 6 younger generation) and making observations. Furthermore, an intensive literature study to get and overview over the consequences on a larger scale, like the Canadian Arctic, was also included. The period that has been the main focus within this research was from the beginning of a settled life of the Inuit to now.

From the observations made during the fieldwork in Arviat in May 2008, it became clear that subsistence-hunting is still an important and integral part of the Inuit life in Arviat. A lot of time is spent on the land, people feel at home on the land and country-food is still a popular source of food.

This current situation of the subsistence-hunting in Arviat differs from the situation in the beginning of (forced) community life. According to the participants in this research this situation is still undergoing changes. These changes are caused by changes in the physical and the social environment. The main consequences observed by the interviewees within this research due to physical environmental change are that hunting, traveling and navigation in and around Arviat are more difficult, because of warmer temperatures in winter, a decrease in snowfall and an increase in weather instability and unpredictability.

Warmer temperatures in spring and a change in the behaviour of caribou make hunting easier near and around Arviat. The used literature supports these findings.

The changes in the social environment that make hunting more difficult are an increased participation in the wage-economy by the Inuit in Arviat and an increasing influence of government regulations. But mostly changes in the social environment have made it easier to hunt. These changes are most of all the imported techniques and equipment from the south.

The consequences of environmental changes on the gender-relations have different effects on men and women in Arviat as could be analyzed from the sources used for this research. However, the changes in the physical environment are of less influence on gender-relations than the changes in the social environment. The main changes in the gender-relations are that more women take over the role of provider of the family and that more men are joining the women in doing more domestic work. This is caused by the increased participation in the wage-economy, especially for women. The disappearance of some traditional tasks for men caused by the transition to life in a settlement could cause identity problems for some men. Introduction of the wage-economy, southern norms and values, stores and technologies by *Qablunaat* cause a loss of traditional knowledge about subsistence-hunting and supporting practices. This also made increase the number of women who go hunting on their own.

Glossary

When the Inuit in Arviat are speaking English they use some Inuktitut words rather than their English translation. They also use the brand names for their machines, rather than the generic name. Throughout this thesis the following words are also used.

<i>ACIA</i>	Arctic Climate Impact Assessment
<i>AHDR</i>	Arctic Human Development Report
<i>Amoutis</i>	Packing parkas
<i>Aput</i>	Snow cover
<i>Arviamiut</i>	People of Arviat
<i>Arviq</i>	Bowhead whale
<i>Honda</i>	All-terrain-vehicle
<i>Kamutik</i>	Sled
<i>Maktaa</i>	Skin and blubber of beluga whales
<i>Qanniqtuq</i>	Snowfall
<i>Qablunaat</i>	White people
<i>Skidoo</i>	Snowmobile

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1. Introduction and background

1.1 Motivation

Almost four million people, including indigenous people and more recent arrivals, live in the Arctic today (Young and Einarsson, 2004). For most of the indigenous people traditional practices like hunting and gathering are still important, while adapting to many aspects of the modern world at the same time (Dahl, 2000). They are part of the Arctic system, shaping and being shaped by the local and regional environment. The Arctic environment is changing rapidly through different processes on a global scale and will continue to change in the future (ACIA, 2005). These processes include changes in the social and physical environment. The physical environment combines “the natural surroundings and constructed surroundings of a person, which form physical boundaries and contribute to shaping behaviour” (Chapparo and Ranka, 1997:15). The constructed surroundings of the Inuit consist mainly of buildings and villages build in the last fifty to seventy years (Dawson, 2003a). The “social environment refers to an organised structure created by the patterns of relationships between people who function in a group which in turn contributes to establishing the boundaries of behaviour” (Chapparo and Ranka, 1997:15). This means that the physical environment together with the social environment influences the behaviour of the people living in Arctic communities (see Figure 1.1).

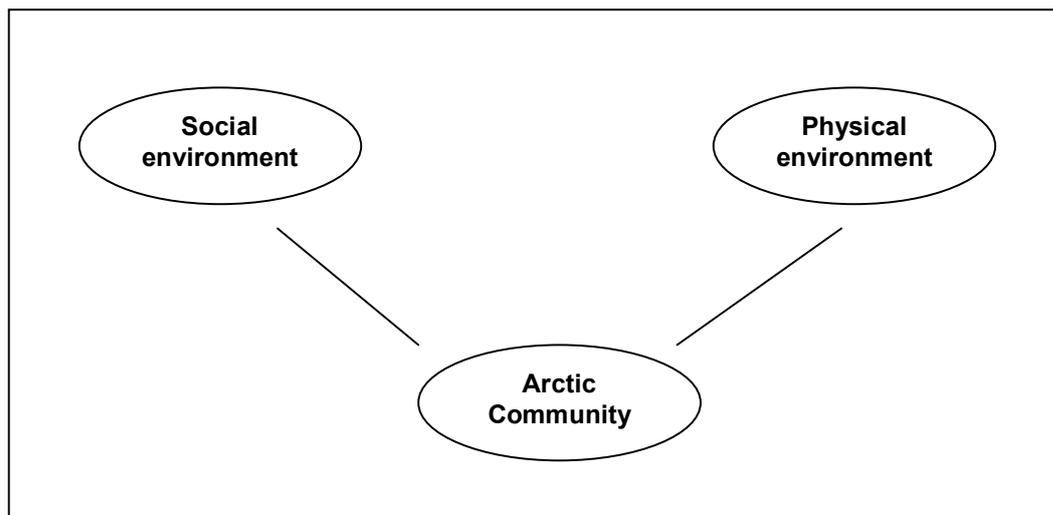


Figure 1.1 The influences of the social and physical environment on Arctic communities

Impacts of environmental change are currently noticeable in the Arctic regions (Young and Einarsson, 2004). The Arctic Climate Impact Assessment (ACIA, 2005), which is the product of scientific research conducted by hundreds of researchers and which includes the traditional knowledge of the indigenous people in the Arctic, stresses that climate change has a greater impact on the physical environment of the Arctic regions than it has on other regions of the world.

According to ACIA (2005) and the Arctic Human Development Report (AHDR; Young and Einarsson, 2004) environmental change in the Arctic has impacts on the traditional lifestyles of the indigenous people in the Arctic. The traditional lifestyle of the Inuit can be characterized by “close relationships with the natural world (as part of the physical environment) together with a sense of belonging to the land (and the sea)” (Young and Einarsson, 2004: 17). The traditional lifestyle in the Arctic includes traditional values and cultural practices, a nomadic way of life and subsistence activities like fishing, hunting and trapping (Young and Einarsson, 2004). In hunting a distinction can be made between hunting for domestic consumption (subsistence) and hunting that involves selling animal products for cash (commodification). The definitions of subsistence-hunting changed with influences of globalization. Condon et al. (1994) define subsistence hunting in current small-scale Arctic communities as “a way to make a living in the Arctic given the limited cash resources and employment opportunities that characterize most modern northern settlements” (Condon et al.: 44). Another example of how the traditional lifestyle is affected by the changing social and physical environment, are changes in the traditional gender-roles. “Gender-specific roles and responsibilities are often conditioned by household structure, access to resources, specific impacts of the global economy, and other locally relevant factors such as ecological conditions” (Food and Agriculture Organization of the United Nations, 1997). In the traditional nomadic system there were sharp differences in gender roles, but they were seen as complementary instead of opposing (Young and Einarsson, 2004). Living a nomadic life in the Arctic required a partnership between the community members. In the traditional system men and women had their own role in the subsistence-hunting, but were closely working together. It is suggested that today, partly as a result of a changing social and physical environment, these gender-specific roles are changing. The changes have different implications for men

and women. The AHDR is stressing that gender-based conflicts are becoming more common in the Arctic nowadays. That is one reason why it has been recommended in the AHDR to incorporate gender-issues in future research on environmental change (Young and Einarsson, 2004). The AHDR and ACIA also emphasize the need to improve our understanding of the impacts of environmental changes on a human population on a regional scale, because of large regional differences in the Arctic area (ACIA, 2005; Young and Einarsson, 2004).

1.2 Definition of the research problem

As indicated earlier the Arctic is facing a changing environment. This clearly has consequences on the lives of people living in the Arctic area. People are affected on a local scale and hunting for subsistence and gender-relations are being used as a central focus within this research to act as a way of measurement for the traditional lifestyle. The way that the traditional lifestyle is changing due to Arctic environmental changes is of main interest within this research (see Figure 1.2).

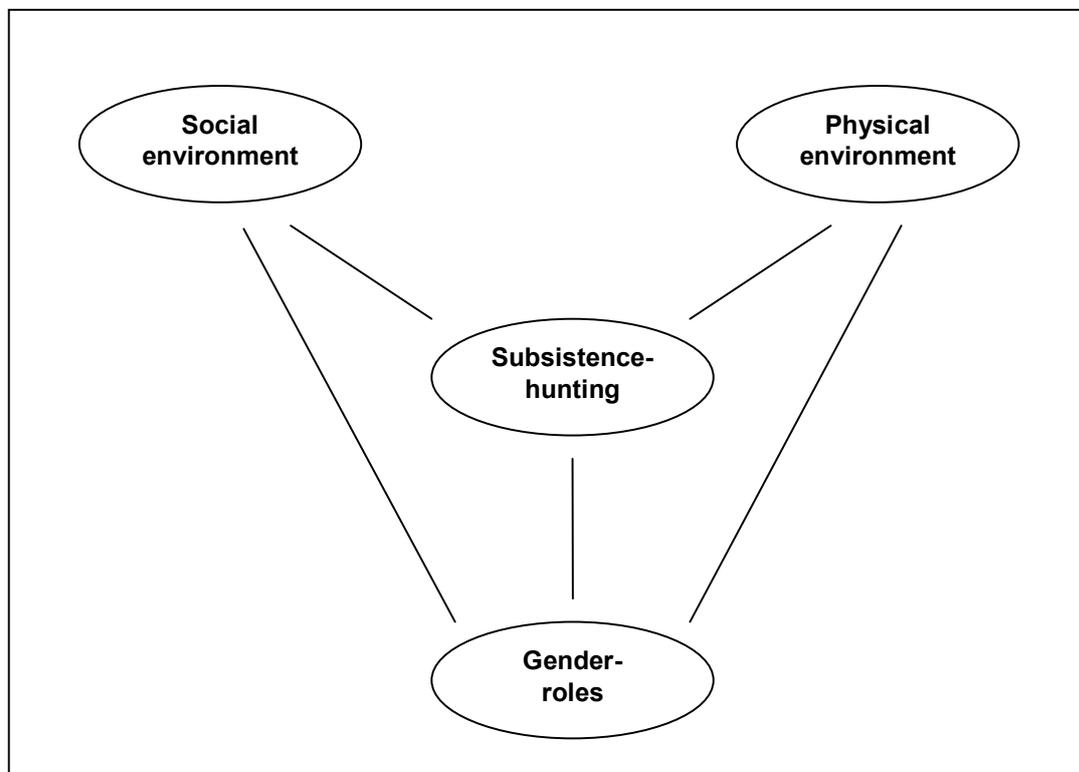


Figure 1.2 Environments influencing subsistence-hunting and gender-roles

1.3 Research goals

The aim of this research project is to come to know to which extent the processes of a changing physical and social environment in the wider Arctic as described in recent literature are perceived on a local scale. A second aim is to find out to what extent these processes have been able to affect the traditional gender-roles and the traditional activity of hunting in one specific Inuit community (see Figure 1.2).

1.4 Research questions

The main research question is:

What are the consequences of a possible changing environment on subsistence-hunting for both Inuit men and women in the community of Arviat?

In order to give an answer to the research question several sub-questions are made:

- *What are the changes occurring in the physical and social environment of Inuit living in the Canadian Arctic?*
- *What are the changes in subsistence-hunting activities in the Canadian Arctic?*
- *What are the changes in the gender-roles due to environmental change in Canadian Arctic communities?*
- *What are, according to individual Inuit in Arviat, the changes in their environment?*
- *What are, according to individual Inuit in Arviat, the consequences of those environmental changes on their subsistence-hunting practices?*
- *What are, according to individual Inuit in Arviat, the consequences of a changing environment on gender-roles in Arviat?*

1.5 Spatial and chronological outline

The choice was made to do a research in the Canadian Arctic, because of the high percentage of indigenous people living in this area. An additional reason for this choice is that previous similar researches with related topics were done in this region, which has been used to compare the findings in this research.

In order to get the needed data about local perceptions the decision has been made to conduct a case-study in one of the 28 Inuit communities in Nunavut, which is part of the Canadian Arctic (see Figure 1.3).



Figure 1.3 The Arctic (<http://maps.grida.no/go/graphic/arctic-conservation-area-caff-topographic-map>)

The community of Arviat forms the chosen case for this case-study. Regarding small Arctic communities like Arviat “the word community is not restricted to a limited area of settlement. The surrounding that supplies resources for the settlement and the people who live there are viewed as part of the community” and is also part of this research area (Association of Canadian Universities for Northern Studies, 2003).

One of the reasons for choosing Arviat is that the population of Arviat knows a high percentage of Inuit (94%). Arviat can be described as a community with strong traditions and cultural values (Census 06, Statistics Canada; Tagalik, 2006), which was also an important fact for this research. Hunting still plays an important role in the life of Inuit living in Arviat, which is the main focus of this project. Another reason why this community has been chosen is the location at sea. This was important because changes in the sea ice can be used as indicator for environmental change as can be seen in current literature (Ford et al., 2008; Nickels et al., 2005). For a more detailed description of the research area see chapter 4.

The focus of this research lies on the changes which occurred during the life in communities. The time span reaches from about 1960 up to the present. During the 1950s and 1960s the Inuit groups, living in the region around the Western coast of the Hudson Bay, were encouraged by the Canadian Government to settle in permanent settlements. One of these settlements was Arviat, formerly known as Eskimo Point. The Government felt that the Inuit could be better provided with services as health care and education while living in a permanent settlement, rather than dispersed across the region living in small, mobile groups (Dawson, 2003a).

1.6 Bookmark

The results of an intensive literature study can be found in chapter two of this thesis. In chapter three the methods used for this research project are explained. In chapter four, background information about the research area (the community of Arviat) is given. Chapter five presents the results of the fieldwork conducted in Arviat. A discussion about this research is made in chapter six and the main conclusions of this research are presented in chapter seven.

2. Hunting and Gender in the Arctic environment

2.1 Introduction

In this chapter a review is made of the recent literature on the key subjects of this thesis. The main subjects are subsistence-hunting, the physical environment, consequences of changes in the physical environment on subsistence-hunting and gender-relations in the Arctic.

2.2 Subsistence-hunting in the Arctic

Subsistence-hunting is often defined as the ‘production and distribution for home and local consumption in contrast to commercial harvesting and marketing of hunting and fishing products’ (Dahl, 2000:215). Today all hunting activities assume a commercial action. Nobody is able to hunt without money for investments in equipment, gasoline or transportation as figure 2.1 illustrates (Dahl, 2000).



Figure 2.1 Frank Nutarasungnik hunting with modern equipment.

In these days formal as well as informal economies are important to make a living for the people living in small Arctic communities. Formal economies increase the economic progress of a community and are measured with for example employment rates and Gross National Products. The informal sector on the other hand is difficult to measure in exact rates. The informal economies are defined as ‘those transactions, which provide for subsistence and do not increase profits or accumulate capital for its own sake’ (Kofinas, 1993: 2). In many Arctic and Sub-Arctic regions of North-America the informal sector is largely based on subsistence-hunting (Kofinas, 1993).

Subsistence-hunting in different areas and seasons

The way that subsistence-hunting is used to make a living in the Arctic strongly differs between different regions. The diverse group of indigenous people living in the Arctic regions is ranging from the Inuit and Athabascans of the North-American Arctic through the Saami of Fennoscandia and the Kola Peninsula to the people of the Russian North (Young and Einarsson, 2004).

All these groups have in common that they survived in the Arctic for thousands of years through the use of the natural resources. They were hunters and fishers. Throughout the Arctic the most common species for hunting have been marine mammals, such as seal, walrus, narwhal, beluga, fin and minke whales, and land mammals such as caribou, reindeer and musk-ox (Nuttall, 2000). The possibilities to hunt these animals differ for the various regions and different times of the year, because hunting is a highly seasonal activity. Hunters have to deal with seasonal variations in the environment and the seasonal migration patterns of the animals they depend on (Alexander, 1992). That is why each community has evolved its own seasonal rhythm of hunting activities. These rhythms have to be adapted spontaneously, because no years are alike in terms of seasonal change and success in hunting (Berkes and Jolly, 2001). According to the ACIA (2005) the climatic changes which are supposed to occur in the future will be so fast and substantial that adaptation will become more problematic.

The lifestyles of the different groups in the Arctic are different. Saami living in Northern Scandinavia and part of Russia for example found another way to survive in the Arctic environment than other groups did. The nomadic Saami herd reindeers while the subsistence-activities of the Inuit living in the North-American Arctic does not include the domestication of caribous (the North-American counterpart of the reindeer). As the way of life differs between different groups of indigenous people dispersed over the Arctic regions, the importance of subsistence-hunting for survival does as well (Smith and McCarter, 1997).

For the Inuit living in Nunavut the contemporary seasonal rhythm of subsistence-activities can be described as follows:

The hunting for caribou and seals occurs year-round, whereas the purposes of the caribou hunt changes depending on the season. This is because of the fact that the hides from the caribous are of better quality during fall. Other hunting opportunities are seasonal. In the springtime lake-fishing for trout is a popular subsistence activity. Other sources of food in the spring are geese and ptarmigans (Figure 2.2), which can be hunted near the communities. The goose eggs, which can be collected on the land, form a welcome and cheap alternative to the eggs from the store. In the springtime there is also the possibility to hunt for musk-oxen and wolves. In the summer the Inuit are able to hunt beluga whales and fish Arctic char. The *maktaaq* of the beluga whale is eaten by the Inuit and the meat is often fed to the dogs. The Arctic char is mostly caught for own consumption, but sometimes Arctic char is also sold to local stores or to the south. In this time of the year there are also tern eggs available. In the fall polar-bears are hunted in Nunavut. The skins of polar bears are often sold to tourists or auction houses in the south. Other seasonally available additions to the diet are berries, which grow in the tundra and can be collected in the fall. In the winter especially foxes are hunted for their fur, which can be sold to the south. (Tyrell, 2005; Pauktuutit Inuit women of Canada, 2006; McDonald, 1997; Ledyard, ca 1958).



Figure 2.2 A ptarmigan shot for consumption

Changes in subsistence-hunting

Traditionally, the Inuit of the Canadian Arctic fulfil all their needs from the surrounding land and waters. This has changed from different exogenous influences. According to Myers (2000) the most important influences are: the transition to a settled life in the 50s and 60s, new technologies and the increasing importance of the wage-economy. In modern community life families have to find wage-earning jobs to meet the demands of modern hunting equipment (gasoline, rifles, fishing nets, GPS etc.) for subsistence-hunting and fishing (Kofinas, 1993). This process causes a decrease in time for subsistence-hunting activities for some individuals and can lead to the loss of hunting skills and more risk taking behaviour (Ford, 2008; Myers, 2000). Other influences on subsistence-hunting are price-related, e.g. the decline in the price for fox pelts and the collapse of the European sealskin market (Myers, 2000). In addition to this the changing diet of many Inuit influences the hunting activities as well (Collings et al., 1998). The Inuit traditionally relied on fish and meat for all their nutritional needs. For many people in the Canadian Arctic the hunted animals still make up a substantial part of the diet and today for some households the proportion of country-food in the diet is still 50% and higher (Kofinas, 1993). The other needs are now met by store-bought food. Myers (2000)

and Condon (1994) see the process that fewer younger people are interested in hunting. According to them this can have a variety of reasons: for example the lack of training, money and interest in hunting and an increased involvement in sports and other leisure activities.

The new technologies have partly been able to fill the gaps of knowledge and skills of hunting, but on the other hand they increased the dependence on money and the risk-taking behaviour (Ford et al., 2008).

Bringing all these processes together many researchers make the conclusion that commercial and subsistence lifestyles and activities are so highly interconnected that making a clear difference between 'traditional' (subsistence) and 'modern' (formal) economies and lifestyles is not possible (Myers, 2000; Dahl, 2000). The Arctic Human Development Report (Young and Einarsson, 2004) also states that the traditional way of hunting is embedded in the modern world. The monetary system, the modern technology, the present-day know-how and government regulations influence the subsistence-hunting activities of the Inuit in various ways (Myers, 2000). But despite these processes of change, the traditional subsistence lifestyle has still its importance for cultural, social, nutritional and economic reasons, even when the participants and the way of participation are changing (Myers, 2000).

This purely economic perspective on subsistence-hunting offers only a limited view of subsistence-hunting in Arctic communities. Subsistence-hunting is not purely the activity of going hunting, but it includes practices as teaching, learning and sharing of knowledge and skills and the deepening of the connection between the hunter and the land. Also important in the subsistence way of life is the sharing of food and the processing of skins to make clothing (Wenzel, 1991). This subsistence lifestyle also plays an important role in the development of a self-image, the cohesion of the group and the transmission of traditional values. These traditional values and practices are important in maintaining self-esteem and the community well-being and in strengthening the links between different generations (Ford et al., 2008; Wenzel, 1991; Kofinas, 1993; Nuttall, 2000). In the context of Inuit and Nunavut traditional knowledge is a "term that refers to local traditions and customs that are transferred directly from one person to another. This

knowledge is personal and involves personal relations, and as such, the traditional knowledge is reproduced within the social network that makes up the settlement as a community” (Dahl, 2000: 229). Inuit traditional knowledge is often referred to as *Inuit Qaujimaqatuqangit (IQ)*. One of the most crucial contemporary processes of change which can be seen is the decrease in traditional knowledge and skills. The absence of participation in hunting in the childhood makes it impossible for the youth to make up all the experiences and learn the skills which are necessary to hunt safely. This can also alter the connection between the people and the land and can lead to a separation between the older and younger generations and a general change in social norms (Ford et al., 2008).

In conclusion, the subsistence-hunting is changing because of a variety of influences. The processes and influences mentioned above, which are said to change the subsistence-hunting patterns, are partly due to the changing social environment in which the Inuit live. In the following paragraphs the focus however lies on the changes in the physical environment of the Inuit and the way processes in the physical environment are influencing the subsistence-hunting activities. To be able to describe these influences a description of the physical environment in which the Inuit live will be given.

2.3 Physical Environment

The natural surroundings in the Canadian Arctic together with the sub-Arctic regions have been seen as a very severe and harsh climate by many people outside the area (ACIA, 2005). Winter seasons are long and cold with extremes up to -50 °C. During this long winter period the land is covered with snow and the water is covered by a thick layer of ice (Figure 2.3). There is a small variety of wildlife and plants compared to the more temperate regions of Canada and the growing season is relatively short during spring and summertime (ACIA, 2005; Meyers, 2001).



Figure 2.3 The Hudson Bay covered with snow and ice.

Next to these seasonal aspects there are variabilities in the weather that make living in the Arctic even more susceptible. These are all kinds of weather extremes that can suddenly happen during the year, like storms or blizzards and sudden freeze periods (ACIA, 2005).

Although the tough climate, there are resilient indigenous groups that have managed to adapt and survive in the harsh environment for thousands of years. They endured many changes in their physical environment and successfully adapted to them and their descendants are still surviving in the Arctic today (ACIA, 2005; Meyers, 2001; Anisimov and Fitzharris, 2001). In the next paragraph the main changes in the physical environment that are known in recent literature are examined.

2.4 Changes in the physical environment in the Canadian Arctic

Climate change has been observed as being one of the greater influences on a changing Arctic physical environment and as said before the warming of the surface air temperature is happening twice as fast in the Arctic than the rest of the world (ACIA, 2005; Pennisi, 2007).

The climate in the Arctic has always fluctuated, but the recent increase in surface air temperatures is not merely due to internal variability (from the internal dynamics of the climate system). The recent change in climate is due to a combination of internal variability and radiative forcing which is caused by human actions and pollution (Delworth *et al.*, 2000; Kerr, 1999; Vinnikov *et al.*, 1999; Moritz *et al.*, 2002; Johannessen *et al.*, 1999). Next to the increasing surface air temperature in the Arctic there are also other noticeable and documented changes, like an increased weather variability and unpredictability, increased precipitation, alterations in sea-ice dynamics and an increase in weather extremes which are further explained in this chapter (Gough *et al.* 2004; Stirling and Parkinson 2006 in Ford *et al.* 2008; ACIA, 2005).

In this paragraph the focus lies on the Canadian Arctic including Nunavut. There can be large regional differences between and within the Canadian Arctic or Nunavut (ACIA, 2005; Young and Einarsson, 2004). That is why the main empiric part of this research is about the local environment surrounding the town of Arviat, Nunavut. An overview of the environmental changes found in previous research in Nunavut, the Canadian Arctic and the Arctic as a whole is given in appendix A: Environment table.

The changes are divided up in wind, temperature, sky, precipitation, ice, land, water and vegetation and wildlife. These categories will separately be described in the following.

Winds

In the whole Canadian Arctic the weather is less stable and more unpredictable (Nickels *et al.*, 2005; Ford *et al.*, 2008). There are stronger winds than before and the prevailing wind directions, which differ per region, have shifted. Also thunderstorms are said to be more frequent in the Canadian Arctic and Nunavut (Nickels *et al.*, 2005; Keith and Arqviq, 2006).

A regional difference between the whole Canadian Arctic and Nunavut is that there are fewer thunderstorms observed in certain parts of the larger Canadian Arctic and that they happen at different times of the year than before. In Nunavut this is not observed by the local Inuit (Nickels *et al.*, 2005). On the other hand there are reports of sudden wind changes in Nunavut, which are not observed in the rest of the Canadian Arctic, as far as the used literally sources describe (Keith and Scottie, 2005).

Temperature

The winters are reported to be warmer in the Canadian Arctic than in the Northern Arctic as a whole (ACIA, 2004; Nickels et al., 2005). In Nunavut and the Canadian Arctic observations have been made by the local inhabitants that there are less extreme cold temperatures in winter, the summers are cooler on average, but there are more extreme warm temperatures in summer (Nickels et al., 2005).

Also autumn has been reported by local inhabitants of the Canadian Arctic as being longer and warmer and there are more fluctuations in temperature (Nickels et al., 2005). As in the whole of the Northern Arctic, in certain parts of Nunavut it has been observed by the local inhabitants and western scientists that there are rising temperatures year round as can be seen in figure 2.4 (ACIA, 2005; Keith and Scottie, 2005)

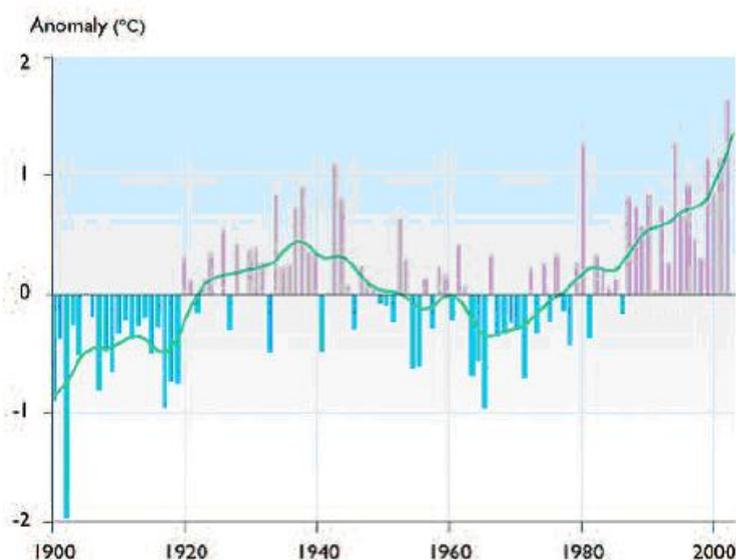


Figure 2.4 Observed Arctic temperatures 1900 to present (ACIA, 2005)

Sky

Where the sky used to be clearer before, today the sky looks hazier in the Canadian Arctic and Nunavut (Nickels et al., 2005; Keith and Arqviq, 2006). Also people in those regions experience more direct heat from the sun and the sun's location in the sky appears to have changed (Nickels et al., 2005). In the whole Northern Arctic and in

Nunavut an increased ultraviolet radiation has been observed (ACIA, 2005; Elders Conference on Climate Change, 2001).

Precipitation

In the whole Northern Arctic, including the Canadian Arctic and Nunavut an increase in rainfall has been observed (Nickels et al., 2005; ACIA, 2005). On the opposite a decrease in snowfall (*Qanniqtuq*) and snow cover (*Aput*) has been observed in the last fifty years in all of those regions (Nickels et al., 2005; ACIA, 2005; Keith and Scottie, 2005; Ford et al., 2008). The type of snow has changed in the Canadian Arctic and Nunavut, with greater variation within these regions. In some parts the snow is drier or grainier and in some places there is more often a top layer of ice covering the snow (Nickels et al., 2005; Keith and Arqviq, 2006).

Ice

The average extent of sea ice in the Arctic has decreased in the last decennia as presented in figure 2.5.

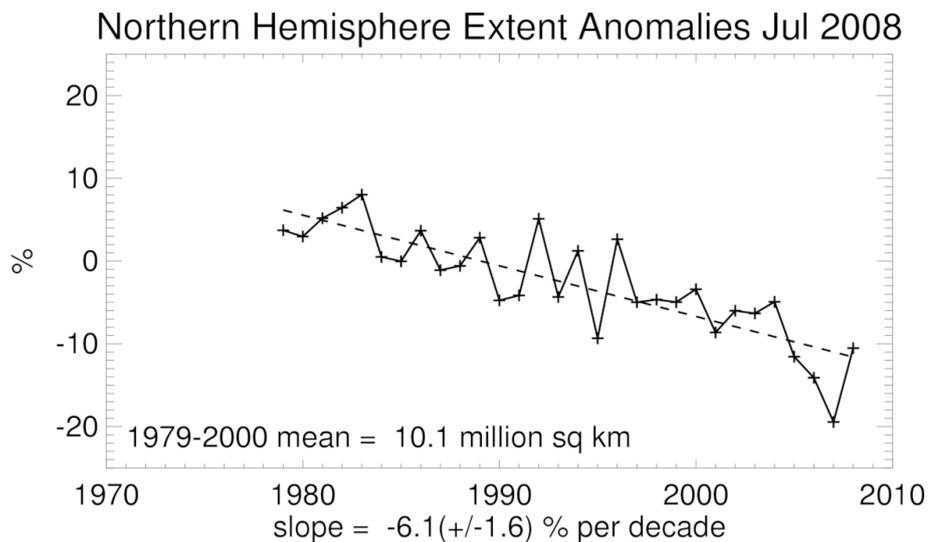


Figure 2.5 Northern hemisphere extent anomalies Jul 2008 (www.nsidc.org)

Furthermore, ice on fresh water as well as sea ice has become thinner in certain places over the years in the Canadian Arctic including Nunavut (Nickels et al., 2005; Ford et al.,

2008; Keith and Arqviq, 2006). Ice is also freezing up later in fall than before and is breaking up earlier in the year in the Canadian Arctic and also in the Northern Arctic as a whole (ACIA, 2005; Nickels et al., 2005; Ford et al., 2008). In Nunavut observations have been made by Inuit of more rapidly melting of the snow and ice than earlier in their lifetime (Keith and Scottie, 2005).

Land

In certain parts of the Canadian Arctic, including Nunavut, observations have been made that the ground is descending or in other parts that the ground is rising (Nickels et al., 2005). This can be explained by what scientists call “isostatic rebound”. This happens where the weight of a glacier or ice-sheet has depressed the crust of the earth. When the glacier has disappeared the elastic structure of the crust makes that the crust rebounds to the height where the crust was before it got covered by the ice. This isostatic rebound occurs with an average rate of 1 to 1.3 meters per century in the surroundings of Arviat, Nunavut (Bluemle, 2005; Hamilton, 2004). This rising of the land could explain why observations have been made about new islands which are growing and arising in the Canadian Arctic and Nunavut (Nickels et al., 2005). There is also an increase in erosion and the land is becoming drier in parts of the Canadian Arctic and Nunavut (Nickels et al., 2005).

Water

In parts of the Canadian Arctic the fresh water levels are lower than before (Nickels et al., 2005; Keith and Arqviq, 2006). This could be explained by the process of isostatic rebound. Sea-levels are sighted of being higher in the whole Canadian Arctic including Nunavut, but in Nunavut observations have been made by local inhabitants that the sea level is also lower in the last years (ACIA, 2005; Nickels et al., 2005). Sandbars are higher and becoming larger in the Canadian Arctic, but this has not been sighted in Nunavut as far as the used primary literally sources explain (Nickels et al., 2005).

Vegetation and wildlife

In the Canadian Arctic, Nunavut and the whole Northern Arctic new species of marine and earthbound wildlife and vegetation are reported (ACIA, 2005; Keith and Scottie, 2005; Elders Conference on Climate Change, 2001; Nickels et al., 2005). These consist are mainly certain species of more southerly species of insects, fish and birds (Nickels et al., 2005; ACIA, 2005).

In some areas in the Canadian Arctic, including Nunavut, a decrease in health under wildlife has been observed (Nickels et al., 2005). Examples are sick caribous with their hides getting thinner, polar bears that are getting thinner and fewer cubs survive to become healthy adults (Nickels et al., 2005; Pennisi, 2007; Keith and Scottie, 2005; Elders Conference on Climate Change, 2001; Derocher, 2008). In Nunavut an impaired growth of edible/fruit-bearing plants and a reduction in species available for hunting, fishing and gathering has been observed (Keith and Scottie, 2005).

2.5 Consequences of a changing environment on subsistence-hunting in the Canadian Arctic

According to recent literature people that live in the Arctic are affected by the changes in the surrounding social and physical environment in several ways as will be explained below. The distinction between the social and the physical environment will be used to explain the several ways in which the changing environment affects the subsistence-hunting of the Inuit. We have to keep in mind that the two are not totally separable, but influence one other. An example is given in Ford et al. (2008) where is stated that recently the observation has been made that there is more powdery snow in recent years around Arctic Bay and Igloolik, Nunavut. This makes it harder to access caribou herds by the increase in travel time and fuel costs. It would have been less of a problem if changes in the social environment would not have brought new technologies like the snowmobile. If dog-teams were still often used this change in the physical environment would be less of a problem and of less importance to this research.

Ford et al. (2008: 5) note that “some of the most dramatic changes have occurred in the strength, direction, and predictability of the wind and ice conditions”. These changes

influence subsistence-hunting in a variety of ways. Thinner sea-ice, more cracks, leads, later freeze-up and earlier break-up make it more dangerous and time-consuming to hunt and travel upon the ice (Ford et al. 2008; Nickels et al. 2005; ACIA, 2005).

The weather being observed as less stable and less predictable makes it harder to anticipate on the weather changes, which can raise the risk to be caught in bad weather or a blizzard on the land or on the water (Ford et al. 2008). The fact that predictions are less accurate also has the effect that knowledge about the prediction of weather is less frequently shared between generations (Nickels et al. 2005). In this way an important traditional part of Inuit knowledge is lost.

More weather extremes cause danger for the hunters, because they are not used to the new conditions and often poorly prepared for them (Ford et al. 2008). Abrupt changes in the direction and strength of the wind can cause danger for hunters, especially on sea during the summer months and can limit access to hunting grounds over water (Ford et al. 2008). These new weather conditions also cause hunters to stay home more often (Nickels et al. 2005). During research in Arctic Bay there was less snowfall observed on the land, which effects was that the hunting equipment got damaged sooner (Ford et al. 2008; Nickels et al. 2005). Less snow makes traveling by snowmobile also more difficult and there are almost no igloos being build anymore because of the lack of enough snow and the change in quality of snow (Nickels et al. 2005; Keith and Arqviq, 2006). In Igloodik there has been more snowfall observed by the local Inuit, especially on the ice. This made it dangerous for hunters to travel upon it, because they could fall through the thin ice covered by the thicker snow (Ford et al. 2008).

A decrease in numbers of wildlife and changing migration and distribution patterns of wildlife, have reduced harvesting opportunities (Nickels et al. 2005; ACIA, 2005). On the other hand there are new species of wildlife coming further northward which could bring more hunting opportunities (Keith and Arqviq, 2006). Another consequence of these changes is that people in the Arctic have to rely more on store-bought food (Nickels et al. 2005; ACIA, 2005). There are fewer berries found on the land and the berries that are found do not taste good or are dried out (Nickels et al. 2005; ACIA, 2005). Berries used

to be a part of the Inuit diet, but this is less the case in the last years. Lower freshwater levels have caused more damage to boats and boat motors (Nickels et al. 2005). Through the increased heat from the sun and UV-radiation more sunburns, skin rashes and cracked lips are caused (Nickels et al. 2005; ACIA, 2005).

In this paragraph the consequences of a changing physical environment on subsistence-hunting as stated in the literature has been described. In the following paragraph the second interest of this research will be explained: the way a changing environment influences gender-relations of the Inuit.

2.6 Gender-relations in hunting communities

Gender

Writing about gender-roles requires thinking about a good definition of gender. Whereas sex is biogenetically programmed, gender is a social construction (Frink, 2002; Jarvenpa and Brumbach, 2006). This means that gender is specific to a particular culture and a particular time. Frink (2002) defines gender as ‘a social category that is based on biological sex, age, and sexuality’. Gender is not an analogous to biological sex, because sex has no relation to culture; gender on the other hand is man-made and is embedded within cultural and historical social institutions and ideologies such as status, class, ethnicity, and race (Frink, 2002). According to Jarvenpa and Brumbach (2006) gender is more than a list of what women do and women cannot do or what men do or cannot do. Gender is rather a highly alterable and flexible set of social behaviours. Locally relevant factors which create the circumstances under which people interact are important for the interpretation of gender-roles, too.

Jarvenpa and Brumbach (2006) argue that sexual divisions of labour, which can be found in every society, are to be interpreted as broad ordering principles, which are open to adaptation and flexibility, especially when they have to deal with changing environments. The gender-specific roles and responsibilities can vary significantly among different societies, cultures, classes, ages and periods in history and are often dependent on factors as household structure, access to resources, impacts of the global economy and other local factors as for example ecological conditions (FAO, 1997). This means for this

project that the task is to incorporate the personal and wider context of the Inuit into the interpretation of gender categories and responsibilities, while avoiding gender stereotyping based on assumptions from our own cultural background (Frink, 2002).

Gender in the Arctic

In many publications about hunter-gatherer societies, the sexual divisions of labour are characterised as: man: the hunter and dominant force in the public sphere - woman: the gatherer and dominant force in the private sphere. This forms an oversimplification and a society can hardly ever be attached to such a sharp division (Gombay, 2000; Jarvenpa and Brumbach, 2006).

Billson and Manicini (2007) state that the life in an Inuit camp (before resettlement in the 1950s) required a sharp delimitation of men skills and women skills. Nevertheless most Inuit elders believe in a virtually equal relationship between men and women. 'The skills of the one balanced the skills of another' (Billson and Mancini, 2007: 37). According to them the Inuit do not describe the different roles in terms of biological sex, but rather of necessity and workability. The division of labor was hence a gendered and not a sexual one. Each person in the camp had to be skilled according to his or her gender. This made a self-sufficient life possible for the group (Billson and Manicini, 2007).

Billson and Mancini (2007) give a description of the stereotyped traditional Inuit woman and man:

"She was a good mother, a good cook and a good seamstress. She focused all her energy on home while taking care of the children, preserving and cooking the food, creating the family shelter and making the family's clothing. She occasionally hunted, but she stayed close to home all the time. Next to all these tasks, she was a good teacher for the children, to teach them all the skills necessary to survive.

He became a man, when he could manage his own family, say when he was able to hunt, to make sledges and other equipment and to have his own dog team. He was a good man when he could teach the boys the skills to become a good hunter."

Gombay (2000) describes the traditional gender-roles of the Inuit as clear, because in most literature the scientists agree that men and women had different, specified responsibilities. On the other hand he argues that these responsibilities have never been fixed and nothing prevented people from fulfilling tasks that are standard associated with the opposite sex. Work in and around the camp which lied in the responsibility of the women was not shameful for a man and a woman, who went hunting was not taken offence at (Dahl, 2000). But this crossing over in the 'territory' of the other only occurred in exceptional circumstances. Women helped with hunting and fishing when it was necessary for survival and men cooked and made clothing when they were on the land during long extended fishing- or hunting-trips. Men also cooked when the women were busy with other activities and they helped scrape the hides or gather fuel for cooking, especially in the fall when the days were short and new clothes had to be made for the winter. Going on a boat for whale hunting for example was a typical male routine, but if there was a labour shortage or other circumstances that made it necessary, women would come along with the men without hesitation (Billson and Mancini, 2007).

The women were highly independent and had a great autonomy in fulfilling their tasks while the men were aware of the fact that the family well-being depended on their wives' contributions (Matthiasson, 1996; Gombay, 2000). Billson and Mancini (2007:35) say that "Marriage was not an option, but a matter of life and death, the union of a hunter and a seamstress. Neither would live without the contribution of the other". This quote makes clear that living and surviving in the Arctic required a partnership between men and women (Young and Einarsson, 2004).

Changing gender-roles

The lifestyle of the Inuit changed since resettlement in the 1950's and 1960's. Billson and Mancini (2007) argue that gender identity and the visions which produce these identities are changing slowly, even when the way of life is changing dramatically, but they also see that the clearly defined gender roles of the traditional Inuit culture have faded since resettlement. The increasing contact with *Quablunaat* changes life for Inuit men and women. Despite adapting various features of a modern, southern lifestyle, the traditional

values and the cultural heritage remain an important factor in their lives (Kofinas, 1993; Myers, 2000). There are big differences in the life of Inuit according to the intensity of living following the traditional values, but there is one thing that all Inuit have in common: they are proud of their culture and want to keep it alive (Billson and Mancini, 2007). For men and women in a modern Inuit community the changing lifestyle mixed with a strong tie with their cultural heritage leads to changing responsibilities and tasks for men and women. The division of men-spheres and women-spheres in a modern Inuit community can be described as generally following traditional values; with the women still having primary authority in the domestic sphere and the men still having authority in the public sphere (Billson and Mancini, 2007) .

However, the way people are fulfilling their tasks has changed a lot with the use of new technologies like electricity, heaters, tap water etc. For example the women do not prepare hides to make tents, because this is not needed in a time of permanent settlement. The tasks of education and childrearing changed, too. In camp life the men taught the boys and the women the girls how to fulfil their roles. They learned the skills necessary to survive in the camp and on the land (Billson and Mancini, 2007). Now the children go to school and learn things which are attributed to more southern educational standards (Ford et al, 2008).

With changing tasks the partnership and cooperation between men and women, which was essential for survival before resettlement, has changed too. The cooperation between the partners continues, but with the introduction of the wage-economy the survival values of this cooperation have faded away (Pauktuutit Inuit women of Canada, 2006). Nowadays the Inuit have to take part in the 'mixed economy' to feed their families, but limited supply of permanent jobs makes this a serious problem. When they don't have a full-time job, men and women try to make some additional money for example with the production of handicraft or art (Figure 2.6). Because unemployment is so high in the Canadian Arctic communities, hunting and fishing remains an important activity (especially for the men) to provide the families with food (Pauktuutit Inuit women of Canada, 2006).



Figure 2.6 Martha Nutarasungnik wearing hand-made traditional jewellery

With the introduction of wage-labour the role of the Inuit women has changed a lot. As indicated in many reports Inuit women are presently in many cases the primary income earners of the family (Dahl, 2000). They have a lot of responsibilities: They are working for the community schools, staying with sick people, cooking for their families, fishing, helping their husbands, taking care of the children, making clothes, preparing traditional food, sewing and hunting (Billson and Mancini, 2007). Some men nowadays also take part in childrearing, but the women still have the primary authority in this. Many women also actively participate in hunting and fishing to feed their families (Pauktuutit Inuit women of Canada, 2006). “The ideal women is no longer the cooking and sewing women, but one that has a good education, a good job and have children and a good partner” (Billson and Mancini, 2007: 237).

While women still have the traditional role and tasks (according to the availability of skins and her own skills) to fulfil next to more modern tasks like wage-earning, the men find their task as the provider of the family problematic in the context of living in a settlement (Billson and Mancini, 2007). The status of the woman in the community never depended on the hunting skills and success of her husband, but on the way she fulfilled her own tasks. The man however derived his esteem from his success in hunting. Now he is facing the problem of losing his task and role as provider of the family through diminishing hunting opportunities and unemployment (Remie, 1984; Billson and Mancini, 2007). This can lead to an identity-problem of men in contemporary Inuit communities: less subsistence-hunting can undermine the self-worth of some Inuit men (Young and Einarsson, 2004; Dahl, 2000). This process again can lead to problems between the gender roles. The Arctic Human Development Report (Young and Einarsson, 2004) describes the increasing problems between men and women. Through desperate attempts to rebalance the roles, the number of women facing violence in their relationship is increasing (Billson and Mancini, 2007).

While many women maintain their traditional roles and duties, more and more women are choosing another route for their lives. Many women resist marriage now, which in camp life have been so important for surviving. A reason for this is that they see how their men take over more “patriarchal attitudes” from the *Qablunaat*-society, which can cause more violence towards women (Billson and Mancini, 2007).

Today, the women see their role in being the principal provider for their children (Billson and Mancini, 2007). So, the dependence on the men for being the provider is not as overwhelming as it was while living on the land.

This chapter which contains much of the recent literature in this field of interest forms the basis of this project. The data presented in this chapter is used for reflection of the results and conclusion of this research project.

3. Research methods

3.1 Introduction methods and techniques

The methods used for this research will be explained in this chapter. In order to get background information on this topic and to incorporate the most recent research concerning this subject a literature study was performed. The outcome of that study was presented in the previous chapter. With this information the choice has been made to conduct a case-study in order to answer the main question thoroughly. Swanborn (2003) mentions that the use of a case-study is a very suitable strategy to study a current social phenomenon or phenomena because of the possibility to observe and question within the natural surrounding of the phenomenon itself. The phenomena being studied in this project are changing hunting practices and changing gender-roles in the context of the Arctic community of Arviat. Case-studies are defined in many ways by different authors and in this research a choice has been made to combine several of them, which is further explained in paragraph 3.2. The methods used within this case-study, conducting interviews and making observations, are explained in paragraph 3.3 and 3.4.

3.2 Case-Study

A case-study is appropriate in order to answer the main question of this research because it is an intensive research strategy into one or multiple phenomena about one case (Swanborn, 2003; Schwandt, 2007). A case is defined by Schwandt (2007: 27) as “a specific and bounded (in time and place) instance of a phenomenon selected for study”. According to Schwandt (2007: 27) the case may be a “person, process, event, group, organization and so on”. In this research the case is the community of Arviat as defined earlier in chapter one. The community is a case out of a larger research area, the Arctic. Comparison is an important part of research according to Swanborn (2003). Comparing the research and its outcomes with other research validates the research strategy (Swanborn, 2003). Comparison between this research and similar research conducted in the Arctic will be of great importance within this thesis.

According to Swanborn (2003) there are six different assumptions that are typical for most scientific case studies:

1. One case or a few cases are studied (depending on the sort of case study)
2. The case has to be studied in his own context
3. Developments over time are studied
4. Different data sources and methodologies are used for the case study
5. Explanations of processes are studied (detailed descriptions, different considerations and interpretations, all perspectives are mentioned)
6. The results are displayed to the people involved

Starting with assumption 1, the case within this research is the community of Arviat as defined earlier in this thesis. Swanborn (2003) states that the case should be studied within its own context in order to prevent misplacement of people or information. This was the main reason to do fieldwork in Arviat for this project. An objective of this research was to study the developments and changes of subsistence-hunting and gender-relations over time, using different sources (e.g. current literature and interviews) and methods (e.g. interviewing and observation) within this case study. These different methods are used in order to give a complete answer on the main question. By conducting many interviews and by incorporating much current literature different understandings on this subject are being included; understandings from the scientific world and from the local Inuit. With this incorporation of multiple interpretations on this subject there is a certain confidence that a lot of the current perspectives are included. Assumption 6 has also been of use within this research. The results have been displayed to one of the persons living in Arviat who were involved in this research to examine the interpretation of the gathered information from a different cultural perspective.

In the next paragraphs the methods used to gather the information for this case-study are further explained.

3.3 Observation

Participant observation is “a method which involves living and/or working within particular communities in order to understand how they work ‘from the inside’” (Cook 2005: 167). According to Peter Kulchyski (Stern & Stevenson, 2006: 6) the participant-observation-method involves “going there” and “visiting, listening, talking, waiting, assisting: mimetically adopting to the extent possible the norms of community life”. As the name implies, participant observation exists out of two parts. The first one is *participating* in a community and concerns intentionally involving themselves (the researchers) in everyday lives and routines, establishing relationships with people in the community who can give a deeper insight in what is ‘going on’ there (Cook, 2005). The second part of the name is the *observation* of a community by “sitting back and watching activities which unfold in front of their eyes, recording their impressions of these activities in field notes, tallies, drawings, photographs and other forms of material evidence” (Cook, 2005: 168). The researcher has to be aware that the data that collected and interpreted are always biased by the researcher’s own cultural background and way of thinking.

Participating in a community was not the intention of this research, because it takes time to build relationships and a deeper involvement in the community. Furthermore, because of the cultural difference the researchers would probably be seen as outsiders (Sommer and Sommer, 1980). Observation on the other hand formed one of the key methods which contributed to the data collection during this fieldwork in Nunavut. It was possible to watch different activities that were going on in and outside the community of Arviat during a month, and recordings could be made of the researcher’s impressions of these activities (Figure 3.1). More on these recordings can be read in paragraph “Constructing data”



Figure 3.1 Observation at the floe-edge

Access

The process of getting in contact with the community in Nunavut went through a number of ‘gatekeepers’, which are generally described as people or institutions who control the access to a community (Cook, 2005). One of these ‘gatekeepers’ was the Nunavut Research Institute (NRI) which evaluates and controls the research applications of the researchers who want to come to Nunavut. The other important ‘gatekeepers’ were members of the community in question themselves. They also have to grant their permission for research taking place in their community. For the community members it is important that the research is relevant for them and that they are actively participating in the research process. The NRI together with the communities in Nunavut have published several guides to help researchers to comply to the needs they have to fulfil to be able to do research in Nunavut, like “*Negotiating Research Relationships with Inuit Communities: A Guide for Researchers*”, “*Nunavut Research Institute, Scientific Research Guidelines*” and the “*Ethical Principles for the Conduct of Research in the North*” (NRI website, 2008). These guides state that Inuit should be involved throughout

the research process not only through giving information in the process of data-collection, but also in the process of project design, analysis of the data and the communication of the results. The aim of this research was to involve the local inhabitants as much as possible in the research process. There were different levels of participation for different local Inuit. First of all there was the research licensing process, which required and made up the first involvement of the local people in this research. There were some basic participants, with whom interviews were conducted and guided tours were made. There were two local Inuit that acted as advisors during the fieldwork in Arviat. Another way to involve the local Inuit has been to send the results back to the community to seek feedback to ensure that they make sense from a local Inuit perspective. When this research project ends and all the results are revisited, the results will also be reported back to the community.

Role

It is not only important to think about which people to contact, but it is also very important in which way the researcher present himself (Cook, 2005). This role a researcher has in the community is important in the choice of ‘participatory’ or ‘observational’ fieldwork. As explained earlier the method used was *observation* and less *participation*. The ‘tactical’ roles was to be ourselves, students doing a research project, in the hope that people will find it easy to talk to people who are still in a learning process (Cook, 2005). Fyfe (1992) mentions that it is important to take into consideration if the researcher’s role should be “overt, providing a full explanation of our role, or covert, concealing our purpose and identity” (Fyfe, 1992: 131, in Cook, 2005: 175). For this research the choice has been made to be honest about the intentions and research, because more cooperation was expected in that way. It has been important to keep the role as western-European students and researchers in the back of our minds, because it can influence the collected information and the perception of it (Crick, 1992 in Cook, 2005).

Constructing data

Recordings that were used as valuable ‘data’ consist of photographs, films and field notes. The field notes were collected in two *field diaries*. Photographing and filming took place during the day when the context and subject was perceived as being suited for this research. *Field diaries* were kept up to date day-by-day (no loss of information due to fading memory through time) during the entire period of fieldwork. These diaries contain records of the progression of the research, observations made during the day and what have been come to understand (Cook, 2005). Other recommendations from Cook (2005) that were inserted in the diaries are rumours, feelings, maps, context-information, interactions and people.

Applicability

Participant observation is a method which is full of unpredictable surprises when applied (Crick, 1992 in Cook, 2005). As researcher all that can be done is to be prepared and flexible, because “participant observation relies heavily on the social skills of the researcher, it is a method that requires considerable amounts of introspection, questioning and self-doubt” (Cook, 2005: 180). We think that this method is useful for observing which role hunting plays in Inuit life today in Arviat and what kind of roles Inuit men and women have in a community, especially concerning hunting tasks. This has been observed by keeping our eyes and ears open all the time, but also by going out on (hunting-) excursions and by visiting families at their homes. The focus of the observation was on different kind of things in different situations as can be seen in tables 3.1 and 3.2 below. This focus was chosen on basis of the information from the used literature in chapter 2. It was important to have a focus in order not to drown in the information available, but to filter and gather the right information for this research.

Table 3.1 Focus during observations on the land:
• Activities / tasks during a hunting trip
• Weather and habitat conditions
• Hunting tools
• Hunting methods
• Animals
• Group composition
• Length of the trip
• Travel distance
• Location
• Transportation
• Informal conversation
• Processing of the hunted animals
• Decision making
• Total harvest of the group

Table 3.2 Focus during observations in the community:
• Hunting related activities / tasks in the community
• Processing of hunted animals
• Maintenance of hunting equipment
• Decision making
• Food habits
• Weather conditions
• Informal conversation
• Hunters: coming and leaving
• Maps of the region
• Other external information

3.4 Interviews

An interview can be defined as a “conversation with a purpose” (Eyles, 1988, cited in Valentine, 2005: 111). According to Valentine (2005: 111) “interviews are generally unstructured or semi-structured”. This means that the interview is rather a conversation and dialogue than an interrogation. Semi-structured interviews focus on certain themes and may include suggested questions, but there is no indisputable list of questions, which has to be followed.

One of the advantages of semi-structured interviews, in contrast to questionnaires, is that they are sensitive and people-oriented. The participants are able to use their own words and they have the ability to raise questions the researcher has not anticipated. This produces a more wide-ranging, detailed and deeper insight in the topic than a questionnaire survey would allow.

For gathering information about which changes in environment and hunting activities the Inuit experience, the conduction of semi-structured in-depth interviews was chosen, because we wanted to know what the persons thought that we were talking with. A key quality of an in-depth interview is the intense focus on the individual and his personal perspective (Richie and Lewis, 2003). In-depth- interviews allow the interviewee to express his own experiences in all their complexities (Valentine, 2005).

In contrast to the in-depth- interviews questionnaires are usually standardised and the aim is to survey a representative sample of the population so that it is possible to make generalisations from the responses (Valentine, 2005). “Unlike a questionnaire, the aim of an interview is *not* to be representative but to understand how individual people experience and make sense of their own lives” (Valentine, 2005: 111).

In many critical research reviews it is stated that it is impossible to extrapolate from a few interviews with Inuit to the Inuit population as a whole. This methodological disadvantage was taken into consideration, but as long as it is not an objective of this research to make general representative conclusions about all Inuit it is presumed that the use of a limited number of interviews and observations forms a good methodological choice to get the information needed for this research. It is valuable because the interviews in this research can be used in comparison with the used literary sources where in many cases comparable interview methods have been used.

The in-depth interview leaves points for a critical review. Some positivist’s state that it is impossible for the researcher to stay objective and that the researcher will bias the respondents that they come in contact with. O’Connell, Davidson and Layder (2004, cited in Valentine, 2005: 112) respond to this by explaining that “Interviewers are not losing their “objectivity”, becoming partial or imposing a particular world on the respond, rather

they are using the interview as an opportunity to explore the subjective values, beliefs and thoughts of the individual respondent”.

According to Ford et al. (2008), semi-structured interviews are a widely used method for gathering information in the Northern research context. The participants in these interviews were guided by some key questions, but the scope and direction of the discussion followed the associations the participants identified as important. This form of an interview is open for new and unexpected information. Our opinion is that the use of semi-structured interviews could give valuable data for the research purposes, but we have been certainly aware of the possible influences we have had as researchers and individuals on the interviewees and their answers.

The interviews

The key themes which are included in the interviews are:

- Changes in the physical environment as perceived by the Inuit
- Changes in the social environment as perceived by the Inuit
- Changes in hunting activities
- Changes in gender roles
- Relations between these latter changes

In the interviews, these key themes were further specified and discussed. In the appendices H and I the lists of questions and probes are included, which were used to help the interviewer during the interview to cover all the important themes.

If the participant agreed, the interviews were recorded, because recording allows the researcher to fully concentrate on the interview (Figure 3.2). As long as the research was conducted by two students, there was always one person to ask the question and one person who could take notes during the interview. The recorded tape together with the notes formed the material for the interpretation and analysis of the information.

“Interviewing in different cultural context ... requires a heightened sensitivity to the complex power relations which exist between researchers and interviewees, and local codes of behaviour” (Valentine, 2005: 124). That is one of the reasons why it has been

important to make clear that the interviewee did not have to answer everything that they were asked and that they had the right to quit the interview whenever they wanted to. This was expressed in the consent form that the interviewees needed to sign in order to start the interview (appendix G).



Figure 3.2 Preparing an interview at the HTO in Arviat

Misunderstandings are likely to happen while conducting an interview in a different cultural context, because there can be slightly different meanings of sounds, gestures or words. To pick up the local use of the English language, we tried to make contacts and have conversations with the members of the community before starting with the conduction of interviews. The interviews with the Elders in Arviat were conducted in Inuktitut with help from a translator/interpreter. According to Valentine (2005) working with an interpreter can lead to complicated misunderstandings. These problems can face

linguistic as well as cultural misunderstandings. It is possible that the presence of an interpreter influences the behaviour of both the researcher and the interviewee. Another problem is the interpretation from one spoken language into another. Words can be changed, because the translator and interpreter have no words fitting the concepts. This leads to a loss of information and meaning.

The interviews with the younger generation were conducted in English, without the presence of a translator. English was not the mother tongue of both the interviewer and the interviewees. This can also lead to problems concerning the understanding of concepts raised in the interview. Conducting an interview in English or using an interpreter both has its advantages and disadvantages. The choice that has been made in this research was to conduct the interviews in English where it was possible and an interpreter has been hired when that was necessary and realizable.

Access

The choice of interviewees was very important, because it influences the information and perspective that the interviewer gets. To get into contact with potential interviewees some gatekeepers in organisations and institutions in Arviat were contacted. They helped to get into contact with people who agreed to participate in this research. First of all the local Hunters and Trappers Organisation was contacted with the help of Frank Nutarasugnik. Through this organisation there was the possibility to get a list of names of Elders who have knowledge about the hunting activities in the community Arviat. Another method which was used for gaining access to informants is the so called “snowballing”.

“Snowballing” is “using the contacts you have to recruit another contact” (Valentine, 2005: 117). The strength of this method is that it helps to overcome the main problem in gaining access to interviewees, to gain their trust (Valentine, 2005). For this method it is important that there are multiple starting points for the snowballing, so that will not be a too homogenous group of like-minded people, who take part in the interviews. Through these methods we tried to reach the inhabitants of the community of Arviat.

The planning was to conduct interviews with Elders to get information about the subsistence-hunting and gender-roles in the beginning of Inuit life in settlements. An

objective was to interview men and women of different ages who enjoy a family life to get information about the subsistence-hunting and gender-roles from living in communities in the earlier days until today. Younger Inuit who did not experience family life and its gender roles and who are not old enough to hunt on their own were not incorporated in this research.

Every category of interviewees has been divided into men and women. There has been an attempt to conduct as much interviews as possible, because it could give the research greater value if the data- collection increased by interviewing more people.

In the month of fieldwork there have been interviews with:

- Twelve Elders (six men and six women)
- Six younger people aged between 20 and 50 (two women and four men)

The younger *Arviamiut* are referred to as ‘interviewees’ in the result chapter, where the older generation has been referred to as ‘Elders’.

Unfortunately it was not possible to conduct more interviews with younger women, because of the lack of time. Most of the women with this age are working in the community or have small children, which lead to a planning problem for the conduction of more interviews.

Conduction of the interviews took place in the last three and a half weeks of the fieldwork period, because the first days were used for observations and contacting people (for the interviews). An interview was about 45 minutes to 90 minutes (depending on the possibility and willingness of the interviewees).

4. Research Area: Arviat and surroundings

4.1 Introduction

In this chapter general information about the research area of interest is given. As indicated in chapter one does Arviat form the chosen community for this case-study (Figure 4.1). A community includes not only the settlement, but also the surrounding land and ice (Association of Canadian Universities for Northern Studies, 2003). That is why the surrounding environment will also be explained in this chapter. In the following a description of the geography, history, demography and economy of Arviat will be given.



Figure 4.1 Arviat

4.2 Geography

The community of Arviat is located at 61°06' North, 94°01' West. The community is located on the northwest coast of the Hudson Bay, in the Kivalliq region of Nunavut territory, Canada. Arviat is the second most southern community of Nunavut and its location is close to the geographical centre of Canada (see Figure 4.2).

This has the advantage that fares for travelling from the South are lower for Arviat than for some of the more Northern communities, which has been one of the practical reasons for choosing this location.



Figure 4.2 Nunavut (www.magicstatistics.com)

Although Arviat is situated south of the Arctic Circle, the community has often to deal with more severe weather conditions than the High Arctic regions. The reasons, which cause these sharp conditions, are the cold currents of the Hudson Bay, and a flat landscape, which cannot protect the community from strong Arctic winds. These winds, that blow down from the Arctic North are common in the Arviat area throughout the year (Tyrell, 2005).

The community is situated along the coastline and is surrounded by thousands of lakes and some rivers as can be seen in Figure 4.3.

During the winter, the lakes and the sea are frozen and the ice is reaching to the floe-edge in the East of the community, which builds the border between sea-ice and open water (Tyrell, 2005).

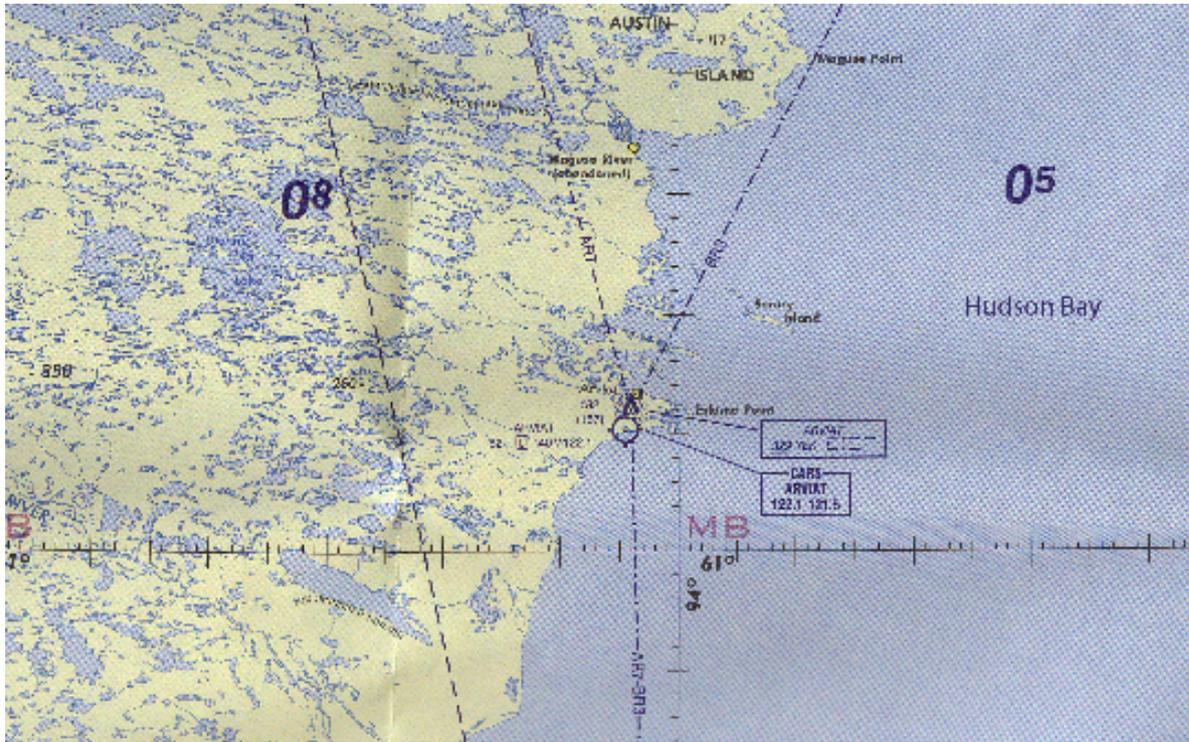


Figure 4.3 Navigation Chart (NAV Canada 2006)

The seasons in Arviat have been crucial for the activities of people living in the area. The winters would regularly last from the middle of October until the end of April. The sea-ice would regularly break-up in early July. The temperature varies between approximately +30 °C maximums in July and -50 °C or more in January and February and heavy blizzards are frequent (ACIA, 2005; Nickels et al., 2005). Average monthly temperatures for Arviat in the year 2005 are shown in table 4.1.

Table 4.1 Average monthly temperatures in Arviat, Nunavut, 2005	Average low	Average	Average high
January	-34,3°	-30,8 °	-27,2°
February	-33,5°	-29,4 °	-25,2°
March	-26,8°	-21,8 °	-16,7°
April	-12,9°	-8,9 °	-4,8°
May	-7,7°	-4,6 °	-1,6°
June	1,7°	5,2 °	8,7°
July	6,9°	11,6 °	16,4°
August	7,9°	11,5 °	15°
September	2,2°	4,7 °	7,2°
October	-3,3°	-1,1 °	1°
November	-15,8°	-12,4 °	-9°
December	-25,6°	-22,7 °	-19,6°

www.climate.weatheroffice.ec.gc.ca

4.2 History

In the early 1920s the Hudson Bay Company decided to establish a trade post on the Western Coast of the Hudson Bay, North of Churchill. In 1923 the new post called Eskimo Point was opened officially (Eskimo Point Resident's Association, 1967). Since June 1989 Eskimo Point is known as Arviat. The name Arviat comes from the word *arviq*, the Inuktitut word for "bowhead whale". This name was chosen for the community because of a small island near the community that is shaped like a bowhead whale (gov.nu.ca, 2008). Short after the Hudson Bay Company has opened this new post, the catholic mission came to Eskimo Point.

The first buildings of the community were located about one mile east of the present location of the community. The town moved to its present site because there was room for expansion and deep enough water directly in front for medium size ships. Finally there were some lakes near enough to provide the inhabitants with fresh drinking water (Eskimo Point Resident's Association, 1967). In the following years Arviat has seen a fast development. In 1928 an A.R.C. Mission came to the new location, in 1929 an

Anglican Mission followed and in 1936 the Royal Canadian Mounted Police established an office in the community which is now called Arviat (Eskimo Point Resident's Association, 1967).

The area around Eskimo Point had been inhabited by Pallirmiut Inuit. They spend most of their time inland where caribou are plentiful and could be hunted, but they also came to the coast for seal, walrus and whale hunting (gov.nu.ca, 2008). Most of them came only three or four times a year to the settlement to trade (Eskimo Point Resident's Association, 1967). In Arviat the seasons always played an important role. In the spring and summer time (approximately from May to August) there were about 15 to 20 families living in Arviat. They came here to go on boats for whaling and seal hunting and to trade their hides. After the middle of August the families would move inland again to make their living from caribou hunting, trapping and ice-fishing (Eskimo Point Resident's Association, 1967; Ledyard, ca 1958). In this time they hunted their winter supply of caribou scattered over a wide area. As soon as the lakes were frozen sufficiently to travel with dog teams, some of them came to the settlement to trade caribou hides for ammunition and other materials (Ledyard, ca 1958).

In the early 1950s, the Inuit had to deal with an increasing pressure to change their lifestyles. During the 1950s and 1960s the Inuit groups, living in the region around the Western coast of the Hudson Bay, were encouraged by the Canadian government to live in permanent settlements. One of these settlements was Arviat. The government felt that the Inuit could be better provided with services as health care and education while living in a permanent settlement, rather than dispersed across the region living in small, mobile groups (Dawson, 2003b; Pauktuutit Inuit women of Canada, 2006). Some families moved to avoid famine and the hardships of life on the land and to take advantage of the benefits that community life promised and some families were unwilling to go (Pauktuutit Inuit women of Canada, 2006). This period marks the beginning of a community life in Arviat as it is lived today.

4.3 Demography

With a population of 2,060 people in 2006, Arviat forms the third largest community in Nunavut, behind Rankin Inlet and the capital, Iqualuit. Between 2001 and 2006 the population in Arviat increased with 8,5 %, which was under the rate in Nunavut (10,2%) but above the rate in Canada (5,4%). Arviat is growing at a fast rate, because of a high natural increase; this means that birth rates are significantly higher than death rates. No people immigrated between 2001 and 2006. The birth rate for Nunavut (including Arviat) is high and the death rate is low in comparison with Southern Canada. Approximately 94% of the Arviat population is Inuit; the remaining 6% is made up of *Qablunaat* teachers, nurses, government employees and others (Government of Nunavut, 2008). The aboriginal population in Arviat is very young: 41,3% of the inhabitants are younger than 15 years old in comparison with Nunavut (37,7%) and Canada (29,7%) (Census 06, Statistics Canada). In figure 4.4 the common image of children playing on the street is shown.



Figure 4.4 Children playing in Arviat

4.4 Economy

The economy of Arviat can be described as a mixed subsistence economy. The mix is characterized through a combination of wage labour and the use of resources from the land and sea (Tyrell, 2005). The biggest employer in Arviat is the government, which includes schools, the hamlet, government offices and healthcare services. There are other employment opportunities like the stores and community or Inuit organizations. The unemployment rate (as defined by Statistics Canada) in 2006 in Arviat was 8,5 % for women and 15,6 % for men (Census 06, Statistics Canada). In 2001 the unemployment rates were 20,3 % for men and 17,6 % for women (Census 2001, Statistics Canada). This says something about the formal economy, but in Arviat the subsistence economy and market economy are inseparable and not clearly defined, what makes it difficult to analyse these statistics (Myers, 2000; Tyrell, 2005). Next to wage labour there are a lot of activities done in the community to help pay for hunting equipment, Hondas, sewing equipment, skidoos, store-bought-food and clothing (Tyrell, 2005). These activities include making arts for tourists, guide tourists and sell skins inside as well as outside the community.

5. Results: changes in the environment and consequences on subsistence-hunting and gender-relations

5.1 Introduction

In this chapter the main results of the fieldwork will be presented. The intention of this chapter is to show which changes are perceived in the local environment by the Inuit in Arviat, what consequences the interviewees see in this respect to subsistence hunting practices and how this relates to changing gender-relations.

The chapter will first discuss the results from changes in the physical environment and then the changes in the social environment as observed by the interviewees and from our own observations during the fieldwork in May 2008. Within paragraph 5.2 the observations by the interviewees are discussed (see also Appendix B), followed by the consequences that the participants think the changes have on their subsistence-hunting practices (see Appendix C). And at the end of each section in paragraph 5.2 the results from the personal interviews and the observations made during fieldwork will be compared with the recent literature as examined in chapter two of this thesis. Appendix A gives a structured insight in the differences between the changes in the environment within the literature study and the changes that are perceived by the interviewees in Arviat. Paragraph 5.3 will discuss the observed changes in the social environment by the interviewees and paragraph 5.4 will deal with the change in gender-relations caused by changes in the physical and social environment.

5.2 Physical environment

5.2.1 *Weather - winds*

Observations

Many of the interviewees and the other people that we spoke in Arviat on a more informal base, have observed that the local weather has become more unstable and unpredictable during their lifetime. This unstable weather includes stronger and more

wind and more frequent thunderstorms. The unstable weather that has been observed does not mean that there are also more storms, because two of the interviewees have observed that there are fewer storms in Arviat and its surroundings than earlier on in their lifetime (Interviewees 1 and 2, personal communication).

“It is not just warm weather or cold weather. It changes a lot. It changes every time now.”

(Elder 1, personal communication)

Consequences

The weather being less predictable has the most effect on the Elders who were used to use their extensive knowledge about the weather and the land. The increasing unpredictability and the instability of the weather make it often more difficult to navigate and to travel. Hunting, especially on the sea, is more dangerous, because people can be surprised by a sudden change in weather. From the observations that we made in and around Arviat and the people that we talked on an informal basis most of the people only go out hunting when the weather is good. When this is the case a lot of people are not interested in activities like skidoo-races or they even quit early from work to be out on the land and to be out hunting (3rd, 9th and 10th of May, Observations in Arviat, 2008). Two of the participants (Interviewees 1 and 3, personal communication) have told us about two Elders that died because they could not find their usual route back from Rankin to Arviat when the weather shifted;

“Coming from Rankin it was really nice out and they got bad blizzard and blowing snow, just like that and so two people died from here.”

(Interviewee 1, personal communication)

“There is a route that they always use during a specific time of year. And when the weather start warming up it changed and that is how they naturally died. Like they froze to death or and they got stuck on their route.”

(Interviewee 3, personal communication)

Reflection

The literary sources used and the own research in Arviat support each other in the observations that the weather is less stable and more unpredictable (Ford et al. 2008; Nickels et al., 2005). This means that this change in weather has been observed in other parts of the Canadian Arctic as in Arviat and its surroundings. The facts that winds blow more frequently and that more thunderstorms are seen near Arviat have also been observed in other regions in the Canadian Arctic and is not only a local phenomenon (Nickels et al., 2005; Keith and Arqviq, 2006). The decrease in frequency of storms during the last ten or twenty years as observed by two of the interviewees has not been mentioned in the used literature and are therefore very interesting (Interviewees 1 and 2, personal communication). It does depend on the definition of storms used by the interviewees to make further assertions.

Consequences like difficulties in navigation, hunting and traveling due to unstable weather and its unpredictability makes it often more dangerous to go out on the land or sea. During one of the hunting trips that we have participated in a mist came over which reduced our sight till about ten meters, but after half an hour it was clear again (6th of May, Observations in Arviat, 2008). This has been observed in Arviat during the fieldwork as well as other parts of the Canadian Arctic (Ford et al. 2008).

5.2.2 Weather - temperature

Observations

In this research participants have mentioned that there are more colder days being observed in Arviat now (Interviewee 1 and Elder 2, personal communication). This could be explained by the fact that this year there was an extreme long and cold winter as we heard from many people within the community of Arviat during informal conversations

and interviews (Observations in Arviat, 2008; Interviewee 4 and Elder 3, personal communication). Interviewees have also observed that the spring seasons are getting warmer, that there are more fluctuations in temperature and that the temperatures are rising year round (Interviewee 3 and Elder 2, personal communication).

Consequences

The effects of these rising temperatures are mostly expressed in making it more difficult to travel on their snowmobiles. Trails are getting slushy, which makes traveling with the skidoo slower and more difficult to travel for far distances (Interviewees 3 and 4, Anonymous Elder, personal communication). For the case that traveling gets to hard or that the machine breaks down under those conditions Frank, our guide, always brings a survival set with him on the land. This will enable him to camp and survive on the land and gives him time to fix his machine or wait for help from the community (14th of May, Observations in Arviat, 2008).

Reflection

It has been getting warmer on average each year during winter and springtime in the Canadian Arctic including Arviat (Nickels et al., 2005; ACIA, 2005; Keith and Scottie, 2005). Summers are not mentioned as being warmer during the interviews, while the summers are reported to being warmer in the Canadian Arctic as a whole (ACIA, 2005). The winters being mentioned as having more cold and colder days, is probably partly explainable by this last winter in 2007/2008 being colder and longer than the previous winters in Arviat.

5.2.3 Sky

Observations

Some of the interviewees have observed that the sky looks hazier in the last years while it used to be clearer when they were younger. One of the participants mentioned that the sun appears to be in a different place. There are also more clouds these days according to

several of the participants (Interviewees 1 and 5; Elders 3 and 4, personal communication).

“The sky always looks hazy now, always different. It was used to be very clear.”

(Elder 3, personal communication)

Consequences

The sky being more hazy or cloudy has not been mentioned to have many effects on the people in Arviat, as long as the sight over the land is clear enough to see where to go and where the animals are (Figure 5.1). A change in the sky that people notice and that is of influence on them in Arviat and during hunting and traveling, is that they burn more easily from the sun these days. They have to use sun lotions and sunglasses to protect themselves.



Figure 5.1 Fishing under the sky near Arviat

“I noticed that years ago without any kind of Qablunaat made sun lotions we weren’t getting any kind of skin irritations. But now we must have some sort of sunscreen on. And also the snow blindness, we have to wear sunglasses.”

(Philip Kigusiunaaq, Arviat interviews in Keith and Scottie, 2005)

Reflection

As derived from the interviews held in Arviat, the literature found, supports the observation made that the sky looks hazier in the last years than the years before (Nickels et al., 2005; Keith and Arqviq, 2006). That one of the participants (Interviewee 5, personal communication) has observed that the sun’s location in the sky has changed has also been observed by other people in the Canadian Arctic (Nickels et al., 2005). These sightings of the movement of the sun’s location can be explained by temperature inversions, which are layers of warm or cold air which make light bend and let it look like the sun’s is in another place (Davidson and van der Werf, 2005; BBC Weather Centre, 2008). Scientific facts tell that the sun’s UV radiation has increased in the Canadian Arctic which explains the fact that people in Arviat and the rest of the Canadian Arctic burn their skin sooner from the sun than in their earlier years (ACIA, 2005; Elders Conference on Climate Change, 2001).

5.2.4 Snow

Observations

Many of the interviewees have observed a large decrease in snowfall and a diminishing snow cover on the land during their lifetime (Interviewees 1, 2, 3, 4 and 5; Elders 2 and 5, personal communication). During a trip to one of the cabins we were told that there was less snow, which makes it easier to prepare the cabin for the summer (4th of May, Observations in Arviat, 2008). Some of the participants have observed that the amount of snow that falls is less stable or fluctuating more (Elders 4 and 6, personal communication). The participants in the interviews have also observed that the type of snow has changed. The snow in and around Arviat has been observed as being harder than before.

“The snow hardness and that and the amount of snow I’ve seen falling from my childhood years until now has dropped dramatically.”

(Interviewee 5, personal communication)

Consequences

Less snowfall and less snow on the land cause greater difficulty for travelling over land by snowmobile (Interviewees 1 and 4; Elder 2, personal communication; 14th of May, Observations in Arviat, 2008). This is important because the snowmobile is one of the primary modes of transportation on the land during the long winter season for the inhabitants of Arviat (Figure 5.2).

“There is not much snow to support the skidoo’s.”

(Interviewee 4, personal communication)

The quality of the snow also changed in the past years and has been observed to be harder. The snow being harder has two different consequences on the hunting practises of the Inuit. It is negative for people who want to use the snow for building igloo’s, because the snow is not very well suited for that purpose anymore (Anonymous Elder, personal communication). On the other hand, harder snow makes travelling with skidoo on it easier and faster and is a positive influence according to some of the interviewees and people who we spoke on an informal base during the fieldwork in Arviat (Interviewee 5, personal communication).

“From the cold weather the snow is much harder now. When he used to cut it up, it is too hard now. In those days the snow was perfect to build an igloo, to cut it with a snow knife, but now it’s too hard.”

(Anonymous Elder, personal communication)



Figure 5.2 Snowmobiles at the town-edge of Arviat

Reflection

In the Arctic including the Canadian Arctic a decrease in snowfall has been reported the last fifty years which support the findings of less snow in and around Arviat in this research (Nickels et al., 2005; ACIA, 2005; Keith and Scottie, 2005; Ford et al., 2008). In the literature observations have been mentioned about more snow on the ice, but this was not mentioned in the interviews and during observations in Arviat (Ford et al. 2008).

From the literature review it is clear that there are many variations in the change of snow types that differs from one local area to another (Nickels et al., 2005; Keith and Arqviq, 2006). This explains that the snow in and around Arviat has been observed as being harder than before, while somewhere else in Nunavut like Arctic Bay the snow is more powdery in the last years (Ford et al. 2008).

The decrease in snow on the land is making it more difficult to travel by snow mobile (or dogsled) in the whole of the Arctic including Arviat. Damaging equipment is a part of this increased difficulty in travelling (Nickels et al. 2005; Keith and Arqviq, 2006).

In the used literature it is stated that the change in type of snow makes it less suitable to build igloo's with, as also observed by one of the interviewees in Arviat (Anonymous Elder, personal communication), although this can differ between different regions because of the local variations in types of snow. The positive consequence that travelling on the snow gets easier because the snow is harder is not to be found in the used literature. This can probably also be explained by the regional differences in types of snow again.

5.2.5 Ice

Observations

One of the participants states that the ice has become thinner over the years (Elder 3, personal communication). But two of the participants have observed that the ice is thicker this year (Elder 2 and Anonymous Elder, personal communication). The ice being thicker was observed during the yearly cod-fishing competition. Where we could not fish the first day, because unexpected an extension was needed on the drill to get through the thick ice as can be seen in figure 5.8 (23rd of May, Observations in Arviat, 2008). This thicker ice could be explained by the observation that this year there was a stronger and longer winter than that they were used to in the last years (Figure 5.3; Interviewee 4; Elders 3 and 7, personal communication).

*“There is less snow this year and the ice is too thick now, because of the cold weather.
When there is more snow on top of the ice, the ice is thinner.”*

(Elder 2, personal communication)

The ice is breaking up earlier in spring (Elder 3, personal communication). This goes together with the observation that many interviewees made that the melting of snow and ice in spring goes faster now than before in their lifetime (Interviewees 2 and 3; Elders 3, 5 and 6, personal communication).

“The ice ... goes out faster now.”

(Elder 3, personal communication)

“In spring the snow melts faster now.”

(Elder 6, personal communication)



Figure 5.3 Testing the ice

Consequences

In several informal conversations during our stay in Arviat, Inuit have said that because of the earlier break-up, the more rapidly melting of the ice and the ice being thinner in several places it has become more dangerous to travel on the ice, lakes and sea (Observations in Arviat, 2008).

Reflection

As seen in the literature review and a few interviews, the ice has become thinner over the years (Nickels et al., 2005; Ford et al., 2008; Keith and Arqviq, 2006). But two of the participants have observed that the ice is thicker this year, which is an exception compared with the current literature and can be explained by the observations people in Arviat made that this last winter was a very cold one (Observations in Arviat, 2008). The observations made by some of the interviewees that the ice is breaking up earlier and that the ice and snow is melting faster in spring is also observed in other parts of the Canadian Arctic by the local inhabitants. The results of this research and the used current literature both show the observed increased danger of these changes of the ice in the Canadian Arctic and Arviat (ACIA, 2005; Nickels et al., 2005; Ford et al., 2008; Keith and Scottie, 2005).

5.2.6 Land

Observations

One of the main observations that have been made by several Elders in Arviat is that the land is rising (Elders 2, 3 and 6, personal communication). They have seen new islands arise and grow and shoal's getting higher and bigger (Interviewee 5 and Elder 8, personal communication). The land appears to be drier, too.

“In the ocean she used to seen only water, now there are more islands around. In the 90s it wasn't so, now all the islands show up at low-tide.”

(Elder 8, personal communication)

Consequences

No direct consequences on subsistence hunting have been mentioned by the interviewees.

Reflection

As seen in chapter two the isostatic rebound could be a good explanation why many Elders have seen the land grow during their lifetime. This uplifting of the land has also

been observed in other parts of the Canadian Arctic (Bluemle, 2005; Hamilton, 2004; Nickels et al. 2005). The land getting drier is also not unique for Arviat and its surroundings and is happening at other places in the Canadian Arctic as well (Nickels et al. 2005).

5.2.7 Water

Observations

Some of the participants in this research have noticed that fresh water levels have been lowered during their lifetime (Interviewee 4; Elders 2, 6 and 8, personal communication). There is also more open water being seen during the winter season like can be seen in figure 5.4 (Anonymous Elder, personal communication).

“Rivers are not as deep anymore”

(Interviewee 4, personal communication, 2008)

“On the land you can see the lines where the water has been.”

(Elder 8, personal communication, 2008)



Figure 5.4 Magoose river

Consequences

No clear consequences have been mentioned of these changes in water level and more open water during the winter season.

Reflection

At other regions the fresh water levels have also been observed as being lower than before (Nickels et al., 2005; Keith and Arqviq, 2006). In the used literature the consequence has been mentioned that boats and other equipment have been damaged because of the lower freshwater levels (Nickels et al. 2005). Effects as these have not been mentioned during the interviews in Arviat.

5.2.8 Vegetation and wildlife

Observations

New species of wildlife and vegetation have been observed in and around Arviat. Especially new kinds of birds have been sighted, grizzly bears are moving in closer, other types of plants have been spotted and wolverines are coming back into the area (Interviewees 3, 4 and 5; Elder 6, personal communication). Also the amount of birds has changed. For example there are a lot more snow geese than before according to one of the participants and to other people in the community (Elder 3, personal communication; Observations in Arviat, 2008).

An impaired growth of edible/fruit-bearing plants has been observed by some of the participants. Especially the blue-berries that they used to gather are not growing as much as they used to (Elders 1 and 3, personal communication).

“In our days they can’t really go that much. They are small or they don’t fully grow.

Even the blueberries are not growing.”

(Elder 1, personal communication)

A change in the behaviour of certain animals has been noticed by the participants and it is expected that the behaviour will continue to change in the future. Caribous are coming closer to the coast and the communities and bears and caribous are not scared easily these days and are coming closer to humans (Elders 2 and 6, personal communication and Observations in Arviat, May 6th 2008). During our own observations we have seen that the caribous are not that scared of us, and are not even that scared if they hear gunshots (Figure 5.5; 6th of May, Observations in Arviat, 2008).

“All the animals behave different now. In those days the caribou were used to run, when they see someone is coming. Now they stay close and just walk by.”

(Elder 2, personal communication)



Figure 5.5 Caribous near Arviat

Consequences

Some of the participants mentioned that new species could mean new hunting opportunities (Interviewees 3 and 4; Anonymous Elder, personal communication). The fact that caribou are behaving differently and are coming closer to town makes it easier to hunt them. But the fact that bears are coming closer and are less scared of humans make

it more difficult and dangerous to hunt (Elder 6, personal communication). The impaired growth of edible/fruit-bearing plants makes it more difficult to gather them.

“The bears come close and he is scared to go out hunting now, because there are too many bears in fall. He used to sleep overnight, but there are too many bears.”

(Elder 6, personal communication)

Reflection

Like in and around Arviat, new animal species are being reported throughout different regions in the Canadian Arctic, which could bring new hunting opportunities (ACIA, 2005; Keith and Scottie, 2005; Elders Conference on Climate Change, 2001; Nickels et al., 2005). During some walks through the community a helpful resident pointed out some birds which are rare or new to Arviat and its surroundings (8th of May, Observations in Arviat, 2008). The literature also states that in other regions of Nunavut there is an impaired growth of edible or fruit-bearing plants as is the case as observed through participants in this research (Keith and Scottie, 2005). In the literature there has been stated that the health of certain animals was in a worse state than before, but this was not mentioned by the interviewees (Nickels et al., 2005; Pennisi, 2007; Keith and Scottie, 2005; Elders Conference on Climate Change, 2001; Derocher, 2008).

In conclusion, the physical environment does affect the subsistence-hunting practices of the participants in Arviat. In the following paragraph 5.3 the changes in the social environment and the consequences on subsistence-hunting as perceived by the interviewees will be presented.

5.3 Social environment

5.3.1 Life in a community

Where there were no more than fifty people (a few families) living in a camp, there are now hundreds or even two or three thousand people living in one community. This change brought all different kinds of other social changes along with it. Living in the

community of Arviat, formerly Eskimo Point, brought first of all more contact with *Qablunaat*. The *Qablunaat* and their beliefs, systems and inventions they brought with them, influenced subsistence-hunting in various ways as perceived by the interviewees in Arviat. The main consequences on subsistence-hunting practices in and around Arviat are caused by the introduction of Quota systems and hunting-licenses, the introduction of the monetary system and the wage economy and the introduction of new technologies. These will be further explained in this paragraph.

5.3.2 Quotas and hunting-licenses

Qablunaat brought hunting licenses which formed a restriction for the Inuit to hunt what they were used too. Now the Inuit in Arviat only need licenses for the hunting of musk-oxen and polar bears. Next to those restrictions the Inuit have no further restrictions on what they hunt, while non-Inuit have to get licenses for hunting and fishing (Interviewees 2 and 4, personal communication; 14th of May, Observations in Arviat, 2008). The hunting quotas and licenses are not only seen as something restricting, but also seen as something positive by some people. Some of the interviewees believe that there will be more quotas and management for other wildlife as well, which will take care that this wildlife will be there for future generations (Elder 1, personal communication). This is seen as a positive influence (Elder 2, personal communication).

5.3.3 Monetary system and wage economy

With the *Qablunaat* came the wage-economy and money to the community of Arviat. Nowadays you need money to buy the proper hunting equipment like guns and means of transportation. Every time that you go out hunting, it will cost money because you use bullets and gas. You have to have or earn money before you even can go out hunting (Elder 4, personal communication; Observations in Arviat, 2008). In Arviat the sharing of food is mostly done between family members or close friends today. But also people who cannot get their own country food are supported by the hunters in Arviat, sometimes in exchange for cash (17th of May, Observations in Arviat, 2008).

“He would like to go back to the old ways. But it is not possible, because they would have to get funding for that. It is all about the money now when you are travelling around.”

(Elder 4, personal communication).

Because more and more people are taking part in the wage-economy in Arviat, there is less time for some people to hunt. Where hunting once was their main business, it now has become a weekend activity next to other free time activities as the following quote explains:

“I call it activities or, but for dad it was not an activity, it was their life. How they lived. No, I call it hunt, but like you know, when we are hungry there is food across the street.”

(Interviewee 1, personal communication)

This does not mean that hunting today is not still for survival; because of the high prices of healthy food in the store country food (Figure 5.6) is still needed to live in a healthy way in Arviat (Interviewee 1, personal communication). Hunting being more and more a weekend or spare time activity makes some young people loose interest in it and valuable knowledge for hunting and survival on the land is being lost (Interviewee 3, personal communication; Observations in Arviat, 2008). Resilient as the people in Arviat are however, a lot of the skills needed are taught in school (Interviews in Arviat, personal communication).



Figure 5.6 Busy in front of the store in Arviat

5.3.4 Technology

Modern technologies from the *Qablunaat* are of greater influence in making it easier to hunt (Figure 5.8). The interviewees are not talking about the gun, because that was not new in their lifetime, but already existed. The inventions that brought the biggest change are the snowmobiles and the ATV's (All Terrain Vehicles; Figure 5.7). Where they used dogsleds and their feet to travel and hunt on the land, they now use these modern machine which give them some advantages over the older transport modes. Although dogsleds are still use by some to travel and hunt, they are mostly used as a hobby and to compete in races (Elder 7, personal communication). The main advantages of using the snowmobiles and ATV's is their speed and their strength and ability to tow or carry large and heavy loads (Interviewee 1; Elders 4, 5, 9 and Anonymous Elder, personal communication).



Figure 5.7 ATV in use

“With skidoo it is easier and faster to go out. They can come back the same day, with dogs they had to stay overnight.”

(Anonymous Elder, personal communication)

“Hunting is easier now with skidoos and ATV’s and they can carry the whole catch back home now.”

(Elder 9, personal communication)

Other technologies that make the hunting and traveling easier and saver, are the weather forecasts on the television and internet, and the use of navigations systems like GPS (Global Positioning System) (Interviewee 1; Elder 4 and Anonymous Elder, personal communication).



Figure 5.8 Using a modern tool for fishing

5.3.5 Reflection

Quotas were and still continue to be a topic of conflict, mostly between the scientific world and the local inhabitants (Dowsley and Wenzel, 2008). Where wildlife co-management in Nunavut should bring scientific research and *Inuit Qaujimagatuqangit* closer together, conflicts still arise with for example setting up hunting-quotas for polar bears (Dowsley and Wenzel, 2008). More quotas are expected in the near future by some of the interviewees and the influences of the quotas on the subsistence-hunting practices will therefore be of greater proportions (Elder 1 and 2, personal communication). However, some of the Elders in Arviat also said that hunting will always be an important part of the Inuit culture and that hunting will still be practiced by the future Inuit generations (Elders 1, 4 and 6, personal communication). On the other hand they predict that the way of hunting will change in the future, because of different species coming up North, because of new technologies, because of more quota's and restrictions and because of a different lifestyle of the Inuit (Elders 1 and 2, personal communication).

The younger interviewees on the other hand have a different view towards the future. They mentioned that the future will be harder for them, because they have to be educated in order to earn the money they need to survive (Interviewee 6, personal communication). One young Inuit has directly mentioned the thought, which was present during every interview; the fear that subsistence-hunting and with it an important part of the Inuit culture will fade away and finally will disappear in the future.

“We don’t want it to disappear, but we can’t force other people to learn Inuit stuff or we can’t force them to forget about what their parents taught them.”

(Interviewee 1, personal communication)

More participation in the wage-economy and new technologies are of greater influence on subsistence-hunting activities in the Canadian Arctic according to Myers (2000). The findings in the interviews and the literature review support each other in the effects of the increase in participation within the wage-economy; there is less time to participate in hunting activities for some individuals and there is a loss of hunting skills and knowledge (Ford et al. 2008). The observation made by some of the interviewees that some younger people in Arviat loose interest in hunting, has also been mentioned in the used literature (Myers, 2000; Condon, 1994). The literary sources give the following reasons for the observations that younger Inuit lost interest in hunting: the lack of training, lack of money and an increased involvement in other leisure activities (Myers, 2000; Condon, 1994). Especially the younger generation in Arviat likes it to spend much time playing computer games, surfing in the internet or watching television or hanging around with friends in the community (Observation in Arviat, 2008). One of the participants gives a similar answer if he is asked about the reasons why some younger Inuit loose their interest;

“Yeah, there is a handful of youth that choose not to go hunting. I don’t know why, I guess it is all influences that being in a community has. There is work, there are dances.”

(Interviewee 3, personal communication)

The sharing of food, which was a part of the Inuit subsistence-hunting culture, is also changing partly because of the involvement of cash economy (Kishigami, 2004).

New technologies are seen as making hunting easier by most of the interviewees. The literature supports this and states that this partly fills the loss of hunting knowledge and skills, but on the other hand increases the dependency on money and working in the wage-economy (Ford et al. 2008).

An existence of great variations between the communities in the Canadian Arctic has been mentioned by younger generation Inuit during the fieldwork (Interviewees 2 and 3, personal communication). According to them Arviat is a community where it could be possible to keep the traditions alive. In Arviat there are a lot of younger people, who know how to hunt and who see the need to preserve the unique Inuit culture and traditions. There are other communities in the Canadian Arctic where the willingness to keep the tradition is not as high as in Arviat (Interviewees 2 and 3, personal communication). The description of Arviat as a community with strong traditional links and practices is also found in recent literature (Tagalik, 2006). What all the interviewees had in common is that they saw the need to keep their culture alive. The most important factor for this is to teach the children the traditional skills and knowledge and to make them proud of being an Inuk.

5.4 Gender

5.4.1 Gender-roles

Until now in this chapter the main consequences of the changing physical and social environment have been discussed. In this paragraph the effects of these changes in the environment on gender-relations, as perceived by the participants in this research, will be presented.

The literature constructs a relative uniformity in writing about gender in contemporary Arctic communities. It is obvious that the resettlement, the increasing contact with *Qablunaat* and the introduction of wage labour had a significant influence on this development (Myers, 2000). In this paragraph the results of the case study conducted in Arviat in regard to gender-roles will be given and analysed. The aim of this paragraph is

to give an insight about how the *Arviamiut* see the process of changing gender roles and responsibilities and to analyse which role subsistence-hunting plays in this process. In Appendix D the changes in the social environment as experienced by the participants and the consequences these changes have on gender-relations are given.

“It is traditional, but in a modern way.”
(Interviewee 3, personal communication)

One of the participants, a young *Arviamiut*, describes the life in the community of Arviat as traditional, but he also sees the influences of a modern life, which alters the way Inuit men and women in Arviat live their lives. The recent literature states that the division of tasks between men and women was clearly defined while living in the camps and that today the gender-roles are still following traditional values (Billson and Mancini, 2007; see chapter 2.6). In Arviat some of the people who were interviewed confirmed this (Interviewee 3; Elders 6, 9, 10 and Anonymous Elder, personal communication).

In Appendix F a table of the results of the conducted interviews are given according to the tasks Elders and people of a younger generation see as typical for men and women. The Elders as well as the younger generation state that typical women tasks are: cooking, sewing, taking care of the kids and working in and around the house. There were some differences between answers from the Elders and the younger generation of Arviat. The Elders see the task of the elderly women in teaching sewing and preparing skins and the younger generation sees their task in learning these traditional skills. Other differences are that the Elders thought about more traditional activities as picking blueberries and drying meat as typical women tasks. These activities were rarely mentioned by the younger generation, but regularly by the Elders.

For the typical male activities, the picture given by the different interviewees is almost the same. The typical tasks for men are: Hunting and fixing house and equipment (Figure 5.9). For the older generation the teaching of hunting was an important male task, too.



Figure 5.9 Ready to repair the *skidoo*

Like one of the interviewees says, the traditional division of labour is still prominent in Arviat, but it has become more modern and open (Interviewee 3, personal communication). For many people in Arviat the traditional division of labour is still important: men are going hunting and the women are taking care of the children and the household and prepare skins and meat (Interviewees 1 and 2; Elders 3 and 8, personal communication; Observations in Arviat, 2008).

These responsibilities are principally the same which made surviving possible before resettlement and can thus be described as ‘traditional’, because Dahl (2000) defines tradition as those referring to “cultural elements that have relatively old historical links or are considered ‘original’ cultural traits” (Dahl, 2000:9). But what makes the difference between the fulfilling of tasks now and the time before settlement is that the social environment of the Inuit living in Arviat is changing. They are now living in a modern community, have to do wage-earning jobs and have access to modern equipment. This alters the way they are fulfilling their tasks.

This sharp division of tasks between men and women is surely simplified and only gives an overview of the tasks men and women in Arviat define as 'typical male or female'. But as Jarvenpa and Brumbach (2006) argue, the sexual divisions of labour are to be interpreted as broad principles, which are flexible and open to adaptation. In the following part the extent of adaptation and changes of traditional gender-roles will be analysed.

5.4.2 Changing gender-roles

In the recent literature the process of changing gender-roles in Arctic communities is expounded. It is stated that a changing lifestyle of the Inuit since settlement affects the gender-roles of the Inuit (Billson and Mancini, 2007).

The interviewees in Arviat were also asked about the changes they see in gender-roles. Here a different picture for the younger and the older generation emerged (see Appendix F).

Some of the Elders say that there has not been a change in tasks and responsibilities for men and women (Elder 6 and Anonymous Elder, personal communication).

The younger generation on the other hand has mentioned some changes in the responsibilities. Three of them explained that some tasks like making *kamiks* or going hunting could not be fulfilled, because of a lack of traditional knowledge (Interviewees 1, 2 and 4, personal communication).

As described in the literature, each person living in a camp out on the land had to be skilled according to his or her gender (Billson and Mancini, 2007). According to the used literature the men taught the boys how to hunt and fulfil the other male responsibilities like fixing or making equipment like *kamutiks* and boats, while the women taught the girls all the things a girl had to learn like sewing and cooking. Since resettlement this has become more difficult for the people, because children have to go to school to learn things that contributes to more Southern requirements (Ford et al., 2008). To compensate this and to make sure that the traditional Inuit skills are not getting lost the schools in Arviat regularly invite Elders to come to teach the children at school (personal communication; 8th of May, Observations in Arviat, 2008).

“Women prepared food and skins. Now not many women can do this anymore. Only the Elders.”

(Interviewee 4, personal communication)

Since resettlement the traditional clothes were more and more replaced by store-bought clothing (Figure 5.10), leading to the loss of knowledge about making clothes from hides (Observations in Arviat, 2008). The elderly women still sew and make traditional clothing (personal communication and Observations in Arviat, 2008).

When asking them about their daily activities, sewing is always an important activity for them, it is a part of their life. But they see that many of the younger women do not know how to make *kamiks* and other traditional clothing anymore, because they do not learn this at home. This sort of lack of knowledge can lead to a shift in the responsibilities of men and women, like this quote of a young Inuit woman demonstrates;

“Normally the woman’s job is to skin and cut up the meat. But today it’s different to me and I don’t know how to do it. Nobody has ever taught me, I’ve never asked and I just refuse to cut up something that I didn’t shoot. My dad does it. The only part that I really have is just cook it and organize it, but I am not involved in hunting...”

(Interviewee 2, personal communication)



Figure 5.10 Hunters wearing modern clothing

The gender-based differentiation between tasks and responsibilities for the older generation seems not to have changed a lot. The elderly women are still sewing and drying meat and picking blueberries etc. For the younger generation this is not the case as this woman indicates. Both generations are busy with taking care of the nutrition of the family, while the older generation makes more use of country-food and the younger generation uses more store-bought food, including junk-food for their diet (personal communication, 2008).

“Men go hunting, women stay and dry. For me and a lot of older ladies it is still the case.”

(Anonymous Elder, personal communication)

Living in the harsh Arctic environment required a good partnership between the men and women in a community (Young and Einarsson, 2004). The women and men were highly independent in fulfilling their tasks and they had to rely on each other to survive. The men and women would switch to the other sex's responsibilities only in exceptional circumstances (Billson and Mancini, 2007; Dahl, 2000; Jarvenpa and Brumbach, 2006). Now, there are a lot of people who fulfil tasks which are typically associated with the different sex (Observations in Arviat, 2008). One of these tasks, which were mentioned in the interviews, is that some men (especially younger men) are helping in childrearing and domestic work today.

“Yes, this just started recently. Like men are doing offices or men cleaning the house taking care of the kids. That makes sense for the future. I understand that we can't live like in the old days forever. Everything is changing.”

(Interviewee 1, personal communication)

The Inuit adapt their lifestyles to the new emerging circumstances. Men and women have to work together and help each other in a time where wage-earning has become so important for surviving. Whereas a lot of women have a job and go working some men help doing the housework and taking care of the kids (Interviewees 1, 2 and 5, personal communication; Observations in Arviat, 2008).

The following quote demonstrates that doing the housework is not as easy for some men as for others. Some men do not want to take part in the domestic tasks, because they see their authority fading away.

“When the men do that (domestic work), they feel like women or they are under the power of a woman. They don’t want to be seen like that here.”

(Anonymous, personal communication)

Before wage-earning became so important for the Inuit in Arviat, the men were the providers of the family. They provided their families with animals from the land. Through the use of these catches in a variety of ways, they were able to fill all the demands of their families (Myers, 2000). According to Myers (2000) this has changed through the resettlement, new technologies and the increasing importance of wage-labour. The demands of modern hunting equipment require wage-earning jobs (Kofinas, 1993). Dahl (2000) describes that women living in Arctic communities are often the primary income earners of the family. This is also true for Arviat (personal communication, 2008). The unemployment people are facing in Arviat is high, especially for the men (statistics of Canada, 2008). In 2006 in Arviat the unemployment rate for females was 11,8% and for males 20,8%. This makes many women to the main providers of their families. For the men time to hunt decreases due to wage-labour. For some men this can lead to an identity-problem, because their self-worth can be undermined, facing the problem of not being able to be the provider of the family (Young and Einarsson, 2004; Dahl, 2000). For some men in Arviat this problem could be true.

“Men had to hunt and bring ice and water, now they don’t have to do this everyday. The woman still has her responsibilities, but the men loose them. And when they don’t have a job what should they do? Men sometimes kind of get lost here, because they feel like they don’t have a job they are not useful. Whereas the women always have something to do.”

(Interviewee 2, personal communication)

The tasks and responsibilities the women had while living traditional life are still to be done (Observations in Arviat, 2008). They have to take care of the children and cook and clean. The task of wage-earning has been added to the more traditional tasks. For the men

in Arviat the traditional daily tasks as bringing water, ice and meat are reduced and modern tasks like doing wage-earning jobs replaced them to a lesser extent (Billson and Mancini, 2007; Observations in Arviat, 2008).

5.4.3 Subsistence-hunting and gender

For the people in Arctic communities hunting is still an important activity to provide the families with food (Pauktuutit Inuit women of Canada, 2006). For Arviat this is the case, too (personal communication, 2008). But which role does hunting play in the changing gender-roles in the Inuit community of Arviat? To be able to give an answer to this question the changes in subsistence-hunting, which are influencing gender-roles, will be described in the following section. In Appendix E a summary of what people mentioned in the interviews about hunting and gender is made.

Hunting in Arctic communities has been a male dominated activity (Billson and Mancini, 2007; Dahl, 2000). According to the interviewees this is still the case for Arviat.

“I was never taught how to hunt, because I was not a boy. My brothers were taken out by my dad when they were young. I was not taken because I am not a boy.”
(Interviewee 2, personal communication)

This quote demonstrates how important gender is for hunting. The brothers of the interviewee were taught how to hunt, while the interviewee never learned it. Some interviewees have mentioned in the interviews that women learned how to hunt when there was no boy in the family who could be taught to hunt (Interviewee 1 and Elder 5, personal communication).

According to the younger generation interviewees some developments took place which made the number of hunting women increasing.

“Like twenty years ago only men and the wife used to go there, but today young people or more ladies are going out hunting.”
(Interviewee 6, personal communication)

One of the developments that made hunting more open for women is the use of technological improvements. Most of the Inuit in Arviat have access to snowmobiles and ATV's, which make travelling on the land faster and easier. The use of GPS and weather forecast from television or internet make travelling on the land easier and safer. Next to these technological improvements there are also changes in the local environment that make it easier to hunt (personal communication, 2008). Some *Arviamiut* have observed that the caribous come closer to the Hudson Bay and the community and that they behave in a different way. As mentioned previously in this chapter they are not scared of hunters and do not run away as quickly anymore (see paragraph 5.2). Those developments are leading to an increasing number of women who go hunting around Arviat.

Another reason mentioned in the interviews is that they are single or divorced and they have nobody to go with them, because an increasing part of younger women are living on their own today (Interviewee 1, personal communication; Observations in Arviat, 2008). Despite this development the number of women who go hunting on their own is still limited in Arviat. This is because some women did not learn how to hunt. Many are not interested, afraid or have no time to hunt, because they have children or they have to work in the community (Interviewees 2 and 5, personal communication). Many women in the community often go hunting together with their husbands, because they like it to be 'on the land' (Interviewee 6; Elders 3, 4 and Anonymous Elder, personal communication; Figure 5.11). Some of the women also mentioned that they only go out when it is not too cold. In the winter only the men go to provide the family with food (Interviewee 6; Elders 3 and 10, personal communication).



Figure 5.11 An ice-fishing Inuit women

In conclusion of this paragraph, the gender-roles in Arviat have been changing since resettlement as a consequence of a changing environment. The division of labour has become more open and the gender specific roles more interchangeable.

The conclusions based on the results presented in this chapter will be given in chapter 7.

6. Discussion and recommendations

This chapter is a critical view on this research in order to decide which level of quality this research has achieved and what could be improved by us or other researchers studying these subjects. According to Flick (2007) and Rasmussen et al. (2006) there is no global agreed kind of measurement of quality in qualitative research, where “standardization and control of the research situation” are at the basis of quality measurement in quantitative research (Flick, 2007: 61). Quality or as Rasmussen et al. (2006: 117) call it “trustworthiness” is mostly reached by transparency, to let the readers see what we did and how we came to the conclusions (Rasmussen et al., 2006; Flick, 2007). To increase the transparency there will be reflection on the methods, data quality and content quality (Flick, 2007). Because these three are all interconnected, there will be no clear distinction in paragraphs between them.

The most important part of the planning is the choice of the right research methods in order to get the necessary data to be able to answer the main question (Rasmussen et al., 2006; Flick, 2007). The methods chosen in this case-study are the conduction of interviews and making observations, partly based on success with these methods in previous research projects about this topic (Ford et. al, 2008; Nickels et. al, 2005). First the method of interviewing and the quality of the collected data with this method will be discussed. The interview questions were made in a short time period before going into the fieldwork period. Taking time to think about such important questions should be at the basis of solid research. This absence of time however was partly substituted by the feedback that has been given by people in the field of study (e.g. the Inuit advisors in Arviat) and in the field of science (e.g. the research supervisors) in order to control the quality of the questions before the interviews were conducted.

Some data gathered in the interviews are not specifically mentioned in the thesis. One type of information, which has not been directly used, is the personal background information of the interviewees (e.g. name, place of birth, parents). This is because it does not upgrade the content of the research and because of privacy reasons. The personal questions are used to get in contact with the people and to let them get familiar

with the setting and interviewers and to create a good and personal atmosphere. The information that was gathered through the personal questions about the interviewee and his or her parents has been used to get some background information about the interviewees and to be able to specify the further questions. There are some other kinds of specific questions that are not mentioned in the thesis, which include: *Do you remember your first catch? What is so special about being on the land? What does hunting mean for you?*

These questions have been asked to get insight in the hunting activities of the Inuit and to stimulate the interviewees to express themselves. Most of the data gathered from this kind of questions was not used to answer the research questions, but to gather background information needed to get insight in the way of life of the Inuit.

There are several factors of influence on the success of the interviews and the quality of the data, like the interviewer, interviewee, timing and setting (Flick, 2007; Ezzy, 2002). We as researchers are one of the main factors who influence the quality of the data that can be collected (Ezzy, 2002; Dumas and Loring, 2008). Not only the cultural background (as explained in paragraph 3.4) or the way the researchers are taught in school are of influence, but especially the way in which researchers are trained to conduct interviews is important (Ezzy, 2002). Although the interviews were rehearsed by us in test situations before being actually conducted in the field, we have to admit that our own interview skills are not that well practiced and advanced. A deeper meaning in the data and a better quality could probably have been reached if we had better training in interviewing skills. This mainly became clear during the transcribing of the interviews where we sometimes were disappointed that we did not ask for deeper meanings when the chances were there. A recommendation for future research, which should not be underestimated, is that the interview skills are well practiced before conducting the interviews.

Next to the interviewer, the interviewee is of great influence on the quality of the data (Valentine, 2005). The interviewee can be tired, moody or in a hurry (e.g. good timing is also important) which can all influence the answers that are given. A much seen effect is

that the interviewees respond with an answer that they think the interviewer would like to hear, sometimes referred to as a pleasing response (Aykin, 2007). This could exist of information that they have read or heard instead of experiencing it or observing it themselves. For the interviewer it is hard to notice these pleasing responses and we have to be aware that a part of the collected answers could consist of these kinds of responses. Next to the interviewer and the interviewee the setting in which the interview is set up is also of importance to the quality of the research data (Valentine, 2005). The Hunters and Trappers Organization (HTO) in Arviat friendly offered us their conference room to conduct interviews in, which had a formal ambiance. The interviews with the Elders took place in there while the younger participants all were interviewed in their own homes or offices where they might feel more comfortable to speak freely. The fact that there was no translator present during the interviews with the younger participants could also improve the credibility of the information given by them, because they were not influenced by a fourth person and opinion. The setting and the presence of an interpreter was especially important when the topic of the interview went to the gender-relations. We suppose that the elderly women were less eager to talk about this subject in the setting in the HTO, while the topic of gender-relations were more extensively discussed during the visits of the younger participants. Further possible biases caused by working with an interpreter or interviewing in another language are already discussed in paragraph 3.4. We are sure that these caused misunderstandings between us and the participants, which were noticed in several ways; the answers we sometimes got were not near the topics of certain questions and long stories in Inuktitut were sometimes translated in one or two phrases.

The timing of the fieldwork also has the influence that the participants often react with information from the last seasons. A good example of this is that the last winter was relatively long and cold in Arviat, which was mentioned many times if the participants were asked about the last winters, but which does not fit into the trend of the last few years.

Using the method of interviewing resulted in data that could be well used in order to answer the sub-questions related to subsistence-hunting and environmental change. In

order to know if the data was of good quality we used and compared multiple data sources: literature, interviews and observations (Nickels et al., 2005; Keith and Scottie, 2005; Ford et al., 2008). This strategy is called “triangulation” in social sciences and is used to “verify the validity” of the gathered data (Gorden, 1987: 12; Flick, 2007).

Another limitation has to do with the strategy of “snowballing”. As explained in chapter 3 “snowballing” needs several starting points which are spread out over different circles of people in order to get a group of participants which closely represents the target group of inhabitants of the community of Arviat. Given the limited time for fieldwork it was not possible to come to know many different minded people who could act as a starting point for “snowballing”. This could be compensated through the good advice from the people we did come to know in the community, because they know a lot of people in the community very well.

The observations including useful informal conversations during the fieldwork in Arviat form a good supplement to the interviews and the literature review. Although not all the information that has been gathered could be used to answer the main question, most of it did help to improve our understanding of the cultural background and habits of the participants. Points that we set out to focus on during observation as presented in paragraph 3.3 were almost all recorded and used. Making lists to focus upon during observation is something that we recommend to future researchers.

There is one critical process however that could not be observed in the month that we spend doing fieldwork in Arviat, and that is change. The temperature got warmer, there were sunny and cloudy days, but the structural change that this research is about cannot be observed in one month. Observations have to be made for at least over a couple of years in order to compare the same seasons with each other.

Observing in Arviat in the beginning of spring only allowed us to see the current Inuit lifestyles in this particular time of the year. This limited the data from observations that we could compare with the information from the interviews and literature study, because we did not get data through observations concerning activities in other seasons (Alexander, 1992; Berkes and Jolly, 2001). An example would be the processing of

caribou-skins; the skins of caribou are of best quality in fall and not in springtime, because they shed their hair around springtime. The best time to observe the processing of skins therefore is during the fall season and the beginning of winter (Observations in Arviat, 2008).

It would be interesting for future research to come back to Arviat in another time of the year to see how the life changed and to further complete the information gathered through new observations. It would also be interesting to stay for a longer period (e.g. a couple of years) or to come back in the same season a few years in a row to observe the environmental changes and gender-role changes first hand.

Another limitation for this research, especially for the gender aspects, was the sensitivity of the topic. When talking about changing gender roles some people probably do not like to mention problems or arising questions about this. That is one reason why there were no questions included in the interviews with direct regard to this. The circumstances in Arviat, under which the interviews had to be conducted, were not optimal for asking questions about such a sensitive topic (e.g. because of the presence of a 'male' translator and the language differences). A better option to gather information about gender-roles might be to work with focus groups. A focus group is "a group of individuals selected and assembled by researchers to discuss, and comment on, from personal experience, the topic that is the subject of research" (Conradson, 2005: 129). In the case of talking about gender a focus group will include only persons with the same sex (including the interpreter and the researcher). This could have the effect that people more easily share and discuss their understandings and thoughts about such a sensitive topic. Frink (2002) states that gender is embedded in social institutions and ideologies like status, class, ethnicity and race. The ages, household structures and the access to resources are also factors, which can affect the gender-specific roles and responsibilities (FAO, 1997). To gather information about gender-relations in Arviat it might be a better option to compose focus groups in the way that people with comparable personal backgrounds are sharing their experiences. Another interesting option could be to compare the data on gender, gathered in Arviat, with other small communities in the Arctic.

Focus groups can be used to spread research findings and to get feedback on it (Rasmussen et al., 2006; Conradson, 2005). This could improve the quality and content of the data and the involvement of the local Inuit. In this way, the possibility is created to get more and deeper information about topics, which came up only short and superficial in the used research methods within this research. It would be interesting to speak with women in Arviat about their opinion on the topic that men picking up more and more patriarchal attitudes from the *Qablunaat*-society and to find out how they react to this. This is a topic that is of great interest in the recent scientific literature, but the conduction of interviews and observation have shown to not be the right methods to get the information needed to get a good insight in this problem. Future research on this topic is recommended.

The quality of the data which was the outcome of the fieldwork has been reached by looking for feedback in the field of study and the field of science in the planning of the research as well as during the fieldwork in Arviat. Ezzy (2002: 150) states that “the self is always an abiding influence in and on our writing”, and because of that the representativeness of the subject is always further biased. To control the representativeness or quality of our interpretation of the used data by us as researchers and writers the results have been reported back to an Inuit advisor in Arviat and several methods (e.g. literature review, observations and interviews) have been used to “cross-check” the information (Gorden, 1987: 12; Flick, 2007). Participation of local advisors is of great value in this research in order to reach quality and we recommend involving local participation like this in future research.

The conclusions which can be made based on this research project are comparable with the conclusions that other researchers (Inuit and non-Inuit) have brought up for other Arctic regions. The results are not peculiar in comparison with other recent scientific research. The function of this case-study was to come to know if general assumptions about subsistence-hunting and gender in the Arctic are visible in Arviat as well. After conducting this research project we can say that this is the case. One thing which makes Arviat stand out from other communities in the Canadian Arctic is that there are still very

strong historical links present in the community, which could be interesting for future research.

7. Conclusion

In this chapter an answer will be given for the research question. The results of this research project will also be compared with previous research on this topic. The main research question of this thesis is: *What are the consequences of a possible changing environment on subsistence-hunting for both Inuit men and women in the community of Arviat, Nunavut?*

The first conclusion to be drawn from this research project is that the environment in and around Arviat and in the wider Arctic has been changing in the last sixty years with as main causes climate change and an increasing contact with *Qablunaat*. The physical as well as the social environment has been facing changes with different negative as well as positive consequences for subsistence-hunting and gender-roles in Arviat as well as the wider Arctic.

Consequences of a changing environment on subsistence-hunting

The main changes in the physical environment, which are taking place in and around Arviat, are an increase in the average temperature, a decrease in snowfall and an increase in the weather instability and unpredictability. These changes have some negative consequences for the hunting activities of the *Arviamiut*. One of these negative consequences is an increasing difficulty in traveling and navigating, mainly caused by weather instability. This means that hunting becomes more dangerous for the Inuit in Arviat and in other regions of the Arctic. Another influence that makes hunting more dangerous near Arviat is the changing behaviour of bears. They come closer to the town and are said to be less scared of humans. The increasing temperatures and the decreasing amount of snow also have negative impacts on hunting activities in Arviat. The *Arviamiut* describe that the snow is melting faster in the spring than they were used to. This has the consequence that they can not use their *skidoos* for traveling for a longer period. All these negative impacts of a changing physical environment on hunting are not unique for Arviat, but are also described for other communities in different Arctic regions (Ford et al., 2008; Nickels et al., 2005; Keith and Scottie, 2005; ACIA, 2005).

The same changes in the physical environment also have positive effects on hunting in and near Arviat. The warmer temperatures make certain species of wildlife (especially caribou) come earlier in the year and caribous are coming closer to town and behave different (less frightened), which means that they are sooner and easier to shoot. Hunting caribou earlier in the year means less dependency on winter stock and store-bought food. These consequences are comparable with the consequences which are observed in other parts of the Arctic according to the current literature used (ACIA, 2005; Keith and Scottie, 2005; Elders Conference on Climate Change, 2001; Ford et al., 2008; Nickels et al., 2005).

However, there are also differences concerning the changes in the physical environment and its consequences on subsistence-hunting between the used literature and the outcomes of this research. These are differences in the amount of snow cover on the ice and the quality of snow. These differences can be explained by the large regional variations of snow cover and quality in the wider Arctic as described in different other research reports (ACIA, 2005; Keith and Scottie, 2005; Ford et al., 2008; Nickels et al., 2005). These regional differences in snow cover and quality mean that the consequences on hunting practices of local inhabitants are also often diverse.

It can be concluded that the changing physical environment has large impacts (positive as well as negative) on subsistence hunting in Arviat, which have also been observed in other regions of the Arctic. There are however large regional variations.

The main changes in the social environment, which are taking place in and around Arviat since the Inuit live a settled life, are the introduction of the monetary system and wage-labour, the increased access to stores and modern equipment and the government regulations.

The main restricting consequence of the changing social environment on subsistence-hunting practices in Arviat is the loss of time due to an increased participation in the wage-economy. This consequence has also been observed in earlier research on this topic in different Arctic areas (Myers, 2000). Hunting becomes more and more a weekend activity. This means that some young people loose interest in it and valuable knowledge for hunting and survival on the land is being lost. Other factors, which make the amount

of time to hunt decrease, are the increased involvement in leisure activities (e.g. dances and skidoo-racing) and the increased use of multimedia, especially of the younger generation. This can lead to a shift in interest, away from traditional activities like hunting to more modern activities like surfing in the internet and watching television. This again leads to the loss of knowledge which, in turn, can make hunting become even more dangerous because certain survival skills are lost.

A closely connected social environmental change is the involvement in the monetary system which has impacts on the lives of the Inuit in Arviat and other Arctic regions. This change has close ties to the higher participation in the wage economy, because in order to survive and hunt people have to earn money. Money is needed to buy certain necessary goods in order to hunt (e.g. gas and bullets). This means that where people do not have much money, they can not go hunting and traveling like they would want to or they were used to.

Increased influences of government regulations (e.g. quotas) form another restricting factor on subsistence-hunting activities for indigenous people in different parts of the Arctic (Dowsley and Wenzel, 2008). This restriction is also the case in Arviat where there are quotas on musk-oxen and polar bears. This form of wildlife-management is also seen positively by some people in Arviat, because it makes sure that there will be wildlife for their future generations.

There are also changes in the social environment which have positive influences on hunting activities in Arviat and other Arctic communities. The import of technical equipment from the south like *skidoos*, *Hondas* and GPS for example are making it easier and safer to hunt and travel in and around Arviat and the Arctic (Myers, 2000). This forms a large positive influence for the hunting practices of the Inuit. The *Arviamiut* explain that hunting and traveling has become a lot easier and faster since they have access to this modern equipment. But the use of this modern equipment has its disadvantages, too. The use of GPS for example can lead to the loss of traditional knowledge about navigation, which could lead to dangerous situations when the equipment would fail.

Other influences, which came with the increasing contact with *Qablunaat*, are the easier access to food (e.g. because of access to stores) and the involvement of the indigenous

population in the cash economy (Kishigami, 2004). This has led to an increasing use of store-bought food of the Inuit living in Arviat and a decreasing importance of hunting for surviving and the traditional system of sharing of food.

The information gathered in this research regarding the changing social environment and its impacts on subsistence-hunting is not showing major differences with previous research conducted in the Arctic (Myers, 2000, Dahl, 2000).

Concluding it can be said that there are changes in the physical and social environment, which directly influence the subsistence-hunting activities in Arviat in a positive as well as a negative way. Despite these changes, subsistence-hunting still plays an important and integral part of the lifestyle of the *Arviamiut*. Much time is spent 'out on the land' where people are hunting and fishing. Country-food is still a popular and economically important source of food for the Inuit in Arviat, because of the high prices of food in the stores and the unhealthy food that is sold there. This has not only been observed in the case of Arviat, but has also been mentioned for other Arctic communities (Pauktuutit Inuit Women of Canada, 2006).

Consequences of a changing environment on gender

For men and women in Arviat the changing environment has different consequences. The changes in the physical environment as observed by the interviewed Inuit have no direct influences on the division of tasks between men and women and gender-roles in general. However, some of the women in Arviat said that they only go "out on the land" for fishing or hunting when it is not too cold, whereas men do not seem to be influenced in their choices by the colder temperatures. Most of the women interviewed during fieldwork like to go fishing in the springtime. As long as the temperatures are rising and the spring is coming earlier in the year the participation of women in fishing and hunting is increasing. An additional change in the local environment of Arviat, which makes hunting easier for women, is the changing behaviour of caribous, which makes them easier to hunt. Together these processes lead to an increase in hunting opportunities of women. In general it can be concluded that there are more women participating in hunting activities than the *Arviamiut* were used to, but the number of women who go

hunting regularly is still very limited. This means that the traditional division of roles between men and women in hunting practices are slightly changing, but still apparent; the men still are “the hunters”. The number of women, who go hunting differs between the Elders and the younger generation. The elderly women often go out hunting with their men, while the younger generation women have many tasks to fulfill in the community. They have to take care of the children, earn money, cook and clean, so that they don’t have the time to go “out on the land” with their men.

Changes in the social environment brought more consequences for gender-roles in Arviat than changes in the physical environment did. One of the main consequences of a changing social environment for the men and women living in Arviat is the fact that some women are taking over the role of being the provider of the family, because more women participate in wage-labour than men (Census 06, Statistics Canada). This development has also been described in the recent literature about other Arctic communities (Billson and Mancini, 2007). In the traditional system men were the provider of the family (Myers, 2000). The recent shift in these roles (women being the provider of the family) has led and can lead to the problem of a changing partnership between men and women in Arctic communities (Young and Einarsson, 2004; Dahl, 2000; Billson and Mancini, 2007). Observations and informal conversations with women in Arviat have shown that some women are able to live on their own and raise children without help from a man. Based on these observations the conclusion can be made that women in Arviat do not have to rely on men for providing themselves (and their children) with the daily needs like they did living the traditional nomadic life. This change in partnership, in which women are not as dependent on their men as before, together with diminishing hunting opportunities and a high unemployment rate for men, can lead to identity problems for men together with an undermining of their self-worth (Young and Einarsson, 2004). This problem has been mentioned by an interviewee during the fieldwork in Arviat, but it has not been mentioned as often as it could be expected from the literature.

Another consequence of the high participation of women in wage-labour is the fact that some men are switching to the more female sphere of domestic work in Arviat and in other parts of the Arctic (Pauktuutit Inuit Women of Canada, 2006). Especially the

younger men are helping to take care of the children or to clean the house, where Elder men are observed to do this mostly out of necessity when they have become widowers. This has been mentioned in recent literature about Canadian Inuit and has also been observed in Arviat (Pauktuutit Inuit women of Canada, 2006). The clear division of labour between men and women, which was part of the traditional system of the Inuit communities, seems to become more open nowadays, especially for the younger generation Inuit. The Elders in Arviat on the other hand have mentioned that the traditional division of labour is still very important for them and that they do not see many changes in this.

Another important consequence that has been brought up during the interviews and which has also been stated in the literature is the loss of traditional knowledge for men as well as for women (Ford et al., 2008). The fact that food and clothing is available in stores makes it less necessary to hunt for the meat and the hides. For the older generation in Arviat traditional clothing as well as country-food plays an important role in their daily lives. They rely on country-food for their nutrition and sometimes fill it up with store-bought food. For the younger generation traditional food (and clothing) is not as important as for the older generation. This has the consequence that typical female activities like drying meat or sewing are not part of the daily lives of younger Inuit women. For the older generation they are part of their daily routine. This process again has the effect that some men and women are losing their gender typical skills, what can lead to a shift in responsibilities and tasks between generations and sexes.

In general the gender-roles appear to become more interchangeable in Arviat, especially for the younger generation. For the Elders the traditional way of life, including subsistence-hunting and traditional gender-roles, is currently still important in Arviat, more important than for the younger generations. The expectations for the future are that the Inuit will have to deal with influences from *Qablunaat* even more and that this can lead to the loss of traditions and practices, which are typical for the Inuit. To compensate this process the Inuit of Arviat are trying to teach their children as many traditional skills as possible, because one thing the Inuit in Arviat have in common: they want to keep their culture.

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- Appendix I: Interview hunter

Appendix A: Changes in the environment table

This table reflects the changes that are observed in the Arctic, Canadian Arctic, Nunavut and Arviat. Information about the changes in the arctic, Canadian Arctic and Nunavut are found in the current literature and the observations made in Arviat are the results from this research project. A black dot behind the observation in the first column means that the observation has been made in that larger area. Where there is no observation that means that it is not mentioned in the literature that has been used for this table.

Contradicting differences in this table could be caused by regional differences within the larger areas used in this table.

Appendix A: Changes in the environment table	The Arctic	Canadian Arctic	Nunavut	Arviat
Weather				
The weather is more unstable and unpredictable	•	•	•	•
Wind				
Stronger winds / more wind		•	•	•
Prevailing winds have shifted		•	•	
Thunderstorms are more frequent		•	•	•
Thunderstorms are less frequent		•		
Thunderstorms are happening at different times of the year		•		
Storms are less frequent				•
Sudden wind changes	•		•	
Temperature				
Rising temperatures year round	•		•	•
More fluctuations in temperature		•	•	•
Winters are warmer	•	•		
Less extreme cold temperatures in winter		•	•	
Spring is warmer these days				•
Summers are cooler		•	•	
More extreme warm temperatures in summer		•	•	
Autumn is warmer and longer		•	•	
Sky				
The sky looks more hazy		•	•	•
More intense heat from the sun observed	•	•	•	
Sun looks higher in the sky/ its location moved		•	•	•
More clouds these days				•
Increasing UV radiation / more sunburns and skin rashes	•		•	•
Precipitation				
Increase in rainfall	•	•	•	
Less rainfall		•		
Increase in freezing rain		•		

Decrease in snowfall / snow cover	•	•	•	•
Amount of snowfall is less stable				•
Type of snow has changed	•	•	•	•
Ice				
Ice has become thinner	•	•	•	•
Ice has become thicker				•
Ice is breaking up earlier	•	•	•	•
Later freeze-up of the ice	•	•	•	
More rapid melting of snow and ice			•	•
Land				
Ground is sinking		•	•	
Land is rising		•	•	•
The land is drier		•	•	•
Increase in erosion		•	•	
Islands are growing / new islands appear		•	•	•
Water				
Fresh water levels are lower	•	•	•	•
Sea level is higher	•	•	•	
Sea level is lower			•	
Sandbars are higher and larger		•		•
More open water in winter				•
Vegetation and Wildlife				
New species of wildlife or vegetation	•	•	•	•
Decrease in health under wildlife	•	•	•	
Caribou hides are thinner			•	
There are more birds now				•
Impaired growth of edible/fruit-bearing plants	•		•	•
Change in behavior of wildlife	•			•
More species available for hunting, fishing and gathering				•
Reduction in species available for hunting, fishing and gathering	•		•	
Seasons				
There are shorter winters	•			•
Changes in the length and timing of the Inuktitut seasons			•	•
Summers are getting longer			•	
Spring is getting shorter				•

Sources: ACIA, 2005; Nickels et al. 2005; Keith and Scottie, 2005; Elders Conference on Climate Change, 2001; Furgal et al. 2001.

Appendix B: Changes in the physical environment in Arviat, Nunavut				
Winds				
The weather is more unstable and unpredictable	In those days when they went hunting it was clear all the day, now it becomes cloudy after half a day. (Elder 4)	It is not just warm weather or cold weather. It changes a lot (it is not stable). It changes every time now. (Elder 1)		
Stronger winds / more wind	then there was not so much wind (especially in the summer) (Anonymous)			
Thunderstorms are more frequent	In summer there are a lot of thunder storms. (Elder 6)			
Storms are less frequent	We have less storms (Interviewee 2)	Less storms (Interviewee 1)		
Temperature				
more cold temperatures in winter	more colder days I guess (Interviewee 1)	In winter it is too cold (Elder 2)		
Spring is warmer these days	In spring it is too warm now (Elder 2)			
Rising temperatures year round	It is getting warmer each year (Interviewee 3)			
Sky				
The sky is more hazy	The sky always looks hazy now, always different. It was used to be very clear. (Elder 3)	but nowadays it looks like foggy and cloudy (Interviewee 5)		
The sun's location moved	The sun, I think it kind of moved (Interviewee 5)			
More clouds these days	Used to be nice clear skies, nice and calm, in our days it's cloudy all	It is always clouding. (Interviewee 5)	It used to be very sunny in springtime when it's melting.	

	the time. (Elder 4)		Now Always cloudy, raining, blizzards till late April. (Interviewee 1)	
Precipitation Decrease in snowfall / snow cover	There is not as much snow (Interviewee 3)	There is less snow now. (Elder 5)	not much snow to support the skidoo's (Interviewee 4)	There is less snow on the ground or inland or anywhere (Elder 10)
	The road would be closed when we were kids, because there was so much snow, but now it does not pile up as much during storms. (Interviewee 2)	The snow hardness and that and the amount of snow I've seen falling from my childhood years until now has dropped dramatically (Interviewee 5)	There is a lot less snow now than that I was younger. (Interviewee 1)	There is less snow this year (Elder 2)
Amount of snowfall is less stable	The snow is sometimes too high and sometimes too low. (Elder 4)	Nowadays there is not a lot of snow or too much snow. (Elder 6)		
Type of snow has changed	From the cold weather the snow is much harder now. (Elder 9)	The snow hardness has changed (Interviewee 5)		
Ice Ice has become thinner	The ice is thinner (Elder 3)			
Ice has become thicker	the ice is too thick now (Elder 10)	ice is too thick now (Elder 2)		
Ice is breaking up earlier	The ice ... goes out faster now (Elder 3)			
Rapid melting	The snow didn't melt as fast (Interviewee 3)	when it starts melting it is very fast (Elder 3)	The snow is melting faster now. (Elder 5)	snow is melting faster in the spring (Interviewee 4)
	In spring the snow melts faster now (Elder 6)			
Land				

Land is rising	You can see the ground growing. (Elder 3)	He thinks that the ground is higher now. (Elder 6)	The land is growing fast, it is much higher now (Elder 2)	
Islands are growing / new islands arise	In the ocean she used to see only water, now there are more islands around. In the 190s it wasn't so, now all the islands show up at low-tide. (Elder 8)	More shoals, you know low tide island, when high tide they disappear, low tide they appear, they are getting more (Interviewee 5)		
Water				
Fresh water levels are lower	On the land you can see the lines where the water has been. (Elder 8)	rivers are not as deep anymore (Interviewee 4)	The rivers are much more shallow. (Elder 6)	The water is drying up. (Elder 2)
More open water during winter	Maguse River used to be open at a few spots. This year first time that it is open all the way. (Anonymous)			
Vegetation and Wildlife				
New species of wildlife or vegetation	New kinds of birds that are coming in more (Interviewee 3)	New kinds of birds (Interviewee 4)	Wolverines are back in the area (they were not shot for 30 years) (Anonymous)	Starting to see foreign species. 6 pelicans at Tha-anne river flying north and bird with rounded beak. (Interviewee 5)
	There are other plants growing these days. (Elder 6)	Grizzly bears are moving close in this way. (Elder 6)		
There are more birds now	There is a lot more birds now, like snow geese (Elder 3)			
Impaired growth of edible/fruit-bearing plants	Blue berries are smaller now; they don't really grow much now. (Elder 3)	In our days they can't really go that much. They are small or they don't fully grow. Even the blueberries are not		

<p>Change in behavior of wildlife</p> <p>More species available for hunting, fishing and gathering</p> <p>Seasons Shorter winters</p> <p>Changes in the length and timing of the Inuktitut seasons Shorter spring</p>	<p>Caribous come closer to the community (Interviewee 4)</p> <p>Wolverines are back in the area (they were not shoot for 30 years) (Anonymous)</p> <p>It was longer winter seasons like ten years ago (Interviewee 3) Spring comes sooner (Interviewee 3) It seems like the spring used to be longer, back then. (Interviewee 1)</p>	<p>growing. (Elder 1) Caribous come closer to Hudson bay coast (Anonymous)</p>	<p>The animals, the bears and caribou don't get scared pretty easy now and they come close now. (Elder 6)</p>	<p>All the animals behave different now. In those days the caribou were used to run, when they see someone is coming. Now they stay close and just walk by. (Elder 2)</p>
<p>This winter (2007/2008) was longer</p>	<p>longer winter this year (Interviewee 4)</p>	<p>He thinks that the winter is longer. (Elder 7)</p>	<p>It is a long winter now (Elder 3)</p>	

Appendix C: Consequences on subsistence-hunting in Arviat

Physical environment

Consequences	Observations made	Environmental changes
Difficulty in hunting, navigation and travel	<ul style="list-style-type: none"> • More slushy trails, harder to travel with snowmobile • Less snow on trails, needed for traveling with snowmobile • Sudden weather changes (on land or on sea) 	<p>Warmer temperatures in winter A decrease in snowfall</p> <p>Increase in weather instability Increase in unpredictability of the weather Warmer temperatures and fast increasing temperatures are causing thinner ice and the ice melts faster in spring</p>
Difficulty in hunting	<ul style="list-style-type: none"> • The ice is thinner breaking-up earlier in the year and melting more rapidly, there are more weak spots in the ice 	<p>A change in the behavior of some of the wildlife Impaired growth of edible/fruit-bearing plants Changes in the quality of snow</p>
Difficulty in gathering	<ul style="list-style-type: none"> • Bears come closer to town, it is more dangerous • There are less berries that grow around Arviat 	<p>Warmer temperatures come sooner in spring</p>
Difficulty in using snow	<ul style="list-style-type: none"> • the snow is too hard to build igloos with 	<p>A change in the behavior of some of the wildlife</p>
Easier to hunt	<ul style="list-style-type: none"> • Spring comes sooner, so certain kinds of wildlife come sooner • Caribou come closer to town and are less scared and do not run • New species of wildlife are spotted which bring new hunting opportunities 	<p>Certain kinds of wildlife from more southern areas move further northward</p>

Social environment

Consequences	Observations made	Environmental changes
Difficulty in hunting	<ul style="list-style-type: none"> • More people have a job and there is less time for hunting • Less young people know how to hunt 	<p>More participation in the wage-economy</p> <p>More interest and participation in the wage-economy</p>
Easier to hunt and travel	<ul style="list-style-type: none"> • Hunting licenses needed to hunt polar bears and musk-oxen • No licenses needed for other wildlife • Snowmobile and ATV make traveling and carrying easier • Using weather predictions from television and internet • Using improved navigation equipment like 	<p>Increasing influence from government regulations (wildlife management) Limited influence of government regulations Imported technique/equipment from <i>Qablunaat</i> Imported technique/equipment from <i>Qablunaat</i> Imported technique/equipment from</p>

Easier to access food	GPS <ul style="list-style-type: none"> • A lot of food is bought in stores nowadays • The sharing of food happens in more restricted circles • Food is expensive in stores 	Qablunaat Introduction of store-bought food Introduction of the monetary system
Harder to access food		Need for profit in the wage-economy

Appendix D: Consequences on gender-relations in Arviat

Consequences	Observations made	Environmental changes
Women become the provider of the family	<ul style="list-style-type: none"> • Higher participation of women in the wage-economy 	More participation in the wage-economy
Increasing participation of men in domestic work	<ul style="list-style-type: none"> • Higher participation of women in the wage-economy 	More participation in the wage-economy
The ways of fulfilling the tasks have become modernized	<ul style="list-style-type: none"> • Still traditional division of tasks between men and women 	Living in a community
Some men can face identity problems	<ul style="list-style-type: none"> • Some traditional tasks for men are disappearing 	Living in a community
Loss of knowledge about hunting and hunting related activities	<ul style="list-style-type: none"> • Decrease in time for hunting • Decrease in learning by experience/observation 	Children go to school which contributes more to southern requirements
More women go hunting	<ul style="list-style-type: none"> • Hunting has become easier 	Imported technique/equipment from <i>Qablunaat</i>
More women go hunting (because they do not have anyone to go hunting with)	<ul style="list-style-type: none"> • More women are single or divorced now 	More <i>Qablunaat</i> norms and values in thinking about partnership

Appendix E: Changes in hunting according to Inuit in Arviat, Nunavut.

	Elders (12 people)	Younger generation (6 people)
Changing Hunting according to Inuit in Arviat, Nunavut.	<ul style="list-style-type: none"> • Sooner: women stayed in the camp • Husband and wife go out together to hunt • Most of the women stay at home in winter, because it's too cold • Elizabeth can hunt on her own, she learned it because she had no brothers • Sharing occurs in the family • Men are better hunters • Also daughters are taught how to hunt, they go with the dad, because there is no boy in the family • Most of the women go with their men out hunting, then they make tea or something • It is not unusual that women go alone 	<ul style="list-style-type: none"> • Mainly boys go hunting • Boys are taught how to hunt • Guys are too dependent on the weather now, they only go out with nice weather • A lot of women go fishing • Men are better hunters • Girls are often not taught to hunt • Girls are often not interested • Women have to hunt now, because they are divorced or single, nobody hunts with them • Now more women go hunting • Hunting is more open for women now, but not many women care to do it

Appendix F: Gender-roles

	Elders (12 people)	Younger generation (6 people)
Typical women tasks	<ul style="list-style-type: none"> • Cooking • Cleaning • Preparing skins • Teaching younger women • Making clothing • Working in and around the house • Taking care of the kids • Dry meat and char • Picking blueberries • Sewing 	<ul style="list-style-type: none"> • Cooking • Cleaning • Getting stuff ready • Take care of the kids • Learn how to sew • Helping Elders • Fishing • Sooner: staying in the camp area • Learn to prepare skins
Typical men tasks	<ul style="list-style-type: none"> • Shooting the animals • Hunting • Fixing everything, the house and the equipment • Teaching others how to hunting • Watching hockey on television • Making sleds 	<ul style="list-style-type: none"> • Fixing everything, the house and the equipment • Hunting
Changing tasks	<ul style="list-style-type: none"> • His parents had the same tasks and his children will have the same tasks, too • It is very traditional, there has not been a change 	<ul style="list-style-type: none"> • She cannot skin and cut up the meat • He helps cleaning and cooking • Men had to hunt and bring ice and water, now they have to do it anymore • Gender-roles did not change a lot: father and mother had the same responsibilities • Gender-roles are traditional, but in a modern way • It started recently that men are doing offices, cleaning the house, taking care of the kids etc.

Appendix G: Participant Consent Form

Project Title: Inuit hunters in a changing environment

Name of Interviewer:

Name of Interviewee:

Name of Translator:

Location:

Means of interviewing:

The interview and the resulting translations and/or transcriptions and/or images will be used for the Master thesis research project of Claudia Westermann and Matthijs Groeneveld, students of the University of Groningen, the Netherlands. This research is supervised by prof. Dr. L. Hacquebord, Kim van Dam and dr. ir. E.W. Meijles, University of Groningen, the Netherlands. This project deals with the changing social and physical environment of the Inuit and the effects this changing environment has on the subsistence-hunting in the community of Arviat. The interview will be conducted face-to-face in English or Inuktitut. An interpreter will be available for Inuktitut speakers. An interview will take approximately 2 hours.

I have been fully informed of the objectives of the project being conducted. I understand these objectives and consent to being interviewed for the project. I also understand that steps will be undertaken to ensure that this interview will remain confidential unless I consent to being identified. I also understand that, if I wish to withdraw from the study, I may do so without any repercussions.

The University of Groningen and the researchers will not use the resulting translation and/or descriptions and /or images for any other purpose without the permission of the interviewee.

Fill the box if you want to agree with the statement

I would like to remain anonymous

This (or these) form(s) of recording may be used during this interview

Audio

Video

Photo

Taking

notes

I agree to the use of information
I have provided according to the
conditions stated above.

I agree to use the information
according to the conditions
stated above.

Signature of the Interviewee

Signature of the Interviewer

Date

Date

Appendix H: Interviews women

Introduction

- We are two students from the Netherlands doing research in Cultural Geography. This research is the final research to reach our Master-degree.
- We would like to ask you if you want to remain anonymous. The answers that you give will solely be used for our thesis.
- Is it ok if we use a voice recorder? (Or could we even tape it on camera?, we will solely use the material for reviewing the interview)
- Do you have any questions about the research?
- Are you comfortable with starting the interview?

Background questions

- **Can you tell us who you are and where you are from?**
(Name / Age / main occupation, profession / do for a living / fulltime hunter / married / brothers & sisters / city or community of birth (or on the land) / residence history) (vb. “for al living”. Are you full time hunter? Are you employed, what type of job?)

General open Questions (background family)

- **Who are your parents? Can you tell us about them?**
(Name / age / occupation, profession / where from/ born in community or on the land / role within the family / fulltime hunters?)
- **Can you tell us about your grandparents?**
(What do you remember of them / what did your parents tell you about them / do you know how the land looked in their days / fulltime hunters? / Are they now seen as Elders)

Central questions

- **What are your responsibilities in the household?**
(what are the responsibilities of your partner / who earns the money / who decides what happens with the money / who brings up the children / different tasks: shopping, cleaning, sewing, hunting, cooking, etc./ different periods of a year)
- **Does country food play an important role in your daily life?**
(Frequency / who catches / sharing / difference in seasons / who prepares / importance for household economy, livelihood / how was this when you were young)
- **What are your main responsibilities in hunting related activities?**
(who decides what happens with the catch / is it still shared within the community / is it sold / different periods of a year / processing of the catch: skin)
- **Are your responsibilities the same as your mother had, or do you think that a change has occurred?**

(what / why / new technologies / weather / southern people / money / external influences)

Central Questions (women)

- **Did you sometimes go for hunting when you were growing up? Why did you go? Lijkt me minder relevante vraag voor women? Of bedoel je met deze vraag dat ze dit (sporadisch) wel doen?**

(with whom / who taught you / do you remember your first catch / what kind of animals / how often / how long / what did you do with your catch / what kind of transportation / what kind of hunting methods / Area / time of year / participation of women)

- **Do you still go hunting? Why do you go? idem?**

(with whom/ do you teach hunting to other people / what kind of animals / how often / how long / what happens with your catch / what kind of transportation / what kind of hunting methods / Area / time of year / participation of women)

- **Are there differences in the participation and the role of women in hunting between hunting when you were young and hunting these days?**

(what are they / Frequency / type of catch / location / time of year / participation of women)

- **When you were young, did you know what the weather was going to be like?**
(how / who taught you / can you still do that now)

- **Did your actions depend on the weather? And do they depend on the weather now?**

(which actions / how / how did it change / why did it change)

- **Are there any physical changes in the land that you have noticed from since you were growing up and now?**

(Ice / flora & fauna / less snow cover / frozen solid underground / etc)

- **Did these physical changes have any influence on your activities?**

- **Which meaning has hunting for you?**

Closing questions

- **Is it important to teach your children the “traditional” skills that you use or know?**

(which do you know / which do you use / which do the children learn / why / why not / who teaches them)

- **How do you see the future? Do you want to continue hunting (using the traditional skills)? How important is this for you? Will this be possible?**

- **Is there anything that we have forgotten to ask or do you want to add something? Please tell us.**

Thank you very much for your cooperation.

Appendix I: Interview hunter

Introduction

- We are two students from the Netherlands doing research in Cultural Geography. This research is the final research to reach our Master-degree.
- We would like to ask you if you want to remain anonymous. The answers that you give will solely be used for our thesis.
- Is it ok if we use a voice recorder? (Or could we even tape it on camera?, we will solely use the material for reviewing the interview)
- Do you have any questions about the research?
- Are you comfortable with starting the interview?

Background questions

- **Can you tell us who you are and where you are from?**
(Name / Age / main occupation, profession / do for a living / fulltime hunter / married / brothers & sisters / city or community of birth (or on the land) / residence history) (vb. “for al living”. Are you full time hunter? Are you employed, what type of job?)

General open Questions (background family)

- **Who are your parents? Can you tell us about them?**
(Name / age / occupation, profession / where from/ born in community or on the land / role within the family / fulltime hunters?)
- **Can you tell us about your grandparents?**
(What do you remember of them / what did your parents tell you about them / do you know how the land looked in their days / fulltime hunters? / Are they now seen as Elders)

Central Questions (hunter)

- **Did you go for hunting when you were growing up? Why did you go?**
(with whom / who taught you / do you remember your first catch / what kind of animals / how often / how long / what did you do with your catch / what kind of transportation / what kind of hunting methods / Area / time of year)
- **Do you still go hunting? Why do you go?**
(with whom/ do you teach hunting to other people / what kind of animals / how often / how long / what happens with your catch / what kind of transportation / what kind of hunting methods / Area / time of year)
- **Are there differences between hunting when you were young and hunting these days?**
(what are they / Frequency / type of catch / location / time of year / participation of women)

- **Do you have an explanation of the differences (if they are there) in hunting now and hunting when you were young?**
(Weapons / Areas / Animals / transportation / weather / ice / distance of travelling / what happens with the catch / etc)
- **Do you think that the changes in hunting are negative or positive for you and the other hunters?**
(employment opportunities / weapons / areas / animals / transportation / weather / ice / distance of traveling / what happens with the catch / etc)
- **What are the ideal conditions for hunting these days in the different periods of a year?**
(which different periods / when / Weather / ice-conditions / snow / group of hunters / equipment / etc)
- **Were the ideal conditions for hunting the same when you were young for the same periods? Why/why not?**
(differences in the length of the periods / new technologies / environmental changes / weather / etc)
- **When you were young, did you know what the weather was going to be like?**
(how / who taught you / can you still do that now)
- **Did your actions depend on the weather? And do they depend on the weather now?**
(which actions / how / how did it change / why did it change)
- **Are there any physical changes in the land that you have noticed from since you were growing up and now?**
(Ice / flora & fauna / less snow cover / frozen solid underground / etc)
- **Did these physical changes have any influence on your (hunting) activities?**
- **Which meaning has hunting for you?**

Central questions

- **What are your responsibilities in the household?**
(what are the responsibilities of your partner / who earns the money / who decides what happens with the money / who brings up the children / different tasks: shopping, cleaning, sewing, hunting, cooking, etc./ different periods of a year)
- **Does country food play an important role in your daily life?**
(Frequency / who catches / sharing / difference in seasons / who prepares / importance for household economy, livelihood / how was this when you were young)
- **What are your main responsibilities in hunting related activities?**
(who decides what happens with the catch / is it still shared within the community / is it sold / where to go / when to go / with whom / what to use / who owns the equipment / different periods of a year)
- **Are your responsibilities the same as your father/mother had, or do you think that a change has occurred?**
(what / why / new technologies / weather / southern people / money / external influences)

Closing questions

- **Is it important to teach your children the “traditional” skills that you use or know?**

(which do you know / which do you use / which do the children learn / why / why not / who teaches them)

- **How do you see the future? Do you want to continue hunting? How important is this for you? Will this be possible?**

- **Is there anything that we have forgotten to ask or do you want to add something? Please tell us.**

Thank you very much for your cooperation.